Grant Agreement no. 665948
Activity acronym: CIMULACT

Activity full name:
Citizen and Multi-Actor Consultation on Horizon 2020

Deliverable 2.2 – Social needs based research programme scenarios including 10 to 15 simulated calls for H2020

Due date of deliverable: 31.01.2017
Actual submission date: 27.02.2017

Start date of Activity: 01.06.2015 Duration: 34 months

Authors: MISSIONS PUBLIQUES (MP), FRAUNHOFER INSTITUTE FOR SYSTEMS AND INNOVATION RESEARCH (ISI), STRATEGIC DESIGN SCENARIOS (SDS), POLITECNICO MILANO (POLIMI) & all the participants of the Pan-European Conference

Organisation name of lead beneficiary for this deliverable: MISSIONS PUBLIQUES (MP)

Funded by the Horizon 2020 Framework Programme of the European Union

CIMULACT Partners

Teknologirådet – Danish Board of Technology (DBT)
Toldbodgade 12, DK-1253 Copenhagen, Denmark,
Contact: Marie Louise Jørgensen
mlj@tekno.dk
www.tekno.dk

FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV (ISI)
Breslauer Strasse 48, 76139 Karlsruhe – Germany
Contact: Philine Warnke
Philine.Warnke@isi.frauenhofer.de
https://www.isi.fraunhofer.de/

OESTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN (ITA)
Strohgasse 45, 1030 Vienna - Austria
Contact: Niklas Gudowsky
niklas.gudowsky@oeaw.ac.at
http://www.oeaw.ac.at/ita

MISSIONS PUBLIQUES (MP)
35 Rue du Sentier, 75002 Paris – France
Contact: Yves Mathieu
Yves.Mathieu@missionspubliques.com
http://missionspubliques.fr/

STRATEGIC DESIGN SCENARIOS SPRL (SDS)
Rue Dautzenberg, 36-38, BE-1050 Brussels - Belgium
Contact: François Jégou
f.jegou@gmail.com
http://www.strategicdesignscenarios.net/

TECHNOLOGICKE CENTRUM AKADEMIE VED CESKE REPUBLIKY (TC ASCR)
Ve Struhách 1076/27, 160 00 Praha 6-Bubeneč – Czech Republic
Contact: Lenka Hebakova
hebakova@tc.cz
http://www.tc.cz/cs

ASOCIATIA INSTITUTUL DE PROSPECTIVA (Prospectiva)
Bucharest, Sector 5, Aleea Sălaj no. 6,
România, postal code 051907
Contact: Radu Gheorghiu
Gheorghiu.Radu.Christian@gmail.com
http://www.prospectiva.ro/

APPLIED RESEARCH AND COMMUNICATIONS FUND (ARC Fund)
1113, Sofia 5, Alexander Zhendov St. Bulgaria
Contact: Zoya Damianova
Zoya.Damianova@online.bg
http://www.arcfund.net/

GREENDEPENDENT INTEZET NONPROFIT KOZHASZNU KORLATOLT FELELOSSEGU TARSASAG (GDI)
2100 Gödöllő, Éva u. 4. , Hungary
Contact: Edina Vadovic
Edina@greendependent.org
http://www.intezet.greendependent.org/

POLITECNICO DI MILANO (POLIMI)
Via Durando, 38a, 20158 Milano, Italy
Contact: Anna Meroni
Anna.Meroni@polimi.it
http://www.polimi.it/

The Association for Science and Discovery Centres (Science)
Suite 101, QC30, 30 Queen Charlotte Street; Bristol BS1 4HJ, United Kingdom
Contact: Penny Fidler
Penny.Fidler@sciencecentres.org.uk
http://sciencecentres.org.uk/

FUNDACIO CATALANA PER A LA RECERCA I LA INNOVACIO (FCRi)
Paseo Lluís Companys, 23m Barcelona 08010 Spain
Contact: Belen Lopez
Belen.Lopez@fundaciorecerca.cat
http://www.fundaciorecerca.cat

AKADEMIEN DER WISSENSCHAFTEN SCHWEIZ VEREIN
(TA Swiss)
Brunngasse 36, CH-3001 Bern – Switzerland
Contact: Elise Gortchacow
elise.gortchacow@ta-swiss.ch
www.akademien-schweiz.ch

HELSINGIN YLIOPISTO (UH)
Fabianinkatu 33, 00014 Helsinki – Finland
Contact: Petteri Repo
Petteri.Repo@helsinki.fi
https://www.helsinki.fi/fi

TEKNOLOGIRADET – THE NORWEGIAN BOARD OF TECHNOLOGY (NBT)
Kongens Gate 14, N-0153 Oslo, Norway
Contact: Åke Refsdal Moe
Ake.refsdal.moe@teknologiraadet.no
http://teknologiradet.no/

INSTYTUT TECHNOLOGII EKSPLOATACJI-PANSTWOWY INSTYTUT BADAWCZY (ITeE-PIB)
ul. K. Pułaskiego 6/10, Radom 26-600, Poland
Contact: Beata Poteralska
Beata.Poteralska@itea.radom.pl
http://www.itee.radom.pl/

ASOCIACIJA ZINIU EKONOMIXOS FORUMAS (KEF)
J. Galvydžio g. 5, LT-08236, Vilnius Lithuania
Contact: Edgaras Leichteris
Edgaras@zef.lt
http://www.zef.lt/

SIA BALTIJAS KONSULTACIJAS (BC)
Vīlandes 6-1, Riga, LV-1010, Latvia
Contact: Sandra Smalina
Sandra@granti.eu
http://www.balticconsulting.com/

UNIVERSITY COLLEGE CORK, NATIONAL UNIVERSITY OF IRELAND, CORK (UCC)
Western Road, Cork – Ireland
Contact: Stephen MacCarthy
Stephen.mccarthy@ucc.ie
http://www.ucc.ie/

STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK (DLO – LEI)
Alexanderveld 5, 2585 DB Den Haag, Netherlands
Contact: Volkert Beekman
Volkert.Beekman@wur.nl
www.lei.wur.nl

MEDIATEDOMAIN LDA (Mediatedomain)
Rua Nery Delgado 9-1, P-2775-253 Parede, Portugal
Contact: Ursula Caser
ursicaser@gmail.com
http://uc-mediation.eu/

UNIVERSITA TA MALTA (UoM)
Msida MSD 2080 – Malta
Contact: Sandra M. Dingli
Sandra.m.dingli@um.edu.mt
http://www.um.edu.mt/

SLOVENSKA AKADEMIA VIED (SAS)
Štefánikova 49, 814 38 Bratislava 1 - Slovakia
Contact: Tomas Michalek
Michalek@up.upsav.sk
https://www.sav.sk/

SLOVENIAN BUSINESS & RESEARCH ASSOCIATION (SBRA)
Av. Lloyd George 6, 1000 Brussels,Belgium
Contact: Draško Veselinovič
drasko.veselinovic@sbra.be
http://www.sbra.be/

RTD TALOS LIMITED (RTD Talos)

P.O. BOX 21722, 1512 Lefkosia, Cyprus
Contact: Melinda Kuthy
mk@talos-rtd.com
http://www.talos-rtd.com/

4MOTION ASBL (4motion)
10, rue du Commerce, L-4067 Esch/Alzett – Luxembourg
Contact: Gary Diderich
Gary@4motion.lu
http://www.4motion.lu/

ODRAZ - ODRZIVI RAZVOJ ZAJEDNICE (ODRAZ)

Ul. kneza Ljudevita Posavskog 2, 10000, Zagreb - Croatia
Contact: Lidija Pavic-Rogosic
lidija@odraz.hr
http://www.odraz.hr/

STATENS GEOTEKNISKA INSTITUT (SGI)
Månstorpsvägen 14, 263 32 Höganäs – Sweden
Contact: Lisa Van Well
Lisa.VanWell@swedgeo.se
http://www.swedgeo.se/

ATLANTIS SYMVOULEFTIKI ANONYMI ETAIREIA ATLANTIS CONSULTING (SA ATL)
9th klm of Thessaloniki - Thermi, GR-570 01 – Greece
Contact: Christopher Kennard
Kennard@atlantisresearch.gr
http://www.atlantisresearch.gr/

Disclaimer:
CIMULACT is a Horizon 2020 project funded by the European Commission. The views and opinions expressed in this publication are the sole responsibility of the author(s) and do not necessarily reflect the views of the European Commission.

Summary

CIMULACT stands for 'Citizen and Multi-Actor Consultation on Horizon 2020' (the EU Framework Programme for Research and Innovation). CIMULACT is engaging citizens, along with a wide range of other actors, in redefining the European Research and Innovation agenda and thereby make it relevant and accountable to society.[1]

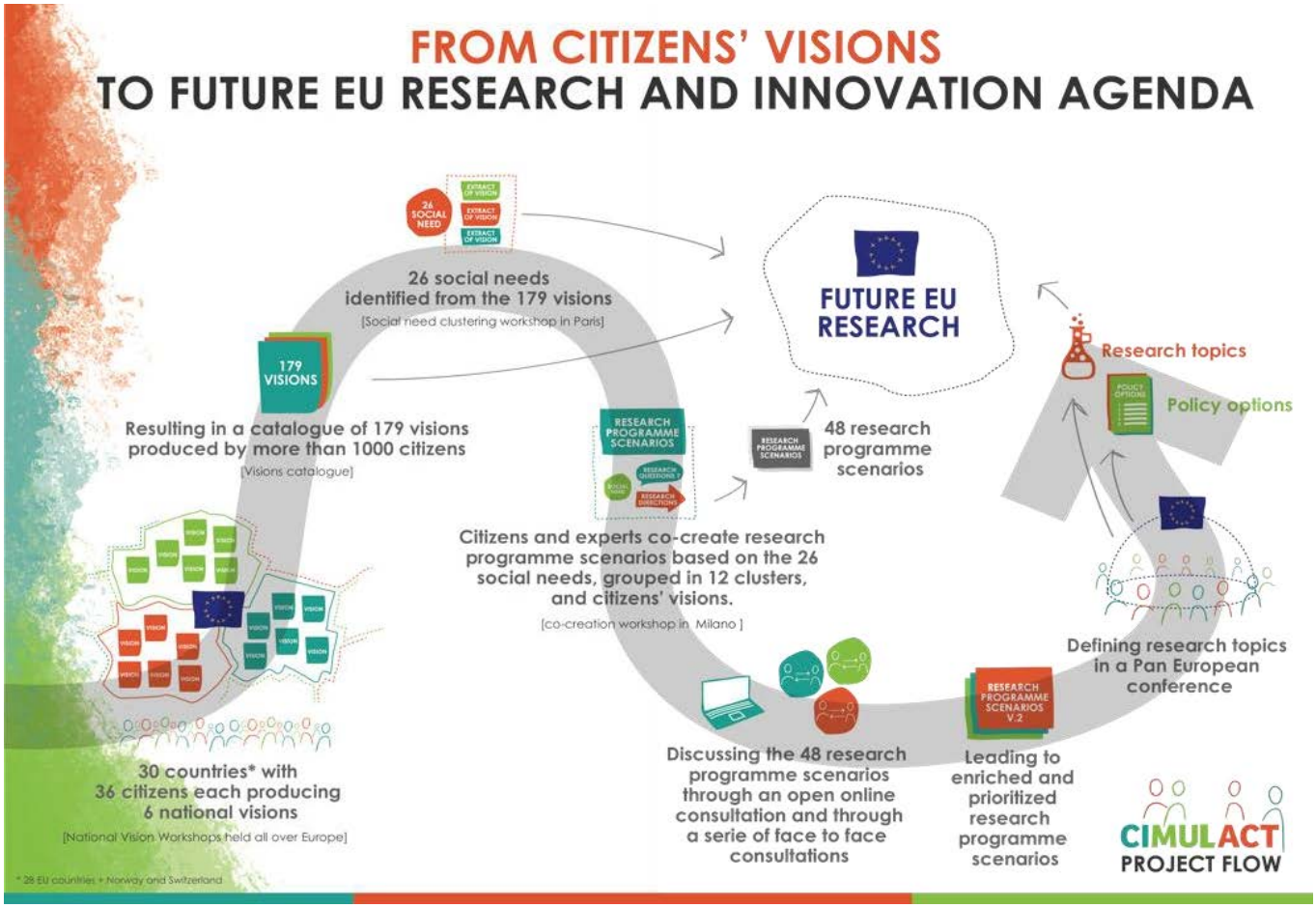
This report documents the draft citizen-based research topics & related CIMULACT policy recommendations produced for the programme Horizon2020.

These citizen based research topics were finalized at the Pan European Conference, on the basis of the feedback from more than 2000 citizens and experts across 30 countries. During this conference held in Brussels European on December 1st 2016, Commission Project Officers, experts and CIMULACT partners joined to enrich and finalize the research topics. They selected and worked on 23 of them.

These enriched and the 25 other (in annex) citizen based research topics as well as the recommendations for research and innovation policy such as framework conditions underpinning social needs based research programming are presented in this document. Both research topics and policy recommendations can be used as an input for the 2018 and beyond Horizon2020 Work Programmes and other relevant EU STI policy initiatives.

[1] More information on the CIMULACT project: http://www.cimulact.eu/

Methodology – How did we get here?



From 179 citizen visions to 48 draft research programme scenarios

From October 2015 to February 2016 the CIMULACT consortium organised visioning workshops in 30 countries. In each of these workshops a group of around 40 citizens - that was carefully tailored to maximise diversity with respect to age, gender, educational, professional and regional background - generated 6 visions of a desirable future (c.f. Deliverable 1.3: Vision Catalogue)[2] following the same carefully designed methodology. In total, 1088 citizens participated across Europe to the beginning of the process.

In March 2016, the resulting 179 visions were reviewed by the CIMULACT core partners with the support of 10 external experts (also called challengers) within a "Clustering Workshop" in Paris[3]. In this process a set of 29 social needs were identified that were underlying the 179 visions (c.f. Deliverable 2.1: First Draft of Social Needs Based Research Programme Scenarios)[4].

From this material an exhibition[5] of social needs was developed with an image representing the need surrounded by supporting "original voices" from the citizens.

In April 2016, a two-day co-creation workshop was held in Milano[6] where 48 research programmes addressing the social needs were developed. The participants of this conference were 30 citizens from 30 different countries that were selected from the participants of the visioning workshops, 30 experts in the areas indicated by the identified societal needs and 35 CIMULACT researchers from 30 countries. Together they co-created the 48 research programme scenarios.

The resulting 48 suggestions for research programmes are in depth documented in Deliverable 2.1 along with the detailed methodology of the conference.

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[2] http://www.cimulact.eu/wp-content/uploads/2016/06/D1.3final.pdf
[3] http://www.cimulact.eu/clustering-workshop/
[4] http://www.cimulact.eu/wp-content/uploads/2016/10/CIMULACT_Deliverable-2-1-Research_programmes_scenarios-corrected.pdf
[5] The exhibition of social needs can be found at http://www.cimulact.eu/wpcontent/uploads/2016/04/Cimulact_ALL_POSTER_SOCIAL_NEEDS_reduced.pdf
[6] http://www.cimulact.eu/scenariococreationworkshop/

Enriching and assessing the research programme scenarios

From June to September 2016 two parallel activities were carried out in order to assess and enrich the suggested research programmes:

- In a Europe wide online survey, citizens and experts were invited to comment on the research programmes by assessing their relevance, supporting their assessment with arguments and suggesting additional research questions. In total, 3.458 people participated in the survey (cf. Deliverable 4.2 European Report on Online Consultation Results, forthcoming).
- In each of the 30 countries, a workshop was held to review 8 and enrich at least 4 of the research programmes. The selection was coordinated in a way that ensured that each programme was reviewed in at least one country. For this process, the national partners were free to choose between a set of three methods or developing their own approach, involving citizens and/or experts. The process will be documented in Deliverable 3.2: Programme and Process for all citizen and Multi-Actor Consultations.

After this process a meeting of the core partners – Paris, November 3rd and 4th - was held where the results of the enrichments from both the online survey and the 2nd face to face consultation were integrated. This process resulted in 48 suggestions for research topics. For each topic a cover page was generated giving the main aspects of challenge, scope and expected impact of the proposed research. In addition, all inputs from the previous steps were documented within a background document of 8-10 pages (c.f. Annex). Great care was taken to keep track of the origins of the contributions for later reference.

The material that was developed in this meeting formed the basis of the work in the final step – the Pan-European Conference.

Pan European Conference: objectives, method and programme

Objectives of the day

The Pan European conference on December 1st 2016 was a crucial step of CIMULACT as it aimed at producing research topics for Horizon2020. European Commission Project Officers, experts and CIMULACT partners joined forces to **transform the CIMULACT "research scenarios"**, produced by more than 2000 European citizens, stakeholders and experts, into research topics. During one day, all participants were invited to contribute within an interactive creative dialogue process to making the next round of calls in Horizon 2020 reflect the needs, concerns and visions of the European citizens.

Method

The Pan European Conference was a unique opportunity to cross views and expertise from European Commission Programme Officers, experts and CIMULACT partners, based on citizens' visions expressed in 30 countries. In total 75 participants attended the conference - 16 programme officers, 11 experts, 2 advisors and 46 CIMULACT partners. Each topic has been raised by European citizens as a desira**ble future and it reflects the citizens'** expectations, desires and concerns for Europe.

The Pan European conference was a privileged moment of collective work where draft citizen-based research topics were discussed in small groups. It was expected from participants to actively participate and fostering diverse points of view. At each table, one facilitator led the discussion and one rapporteur was in charge of taking detailed notes. The European Commission Programme Officers and the experts along with the CIMULACT partners were invited to comment the draft citizen-based research topics with the aim of:

- Sharing their first reactions, dissing what inspire them (focusing on the most promising aspects, unclear elements, etc.);
- Discussing how realistic they were and what should be added or done to make them feasible;
- Looking for innovative elements regarding potential policy options (both on research and more generally).

The participants were asked to amend, modify, develop **–** when needed - the cover pages in order to produce final research topics that can be used for Horizon 2020 research programme.

The discussions were organized per tables – 13 in total. Each table was composed by one table facilitator, 2-4 Cimulact partners, 1 expert and 1 to 2 European Commission officers. 2 to 5 research topics were proposed at each table and the participants prioritized two of them. In some cases, they created a new one, merging similar draft topics. In order to stimulate the debate the participants were invited to change table in the middle of the day and contribute to the work initiated by others.

In order to manage the thousands pages of contents that were produced in the 30 national consultations, the results were turned into an exhibition with selected contents and organized per Grand Challenge with a colour code.

After the work on the topic research, the participants proposed a list of policy recommendations or research policy recommendations inspired, or extracted, from the research topics.

At the end of the day, the participants have produced advanced 23 draft citizen-based research topics (they selected them from the 48 draft research topics and amended them) and about 40 policy recommendations. CIMULACT partners finalised the topics and recommendations during the following day.

The table below summarizes the steps towards the final topics presented in this deliverable.

Table 1: Steps from 48 draft research programmes to final proposed social needs based research topics

	Activity description	When and where	Partners	Outcomes
Step 1	Read, analyse and cross the results from WP2, WP3 and WP4	Paris workshop – November 3rd and 4th 2016	Core-partners	48 draft research topics which include 1 cover page and a full version (5-10 pages)
Step 2	Review and finalise the 48 cover pages and the detailed versions that will be presented at the pan European conference	Desk work	Task 2.2 partners	48 reviewed draft research topics
Step 3	Discuss and comment the draft research topics	Pan European Conference – Dec. 1st 2016	Cimulact partners, experts and European Commission programme officers	Advanced draft research topics and policy recommendations (stage 1)
Step 4	Finalise the advanced draft research topics	Pan European Conference – Dec 2nd 2016	Cimulact partners	Advanced draft research topics and policy recommendations (stage 2)
Step 5	Review and finalize research topics and policy recommendation	Paris workshop – December 5th and 6th 2016	Task 2.2 partners	Finalised research topics (stage 3)
Step 6	Deliver finalised research topics and policy recommendation	December 12th 2016	Task 2.2 partners	Deliverable 2.2 – rough version
Step 7	Deliver finalised research topics and policy recommendation	January 31st 2017	Task 2.2 partners	Deliverable 2.2 – final version

Introduction

Within the following section we first document the 23 research topics that were further elaborated within the Pan-European conference. These were selected in the conference as the most interesting research programme scenarios from the perspective of the participants and accordingly went through one more review than the other topics. It should be noted however that the remaining 25 topics that are documented in the section further below may well be of equal relevance and urgency.

We present the topics following the structure of current Horizon 2020 calls for research or support actions outlining the "challenge" addressed by the research, the "scope" with the key focus areas of the proposed research and the expected "impact" of the research. For each topic we indicate on the top of the page to which of the seven "Grand Challenges" of H2020 it is most closely related. In many cases however, the citizen based research topics span across several of these challenges. About Grand Challenge 7, the citizens did not formulate visions explicitly connected to it, but a few topics can be related to this Grand Challenge. Thus, there was not a dedicated table of discussion Grand Challenge 7 but related aspects were discussed at several tables.

Finally, for each topic we document citations from the citizen visions expressing the need for this impact to be achieved.

For each topic, we also indicate the score this issue achieved in the online consultation (out of a maximum of 5) and the countries that gave high priority to the issue in the second face to face consultation.

Following the setup of tables in the pan European conference, topics are grouped together according to domains. At the end of each domain we document the policy recommendations that were elaborated at the respective table in the pan-European conference. Many of these recommendations are directed at research policy but several are also addressing other policy domains such as transport, agriculture and energy. In addition, the recommendations address all policy level from global, via European to national, regional and even local. Those policy recommendations that were not related to a specific domain or topic but transversal are documented in a separate section.

The research topics detailed versions with all related inputs from the previous work packages are presented in the Annex. Readers who wish to follow up on one of the proposed research topics are strongly advised to consult this rich and diverse material.

Outcome – The 23 elaborated citizen-based research topics & related CIMULACT policy recommendations

Grand Challenge 1: Health demographic change and wellbeing

PERSONAL DEVELOPMENT

1 I am empowered to lead my changes

Research topic :
I'm empowered to lead my changes #6.d

Grand Challenges :
1: Health, demographic change and wellbeing
4: Smart, green and integrated transport
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Uncertainty is rising due to a rapidly changing living and working environment and there is a shift of risks and responsibilities from the state and employer to (vulnerable) individuals. Today´s life-job-education pathways do not respond to the need of acquiring new skills and knowledge for having a fulfilled life. Citizens need technical, social, individual skills and an entrepreneurial mindset to stay competitive in the labor market and be able to adapt to a changing environment. They need to be able to make individual choices to cope with the quest for flexible and adaptive careers over a lifetime. There is not enough psychological knowledge on barriers for changing life-job-education paths and for dealing effectively with uncertainty. Responsibilities of state, businesses, individuals and other actors are dissolving and new mechanisms for coping with these challenges are needed.

SCOPE
Research should underpin the set-up of experiments with new models of coping with changing environments.

Research could focus on one or more of the following key aspects:

- Better understanding the current situation especially consequences such as resignation, depression, polarization, social inclusions, exclusion.
- Better understanding the labor market and its future changes through theories, models and foresight approaches.
- New practices and tools to empower people to make good choices and orient themselves in order to be better prepared for possible future changes (sociology, educational theory, psychology).
- Exploring possible roles of communities for enabling alternative life-job-education pathways.

Citizens of all ages should be involved not only in the research but also in the implementation phase. Particular attention should be paid to differences between different generations.

EXPECTED IMPACT

- Means are available that empower individuals to harmonize life choices in a changing world
- Improved personalized education
- A more flexible job market with the individual in the center
- Possible models are developed for introducing alternative life-job-education pathways, which involves different actors and shares responsibilities (e.g. communities, NGOs, CSOs, businesses, etc.)

Online consultation rating: avg. 3,68/5
Countries prioritizing this research area: Sweden

CITIZENS' VISION
[UK] Vision 2: Community Empowered Learning for the 21st Century
"There is freedom of choice about whether to use life-long learning [...] education is not age based on result dependant. Qualifications are elective. Access to these resources is unlimited throughout a person's life (...). Every person has the right to be educated in a way that allows them to reach a full potential"

[HUN] Vision5: Education in the world of transforming work
"Lifelong learning has been accepted as an important value"

Policy recommendations on personal development

There is a need to ensure that we have solutions oriented towards the older generation adaptation process to fast changing environment. We often make the presumption that if we educate young generations to have the skills needed to cope with fast changing environment, then they will have these skills all their lives. We need to have solutions for today's older generation not only seeking to ensure that they don't get excluded from normal living and society, but also to prepare and enlarge our toolbox for possible future situations. Solutions from these generations will also be useful for other generations.

The world is rapidly changing as a result of globalisation, development of new technologies etc. It requires new mechanisms for individuals to cope with these challenges. Shifting risks and responsibilities to individuals might deepen this problem and today's structures (state,

businesses, families, etc.) do not ensure that citizens are prepared to face the new challenges. Communities may be worth to consider as a way to acknowledge and address the needs of individuals so they are not left behind. It is not innovative in the sense, that community and community building is one of the focus points of EU/EC, but is still innovative in personal development area to have more emphasis not on individual or economic challenges, but to support communities.

HOLISTIC HEALTH

2 Dissemination and continuous exploitation of research and innovation in the healthcare system

Research topic:
Dissemination and continuous exploitation of research and innovation in the healthcare system

Grand Challenges :
1: Health, demographic change and wellbeing
6 Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
There is a gap of awareness at the local level about the research and innovation achievements at the European level.
In fact, research and innovation actually occur in the healthcare system but they do not come easily available to the local service providers, citizens and other relevant stakeholders. This can be due to the inherent complexity of the system, but also to a lack of dissemination and exploitation.
Therefore, there is a need of doing actual exploitation at a granular level and of creating local awareness, through local actions, about the results of research.

SCOPE
A dissemination and support action should be conceived to spread and exploit results of research in the healthcare system at the national and local levels.
This may imply working with local entities and grassroots organisations (organizations, associations, communities, national contact points and companies) to engage people and stakeholders in discussing, adopting and adapting on-going research and innovation achievements.
Local funding entities can facilitate the continuous implementation of research results.
Best practices at the local level must be identified.
The action needs to identify and then to map out the local entities that can be in charge of this exploitation and dissemination activities, in order to understand their responsibilities and capacities.

Contextual and infrastructure factors must be also investigated in order to understand how they influence the exploitation.

EXPECTED IMPACT

- Better exploitation of research and innovation at a local level
- Increased availability of services and solutions for the citizens
- Increased awareness of science progresses and achievements
- Better understanding of the role of EU research and innovation programmes
- Improved roles of national contact points

This research topic was created at the pan European conference, based on other research topics. No online rating and prioritization information available.

CITIZENS' VISIONS

[PL] Vision 1: Healthy Family, Healthy Society (Flower of Life)
"Our vision concerns available, effective and innovative healthcare which is at the heart of a healthy family and society."

[BGR] Vision 6: Evolution in health care
"… Advanced health-care [...] and minimized spread of diseases"

[CYP] Vision 3: Human Rights
"[...] to equal access to issues that we take for granted, such as health, education and retirement."

[FIN] Vision 2: Predictive health tracking
"One's authority over his or herself as well as one's wellbeing increases and all have equal access to health services."

[GR] Vision 6: Five Pillars for human development
"Health: access to health facilities with medical coverage regardless of economic background"

[CYP] Vision 2: A just society oriented towards human rights
"A society that provides equal opportunities for all EU citizens, as well as direct access to a secure health and education system."

[BGR] Vision 6: Evolution in health care
"Health care is free and generally accessible."

[UK] Vision 6: Citizen Empowerment
"People feel empowered to look after their health and well-being themselves. The highest levels of available health/care/education/resources are available for all".

3 Evidence-based personalized healthcare

Research topic:
Evidence-based personalized healthcare #4.a

Grand Challenges :
1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE
Today, almost everyone gets a "standard" treatment for a specific symptom and not a personalised one, whilst new technologies may realise healthcare for all which is more equal, of higher quality and more personalised. Additionally, e-health can secure digitalised medical documentation and facilitate common policies overcoming the issue of fragmented data, which hinders linkages across countries/sectors/systems. This can enable faster diagnostics, and therapy can be more effective, whilst saving resources. This needs to go together with a redefinition of responsibilities and duties of every type of medical staff in order to avoid misunderstanding and confusion, while increasing the capacity of the doctors to humanise the relationship with the patient and the way in which information is shared.
Finally, this can bring about a more holistic approach to healthcare, that is considering patients' symptoms in the context of overall health conditions and curtail treatments that concentrate merely on symptoms. This should help building trust between patients and doctors.

SCOPE
Research should explore the conditions for evidence-based, personalised and human-centric services for health promotion, prevention, treatment and rehabilitation. Reliable user lifestyle profiling methods and technologies should be developed, in order to achieve personalised holistic data-based health services. For this purpose, large amounts of data provided by miniaturised, environmentally friendly (wearable or distributed) systems could be combined with existing data from other sources (e.g. EHR7, insurance data).
This needs to go together with research on skill training programs for both doctors and citizens in order to:

- For doctors to complement the curriculum with social psychology (i.e empathy training) on one hand, and digital literacy and data mining on the other.
- For the citizens to be trained on health and digital literacy.

Research should finally explore ways to make health-related data from diverse sources and destinations interoperable, and to investigate new processing techniques personalised analysis and reporting.

EXPECTED IMPACT

- Effective use of data for personal health
- Individuals enabled to take care of themselves
- Contributing to treat patients comprehensively, not only to solve an acute problem
- More satisfied patients and among health staff
- New economic and financial indicators of effectiveness
- Reduction in primary care in the long term
- Awareness of personal health through data
- More human relationship between the doctor and the patient

Online consultation rating: average importance: 4,1/5
Nations prioritizing this research area: Slovakia, Estonia, Ireland

CITIZENS' VISIONS

[ITA] Vision 4: A school beyond times – a new education model
"The social security system uses smart watches both to monitor the health status and to help individuals to take care of themselves"

[CZE] Vision 3: Free citizens in the secure world of data
"Effective use of data on personal health"

[DK] Vision 1: Physical and mental health
"… healthy as whole – both lifestyle, mental and physical health"

[ROU] Vision 1: Let's be humans through technology
"Advanced technology for health and education"

[HUN] Vision 3: Snapshots - Fragments of conversation in a community house
"Epidemic prevention: hygiene, lifestyle, awareness-raising, not just through vaccination"

[UK] Vision 6: Citizen Empowerment
"People feel empowered to look after their health and well-being themselves. The highest levels of available health/care/education/resources are available for all".

[MAL] Vision 3: Education leading to a new way of life
"With education come healthier lifestyles"

[ITA] Vision 6: Technology at the service of man
"An easier access to advanced technologies, with more intuitive and functional interfaces"

[EST] Vision 6: Life in your age
"People can live up to 100 years old without any problems because they are taught from childhood to make the right choices concerning their health."

4 Access to equal and holistic health services and resources for all citizens

Research topic :
Access to equal and holistic health services and resources for all citizens # 4.b

Grand Challenges:
1: Health, demographic change and wellbeing
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
EU citizens do not receive the same standards of health. There are huge differences in EU countries regarding:
1_Equity: Access to health services, availability of drugs and non-pharmaceutical interventions, access to rehabilitation and nursing.
2_Awareness of health: health promotion and healthy living to prevent illness, locus of control, how people can help themselves, public health strategies, methods of addressing mental health, knowledge access and education of health professionals, etc..
3_ Holistic approach: what is this about in the different cultures and circumstances, and how to achieve truly patient-centred healthcare
Finding solutions to this challenge can prioritize humanity over money, but can also minimize the negative economic impact of bad health. Moreover, they can create better links between the European and the local levels, and add value to local healthcare approaches, yet complying with the European standards.

SCOPE
Research should define the state of the art of the healthcare system in the different European countries in order to promote an equal distribution of resources and knowledge with a Pan-European dimension. The action may imply:
1) Setting the indicators to carry out a comparative analysis of the good and bad practices in the different countries across Europe in the healthcare system, funding models, incentives and in the education/training system. This may lead to knowledge and data distribution with open access and guidelines agreed upon by all stakeholders to create a European health network and to harmonize medical care.

2) Understanding and developing the local knowledge about healthcare with regard to: a) local approaches and medicines that are complementary to the European standard approach; b) the specific situation and circumstances of the patient, in order to set more holistic, person-centred approaches. This may be reflected in the education courses for citizens and healthcare professionals to promote health awareness.

EXPECTED IMPACT

- Social responsibility at a local level to reach a global community taking care of all individuals and their needs at different ages.
- Providing knowledge on effectiveness of a holistic approach.
- More humanity-based approaches and less °business as usual°.
- Minimize the negative economic impact of bad health.
- Better links between the European and local level.
- Value added to the local healthcare approaches.
- Access to quality healthcare across Europe
- Healthcare understood as a service, not a business
- Decrease in diseases caused by bad/unhealthy habits thanks to increased education/health awareness.

Online consultation rating: average importance: 4.11
Nations Prioritizing this Research Area: Spain, Austria, Ireland, Malta.

CITIZENS' VISIONS

[PL] Vision 1: Healthy Family, Healthy Society (Flower of Life)
"Our vision concerns available, effective and innovative healthcare which is at the heart

[BGR] Vision 6: Evolution in health care
"… Advanced health-care [...] and minimized spread of diseases"

[CYP] Vision 3: Human Rights
"[...] to equal access to issues that we take for granted, such as health, education and re

[FIN] Vision 2: Predictive health tracking
"One's authority over his or herself as well as one's wellbeing increases and all have equc

[GR] Vision 6: Five Pillars for human development
"Health: access to health facilities with medical coverage regardless of economic backg

[CYP] Vision 2: A just society oriented towards human rights
"A society that provides equal opportunities for all EU citizens, as well as direct access to

[BGR] Vision 6: Evolution in health care
"Health care is free and generally accessible."

[UK] Vision 6: Citizen Empowerment

"People feel empowered to look after their health and well-being themselves. The health/care/education/resources are available for all".

[DK] Vision 1: Physical and mental health
"… healthy as whole – both lifestyle, mental and physical health"

[HUN] Vision 3: Snapshots - Fragments of conversation in a community house
"Epidemic prevention: hygiene, lifestyle, awareness-raising, not just through vaccination"

[MAL] Vision 3: Education leading to a new way of life
"With education come healthier lifestyles"

[EST] Vision 6: Life in your age
"People can live up to 100 years old without any problems because they are taught from childh concerning their health."

Policy recommendations about holistic health

1. Citizens insist in their visions on equal access to holistic health services and resources. They want continuous improvement to the system they access to.

At the policy level, a benchmarking of healthcare systems and practices across Europe should be launched, in particular on their actual accessibility for the citizens (incl. drug pricing), the evidences and indicators about their effectiveness and the innovations (what research results and innovations are being implemented).

2. Health research so far targeted only doctors and patients. Local actors (city council, **associations, and citizens…) are missing from health research**. There is a difference between a citizen and a patient. How do we bring these perspectives that were mostly left out?

3. The access to healthy life is a result of education. The policy recommendation is to start from the primary school with education programmes that address healthy living (in a broad sense), self-prevention and self-care, together with digital literacy on science issues.

Healthy living is essential for prevention. Citizens must be aware of what healthy living means and what are the factors that influence it (food, work conditions, social life…). The education programmes will be based on evidences on the effectiveness of healthy living practices. The training will continue at the secondary and tertiary levels.

The recommendation is not new per se, but there is a lack of actual implementation in the different European countries. There is a very different situation in every country and even regions within a same country.

4. Education of doctors and health professionals is still very much centred on conventional technical disciplines of medicine, while a more contemporary knowledge about digital topics is needed for being able to benefit from the opportunities that came from data-mining and digital healthcare. It is an urgent issue, as the transformation of the job of the doctor due to digital opportunities is a present case and cannot be neglected or ignored (in particular as the patients are changing too, being much more informed).

Moreover, there is a need of humanizing the relation with the patient that implies to acquire more social skills and empathy.

We recommend to include holistic and integrated approaches to the patient and data literacy (digital skills) into the professional education and trainings of doctors and health professionals in order to address the current challenges of a society with data intensive knowledge; this will cover :

1) Programs on data and digital literacy to deal with data intensive knowledge,

2) Traditional/local healthcare approaches into the standard and international knowledge on medicine,

3) Empathy (i.e. via role-playing) and social skills,

4) Nutrition in the subject of education.

Work life balance and wellbeing

5 Technology as a means of well being

Research topic: Technology as a means of well-being #9.a

Grand Challenges :
1: Health, demographic change and wellbeing
7: Secure societies – protecting freedom and security of Europe and its citizens

CHALLENGE
1. On an individual perspective: wellbeing (emotional, mental, spiritual, physical) can be understood as freedom to choose / self-determination/ autonomy. The challenging question is: what does a "good life" mean and in which way will technology be used in personal and professional lives?
2. On a public perspective:
Guarantee the access to technology with equivalent opportunities, in order to ensure to each person a self-determined "good life" and a "balanced and ethical use of technology".
Creation of frame conditions in order to avoid abuses both from the employees and employers point of view. Today, people are not completely aware of the possibility to create "boundaries" between them and technology. The challenge is to avoid that employers take advantage of technology to abuse employees
Encouraging engagement from citizens
-We should keep in mind: technology is a means, not a goal. The objective is to reach a good life (self-determined).
3. On an organisational (business) level there's the need to integrate the perspective of the individuals into the workplace/ working environment, with an "integrated system design" process: start with social need and develop new technology later; not the other way around. A challenge exists between consumer technology and technologies in the workplace. So far the employees have to go through the technologies the business imposes on them. Technology development in business should learn from the consumer technology development in order to start from the final user need (employees).

SCOPE
Instead of being governed by technological devices, we want to govern them. Especially in the workplace, the aim is that final users (employees) play an active role in the development and process of introduction of new technologies, so that the development is end user centric.

The promotion of a higher level of awareness in the use of technology will allow reaping the benefits it offers without suffering negative consequences such as screen addiction, shifting relationships from physical to virtual space, thinner boundaries between virtual and real actions and exploitation at the workplace.

EXPECTED IMPACT
Better understand the relation between virtual and real
Better deal with privacy issues
Dialogical development of our claim to technology, society and self
Promote critical thinking as a basic requirement for all that follows
Promoting risk assessment research (generate data & evaluate data)
Avoid being overwhelmed by the constant pressure to make far-reaching decisio
with regard to fast-paced technological developments which are outside the reach
Holistic focus
Measuring wellbeing
High ethical standards of societies and constant dialog
Online consultation rating: average importance: 3.86
Nations Prioritizing this Research Area: Switzerland (1), Ireland (4), Slovenia (5)

CITIZENS' VISIONS

[LIT] Vision 6: Emotional Intelligence for Positive World Creation
"Not only technology can save the world, but above all human self-knowledge".

[HRV] Vision 3: The preservation of human health and nature for the generation XYZ
"[in our vision] Technology does not alienate people and does not endanger their health"

[MAL] Vision 6: Education and Society (community)
"[now] Technology is not completely at our service [...] To give man a vision. What makes man is not what man makes, and our creations should not become our creators."

[IRE] Vision 5: Balance of Nature, Humanity, and Technology
"We want technology to be used for the betterment of society"

[ESP] Vision 3: Building the future
"To regulate the role of new technologies in order to avoid damaging the quality of human relationships"

[SVK] Vision 2: Technology for Better Health
"People will live a quality life because of the support for research and development, improved access to its results and better cooperation of the included actions" [WP2]

6 Balanced work-life model

Research topic: Balanced work-life model # 1.B

Grand Challenges :
1: Health, demographic change and wellbeing
4: Smart, green and integrated transport
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

Work-life unbalance can be felt at many levels: time wasted in commuting between home and work, long working hours preventing from social interactions, work stability, lack of time for personal development and family and children care, restricted work flexibility, unhealthy lifestyles. In the future, it will be important to distribute work flexibly throughout life and also flexibly shift between employed (paid) and unemployed (volunteer) work.

This is needed and proved by research from two perspectives:

- From the organisational perspective: a more balanced model would make employees more productive and efficient.
- From a societal perspective: a more balanced model would make people more fulfilled and by consequence healthier.

Thereby people will be able to take care of their loved ones when needed, pursue personal fulfilment and/or follow multiple careers and slowly shift into retirement.

Nowadays workers experience a tension between too much flexibility and too strict boundaries and vice versa. If from one side there is a need of more flexibility on the workplace, on the other side there is a concern that too much flexibility would destroy boundaries between personal and professional life. This can negatively affect well-being. There is a need for making the negotiation between employees and employers more balanced and fair.

SCOPE

Research should rethink the definition of "work" and develop approaches that permit to recognize and reward as "work" all different kinds of human activities including socially valuable daily life activities such as domestic work, childcare, caring for the elderly and social work. Research should help identify and define the different flexible forms of work. Studies could be carried out to analyse the sectors that would fit and not fit for different flexible forms of work, and identify/evaluate the barriers for introducing new forms of flexible work. Research should also pay a particular attention to the relation of negotiation between enterprises and employees (balanced and fair).

However, research should also investigate different frameworks to assess the workload and/or it's accomplishment. It will intend to help people feeling satisfied (and healthy) with their tasks/work, as well as with their personal life as they experience a sufficient degree of flexibility. In this sense, research should help to create a setting where there is flexibility within boundaries and boundaries within flexibility.

What is missing is performance research from the organisational perspective, in order to link it with the existing on personal life research. As work-life balance has been

researched for a long time, there is a need that the research that has been done is put into practice.

EXPECTED IMPACT
Assessed impact on family and social relations of more balanced work-life models
Workers would be more satisfied overall and even more productive during working time
This will allow people to more freely choose their lifestyles and reduce social judgm and prejudices.
Greater understanding and recognition of the impact on the society in short and lon term of extra-work activities/personal activities
Online consultation rating: average importance: 4.
Countries where this is priority: Italy, Poland (1), Austria-Citizens, Slovenia (2), Latvia (3), Austria Stakeholder (

CITIZENS' VISIONS

[LAT] Vision 5: Work as a means of expression
"Job is 100% flexible: work at home and elsewhere, choice of working hours, a possibility to adapt and choose responsibilities and tasks; appropriate reward. One life – a lot of roles – continues development."

[HUN] Vision 2: The rise of a backward region
"They declared their satisfaction with the shorter and flexible working hours (6 hour workdays), the higher wage that provides well for their livelihood, and the healthy working conditions."

[FR] Vision 5: Living in a balanced society
"Our working time (around 20h/week) allow us to participate to citizen actions and to be radiant in our family life and leisure time. Our free time allow us for instance to be involved in volunteering and educational fields."

[DE] Vision 6: The future of work
"Flexible work models are par for the course
More working from home /also half days and quarter days" [...]
"flexible annual working time"

[LUX] Vision 4: Technology at society's service
"I work 4 hours. This allows me to have lunch with my children and my partner in the community kitchen in our participatory house. Then I spend some time with my daughter in the surrounding wood. I started to get involved in participatory life in various forms …"

[SVN] Vision 6: Equality and Human Rights – A driver of Social Development
"Intergenerational cooperation - the transfer of knowledge and traditions, care for the elderly after working active age [...] Fair society of responsible people who act for the common good."*

[SVN] Vision 5: Prosperity and work activity of citizens
"- optimization of labor situation today: flexibility today means working + 8 hours and a lot of working overtime;

- emphasis on individualization, rather than on the importance of taking care for the community."

[FR] Vision 4: Sharing common values to live better together
"- Reflection of feasibility of a minimum income or unconditional income or basic income, financed through local currency
- Education"

[IRE] Vision 3: Relationships with one another and the environment
"Work / life balance will be different. More time for relationships, culture, society e.g. look at Danish model."

[PORT] Vision 4: Culture with all for development
"In 2050 we do not concentrate on productivity (which means ultimately aiming at profit) but on everybody's individual happiness index. That will feed the happiness of the collective." [WP2]

Policy recommendations for work life balance and wellbeing

1. At work, there is a need to shift the focus of technology implementation from the organisational interests to the end-users interests. And due to technological developments this represents a huge potential for the organisations and the employees. Therefore we recommend a policy which **systematically introduces a "well-being gate" anytime a** technology is introduced within the workplace, in order to assess if the **"human"** requirements of employees (end-users) are met. A lot of research in this field has already been done the innovative part is to put into practice the findings (applied research).

So far employees passively have to go through what employers decided. Technology development has to become more "end-user centric", starting from the employees' needs and not just from the business ones (employer, organization…). There is a need to introduce an "integrated system design" process while developing and adopting new technologies within the workplace, pursuing a bottom-up approach. In this way it is guaranteed that the needs of the end-user are taken into consideration and not just the interests of the employers. In order to reach this goal and guarantee that a satisfying level of well-being is preserved, human factors specialists should be integrated inside organisations.

Despite the fact that this might appear not innovative, the reality is that this recommendation is not generalised yet, even though it is obvious.

2. Organizations should include **strategies to "deliver" the research findings that have been** already done about more balanced work-life models.

A lot of research has been already carried out in this field but what we need are tools to develop skills in areas such as personal ability to organize the work. This recommendation suggests the way the research already done needs to be applied within business contexts.

Additional comment: There is a need to reposition "labour unions" in contemporary society. They not appear in the citizens visions (Step 1 of Cimulact) and this may be a signal for a need for research and policy initiative to redesign the role of labour union in the 21st century.

Grand challenge 2: Food security, sustainable agriculture and forestry, marine and maritime and water research, and the bio economy

7 Good quality food for all

Research topic:
Good quality food for all #5b.

Grand Challenges :
1: Health, demographic change and wellbeing
2: Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bio economy
5: Climate action, environment, resource efficiency and raw materials

CHALLENGE
Accessibility to good and healthy food is not equally available to all. Socio-economic factors, pricing, education, culture, location are critical factors that may limit access to healthy quality food and related dietary habits. Unequal access to food has a strong local and global impact in both urban and rural areas. This is expected to become even worse in a changing climate. This inequality is challenging public health as well as social and economic cohesion. Food poverty and food wastage are also pressing challenges in the EU. Consumers are, at times, receiving conflicting and contradictory information about healthy diets and nutritional value and this causes confusion.

SCOPE
Both basic and applied research should be developed with an interdisciplinary approach to understand and assess the processes generating food inequalities and examine how this affects social and economic cohesion locally and globally.
Research should focus on the following aspects:
- Map the food access in rural and urban areas,
- Calculate and assess food poverty in the EU,
- look at supply regulation and issues connected to distribution and prices (transnational level),
- investigate the socio-economic inequalities existing inside a country with regard to food and nutrition (national level),
- analyse all questions surrounding sustainable nutrition: quality, health (use of pesticides), access to healthy food (local level).

In addition, concrete approaches to addressing the issues could be explored such as:
- Design and assess educational programmes to encourage healthy sustainable food habits in particular in primary education,
- The universal basic income as a way to provide equal access to quality food.

Transnational, national and local level

EXPECTED IMPACT
Reduced inequalities of access to sustainable healthy food
Reduced food poverty in the EU
More sustainable urban and rural food systems

Effective strategies to neutralize actors /institutions contributing to food injustic inequalities and food waste around the world.
Effective strategies to fix the flaws/instances of injustice of the transnational foo commerce.
Fostering better quality nutrition to prevent long-term health problems, diseases infections, food disorders (obesity and malnutrition) and antibiotic resistance
Online consultation rating: average importance: 4,03/5
Nations prioritizing this research area: Cyprus, France, Greece

CITIZENS' VISIONS

[CHE] Vision 4. Less is more.
"Less food will be produced and it will be handled more responsibly.
There will be a decision-making system permitting to extract or use natural resources in a sustainable and economical manner and, at the same time, give a bigger share to the global south."

[EST] Vision 6: Life in your age
"healthy fast food and different snacks are easy to find and consume"

[IRE] Vision 3: Relationships with one another and the environment
"Food production done ethically. Work with nature."

[HRV] Vision 3: The preservation of human health and nature for the generation XYZ
"People will grow healthy food for themselves, with minimal or no ecological footprint."

[ITA] Vision 4: A school beyond times - a new education model
"Nutrition is governed by laws that make it organic, sustainable and accessible to all."

[PL] Vision 1: Healthy Family, Healthy Society (Flower of Life)
"We all eat healthy because we have easy access to organic food produced locally"

8 Evolving food culture in growing cities

Research topic:

Evolving food culture in growing cities # 5d

Grand Challenges :
2: Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bio economy
5: Climate action, environment, resource efficiency and raw materials

CHALLENGE
Many people in cities come from diverse cultures. For a long time, people who migrated were expected to adapt to the local food culture. Things have changed and today migrants feel the need to maintain their traditional culture and gastronomy. In ever growing cities, this raises challenges in terms of sustainability due to the need of providing a huge diversity of food cultures, in terms of social-economics impact and in terms of social inclusion and cohesion. Challenges may arise e.g. when a city hosts Mediterranean, African or Asian food cultures which rely on food products which require to be imported from distant regions.
Specific challenges include issues related to personalized food diets, food provision, social cohesion, diversity in communities, and impact on environment.

SCOPE
Research should investigate the following aspects:
-Comparative study of food supply chains and their social, ecological and economic impact
-Studies on the role of food as an enabler for social inclusion and cohesion in cities
-Sociological and behavioural research on food practices and habits taking int consideration aspects related to flavour, taste and emotions.
-Historical research of nutrition flows during periods of migration
-All stakeholders (including the actors of the food service economy, food providers in cities, producers, importers, etc.) and in particular citizens, should be included in the research on more sustainable food production, consumption and delivery

Research should help developing and demonstrating practical solutions such as:
-Policy tools for management of mixed food cultures in cities,
-Sustainable non-indigenous local growing techniques,
-Intervention options into diverse and multicultural food consumption practices,
-Non-prescriptive tools to define the footprint (co2, water, land use) of food,

-Scenarios and strategies for integrated local food production for different cities with different climates (dynamic modelling).
-Urban planning, architecture and design should shape cities in order for them to facilitate and increase community collaboration and social cohesion via a more sustainable food production and consumption.

EXPECTED IMPACT
-More sustainable cultural mix,
-Improved social inclusion and cohesion through food diversity in cities
-Personalized sustainable and healthy food diets taking into consideration the food culture mix and diversity,
-More integration of citizens in the food system research, innovation and development
-Efficient food value supply chains tailored for culturally diverse sustainable and resilient - food systems
-Functioning interventions for the implementation of change and the promotion of new and sustainable ways to consume food,
-A sound, well communicated knowledge basis for consumers' food decisions.
-Online consultation rating: average importance: 3,76/5
Countries prioritizing this Research Area: Switzerland, Belgium, the Netherlands

CITIZENS' VISIONS

[LUX] Vision 1. On the way to a participatory community.

"Children are raised and integrated into the community and nobody is excluded from society. The biological garden would be an integrated part of that co-living and represents the food base for all of us."

Policy recommendations for sustainable food

1. To facilitate public private partnerships (quadruple helix approach) to develop business models that tackle and improve access to food, based on the "quadruple helix approach" (citizens, governments, education, industry).

This integrated approach is innovative. Although sectorial evidence exists, it is necessary to create linkages, which address the topic in a more holistic manner. This calls for consensus building and shared interests between parties that do not necessarily collaborate and might have divergent agendas.

2. Legal framework to limit food loss

Some members states (at national level) have created legal environment and generated good practices that could be adopted through policies (hard or soft law) on a Pan-European level to systematize the prevention of food loss

The benchmarking and research would lead to a European legislative environment (legal framework) to support/encourage the redistribution/donation of food (unsold food, excess agricultural produce, excess food, food waste from agro-industrial processes etc.) to prevent food loss, avoid waste and provide more access to food for the less privileged. This legal framework should be co-created with the help of directly affected stakeholders (including citizens).

3. User-friendly quality food labelling

User-friendly (creative and colourful) quality food (sustainable and nutritious) labelling with clear symbols in an understandable way for the citizens should be available throughout Europe. This could include nutritional value, sustainability and provenance. One basis would be the already existing cases (for example, UK with chocolate or European Organic label).

4. Increased visibility for healthy & sustainable food at points of sale

A policy recommendation based on existing national regulation would give healthy and sustainable food products have increased visibility at points of sale (including supermarkets) and less visibility is dedicated to unhealthy food (for example Netherlands with only healthy snacks at check-out counters in supermarkets Improved marketing for sustainable and healthy food products. A policy would be useless if the food items displayed were not sold).

5. Design of urban spaces for increased social cohesion and sharing of food cultures

Through urban policies, new city designs and buildings tend to incorporate more spaces (roofs, balconies, yards, cellars, etc.) for aspects related to food, including communal cooking and eating spaces, urban farming, vertical farming, neighbourhood aquaponics systems for community empowerment. This shall enable food culture diversity to become more sustainable and to reinforce social inclusion and cohesion.

This is still a weak signal all over Europe both in small and large cities. These should be scaled up and multiplied and approached in a more integrated and systemic manner at city level. The result is expected to increase the understanding and sharing of diverse food cultures in growing cities. Study cases should be carefully analysed and evaluated. EU Programmes like URBACT (Networks of cities) could act as catalysts and case studies. Some EU programme could finance such initiatives.

6. Join Forces for a common food agenda

For research and innovation, enable pool of funders interested in bringing forward a common agenda for food and nutrition security.

7. Canteens should provide more multi-cultural and diverse food.

Grand challenge 3: Secure, clean and efficient energy

9 Smart energy governance

Research topic : Smart energy governance #10.b

Grand Challenges :
3: Secure, clean and efficient energy
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Smart energy systems are characterised by the increasing importance of new actors and a new diversified and sustainable energy mix in the energy systems, facilitated by ICT technologies. Decentralised and individualised energy production (prosumers) and highly regulated energy consumption will be made possible through price signals and the availability of cheap renewable energy technologies, leading to distributed investments in the energy system, higher energy efficiency, lower transmission losses, better resilience and energy security, and generally supporting the development towards a low-carbon European energy system, a defining feature of a European Energy Union. Smart energy systems are at the pilot phase and it seems urgent to begin to focus on the implementation paradigms.

However, smart energy systems potentially include serious tensions inhibitory to their implementation. They are dependent upon local management and backup by consumers in their households, but at the same time they may develop to become top-down regimes creating resistance among users. They will be dependent upon investments by consumers, but the rules, including prices (sell and buy), may be set by the big operators in the system.

Taxation systems may counteract the intentions on getting the smart systems out into all corners of society, because higher efficiency may result in higher taxes in order for the states to gain constant revenue. Self-sufficient prosumers may be hindered by legislation, because of the needs for them to contribute to the collective systems.

Renewable energy production, prosuming and higher efficiency may result in considerably lower costs of energy in the future, which creates a risk for 'hyper-rebound' effects, creating a down-spiraling development towards much higher energy consumption.

To be smart the energy systems of the future must live up to a wide range of quality criteria, including making use of ICT and "ubiquitous computing", but also having the right energy mix, being based on sustainable renewables, making clever use of storage options, and making use of existing infrastructures. Adding to this, the smart energy system needs to be attractive to consumers and prosumers, not requiring too high energy system knowledge for them to participate, being socially and economically just

and fair, counteracting energy poverty, and involving ownership structures which motivates citizen to contribute and to accept the energy system transition.

These requirements do not necessarily fit well with national energy systems as they are now, many being largely monopolistic and governed by single strong central public agencies.

SCOPE

In order to reduce carbon emissions, combat pollution, nuclear failure and energy poverty, and reduce energy dependency it is urgent to find locally managed, decentralised, fair and democratic energy solutions. A decentralised energy supply system can, however, be severely hampered by even small tensions and lack of trust. Therefore it is important to find participatory modes of governance that balance all interests.

Research should develop, test and make policy discourse about new governance models, which are able to mitigate the tensions around the economic, technical, social and democratic implications of smart energy systems. It should thereby create trust, fairness, justice, avoiding energy poverty, and facilitating democratic governance and public participation.

The governance models must have a sector-coupling approach, so that i.e. costs and prices will be distributed fairly in an accountable manner between e.g. heat, power, fuels, and between sources, such as biomass and waste. Further, these models need to create a set of effective incentives including creating motivation for private investments, consumer behaviour, avoidance of rebound effects, and for collective ownership.

Ownership structures should be part of the governance models and should be investigated for their ability to support the development towards broadly accepted smart energy systems. The mobilisation of prosumers and energy conscious consumers should be considered as an important aim for the governance models, as should the future need for "energy communities" in which citizens locally support each other in participatory processes to implement the smart systems, which are the right ones for them and their context.

Projects should, thus, provide a definition and validation of tools for transparent, participatory and multi-disciplinary energy governance, enabling multi-layered integration of stakeholders' interests and investigate barriers and success factors for such governance models. Specific attention should also be paid to aspects of security, data handling and privacy in a Big Data scenario to ensure trust among end-users.

The research should map and engage the relevant actors, including consumers/prosumers/citizens, and should be highly active to create policy dialogues

nationally and on a European scale, as several European members states should be engaged in the project facilitated discourse.

The research is expected to be anticipatory, participatory and highly multi-disciplinary, involving tight collaboration between e.g. smart energy systems experts, system modellers, sociologists, legal expertise, organisational expertise and public education and participation expertise. The consortia will need to have skills regarding policy discourse and implementation.

EXPECTED IMPACT

- Reconstruction of the notion of smart energy systems to be inclusive, encompassing new governance structures
- Creation of multi-actor dialogues and re-orientation among actors regarding the policy implications of smart energy systems
- Contribute to a cross-European common understanding of the need for smart energy systems, based on a more participatory governance paradigm

Note: The topic may result in a Research and Innovation Action, with components of Supportive Action. If it should cover for example 7-8 member state debates, then a budget of 3 million Euro may be the right level

Online consultation rating: avg. 4,05/5
Nations prioritizing this research area: UK, Netherlands

CITIZENS' VISIONS

[IRE] Vision 1: Community Enrichment through Education
"Sustainable energy systems
o Global collaboration
o Respect for environment, resources"

[GR] Vision 6: Five Pillars for human development
"Surroundings: green thinking and living: environmental awareness through education for a "green" lifestyle and renewable energy sources"

[DK] Vision 3: A sustainable Planet
"The sustainable energy sources are: Wind energy, solar cells, solar panels, heat pumps, biomass fuel which includes household waste, manure and slurry, water power and excess heat from the industry. In 2050 we will not use fossil fuels such as oil and gasoline/petrol. We have invented new forms of sustainable energy, such as waste separation which provides energy for the city. The Industry is the driving force behind the development, because there is a demand for and profits to gain in green initiatives."

Policy recommendations on energy

Ensure an open and fair European Energy Prosumer market

The general development of smart energy systems, characterized by an increase of small scale energy production generating a new diversified and sustainable energy mix, should form an important part of the European Union's energy policy. The successful adoption of such systems is a prerequisite for the success of a European Energy Union enhancing secure, affordable and climate-friendly energy. It is of the uttermost importance that the ongoing technological and structural development of smart systems are met with governance models that ensures a fair and inclusive treatment of the new multitude of stakeholders. It is recommended that actions are taken to establish a transparent, participatory and multi-disciplinary energy governance, enabling multi-layered integration of stakeholders' interests. Attention should also be paid to aspects of security, data handling and privacy in a Big Data scenario to ensure trust among end-users.

Grand challenge 4: Smart, green and integrated transport

10 Sustainable transport solutions that enable us to live where we choose

Research topic :
Sustainable transport solutions that enable us to live where we choose
"We want to live like "that", how transport has to be organized to enable it") #10.b

Grand Challenges :
1: Health, demographic change and wellbeing
4: Smart, green and integrated transport
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Definition of sustainable transport: *Sustainable transport is not polluting, not detrimental to health, CO2 neutral, affordable, accessible, available (there when you need/want it), durable and resists to climate variations.*

Life is nowadays mostly concentrated and centralised in big cities, due to better job opportunities, education, services etc. In reality, people do not have the free choice to live where they wish.
Therefore, we need to rethink society's organisation into more distributed communities that (might) produce and consume locally, find themselves supported by more flexible, innovative and sustainable transport solutions, considering the future context of a reduced need to move people and things into bigger cities.
Another challenge is to find out (using a holistic approach), what are the new infrastructures, the virtual tools and possible innovative business models in the area of transport, that can make local communities more attractive for living. Quality of people's lives should be improved by allowing distributed living aiming at a sustainable life style.
The overarching challenge is to determine the best balance between connectivity and self-sustainability of local communities, taking into account the requirements for sustainability of transport.

SCOPE
Research and innovation should investigate how to enable distributed living that is economically feasible and sustainable for the environment. In this context there is a need to define what is understood by "local" and what is meant by "communities that are organized locally" as this is not necessarily the same as "rural".

However, research should look also to the needs of the rural (poorer?) areas, e.g. low cost, small impact, and efficient infrastructure. Current transport strategies solutions should be identified, as well as the current and future transport needs in an (interactive) collaborative process including all users and other target groups (the people).
One of the crucial questions is "What remains as transport needs - in and between - the local communities in the new societal contexts of life organization (change of lifestyle, chance of behaviour, social trends). In a localized organization of life, what would be the transport needs (frequency, distance covered, and reason to move) and what transport services would be needed to satisfy those needs (are walking and biking enough?).
Furthermore there is a need for analysing which services have to remain in the city and which services can be provided on a local level (also in the "rural"), how to articulate and interlink them and how to guarantee access to everybody.
Research should look to the most appropriate equilibrium (relationship) between the connectivity of the "local" with the "urban" and the idea of "self-sustainability" of local communities.
This should be done by developing infrastructures, new/innovative business models and virtual tools of all kinds (provided by "digitalisation") for the provision of public and private services in remote areas. Research should also look into the ways to anticipate, handle and manage the changing transport needs created by new technologies and social media, in an ever changing world, where technological development is very quick, and alike quick are the changes in communication behaviour and transportation needs as a response to those changes
The reduction of imbalance in transportation choices, and the promotion of a decrease of the isolation of people in distant rural areas are paramount in this context.

EXPECTED IMPACT
-Provide an overview of needs of the local citizens
-Increase the attractiveness of non-urban life
-Provide tools and models that can show the socio-economic benefits of distributed living
-Reduce number of cars in cities and in places where nowadays the use of cars seems to be inevitable
-Reduce time spent in commuting
-More effective choices for transport solutions
-More attractive public/collective transport solutions
-Reduced CO2 emissions
-Employment and work opportunities, services and goods are available locally
-Increased opportunities for rural inhabitants (job access, care access, public services, etc.
-A changed mind set of policy makers
-Provide policy solutions to support sustainable development of local communities

Online consultation rating: avg. 3,68/5
Countries prioritizing this research area: Sweden

Citizens' visions

[DE] Vision 1: Sustainability implemented
"technology overcomes spatial distance problems"

[LAT] Vision 4: Ecologically independent
"More people live outside urban areas. Direct production and sale is characteristic in the future because people will be able to produce a lot of things for themselves, especially due to 3 d printers and there will be less need to buy something." [...]

[NOR] Vision 4: The environmental citizen in a "short travelled" and "mega local" city in 2040
"New ultra-flexible ways of working will dramatically reduce the need for commuting"

[MAL] Vision 2: Better quality of life towards sustainable approach to local and global issues
"Less traffic due to self-driving cars, Higher use of scooters and bicycles"

[DK] Vision 4: The nature city of the future
"The city is car-free: the transportation system should completely replace the use of private cars. The system could be electrical, magnetic highspeed trains."

[BGR] Vision 1: The smart city – this is me!
"Car sharing instead of urban transport".

[ITA] Vision 4: A school beyond times - a new education model
"Every hub is as integrated as possible with the urban context, meaning that it is easily reachable with public transportation, surrounded by a green area with cycling paths and zero impact on the environment (solar panels, recycling bins etc.)" [WP2]

Policy recommendations on transports

1. Policy makers or regional authorities should promote the development of local economies and facilitate living and working in local environments, including rural areas. This will require constructing sustainable, accessible, affordable and effective transport systems on a local level. Innovation is usually in the hand of traditional players (large corporation). The research would focus on other, small, local players. Good connections with central hubs will be developed.

2. Research addressing issues of distributed living should be performed by interdisciplinary teams. As the complexity of research questions, topics and

scope is increasing this has to be required explicitly in the topic/call. Ways to boost the political will to finance this kind of research and the research community should be promoted.

Grand challenge 5: Climate action, environment, resource efficiency and raw materials

SUSTAINABLE CONSUMPTION

11 At one with nature

Research topic :
At one with nature # 8.a

Grand Challenges:
5:Climate action, environment, resource efficiency and raw materials
6:Europe in a changing world - inclusive, innovative and reflective societies
1: Health, demographic change and wellbeing

CHALLENGE
Humans are part of nature, and ecology has an enormous influence of our lives In light of growing urbanisation, it becomes increasingly important for research to be directed towards understanding how the carrying capacity of our environmental resource base interacts with our social and economic systems. It is important to change behaviour and attitudes in order to live in harmony with nature. The challenge is to counteract the current trends in development practices that distance humans from a relationship with nature that promotes psychological and physical well-being and health. An approach of stewardship is vital to guarantee a liveable environment for future generations. As citizens expressed, "we do not inherit the world from our ancestors, we only borrowed the world from our descendants".
In Europe consumerism is now part of culture, identity, values, and considered part of economic and national progress. We also live in a "post-fact" society where faith in scientific methods and results is dwindling. In order to change perspectives towards ecological futures, sustainability must become easily understandable, desirable and accessible.

SCOPE
Research should explore how to make a system of policy and planning frameworks, with legal structures and institutions that promote more affordable and accessible sustainability lifestyles. In forming smart consumer habits, while continuing to improve quality of life and sustainable development across the social spectrum, a specific focus could be on forms of integrating natural environments and contacts with nature into land use planning. Relevant research aspects may be:
Exploring how attitudes and behaviors have an influence on consumer patterns societal relationships with the natural environment,
Researching the possibilities for establishing legal rights for ecological entities systems (trees, water ways, fauna, etc.,) as a way to help support behavioral attitude change,
Targeting social innovation programs, education, incentive schema and awareness raising campaigns to explore and disseminate good practices for individuals, communities and cities,

Studying the economic, social governance and legal environments underpinning th good practices and methods to remove barriers to an accessible, sustainable lifestyle.

EXPECTED IMPACT
Positive ecological prospects for future generations and integration with the UN Sustainable Development Goals,
Reconciling urbanisation processes with sustainable development actions,
Steps towards a regulative or legal framework for "the rights for nature", workin towards reduced pollution, restoration of biodiversity, and legal recognition of natural entities.
Better physical and mental health ; better quality of life and happiness

Online consultation rating: average importance: 4,
Countries prioritizing this research topic : Malta, Hungary, Czech Republic

CITIZENS' VISIONS

[LIT] Vision 3: Harmony between Human and Nature
"Restored forest, fresh water available for everyone, stabilized climate change problem, suspended biological extinction; green energy (renewable sources). Nature friendly technology."

[IRE] Vision 4: Decision-making for a Sustainable Future
"We live in a world where cultivation is 100% sustainable. Our laws ensure that we reserve and protect our environment."

[CHE] Vision 6: Social living space:
"…a new form of equitable coexistence of people between age 0-100, animals and plants."

[SWE] Vision 4: A healthier Europe
"We have fewer dioxins and less pollution. For instance there are alternatives to plastics and new substances and products are launched only after they are made safe for the environment and health."

[LIT] Vision 2: Human and Environment
"Pure barter; generation of non-consumerism…"

[HRV] Vision 3: The preservation of human health and nature for the generation XYZ
"We imagine year 2050 as a year in which people live happily in pleasant communities, as a part of nature. These communities will be examples of sustainable oasis based on truth and acceptance of the people's diversity. The development of new technologies, in accordance with the laws of nature, will lead to the improved quality of life. People will grow healthy food for themselves, with minimal or no ecological footprint."

12 Consume smarter, increase well being

Research topic :
Consume smarter, increase well-being #11.c

Grand Challenges :
5: Climate action, environment, resource efficiency and raw material
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Today conspicuous consumption is the norm and goods are used and thrown away with a very short life cycle. There are good examples of responsible consumerism but only limited adoption on a larger scale. We want to support citizens to become more responsible consumers by making information about the product and services lifecycles more transparent and available than it is today. Behavioural economics shows that consumers do not always act rationally and increased information does not always mean more responsible decisions. Therefore the insights of behavioural economics and psychology (ie consumer behaviour patterns) should be used to inform market policies and regulations for both consumers and producers. Innovative methods and actions are needed to enable policy makers, regulators, corporations and citizens to create a market place in which more responsible decisions are made easily. We expect these to (positively) affect work-life balance and personal well-being.

SCOPE
To shift our long-term thinking, re-evaluate our consumption and shift the emphasis from material wealth to healthy wellbeing are all essential for the development of proper values which are necessary for sustaining our social, economic and natural environments.

To explore policy with explicit goals for conducting market and behaviour research in line with alternative economies (for example the service society, the sharing economy). Additional research can be directed to developing experiments with the contract terms, legal frameworks and consumer protection policies to explore and disseminate responsible consumption patterns.

To gain knowledge on more responsible handling of the resources and co-responsibility of corporations, public actors and citizens, with a focus on promoting the circular economy. Examples of this include subsidies for recycling and renewable energies, technologies and applications for supporting responsible consumption, legislation and incentives for long-life goods and products, and resource recovery.

To explore how to pilot experimental communities with legal frameworks and incentives that might promote good practices (i.e. through educational curricula, information campaigns).

EXPECTED IMPACT
Smarter consumption patterns and lifestyle changes impacting the use of resources (including time resources)
The first step in co-creation of policy initiatives with the inclusion of citizens and public interest groups
Input into new standards and regulations concerning sustainable products a services with responsibility of all the stakeholders to be accountable - companies policies – and proper contract terms, legal framework & consumer protection.
Generation of new sustainable business models, products and services
The development of robust legal and governance frameworks that support co-responsibility for the promotion of sustainable consumption patterns
Greater movement towards a circular economy, with the preservation of resources and materials and higher quality of life
Increased well-being, in terms of physical and psychological health, including new strategies for personal life management

Online consultation rating: average importance: 4.
Countries prioritizing this research area: Austria, Denmark, Bulgaria, Hungary

CITIZENS' VISIONS
[FR] Vision 2: Collective project
"Society in general will exit from overproduction and thus from overconsumption."

[CZE] Vision 1: Society without plastics
"In 2050, children will be educated at school as well as at home in ecological behaviour."

[FIN] Vision 1: VALUES – immateriality and minimalism
"Social value is not based on consumption. […]Information belongs to all: data communications are a basic right and data/interfaces open to citizens. […]Co-owning of products is commonplace."

[FIN] Vision 4: The future of responsible consumption
"Citizens no longer value throwaway culture, unethical production nor low quality. Hence children and citizens are educated in a long term to become responsible consumers. As a result, less waste is produced and it is more efficiently processed to energy, for instance. […] Responsible consumption also boosts business and the economy as well as creates new businesses and jobs. Information on responsible consumption and innovations developed based on them could be a new Finnish export product. Responsible consumption comes forth especially in the cities of the future, where people live densely and in harmony with nature. Responsible consumption extends from choices in transport to choices in foodstuffs and commodities such as textiles and home electronics."

[DE] Vision 1: Sustainability implemented
"Economy serves the people, not people serving the economy
• Growth is not the main motivation/indicator for economic success (post-growth society)
• Orientation towards common good (community economy)
• Technological progress does not automatically result in more production, but the time obtained can also be used elsewhere (8 hour day may no longer be necessary)"

[BEL] Vision 5: Moving sustainably
"I'm a fair consumer: I know my coffee, tea, milk producer. "

[CHE] Vision 1: Conscious Consumption
"We know the impact of our actions. We are informed about the origin and the composition of what we consume." [WP2]

URBAN AND RURAL DEVELOPMENT

13 Urban-rural Symbiosis

Research topic :
Urban-rural symbiosis # 8.b

Grand Challenges:
ALL

CHALLENGE
A better-balanced urban rural integration - considering the diversity of rural areas (i.e. suburb, outer periphery, deep rural) - is seen as vital for the quality of life for both urban and rural citizens. There is widespread concern in different countries about a declining quality of life in rural areas and migration from the countryside to urban areas. They point to the need for integration of spatial planning of cities and rural areas to improve social, ecological and economic sustainability while preserving the distinctiveness of each space.
Participatory governance is currently largely missing. As a basis for solutions, a deeper understanding of the diversity of situations is needed. Also we need more differentiated notions than the simple rural/urban dichotomy - city and countryside do not really stop at the border, the mayor's responsibility stops there, but we should consider the functional urban area.

SCOPE
Research should investigate one or several of the following aspects:
Differentiated notions of diverse types of spatial development patterns based on empirical studies of concrete cases across Europe
Ways to establish cultural and physical linkages across diverse types of spaces.
Solutions for sustainable urban/rural environmental resource flows, identification asset bases and means of co-governing in order to share them,
Ways to improve the quality of life and attractiveness of countryside in deprived rural areas,
Integrating urban rural planning approaches,
Participatory governance of spatial planning, shared urban-rural participativ governance structures to be explored,
Exploring the drivers of migration both from rural to urban and urban to rural areas,
Collecting, analysing and disseminating case studies of good practice of urban-rural symbiosis from different parts of the world.

EXPECTED IMPACT

The tendency to focus on the differences between the city and the countryside has been minimized and there is a mutual understanding between the two.
Ways to develop rural areas to preserve their identities, and to retain their hum social capital.
Solutions developed for rural areas to attract more inhabitants.
A differentiated view on diverse conditions in different areas
More locally integrated value chains, reduced environmental footprint
Increased resilience of cities.

Online consultation rating: average importance: 3,
Countries prioritizing this research area: Romania, Sweden Slovakia, Austria (experts, stakeholders),Austria (citizens), Denmark

CITIZENS' VISIONS

[HRV] Vision 4: Erasing the borders
"• A balanced urban and rural development
• EU Member states are self-sustaining in terms of food production and use of renewable energy sources, demographic representation will be equal in the city and in the countryside. The racial, economic, ethnic, gender and political equality is present in the societies
• Planet Earth is a desirable place to live in. By taking care of the Earth - we take care of ourselves"

14 Making dense and growing urban areas more sustainable and liveable

Research Topic:
Making dense and growing urban areas more sustainable and liveable #10c.

Grand Challenges:
4 : Smart, green and integrated transport
5 : Climate action, environment, resource efficiency and raw materials

CHALLENGE
Highly dense and growing big cities, which have more cultural services, better health care, more education possibilities, should become more liveable for everybody. This can happen through different actions, implemented not only within the city but also across the whole Functional Urban Area (FUA). Actions include: making big parks from urban neglected areas; architecturally integrate more green in buildings and interstitial public/private shared spaces; reactivating public spaces and inventing new use of urban infrastructures; renovating public/private housing and encouraging environmentally positive externalities; creating traffic limited zones and cycling mobility.
The city should not really stop at the border - the mayor's responsibility stops there, but we know otherwise the city does not stop there - so, think in the functional urban area.

SCOPE
Research should answer to the challenges of density, diversity, ecology, populations development, and financial sustainability of dense and growing cities, by addressing the following areas in combination, not on their own, using different forms of citizen consultation in every area:
The mixed/integrated urban fabric: distribute common services in time and space i order to avoid centralization and crowding and reduce tension between centres suburbs.
Facilitating the adoption of new efficient sustainable practices (i.e. behaviour change; sustainable lifestyles)
Identification of innovative practices and social innovation, including from outsi Europe, that can be scaled up
The diffusion/dissemination of "promising/good" practices (i.e. advanced urb sustainability; urban agriculture; urban regeneration…)
The creation of an integrated system of public (macro) and private (micro) transportation.

EXPECTED IMPACT
Land and people flows analysed and mapped
A strategy to identify places and services to integrate with view to governance solutions for the FUA, including citizen participation.
Increased sustainability, e.g., by reducing the need for cars. This will foster vibrant cities both in terms of economic and cultural activities.
Links with local SMEs and the development of potential business plans (that can be picked up and adopted once projects finish).
Citizens' increased understanding of science/policy interface as well as science.
More empowered citizens.

Online consultation rating: average importance: 3,
Countries prioritising this research area: France, Italy

CITIZENS' VISIONS
[FR] Vision 5: Living in a balanced society
"Proximity businesses are developed and offer essentially local products. Spaces dedicated to goods and services exchange and sharing do also exist, along with collective cultural spaces self-managed."

[DK] Vision 4: The nature city of the future
"The city is car-free: the transportation system should completely replace the use of private cars. The system could be electrical, magnetic highspeed trains. The city is green."

[ITA] Vision 2: A simply special city
"The places thus become sharing spaces that encourage the development of active and participating citizens."

[NOR] Vision 4: The environmental citizen in a "short travelled" and "mega local" city in 2040
"Good collective solutions, a strong multi-use mode of thought and high population density will contribute to a lower aggregated environmental burden and higher well-being."

Policy recommendations on sustainable consumption, urban and rural development

1. The European Commission, for example DG Regio, should consider making accessibility and affordability of green spaces in urban development a stronger and more explicit priority in the Structural Funds programmes for the 2021-2028 period.

This policy recommendation could also be coordinated together with other EU policy instruments more specifically the LIFE programmes, the climate KIC programmes for climate change mitigation and adaptation objectives, and the rural development programmes. Current and planned research activities with regard to sustainable energy, manufacturing practices, sustainable planning and building, and resource efficiency could also be integrated.

2. When communicating information to change consumption behaviour, psychological and social effects need to be studied in addition to the dominant economic factors.

3. When making research, legislation and policy recommendations, the EU should also consider the responsibilities and resources of industry, government and other public interests in addition to disseminating information to citizens.

This responds to current changes in society and research where the paradigm has switched from thinking of consumers and citizens as rational actors and integrating emotional and affective factors that influence the market place and consumer behaviour.

National consumer protection agencies should be very interested in this research and policy recommendation in developing their own frameworks.

Grand challenge 6: Europe in a changing world - inclusive, innovative and reflective societies

COMMUNITY BUILDING

15 Empowering diversity in communities

Research topic :
Empowering diversity in communities # 1.C

Grand Challenge :
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Equality in diversity: in principle, all people are equal. Still, it is important to find ways to make equality real in the daily life. Our societies undergo socio-cultural changes connected to migration, globalization, democracy crisis, that we can either study and act upon or neglect and remain unprepared. Diversity should be seen as a potential rather than a drawback.
Moreover, there is potential to improve the implementation of existing policies that tackle these changes on national and European level. There is a need to develop new models and innovative approaches for social inclusion.

SCOPE
Research should investigate approaches for empowering diversity in communities by creating better models for understanding the relation between societal conditions and readiness for social inclusion taking into account differences across cultures. There is a need to search for successful models of empowering diversity in communities from abroad and examine their transferability into local policies and educational activities. Research should also investigate the compatibility between legal and social norms. In processes of empowerment for diversity, models of collaborative conflict resolution should be explored.

EXPECTED IMPACT
Improvement of communities and diversities integration, better communication awareness
Better understanding of barriers and enablers for social inclusion
More tolerant and vibrant communities
Stronger social cohesion
Greater equality of rights for all groups of society
Behavioural change in attitudes from tolerance to acceptance
Behavioural change in mindset from stereotyped to complex
Create communities of practice

Online consultation rating: average importance: 3,85/5
Countries prioritising this research area: Slovakia

CITIZENS' VISIONS

[HRV] Vision 3: The preservation of human health and nature for the generation XYZ
"These communities will be examples of sustainable oasis
based on truth and acceptance of the people's diversity."

[IRE] Vision 2: Expression of quality
"People have become more politically engaged in comparison to today, differences have become embraced and attitudes towards minorities have also changed."

[FR] Vision 1: Sociability over technology
"Respect will be a core value. Respect of laicity, of human being, of differences and of religions."

[DE] Vision 6: The future of work
"Complete equality of men and women at work + inclusion"

[DE] Vision 5: Dream school 2050
"In 35 years' time, even more cultures will interact in Germany than is the case today and we hope that our children are taught to be tolerant and open to others and can experience this first hand every day in the community."

[BEL] Vision 1: Foundations for respect, equality, diversity through education
"Our vision of 2050 is : the childhood education will allow us to reach an ideal of respect, an awareness to sustainable development, a better wealth distribution and an openness to social mix because diversity and interactions bring richness."

16 Evidence-based community building

Research topic:
Evidence-based community building

Grand Challenges :
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Evidence based policy making often involves tapping into knowledge and evidence across various sources. Yet, there is a lot to do for overcoming the challenge of clientelism in society (that is at the basis of arbitrary and self-interested decision-making). Also, there is a need for finding the relation between the citizen contribution (problem detection) and the expert contribution (application of the solution).
Moreover, the current educational system does not foster critical and analytical thinking, so citizens have a hard time understanding evidence for the purpose of policy making. There is also the challenge of strengthening the citizens' trust in science, institutions and the policies that are meant to serve the community.
In building communities, we need to empower citizens to access and consult data and evidence while accepting space for their own value based judgement.

SCOPE
Research should focus on creating models for evidence based policy across multiple science sectors and creating more informed mindsets among citizens and policy makers. There is a need to study and develop evidence based intervention programs for reducing prejudices within and between communities. There is a need to explore models of participatory processes for collective agenda setting based on different and specific citizens needs and environments. This requires theoretical and empirical research on how communities can be transformed by knowledge, including:
Introducing steps for change of mind-sets in the society, involving citizens in decision-making
Empowering citizens through accessible informational campaigns and digital tools
Grounding decisions in research and data
Specifying the relation between citizens' and experts' contributions

EXPECTED IMPACT
Ability to justify public policies, their sustainability and possibilities for implementation
Empowered society capable of vision development
Involvement of stakeholders in the analysis and policy decision-making based on substantial data using methods and tools for policy impact evaluation
Reduced power of politicians to make decisions for the entire community on their own
Reduced bias that is generated by disinformation
Useful and meaningful data for citizens and communities that can be used in real life

Online consultation rating: average importance: 3,7/5
Countries where this is seen as priority: Croatia

CITIZENS' VISIONS
[PORT] Vision 5: We build the future now
"People/citizens will have more voice and weight in decision making"

[ITA] Vision 4: A school beyond times - a new education model
"The sense of belonging to the community is strong and it is a common feeling among citizens"

[IRE] Vision 2: Expression of quality
"People more politically engaged"

[UK] Vision 6: Citizen empowerment
"All services should be community led"

[CZE] Vision 5: Open Civil Society.
"Make useful information instead of information ballast".

Policy recommendations on community building

1. Include European Parliament representatives in establishing/creating the scope of the research
2. Regarding "Evidence based community building": inter-governmental or inter-DG consultation and working group on evidence based policy

3. Regarding "Empowering diversity in communities", perhaps there is no need for drafting a research topic, but establishing a Coordination and Support Program for community building
4. Participatory processes in creating policies related to community building
5. Invest in and stimulate more research in community building based on:
   - interdisciplinary and multisector approach
   - new models of evidence gathering and assessment,
   - bottom-up approach:
     - engage citizens to create a real picture of their needs, interests and wishes

   1. inform citizens about the results of implemented research and results to measure the impact it has on their lives
   2. digital empowerment (raise digital literacy)
   3. transparency
   4. social inclusion principles and best practices
   5. participatory decision making process.

6. Make user friendly data accessible and easy to understand to the citizens about research and science achievements

PARTICIPATORY GOVERNANCE

17 Empowered citizens

Research topic :
Empowered Citizens # 3.d

Grand Challenges :
6: Europe in a changing world - inclusive, innovative and reflective societies
7: Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE
Disenfranchised communities, citizens, and NGOs lack awareness of and access to essential services. Moreover, digital tools cannot be applied as a slave on gaping social wounds. The lack of clear channels for meaningful citizen participation furthers the feelings of disempowerment and the distrust of governing bodies. Hampered by asymmetrical knowledge, and seemingly opaque governing process, the dream of achieving an inclusive and reflective European society seems further away than ever.

SCOPE
Understanding the dynamics and challenges of citizen empowerment and participation in a diverse, digital society and exploring, in empirical and/or experimental ways, how citizens could play an active part in designing, producing or running public services as well as democratic processes. The methods and tools, which are developed, should ensure that everyone (society in its diversity) has the capabilities and is motivated to take part in the process; all types of knowledge should be defined and included equally in the participatory processes. The research should take into account how this redesign can improve both the inclusiveness and the outcomes of public services and democratic processes. The research should also explore what are the requirements for participation to be successful, and what are the different impacts of the different participatory methods applied.

EXPECTED IMPACT
Increasing collective responsibility and awareness; for citizens to start to understand their individual responsibility and opportunity for impact.
Finding ways, tools, and techniques to systematize the public participation and transparency of decision making. Citizens will learn about institutions, th decision making process, and the scales of decisions (learning by doing).
There is reciprocity in these processes. Everyone involved (institutions, stakeholders, scientists…) will learn from each other

Promoting new modes of citizen engagement to reduce corruption, increas transparency, and further good governance.
Respecting and treating all types of knowledge and know-how equally.
Engaging citizens in participatory processes in all stages of their lives.
Creating forums for citizen and policy maker dialogues to foster social cohesion and trust in governing institutions. Developing a simple and effective platform to collect and safely communicate data, train involved actors, and target community initiatives.

Online consultation rating: average importance: 4,00/5
Nations prioritizing this research area: Croatia, Malta, France, Italy, Belgium

CITIZENS' VISIONS

[LAT] Vision 3: Responsible lifestyle.
"Each citizen's personal responsibility in decision making"

[DK] Vision 2: A democratic society with REAL equal opportunities.
"Education in democratic culture in elementary school."
[...]"Agnes participated in a lot of debates through social media. She eagerly used her freedom of speech within the "responsibility of speech."

[PORT] Vision 5: We build the future now.
"I participate every day in the construction of my future, my family and my community, in a similar way as is my participation in CIMULACT today. Individual freedom to choose and participate in continuing education and training, politics and citizenship is paramount, as is the study of fundamental rights."

[UK] Vision 6: Citizen empowerment.
"All services should be community-led, geared towards maximum empowerment of groups and individuals, where all feel they have choices and access, and they are listened to."

[UK] Vision 4: Untitled.
"- Citizens decide on spending priorities (e.g. taxes, referendum, participatory budgets)
- WIDENING PUBLIC DEBATE/VOTING MECHANISMS – organising more workshops like this, electronic referendum, public debates including more political parties, groups of interest."

[SWE] Vision 2: Education – A Standardised education system in the EU.
"Project work, as well as virtual classes and lessons over national borders are a reality."

[CHE] Vision 5: Together for one world.
"An attractive educational system (…) promoting the transfer of knowledge."
[PORT] Vsion 3: E.U. – We are
"A responsible society with an aware, active, deliberative and cooperative

(public) participation"

18 Meaningful research for community

Research topic :
Meaningful research for community # 9.d

Grand Challenges:
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Currently there is no direct relation on how publicly funded research and innovation "gives back" to community. Academic research can be far away from everyday reality. There is a need for framework conditions for linking research, innovation and development projects closer to the potential benefit of the community.
The challenge requires:
Democratisation of research funding (i.e. larger participation and better researc assessment).
A more transparent research process (evaluation, feedback, use of money, spin offs, and impact).
Increasing research legitimacy (e.g. considering long term cost-benefit analysis contributing to community's social and intellectual capacity-building)
The general public should receive accessible information about the research process and impacts of research results.

SCOPE
Research should explore:
Ways for research to be evaluated, selected and prioritized according to its ability to contribute to sustainable development and potential beneficial impact to th community.
Better understanding of publicly vs. privately funded research for securing broa perspectives in research.
Ways of building on open access and open science.

EXPECTED IMPACT
Higher relevance of research through better contact with the fundamental needs bottom-up perspectives in research institutions.
Better returns for tax payers.
Citizens will actively take part at any stage of the research process (from idea generation to implementation of results).
Results of research would be put into use faster and more efficiently for the benefi citizens, or the one of businesses
The concern that research might struggle to prove its relevance in early stages will vanish

Online consultation rating: average importance 3.74
Nations where this was seen as priority: Norway - 4th priority.

CITIZENS' VISIONS

[SVK] Vision 4: Futurofarma and Space Tourism
"Combining science with nature in a rational way from which both side effects"
"People will live a quality life because of the support for research and development, improved access to its results and better cooperation of the involved actors"

[SVK] Vision 2: Technology for better health
"People will live a quality life because of the support for research and development, improved access to its results and better cooperation of the involved actors"

[ROU] Vision 3: Back to (our) roots
"Technology will develop in harmony with the environment and individuals' needs"
[CHE] Vision 5: Together for one world
"[…] Funding of the research for the development of environmentally friendly technologies and working models that must be designed keeping human needs in mind"

[GR] Vision 5: Man in the center of education and attempts of development
"The development of the society, technology and our economy must be done in a manner beneficial to mankind. There should be no development that harms humanity or the environment. We need to respect and utilize every places' benefits."

Policy recommendations for participatory governance

1. The research programme should acknowledge communities (both physical and virtual) as a means for solving issues arising from the changes happening in society (e.g. new job market).

2. To have more citizens, scientists, decision-makers working in articulation on projects (design, implementation, solutions…at all stages).
3. To consider for every project if it is relevant to involve or not citizens, at which scales, at any or all steps.

4. To define all the (conceptual) requirements for participation to be successful: political, practical, theoretical, social (basic needs fulfilled)

5. Develop the awareness of the existence and effects of participation to decision makers.

6. To explore, experiment and evaluate participation processes at various scales, publics and different subjects.

7. Experiment participation processes at every step of the life (the people integrate these processes and are more likely to reproduce them)

8. Participation should be mandatory in the education curriculum (schools, universities) and for adults and elderly. Anyone that experimented, lived it, will know how to do it, and will do it naturally.

9. One policy to be supported would deal with a collection and dissemination of best practices models for sharing the responsibilities of empowering citizens for life choice management (between governments, businesses, communities and individuals itself) It would be a "civitas-network" dedicated to this topic (see www.civitas.eu).

10. Define the different types of knowledge for research and respect all of them in order to give an equivalent voice to all the citizens and their knowledge. Research is not just for scientists. These types of knowledge include economic, technical, social, etc.

SOCIAL ECONOMY

19 Debating alternative economic models

Research topic :
Debating alternative economic models

Grand Challenges :
6: Europe in a changing world - inclusive, innovative and reflective societies
8: New economic models

CHALLENGE
The "for profit" economy does not answer to societal needs.
There are concerns about the increasing poverty and income gap, social exclusion, and degradation of social values in the member states. (New) alternative economic models are existing and/or emerging around the world. They are based upon diverse social values instead of monetary values, and include different kinds of drivers (gift, exchange, rent, sharing...). Those new models may have potential to help sustain the current European social welfare standards and ensure social cohesion. Multi-actors in the member states and on European level do not have the complete overview of content, advantages / disadvantages and potentials of these models. To make a robust policy strategy development it is important to have an overview and a common knowledge base.

SCOPE
There is an absolute necessity for a Europe-wide dialogue about these alternative economic models that exist and are emerging world-wide.

Method: Community Support Actions should design a multi-actor approach (scientists, policy makers, businesses, citizens, civil society organisations) to foster a dialogue about experiences with available alternative models, with the aim of:

- Exploring, assessing, benchmarking and evaluating alternative economic models to build a common knowledge base
- Dissemination to and engagement of all relevant stakeholders in co-creation activities
- Integrating and adapting models for regional / local context
- Developing strategies for policy implementation

EXPECTED IMPACT

- Relevant actors have a common overview of available and emerging alternative economic models
- Policy makers and other relevant actors are able to implement strategies to implement the alternative models in their specific situation
- More diversity of alternative economic models in Europe. This might lead to an increased societal resilience
- Formation of new networks, systems, connections and cooperation that can address the societal needs
- A new challenge is added on Horizon 2020 – Challenge 8 – new economic models

This research topic was created at the pan European conference from two other research topics. No information on the online rating and prioritization are available.

CITIZENS' VISIONS

[HRV] Vision 1: New age

"Prosperity, mutual respect, equality, solidarity and equal opportunities for all these are the goals that will be achieved by the "Man of the new era". A different system created by the man of the new era will have the following values: modesty, global solidarity, empathy."

[UK] Vision 1: The 2020 Economy 22

"The most important difference is what constitutes a successful economy. We want as much value to be placed on the positive impact companies have on the economy as financial growth [...]
Economic development and growth that benefit the many and not the few, within a framework of sustainability and equality of wealth and opportunity, underpinned by the principles of trade justice and accountability and transparency."

[LUX] Vision 5: From Zombies to communities/Coexisting in solidarity and working for the well -being of all citizens

"Our vision ´From Zombies to communities´ foresees that in 2050 the following will exist:
- an unconditional basic income for each citizen
- a new local/regional monetary system without interest and banks of "well-being" for a local economy"

[UK] Vision 1: The 2020 Economy

"The measures of success today require dogmatic and ruthless pursuit of profit based on short-term production and consumption at the expense of human rights and individual security and happiness. The 2020 economy requires mass redistribution of power and decision-making to democratic bodies and representatives for the common good. The most important difference is what constitutes a successful economy. We want as much value to be placed on the positive impact companies have on the economy as financial growth."
[...]

"Economic development and growth that benefit the many and not the few, within a framework of sustainability and equality of wealth and opportunity, underpinned by the principles of trade justice and accountability and transparency."

[PORT] Vision 2: Cooperation
"In 2050, our society is based on cooperative values and in a systemic vision of the reality. There is now an unconditional basic income to ensure the basic needs of citizens (in terms of food, health care, housing, education and training). Citizens actively participate in governance, thus guaranteeing sound management of resources (material and immaterial). Moreover, the interests of people and of the planet are placed above economic-financial interests."

20 Fostering equal opportunities in the digital era

Research topic:
Fostering equal opportunities in the digital era

Grand Challenges :
C6. Europe in a Changing World – inclusive, innovative and reflective societies
C7. Secure Societies – protecting freedom and security of Europe and its citizens

CHALLENGE
The on-going digitalization of every-day life is predominated by big players/platforms, and a new generation of Internet provide great opportunities, but also threats to equal conditions for all.
We must ensure that new digital technologies do not oppress individuals and create inequality. For this, it is important to ensure equal access to infrastructure cheap or even free devices and services, information (such as online learning resources), and tools (including the AI-based systems).

SCOPE
Research should explore ways to implement a fully distributed information and communication system model. The next generation Internet should be a digital architecture for an information and communication system that covers everybody in an equal way. Every node of the net has similar possibilities and opportunities.
Better understand inequalities and access in the next digital era (driven by Internet of Things, virtual reality, use of natural language in men-machine interaction etc), define them in terms of human rights and minimum skills required for ensuring equal opportunities.

Finding ways of avoiding the monopolisation of the key capabilities of the new digital era, including of the data on various human behaviour used for training artificial intelligence.

EXPECTED IMPACT

- Access to digital technologies will be equal and universal for all EU citizens ("basic right of being connected" – including the right to disconnect freely).
- Digital empowerment becomes an important driver for bridging economic, social and generational gaps.
- A change in culture of digital education (related to the way data is collected and used)
- Citizens have access to open learning resources, courses.

Online consultation rating: average importance: 3,67/5
Countries where this is priority: Cyprus (4), Lithuania (5).

CITIZENS' VISIONS

[FIN] Vision 1: VALUES - immateriality and minimalism
"Information belongs to all: data communication is a basic right and data/interfaces open to citizens."
[CHE] Vision 3: Harmony between the social and the global
"Online education, shared values / ethics - Pacifism, solidarity, mutual aid"
[CYP] Vision 2: A just society oriented towards human rights
"A society where justice is prevailed and is oriented on the basis of human rights. A society that provides equal opportunities for all EU citizens, as well as direct access to a secure health and education system."
[MAL] Vision 4: Technology at society's service
"In 2050, all members of society have equal access to quality education and opportunities to engage and contribute equitable to fair-decision making and all other processes that affect their lives. Family units in their various forms are accepted and supported to ensure that each individual is embedded in a nurturing social system."
[CYP] Vision 3: Human rights
"The vision is referred to better living conditions, to equal access to issues that we take for granted, such as health, education and retirement. Also, the right opportunities have to be provided to younger people in order to have a proper job school counselling in order to ensure proper career perspectives."
[SWE] Vision 1: Equality between women and men
"That all parents shall have the possibility to a fair division of parental leave"
[GR] Vision 1: Humanity - Environment – Justice Schools fully equipped with the latest technology.
For example, all schools shall have digital libraries and the ability to host video conference for remote learning.

Policy recommendation on social economy

1. It is important to keep safe market conditions to secure confidence in the economy. In a period where new models are emerging at fast pace, it is important to make research on them. The research agenda should also target misuse of some alternative economic models (eg. Local/digital currencies: the risks, the beneficiaries, the risks of abuse and their impact, etc.).

2. It is proposed that more programs include intercontinental exchanges, because social economy is a global theme (for instance flagship programs); it can be interesting to have the "external" vision and expertise on Europe, and to benchmark Europe with other continents.

3. Fund **research that investigates how to integrate social economy with the "normal"** economy, with the aim to create a significant number of new jobs. It will contribute to the emergence of an economic model more open to society and to a more resilient economic paradigm.

4. Create more local/ regional/ national / international networks to connect citizens engaged in communities of practice for the development/improvement/learning, developing synergies, etc. of (new/alternative) business models/economic models. These virtual and real networks will be connected to research communities in order to bring collective intelligence based on collective awareness and sharing experience. Governments and research programmes on different levels can support the development of these networks (financially, physically, virtually, etc.).

5. There is a need for coupling social economy, start-ups and social innovation, in order to boost the emergence of the new economic paradigm. Research could address the question of how to stimulate start-ups having a positive influence on the common good/that make use of/introduce alternative economic models (financial support, setting rules for micro-credits, resources for micro credits, tax policy, developing incubators etc.).

CITIZENS' VISIONS

[FIN] Vision 1: VALUES - immateriality and minimalism

"Information belongs to all: data communication is a basic right and data/interfaces open to citizens."

[MAL] Vision 4: Technology at society's service

"In 2050, all members of society have equal access to quality education and opportunities to engage and contribute equitable to fair-decision making and all other processes that affect their lives. Family units in their various forms are accepted and supported to ensure that each individual is embedded in a nurturing social system."

[GR] Vision 1: Humanity - Environment – Justice
Schools fully equipped with the latest technology. For example, all schools shall have digital libraries and the ability to host video conference for remote learning.

Policy recommendation on technologies at the service of humanity

1. Co-creation of technologies useful for community

Extending the scope of "entrepreneurial discovery process" used for smart specialisation. New types of entrepreneurial discovery workshops may involve citizens and scientists for co-creation of new technologies useful for the community.

2. Testing the acceptance of certain technologies

Creating virtual and real spaces in which emerging technologies (in phase of idea) are presented in real life contexts, and citizens can express their opinions.

3. Testing technologies in real environments

Communities entering the experiment programmes receive 1 million Euros for any purpose, if 10,000 persons accept being part of the programme for testing the new technologies (e.g. a new form of media platform).

EDUCATION (FOR SUSTAINABILITY)

21 Educational ecosystem as a driver of social innovation and local development

Research topic:
Educational ecosystem as a driver of social innovation and local development # 7.a

Grand Challenges :
6: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
Generally, the educational system lacks leadership models and well prepared teachers, technical support as well as motivated pupils. The critical and creative thinking in children is not stimulated and there is not a close enough connection to the surrounding societies. The system needs to adopt personalized approaches to empower people, to be adapted to the social needs and to ensure access to different educational levels in different geographical regions. Stakeholders should be more involved since schools play an active role in the local communities. There is a need for a culture of continuous learning (re-learning, adaptation, etc.) and therefore the educational system should work as "hubs" to reconnect educational agents.

SCOPE
Research should investigate how systematic learning could be used as driver for local innovation and development. Traditional schools should be supplemented or modified to become multi-thematic hubs, dedicated to education and collaboration among citizens of all ages. Every hub should be as integrated as possible with the human context and material culture. Thereby they should promote values and foster cooperation among learning agents (schools, families, territorial stakeholders, communities, technology, environment, etc.), to satisfy individual and community needs and expectations (including personalized and practical education), promote cohesion and inclusion, and support capacity building and the increase of social capital.
EXPECTED IMPACT

- Reduced school drop-outs;
- Improved personalised education
- Much more engaging education for young people
- No shortage of specialists in certain fields
- Schools and kindergartens equipped with modern technology

- Teachers are motivated, well-prepared for their work, adequately paid and everyone respects them
- Well-educated people with critical and creative thinking build free and peaceful societies
- All education institutions form a single network
- Classes are held also in other organizations, not only in schools
- Teachers actively involve field professionals in classes and use innovative programmes/teaching applications
- Contribution to implementation of Global sustainable development goals (particularly SDG 4 and 7), taking into consideration all three aspects of sustainability (economic, societal and environmental)
- Proposals/solutions on how to develop and implement multi-thematic hubs and how to connect different forms of education (formal, non-formal, informal)
- Proposals on how to develop evidence based educational programmes fitted to national needs
- Innovative programmes for teacher's education

Online consultation rating: avg. importance: 4.1/5
Nations prioritizing this research area: Bulgaria, Luxembourg, Lithuania

CITIZENS' VISIONS

[ITA] Vision 4: A school beyond times - a new education model
"In 2050 the traditional schools will be replaced by multi-thematic hubs dedicated to education and collaboration among citizens of all ages. Every hub is as integrated as possible with the human context (…) Every hub consists of pavilions for specific subjects (…)"

[HUN] Vision 5: Education in the world of transforming work
"Education today does not only happen within the confine of school rooms, but also at external venues such as, for example, demonstration sites, visitor centres, organic farms, waste management plants etc. "

[IRE] Vision 3: Relationships with one another and the environment
"Children will be educated in a well-rounded manner i.e. educated in trades/environment/etc. a holistic approach."

[SVK] Vision 1: Popularization of Science and Technology
"There are many centers of scientific information around the country. The general public is regularly involved in scientific activities and research. The quality of science education at kindergartens, primary and secondary schools improved considerably."

22 Design thinking and doing and life skills for all

Research topic:
Design thinking & doing and life skills for all

Grand Challenges :
7: Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE
There is not enough design thinking & doing and creative co-creation approaches in schools. How do we design learning activities, settings and processes to foster the acquisition of design thinking & doing and life skills? How to integrate these settings and processes in the curricula and, simultaneously, rethink limitations of existing curricula? A lack of focus on how to support self-directed and informal learning can be observed. How do we foster educating creators of 'content' and not only consumers of 'content'. There is a need to focus on the design process instead of focusing on end-results.
Only one teacher per class is not enough to achieve differentiated teaching and answer the needs of all children in class. The rigid silos of academic fields and funneled [non-bridgeable] educational tracks, leaving no room for flexibility. Current curricula are conservative and linear: not "à la carte". The tension between historically fundamental subjects and an updated common curricular core at European level which reflects societal needs is challenging.

SCOPE
The research should investigate the power of design inquiry, thinking & doing/ as a mean to foster creativity and innovation and boost learners' abilities to think "out of the box" (set and solve the so called wicked or "ill-defined" problems). By adopting a system's approach (systemic) in studying the scaling up and potentialities of design thinking & doing from individual to communities' organizations (learning ecosystem). The research should identify good practices and methods in developing creativity. Also, the development of concrete approaches and tools in order to enable teachers and schools to implement design thinking and doing as a core educational process. The research should develop methods of diagnostics of students' talents (indicating tools, stages in development of psychological knowledge, evaluation of effectiveness of changes introduced) in order to spot and encourage particular skills and inclinations.
Also, an evaluation of the implementation of design thinking & doing at every stage of the educational process and analysis of impact of the changes achieved.

EXPECTED IMPACT

- Design thinking & doing-based education is seen as a key issue in tackling Grand Challenges and Sustainable Development Goals.
- Creative citizens (from kindergarten kids to senior citizens) who are open, courageous, full of self-esteem, free from inhibitions, ready to take action and responsibility.
- Capacity for collective action and solution finding at community level.
- Improved innovation action of the European social, environmental and economic spheres.
- The wellbeing of society is improved by the innovative approached to sustainable development.
- Job creation raises because people realise what they are good at, new professions and research centres emerge.
- The society is happy because people are fulfilled at work, mentally healthy, and less frustrated.

Online consultation rating: 3,99/5
Countries where this is priority: Italy, Poland

CITIZENS' VISIONS

[LIT] Vision 1: Freedom to Create – Responsibility. Sustainable Future
" Education (practical, unlimited, experiential)"

[CYP] Vision 6: Future Experiential School
"Development of an experiential school without closed structures."

[LUX] Vision 6: I am satisfied with what I am doing! (Do what you love, love what you do!)
"Skills evaluation: as a student, I study at my own pace; I am being encouraged to try / to experiment."

[ITA] Vision 4: A school beyond times - a new education model
"The education of the child is continued and structured in order to strengthen his real aptitudes."

[ESP] Vision 2: Small changes are powerful
"There will be more teachers training and restructuring of the educational content."

[EST] Vision 4: A united world
"Work and school: personal satisfaction. Learn to do what you love and you shall be rewarded for the created value"

[SWE] Vision 6: An expanded view of human competencies

"In our vision people are assessed on the basis of their talents and abilities, rather than just their documented knowledge (for example school grades). The school system is adapted to the individual; for instance it is possible that each person learns at their own pace and that studies can be done from home, through e-training, etc."

[PL] Vision 5: I've Got Talent

"The premise of our vision of the future is the conviction that everyone has talents/aptitude worth discovering, appreciating and developing. On this, an education system of the future should be based. Training programmes will be personalized in accordance with the results of the analysis of pupils' aptitudes and interests. Creating and promoting skills and talents will be correlated with the needs of the economy."

[NL] Vision 6: Education is the foundation of civilisation

"The training college for teachers has become a must and is better equipped to the new developments in the future. Education is not only focussed on knowledge and on economic thinking but also on art, culture, science of nutrition, appropriate social behaviour (good manners), ethics, sport, values and norms, environment and multiculturalism."

23 Learning for society

Research topic :
Learning for society # 11.a

Grand Challenges:
1: Health, demographic change and wellbeing
6: Europe in a changing world - inclusive, innovative and reflective societies
7: Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE
A more sustainable economy and ways of living, that promotes well-being, require a more balanced position between the common good and the individual good. For this shift to occur, citizens need to be educated in a life-long process, on the balance between personal fulfilment and the benefits of collective goals. Society needs to move from "I" to "we", building motivation and trust for change. We are too individualist, which exacerbates social problems.
Society needs to re-think the community's political integration (participation in the collective framework and in the global dialogue), reflecting upon the social and economic cohesion in diversity. Freedom needs to be redefined. There is a need to look for interests, responsibilities and habits of people and define their fundamental needs.

SCOPE
Research should explore the following aspects:
- Educational leverages to the sense of community and common good/progress
- Promoting collective intelligence (working together, consultation and co-creation)
- Facilitate the transformation of "education into action" and development of a new civic sense
- Promoting by education the intergenerational connections for the constant rethinking and sharing of values and priorities
- Ways to acknowledge the community's problems and understanding the community/ies culture/s
- Ways to provide holistic educational lifelong learning opportunities capable of empowering people to take charge of their continuous learning and development

EXPECTED IMPACT
- Developing a sense of community and understanding of mutual dependencies and the effects of one's choices to others' lives
- Social cohesion: respect for human rights in order to be able to protect one's own and not hurt those of others, especially the rights of minority groups
- More collective thinking, citizen participation, and achieving common goals.
- Promote innovative needs that allow to take risk and fail
- Contribution to SDG`s (Global Sustainable development goals) and in particular in SDG4 and SDG7

Online consultation rating: average importance: 3.79/5
Countries where this is a priority: Malta: 2nd priority, Portugal: 2nd priority, Italy: 4th priority, Luxembourg: 5th priority, Portugal: 7th priority

CITIZENS' VISIONS

[PORT] Vision 4: Culture with all for development

"In 2050 we do not concentrate on productivity (which means ultimately aiming at profit) but on everybody's individual happiness index. That will feed the happiness of the collective. Education is the main vehicle for the realization of this vision (…) All citizens have enough time to develop quality human relations and maximize their capacities (…) Social recognition is based on each person's contribution to society instead of material wealth."

[DE] Vision 1: Sustainability implemented

"• Economy serves the people, not people serving the economy
• Growth is not the main motivation/indicator for economic success (post-growth society)
• Orientation towards common good (community economy)
• Technological progress does not automatically result in more production, but the time obtained can also be used elsewhere (8 hour day may no longer be necessary)"

[FRA] Vision 2: Collective Project

"Society in general will exit from overproduction and thus from overconsumption. Waste and polluting products are reduced to a minimum. Basic equipment and needs (housing, food, energy, and security) will be ensured for everyone thanks to a better repartition of wealth. Proximity solidarity is more active and developed. The absence of patents on living things, and the free availability of seeds as open source allow self-sufficiency and knowledge transmissions between generations."

[ITA] Vision 4: A school beyond times - a new education model

"Every hub is as integrated as possible with the urban context, meaning that it is easily reachable with public transportation, surrounded by a green area with cycling paths and zero impact on the environment (solar panels, recycling bins etc.)"

Policy recommendations on education

1. EU should implement some overarching policies including a research on effect of national control over education

Education systems seem to be pretty behind society challenges and changes. One of the reasons is countries have strong control over national education system as a way to perpetuate the current political orientation. Therefore there is a need of input by the Commission the common backbone for educational systems in Europe to align in terms of values basic skills, values, for example, inclusiveness, co-creation, cooperation, solidarity, tolerance and user/community centred approach.

Research would focus on why education in not seen and implemented as a strategic topic. What are the external and internal reasons for immobility in education?

It is innovation because it may offer mutual inspiration for national governments to adapting best practices to the local situation. There is a danger of standardisation of education systems.

2. Make comprehensive research on education for sustainable development and for social innovation.

Raise evidence how education and learning can facilitate achieving sustainable development and foster social innovation (new ways of solving old problems).

The citizen-based transversal policy proposals

- A transversal recommendation is to take CIMULACT results into consideration into the preparation of research topics and next European Framework Program. It will increase the connection with the citizen based societal needs, and will enrich the decision making process (diversity, legitimacy).

- There is a call for more connection between EU-funded research projects and societal needs. This call implies the prescription at a much broader scale than it is today for more transdisciplinarity, part of it being the inclusion of the input from citizens. Define the different types of knowledge for research and respect all of them. These types of knowledge include economic, technical, social, etc.)

- It is stated that methods and indicators for evaluating and measuring the value of research contributions to societal challenges need to be developed (similarly to having scientific publications in academic research). Presently, societal challenge does not have a 'currency' - for example, the currency of academic research is publications in papers and impact factors, or that of technological innovation is registered patents. One example for such currency could be that all research projects should provide proof for tackling a given number of SDGs.

- It is recommended that any research institution, especially those publically funded, has to promote and systematize citizen feedback on their programmes, topics and projects on a regular basis (yearly). This would be valid as well at national level. This recommendation aims at enriching the research and innovation with information and input not used so far.

- Citizens should play an advisory position to research planning. This could be realized in various ways: citizen advisory panels or citizens as members of advisory panels to all research projects to comment on the usefulness and practicality of the project for society as well as assist in the communication of research results to society in general; assessment of impact on society;
  Use citizens as a source of information for research, like in CIMULACT; Develop and implement participatory research methods; Give an equivalent voice to all the citizens. Research is not just for scientists. It needs a lot of convincing in some research communities.

- Increase participatory practices in the field of policies and research.

Three main concerns are on the table:

1. To share a robust methodological framework
2. To incentivise the decision makers and researchers to include participatory practices with citizens in the process
3. To increase citizens' capacities

- Participation methods need to be adapted to specific contexts. Participation should always be contextualized (a method won't work in every context, or will produce different results in different contexts). It is recommended to define the (conceptual) requirements for participation to be successful: political, practical, theoretical, social (basic needs fulfilled).

- Experimentation is a key for decision-makers and policy officers to discover and get interested to develop the practices. In order to enhance the practice, develop the awareness of the existence and effects of participation to decision makers, and explore, experiment and evaluate participation processes at various scales, publics on different subjects. Experiment participation processes at every step of the life (once practiced these practices, citizens are more likely to reproduce them).

- Participation should be mandatory in the education curriculum (schools, universities) and for adults and elderly. By being experienced by a growing number of citizens, it will become a common practice. (benchmark: curriculum on citizenship in the UK).

- Increase involvement of CSOs in research projects. Presently, the involvement of CSOs in research projects is rather low, around 3%. Several obstacles and/or challenges need to be overcome:
    a. The current competitive bidding in research projects is not suited to the increased involvement of CSOs.
    b. The current administrative requirements are often too strict and/or too complex for CSOs to comply with.
    c. There is a tension between the increased involvement of CSOs and performing high quality research. This is due to a variety of factors:
    d. There is a big difference between how CSOs and scientists work, and because of this both are scared of working with the other.
    e. Both scientists and CSOs need to be trained to work together.
    f. Good practice needs to be collected and disseminated.

- **The word "learning"** should be in every sector / in every call (i.e. what is the education content in each call). We think that offered learning content should be incorporated in every sector and area of activity therefore included in every call for projects. Learning is a transversal issue where ones who write proposal should ask how educational content could solve a problem. Educational content can create bigger impact in research field as well as how this content can be embedded in real life.

Annex

The 23 citizen-based research topics posters refined with project officers of the Commission at the CIMULACT Pan-European Conference

1. Personal Development

I’m empowered to lead my changes

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C4. Smart, green and integrated transport

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

Uncertainty is rising due to a rapidly changing living and working environment and there is a shift of risks and responsibilities from the state and employer to (vulnerable) individuals. Today’s life-job-education pathways do not respond to the need of acquiring new skills and knowledge for having a fulfilled life. Citizens need technical, social, individual skills and an entrepreneurial mindset to stay competitive in the labor market and be able to adapt to a changing environment. They need to be able to make individual choices to cope with the quest for flexible and adaptive careers over a lifetime. There is not enough psychological knowledge on barriers for changing life-job-education paths and for dealing effectively with uncertainty. Responsibilities of state, businesses, individuals and other actors are dissolving and new mechanisms for coping with these challenges are needed.

SCOPE

Research should underpin the set-up of experiments with new models of coping with changing environments. Research could focus on one or more of the following key aspects:

- Better understanding the current situation especially consequences such as resignation, depression, polarization, social inclusions, exclusion
- Better understanding the labor market and its future changes through theories, models and foresight approaches
- New practices and tools to empower people to make good choices and orient themselves in order to be better prepared for possible future changes (sociology, educational theory, psychology)
- Exploring possible roles of communities for enabling alternative life-job-education pathways

Citizens of all ages should be involved not only in the research but also in the implementation phase. Particular attention should be paid to differences between different generations.

EXPECTED IMPACT

Online consultation rating ★★

- Means are available that empower individuals to harmonize life choices in a changing world
- Improved personalized education
- A more flexible job market with the individual in the center
- Possible models are developed for introducing alternative life-job-education pathways, which involves different actors and shares responsibilities (e.g. communities, NGOs, CSOs, businesses, etc.)

2. Holistic Health

Dissemination and continuous exploitation of research and innovation in the healthcare system

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

There is a gap of awareness at the local level about the research and innovation achievements at the European level. In fact, research and innovation actually occur in the healthcare system but they do not come easily available to the local service providers, citizens and other relevant stakeholders. This can be due to the inherent complexity of the system, but also to a lack of dissemination and exploitation. Therefore, there is a need of doing actual exploitation at a granular level and of creating local awareness, through local actions, about the results of research.

SCOPE

A dissemination and support action should be conceived to spread and exploit results of research in the healthcare system at the national and local levels. This may imply working with local entities and grassroots organisations (organizations, associations, communities, national contact points and companies) to engage people and stakeholders in discussing, adopting and adapting on-going research and innovation achievements. Local funding entities can facilitate the continuous implementation of research results. Best practices at the local level must be identified. The action needs to identify and then to map out the local entities that can be in charge of this exploitation and dissemination activities, in order to understand their responsibilities and capacities. Contextual and infrastructure factors must be also investigated in order to understand how they influence the exploitation.

EXPECTED IMPACT

Online consultation rating

- Better exploitation of research and innovation at a local level
- Increased availability of services and solutions for the citizens
- Increased awareness of science progresses and achievements
- Better understanding of the role of EU research and innovation programmes
- Improved roles of national contact points

2. Holistic Health

Evidence-based personalized healthcare

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies

C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

Today, almost everyone gets a "standard" treatment for a specific symptom and not a personalised one, whilst new technologies may realise healthcare for all which is more equal, of higher quality and more personalised. Additionally, e-health can secure digitalised medical documentation and facilitate common policies overcoming the issue of fragmented data, which hinders linkages across countries/ sectors/systems. This can enable faster diagnostics, and therapy can be more effective, whilst saving resources. This needs to go together with a redefinition of responsibilities and duties of every type of medical staff in order to avoid misunderstanding and confusion, while increasing the capacity of the doctors to humanise the relationship with the patient and the way in which information is shared. Finally, this can bring about a more holistic approach to healthcare, that is considering patients' symptoms in the context of overall health conditions and curtail treatments that concentrate merely on symptoms. This should help building trust between patients and doctors.

SCOPE

Research should explore the conditions for evidence-based, personalised and human-centric services for health promotion, prevention, treatment and rehabilitation. Reliable user lifestyle profiling methods and technologies should be developed, in order to achieve personalised holistic data-based health services. For this purpose, large amounts of data provided by miniaturised, environmentally friendly (wearable or distributed) systems could be combined with existing data from other sources (e.g. EHR7, insurance data). This needs to go together with research on skill training programs for both doctors and citizens in order to:

- For doctors to complement the curriculum with social psychology (i.e empathy training) on one hand, and digital literacy and data mining on the other
- For the citizens to be trained on health and digital literacy

Research should finally explore ways to make health-related data from diverse sources and destinations interoperable, and to investigate new processing techniques for personalised analysis and reporting.

EXPECTED IMPACT

Online consultation rating

- Effective use of data for personal health
- Individuals enabled to take care of themselves
- Contributing to treat patients comprehensively, not only to solve an acute proble
- More satisfied patients and among health staff
- New economic and financial indicators of effectiveness
- Reduction in primary care in the long term
- Awareness of personal health through data
- More human relationship between the doctor and the patient

2. Holistic Health

Access to equal and holistic health services and resources for all citizens

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

EU citizens do not receive the same standards of health. There are huge differences in EU countries regarding:

1_Equity: Access to health services, availability of drugs and non-pharmaceutical interventions, access to rehabilitation and nursing.

2_Awareness of health: health promotion and healthy living to prevent illness, locus of control, how people can help themselves, public health strategies, methods of addressing mental health, knowledge access and education of health professionals, etc..

3_ Holistic approach: what is this about in the different cultures and circumstances, and how to achieve truly patient-centred healthcare

Finding solutions to this challenge can prioritize humanity over money, but can also minimize the negative economic impact of bad health. Moreover, they can create better links between the European and the local levels, and add value to local healthcare approaches, yet complying with the European standards.

SCOPE

Research should define the state of the art of the healthcare system in the different European countries in order to promote an equal distribution of resources and knowledge with a Pan-European dimension. The action may imply:

1) Setting the indicators to carry out a comparative analysis of the good and bad practices in the different countries across Europe in the healthcare system, funding models, incentives and in the education/training system. This may lead to knowledge and data distribution with open access and guidelines agreed upon by all stakeholders to create a European health network and to harmonize medical care.

2) Understanding and developing the local knowledge about healthcare with regard to:

a) local approaches and medicines that are complementary to the European standard approach;

b) the specific situation and circumstances of the patient, in order to set more holistic, person-centred approaches. This may be reflected in the education courses for citizens and healthcare professionals to promote health awareness.

EXPECTED IMPACT

Online consultation rating

- Social responsibility at a local level to reach a global community taking care of all individuals and their needs at different ages
- Providing knowledge on effectiveness of a holistic approach
- More humanity-based approaches and less “business as usual”
- Minimize the negative economic impact of bad health
- Better links between the European and local level
- Value added to the local healthcare approaches

Technology as a means of well-being

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C7. Secure societies – protecting freedom and security of Europe and its citizens

CHALLENGE

1. On an individual perspective: wellbeing (emotional, mental, spiritual, physical) can be understood as freedom to choose / self-determination/ autonomy. The challenging question is: what does a "good life" mean and in which way will technology be used in personal and professional lives?

2. On a public perspective:

- Guarantee the access to technology with equivalent opportunities, in order to ensure to each person a self-determined "good life" and a "balanced and ethical use of technology"
- Creation of frame conditions in order to avoid abuses both from the employees and employers point of view. Today, people are not completely aware of the possibility to create "boundaries" between them and technology.

The challenge is to avoid that employers take advantage of technology to abuse employees.

- Encouraging engagement from citizens

We should keep in mind: technology is a means, not a goal. The objective is to reach a good life (self-determined).

3. On an organisational (business) level there's the need to integrate the perspective of the individuals into the workplace/ working environment, with an "integrated system design" process: start with social need and develop new technology later; not the other way around. A challenge exists between consumer technology and technologies in the workplace. So far the employees have to go through the technologies the business imposes on them. Technology development in business should learn from the consumer technology development in order to start from the final user need (employees).

SCOPE

Instead of being governed by technological devices, we want to govern them. Especially in the workplace, the aim is that final users (employees) play an active role in the development and process of introduction of new technologies, so that the development is end user centric.

The promotion of a higher level of awareness in the use of technology will allow reaping the benefits it offers without suffering negative consequences such as screen addiction, shifting relationships from physical to virtual space, thinner boundaries between virtual and real actions and exploitation at the workplace.

EXPECTED IMPACT

Online consultation rating ★

- Better understand the relation between virtual and real
- Better deal with privacy issues
- Dialogical development of our claim to technology, society and self
- Promote critical thinking as a basic requirement for all that follows
- Promoting risk assessment research (generate data & evaluate data)
- Avoid being overwhelmed by the constant pressure to make far-reaching decisions with regard to fast-paced technological developments which are outside the reach
- Holistic focus
- Measuring wellbeing
- High ethical standards of societies and constant dialog

Balanced work-life model

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C4. Smart, green and integrated transport

C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Work-life unbalance can be felt at many levels: time wasted in commuting between home and work, long working hours preventing from social interactions, work stability, lack of time for personal development and family and children care, restricted work flexibility, unhealthy lifestyles. In the future, it will be important to distribute work flexibly throughout life and also flexibly shift between employed (paid) and unemployed (volunteer) work.

This is needed and proved by research from two perspectives:

- From the organisational perspective: a more balanced model would make employees more productive and efficient.
- From a societal perspective: a more balanced model would make people more fulfilled and by consequence healthier.

Thereby people will be able to take care of their loved ones when needed, pursue personal fulfilment and/or follow multiple careers and slowly shift into retirement. Nowadays workers experience a tension between too much flexibility and too strict boundaries and vice versa. If from one side there is a need of more flexibility on the workplace, on the other side there is a concern that too much flexibility would destroy boundaries between personal and professional life. This can negatively affect well-being. There is a need for making the negotiation between employees and employers more balanced and fair.

SCOPE

Research should rethink the definition of "work" and develop approaches that permit to recognize and reward as "work" all different kinds of human activities including socially valuable daily life activities such as domestic work, childcare, caring for the elderly and social work. Research should help identify and define the different flexible forms of work. Studies could be carried out to analyse the sectors that would fit and not fit for different flexible forms of work, and identify/evaluate the barriers for introducing new forms of flexible work. Research should also pay a particular attention to the relation of negotiation between enterprises and employees (balanced and fair). However, research should also investigate different frameworks to assess the workload and/or it's accomplishment. It will intend to help people feeling satisfied (and healthy) with their tasks/work, as well as with their personal life as they experience a sufficient degree of flexibility. In this sense, research should help to create a setting where there is flexibility within boundaries and boundaries within flexibility. What is missing is performance research from the organisational perspective, in order to link it with the existing on personal life research. As work-life balance has been researched for a long time, there is a need that the research that has been done is put into practice.

EXPECTED IMPACT

Online consultation rating

- Assessed impact on family and social relations of more balanced work-life models
- Workers would be more satisfied overall and even more productive during working time
- This will allow people to more freely choose their lifestyles and reduce social judgments and prejudices
- Greater understanding and recognition of the impact on the society in short and long term of extra-work activities/personal activities

4. Sustainable food

Good quality food for all

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy

C5. Climate action, environment, resource efficiency and raw materials

CHALLENGE

Accessibility to good and healthy food is not equally available to all. Socio-economic factors, pricing, education, culture, location are critical factors that may limit access to healthy quality food and related dietary habits. Unequal access to food has a strong local and global impact in both urban and rural areas. This is expected to become even worse in a changing climate. This inequality is challenging public health as well as social and economic cohesion. Food poverty and food wastage are also pressing challenges in the EU. Consumers are, at times, receiving conflicting and contradictory information about healthy diets and nutritional value and this causes confusion.

SCOPE

Both basic and applied research should be developed with an interdisciplinary approach to understand and assess the processes generating food inequalities and examine how this affects social and economic cohesion locally and globally.

Research should focus on the following aspects:

- Map the food access in rural and urban areas
- Calculate and assess food poverty in the EU
- Look at supply regulation and issues connected to distribution and prices (transnational level)
- Investigate the socio-economic inequalities existing inside a country with regard to food and nutrition (national level)
- Analyse all questions surrounding sustainable nutrition: quality, health (use of pesticides), access to healthy food (local level)

In addition, concrete approaches to addressing the issues could be explored such as:

- Design and assess educational programmes to encourage healthy sustainable food habits in particular in primary education
- The universal basic income as a way to provide equal access to quality food

Transnational, national and local level

EXPECTED IMPACT

Online consultation rating

- Reduced inequalities of access to sustainable healthy food
- Reduced food poverty in the EU
- More sustainable urban and rural food systems
- Effective strategies to neutralize actors /institutions contributing to food injustice/ inequalities and food waste around the world
- Effective strategies to fix the flaws/instances of injustice of the transnational food commerce
- Fostering better quality nutrition to prevent long-term health problems, diseases and infections, food disorders (obesity and malnutrition) and antibiotic resistance

4. Sustainable food

Evolving food culture in growing cities

GRAND CHALLENGES :

C2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy

C5. Climate action, environment, resource efficiency and raw materials

CHALLENGE

Many people in cities come from diverse cultures. For a long time, people who migrated were expected to adapt to the local food culture. Things have changed and today migrants feel the need to maintain their traditional culture and gastronomy. In ever growing cities, this raises challenges in terms of sustainability due to the need of providing a huge diversity of food cultures, in terms of social-economics impact and in terms of social inclusion and cohesion. Challenges may arise e.g. when a city hosts Mediterranean, African or Asian food cultures which rely on food products which require to be imported from distant regions. Specific challenges include issues related to personalized food diets, food provision, social cohesion, diversity in communities, and impact on environment.

SCOPE

Research should investigate the following aspects:

- Comparative study of food supply chains and their social, ecological and economic impact
- Studies on the role of food as an enabler for social inclusion and cohesion in cities
- Sociological and behavioural research on food practices and habits taking into consideration aspects related to flavour, taste and emotions
- Historical research of nutrition flows during periods of migration
- All stakeholders (including the actors of the food service economy, food providers in cities, producers, importers, etc.) and in particular citizens, should be included in the research on more sustainable food production, consumption and delivery

Research should help developing and demonstrating practical solutions such as:

- Policy tools for management of mixed food cultures in cities
- Sustainable non-indigenous local growing techniques
- Intervention options into diverse and multicultural food consumption practices
- Non-prescriptive tools to define the footprint (co2, water, land use) of food
- Scenarios and strategies for integrated local food production for different cities with different climates (dynamic modelling)
- Urban planning, architecture and design should shape cities in order for them to facilitate and increase community collaboration and social cohesion via a more sustainable food production and consumption

EXPECTED IMPACT

Online consultation rating ★

- More sustainable cultural mix
- Improved social inclusion and cohesion through food diversity in cities
- Personalized sustainable and healthy food diets taking into consideration the food culture mix and diversity
- More integration of citizens in the food system research, innovation and development
- Efficient food value supply chains tailored for culturally diverse sustainable and resilient food systems
- Functioning interventions for the implementation of change and the promotion of new and sustainable ways to consume food
- A sound, well communicated knowledge basis for consumers' food decisions

Smart energy governance

GRAND CHALLENGES :

C3. Secure, clean and efficient energy

C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Smart energy systems are characterised by the increasing importance of new actors and a new diversified and sustainable energy mix in the energy systems, facilitated by ICT technologies. Decentralised and individualised energy production (prosumers) and highly regulated energy consumption will be made possible through price signals and the availability of cheap renewable energy technologies, leading to distributed investments in the energy system, higher energy efficiency, lower transmission losses, better resilience and energy security, and generally supporting the development towards a low-carbon European energy system, a defining feature of a European Energy Union.

Smart energy systems are at the pilot phase and it seems urgent to begin to focus on the implementation paradigms. However, smart energy systems potentially include serious tensions inhibitory to their implementation. They are dependent upon local management and backup by consumers in their households, but at the same time they may develop to become top-down regimes creating resistance among users. They will be dependent upon investments by consumers, but the rules, including prices (sell and buy), may be set by the big operators in the system. Taxation systems may counteract the intentions on getting the smart systems out into all corners of society, because higher efficiency may result in higher taxes in order for the states to gain constant revenue. Self-sufficient prosumers may be hindered by legislation, because of the needs for them to contribute to the collective systems. Renewable energy production, prosuming and higher efficiency may result in considerably lower costs of energy in the future, which creates a risk for 'hyper-rebound' effects, creating a down-spiraling development towards much higher energy consumption. To be smart the energy systems of the future must live up to a wide range of quality criteria, including making use of ICT and "ubiquitous computing", but also having the right energy mix, being based on sustainable renewables, making clever use of storage options, and making use of existing infrastructures. Adding to this, the smart energy system needs to be attractive to consumers and prosumers, not requiring too high energy system knowledge for them to participate, being socially and economically just and fair, counteracting energy poverty, and involving ownership structures which motivates citizen to contribute and to accept the energy system transition.
These requirements do not necessarily fit well with national energy systems as they are now, many being largely monopolistic and governed by single strong central public agencies.

SCOPE

In order to reduce carbon emissions, combat pollution, nuclear failure and energy poverty, and reduce energy dependency it is urgent to find locally managed, decentralised, fair and democratic energy solutions. A decentralised energy supply system can, however, be severely hampered by even small tensions and lack of trust. Therefore it is important to find participatory modes of governance that balance all interests.

Research should develop, test and make policy discourse about new governance models, which are able to mitigate the tensions around the economic, technical, social and democratic implications of smart energy systems. It should thereby create trust, fairness, justice, avoiding energy poverty, and facilitating democratic governance and public participation. The governance models must have a sector-coupling approach, so that i.e. costs and prices will be distributed fairly in an accountable manner between e.g. heat, power, fuels, and between sources, such as biomass and waste. Further, these models need to create a set of effective incentives including creating motivation for private investments, consumer behaviour, avoidance of rebound effects, and for collective ownership.

Ownership structures should be part of the governance models and should be investigated for their ability to support the development towards broadly accepted smart energy systems. The mobilisation of prosumers and energy conscious consumers should be considered as an important aim for the governance models, as should the future need for "energy communities" in which citizens locally support each other in participatory processes to implement the smart systems, which are the right ones for them and their context. Projects should, thus, provide a definition and validation of tools for transparent, participatory and multi-disciplinary energy governance, enabling multi-layered integration of stakeholders' interests and investigate barriers and success factors for such governance models. Specific attention should also be paid to aspects of security, data handling and privacy in a Big Data scenario to ensure trust among end-users. The research should map and engage the relevant actors, including consumers/ prosumers/citizens, and should be highly active to create policy dialogues nationally and on a European scale, as several European members states should be engaged in the project facilitated discourse. The research is expected to be anticipatory, participatory and highly multi-disciplinary, involving tight collaboration between e.g. smart energy systems experts, system modellers, sociologists, legal expertise, organisational expertise and public education and participation expertise. The consortia will need to have skills regarding policy discourse and implementation.

EXPECTED IMPACT

Online consultation rating ★

- Reconstruction of the notion of smart energy systems to be inclusive, encompassing new governance structures
- Creation of multi-actor dialogues and re-orientation among actors regarding the policy implications of smart energy systems
- Contribute to a cross-European common understanding of the need for smart energy systems, based on a more participatory governance paradigm

6. Transport

Sustainable transport solutions that enable us to live where we choose

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing
C4. Smart, green and integrated transport
C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Definition of sustainable transport: Sustainable transport is not polluting, not detrimental to health, CO2 neutral, affordable, accessible, available (there when you need/want it), durable and resists to climate variations.

Life is nowadays mostly concentrated and centralised in big cities, due to better job opportunities, education, services etc. In reality, people do not have the free choice to live where they wish. Therefore, we need to rethink society's organisation into more distributed communities that (might) produce and consume locally, find themselves supported by more flexible, innovative and sustainable transport solutions, considering the future context of a reduced need to move people and things into bigger cities. Another challenge is to find out (using a holistic approach), what are the new infrastructures, the virtual tools and possible innovative business models in the area of transport, that can make local communities more attractive for living. Quality of people's lives should be improved by allowing distributed living aiming at a sustainable life style. The overarching challenge is to determine the best balance between connectivity and self-sustainability of local communities, taking into account the requirements for sustainability of transport.

SCOPE

Research and innovation should investigate how to enable distributed living that is economically feasible and sustainable for the environment. In this context there is a need to define what is understood by "local" and what is meant by "communities that are organized locally" as this is not necessarily the same as "rural". However, research should look also to the needs of the rural (poorer?) areas, e.g. low cost, small impact, and efficient infrastructure. Current transport strategies solutions should be identified, as well as the current and future transport needs in an (interactive) collaborative process including all users and other target groups (the people).

One of the crucial questions is "What remains as transport needs - in and between - the local communities in the new societal contexts of life organization (change of lifestyle, chance of behaviour, social trends). In a localized organization of life, what would be the transport needs (frequency, distance covered, and reason to move) and what transport services would be needed to satisfy those needs (are walking and biking enough?).

Furthermore there is a need for analysing which services have to remain in the city and which services can be provided on a local level (also in the "rural"), how to articulate and interlink them and how to guarantee access to everybody.

Research should look to the most appropriate equilibrium (relationship) between the connectivity of the "local" with the "urban" and the idea of "self-sustainability" of local communities. This should be done by developing infrastructures, new/ innovative business models and virtual tools of all kinds (provided by "digitalisation") for the provision of public and private services in remote areas. Research should also look into the ways to anticipate, handle and manage the changing transport needs created by new technologies and social media, in an ever changing world, where technological development is very quick, and alike quick are the changes in communication behaviour and transportation needs as a response to those changes. The reduction of imbalance in transportation choices, and the promotion of a decrease of the isolation of people in distant rural areas are paramount in this context.

EXPECTED IMPACT

Online consultation rating ★

- Provide an overview of needs of the local citizens
- Increase the attractiveness of non-urban life
- Provide tools and models that can show the socio-economic benefits of distributed living
- Reduce number of cars in cities and in places where nowadays the use of cars seems to be inevitable
- Reduce time spent in commuting
- More effective choices for transport solutions
- More attractive public/collective transport solutions
- Reduced CO2 emissions
- Employment and work opportunities, services and goods are available locally
- Increased opportunities for rural inhabitants (job access, care access, public services, etc.)
- A changed mind set of policy makers
- Provide policy solutions to support sustainable development of local communities

At one with nature

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing
C5. Climate action, environment, resource efficiency and raw materials
C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Humans are part of nature, and ecology has an enormous influence of our lives In light of growing urbanisation, it becomes increasingly important for research to be directed towards understanding how the carrying capacity of our environmental resource base interacts with our social and economic systems. It is important to change behaviour and attitudes in order to live in harmony with nature. The challenge is to counteract the current trends in development practices that distance humans from a relationship with nature that promotes psychological and physical well-being and health. An approach of stewardship is vital to guarantee a liveable environment for future generations. As citizens expressed, "we do not inherit the world from our ancestors, we only borrowed the world from our descendants".
In Europe consumerism is now part of culture, identity, values, and considered part of economic and national progress. We also live in a "post-fact" society where faith in scientific methods and results is dwindling. In order to change perspectives towards ecological futures, sustainability must become easily understandable, desirable and accessible.

SCOPE

Research should explore how to make a system of policy and planning frameworks, with legal structures and institutions that promote more affordable and accessible sustainability lifestyles. In forming smart consumer habits, while continuing to improve quality of life and sustainable development across the social spectrum, a specific focus could be on forms of integrating natural environments and contacts with nature into land use planning. Relevant research aspects may be:

- Exploring how attitudes and behaviors have an influence on consumer patterns and societal relationships with the natural environment
- Researching the possibilities for establishing legal rights for ecological entities and systems (trees, water ways, fauna, etc.,) as a way to help support behavioral and attitude change
- Targeting social innovation programs, education, incentive schema and awareness raising campaigns to explore and disseminate good practices for individuals, communities and cities
- Studying the economic, social governance and legal environments underpinning the good practices and methods to remove barriers to an accessible, sustainable lifestyle

EXPECTED IMPACT

Online consultation rating

- Positive ecological prospects for future generations and integration with the UN Sustainable Development Goals
- Reconciling urbanisation processes with sustainable development actions
- Steps towards a regulative or legal framework for "the rights for nature", working towards reduced pollution, restoration of biodiversity, and legal recognition of natural entities
- Better physical and mental health ; better quality of life and happiness

Consume smarter, increase well-being

GRAND CHALLENGES :

C5. Climate action, environment, resource efficiency and raw materials
C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Today conspicuous consumption is the norm and goods are used and thrown away with a very short life cycle. There are good examples of responsible consumerism but only limited adoption on a larger scale. We want to support citizens to become more responsible consumers by making information about the product and services lifecycles more transparent and available than it is today. Behavioural economics shows that consumers do not always act rationally and increased information does not always mean more responsible decisions. Therefore the insights of behavioural economics and psychology (ie consumer behaviour patterns) should be used to inform market policies and regulations for both consumers and producers. Innovative methods and actions are needed to enable policy makers, regulators, corporations and citizens to create a market place in which more responsible decisions are made easily. We expect these to (positively) affect work-life balance and personal well-being.

SCOPE

To shift our long-term thinking, re-evaluate our consumption and shift the emphasis from material wealth to healthy wellbeing are all essential for the development of proper values which are necessary for sustaining our social, economic and natural environments.
To explore policy with explicit goals for conducting market and behaviour research in line with alternative economies (for example the service society, the sharing economy). Additional research can be directed to developing experiments with the contract terms, legal frameworks and consumer protection policies to explore and disseminate responsible consumption patterns.
To gain knowledge on more responsible handling of the resources and co-responsibility of corporations, public actors and citizens, with a focus on promoting the circular economy. Examples of this include subsidies for recycling and renewable energies, technologies and applications for supporting responsible consumption, legislation and incentives for long-life goods and products, and resource recovery.
To explore how to pilot experimental communities with legal frameworks and incentives that might promote good practices (i.e. through educational curricula, information campaigns).

EXPECTED IMPACT

Online consultation rating

- Smarter consumption patterns and lifestyle changes impacting the use of resources (including time resources)
- The first step in co-creation of policy initiatives with the inclusion of citizens and public interest groups
- Input into new standards and regulations concerning sustainable products and services with responsibility of all the stakeholders to be accountable - companies and policies – and proper contract terms, legal framework & consumer protection
- Generation of new sustainable business models, products and services
- The development of robust legal and governance frameworks that support co-responsibility for the promotion of sustainable consumption patterns
- Greater movement towards a circular economy, with the preservation of resources and materials and higher quality of life
- Increased well-being, in terms of physical and psychological health, including new strategies for personal life management

8. Urban and rural development

Urban-rural symbiosis

GRAND CHALLENGES :

- C1. Health, demographic change and wellbeing
- C2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
- C3. Secure, clean and efficient energy
- C4. Smart, green and integrated transport
- C5. Climate action, environment, resource efficiency and raw materials
- C6. Europe in a Changing World – inclusive, innovative and reflective societies
- C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

A better-balanced urban rural integration - considering the diversity of rural areas (i.e. suburb, outer periphery, deep rural) - is seen as vital for the quality of life for both urban and rural citizens. There is widespread concern in different countries about a declining quality of life in rural areas and migration from the countryside to urban areas. They point to the need for integration of spatial planning of cities and rural areas to improve social, ecological and economic sustainability while preserving the distinctiveness of each space. Participatory governance is currently largely missing. As a basis for solutions, a deeper understanding of the diversity of situations is needed. Also we need more differentiated notions than the simple rural/urban dichotomy - city and countryside do not really stop at the border, the mayor's responsibility stops there, but we should consider the functional urban area.

SCOPE

Research should investigate one or several of the following aspects:

- Differentiated notions of diverse types of spatial development patterns based on empirical studies of concrete cases across Europe
- Ways to establish cultural and physical linkages across diverse types of spaces
- Solutions for sustainable urban/rural environmental resource flows, identification of asset bases and means of co-governing in order to share them
- Ways to improve the quality of life and attractiveness of countryside in deprived rural areas,
- Integrating urban rural planning approaches
- Participatory governance of spatial planning, shared urban-rural participative governance structures to be explored
- Exploring the drivers of migration both from rural to urban and urban to rural areas
- Collecting, analysing and disseminating case studies of good practice of urban-rural symbiosis from different parts of the world

EXPECTED IMPACT

Online consultation rating ★

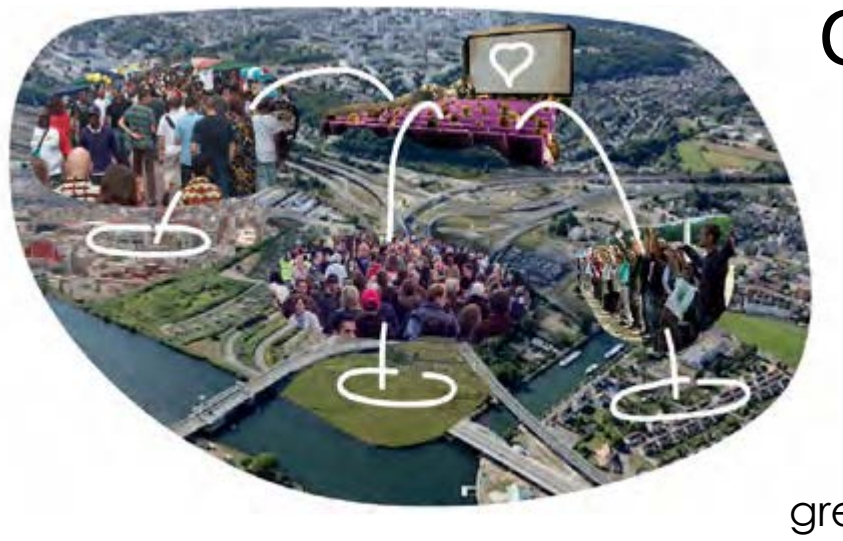
- The tendency to focus on the differences between the city and the countryside has been minimized and there is a mutual understanding between the two
- Ways to develop rural areas to preserve their identities, and to retain their human and social capital
- Solutions developed for rural areas to attract more inhabitants
- A differentiated view on diverse conditions in different areas
- More locally integrated value chains, reduced environmental footprint
- Increased resilience of cities

Making dense and growing urban areas more sustainable and liveable

GRAND CHALLENGES :

C4. Smart, green and integrated transport

C5. Climate action, environment, resource efficiency and raw materials



CHALLENGE

Highly dense and growing big cities, which have more cultural services, better health care, more education possibilities, should become more liveable for everybody. This can happen through different actions, implemented not only within the city but also across the whole Functional Urban Area (FUA). Actions include: making big parks from urban neglected areas; architecturally integrate more green in buildings and interstitial public/private shared spaces; reactivating public spaces and inventing new use of urban infrastructures; renovating public/private housing and encouraging environmentally positive externalities; creating traffic limited zones and cycling mobility. The city should not really stop at the border - the mayor's responsibility stops there, but we know otherwise the city does not stop there - so, think in the functional urban area.

SCOPE

Research should answer to the challenges of density, diversity, ecology, populations development, and financial sustainability of dense and growing cities, by addressing the following areas in combination, not on their own, using different forms of citizen consultation in every area:

- The mixed/integrated urban fabric: distribute common services in time and space in order to avoid centralization and crowding and reduce tension between centres and suburbs
- Facilitating the adoption of new efficient sustainable practices (i.e. behaviour change; sustainable lifestyles)
- Identification of innovative practices and social innovation, including from outside Europe, that can be scaled up
- The diffusion/dissemination of "promising/good" practices (i.e. advanced urban sustainability; urban agriculture; urban regeneration…)
- The creation of an integrated system of public (macro) and private (micro) transportation

EXPECTED IMPACT

Online consultation rating ★

- Land and people flows analysed and mapped
- A strategy to identify places and services to integrate with view to governance solutions for the FUA, including citizen participation
- Increased sustainability, e.g., by reducing the need for cars. This will foster vibrant cities both in terms of economic and cultural activities
- Links with local SMEs and the development of potential business plans (that can be picked up and adopted once projects finish)
- Citizens' increased understanding of science/policy interface as well as science.
- More empowered citizens

9. Community building

Empowering diversity in communities

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Equality in diversity: in principle, all people are equal. Still, it is important to find ways to make equality real in the daily life. Our societies undergo socio-cultural changes connected to migration, globalization, democracy crisis, that we can either study and act upon or neglect and remain unprepared. Diversity should be seen as a potential rather than a drawback.
Moreover, there is potential to improve the implementation of existing policies that tackle these changes on national and European level. There is a need to develop new models and innovative approaches for social inclusion.

SCOPE

Research should investigate approaches for empowering diversity in communities by creating better models for understanding the relation between societal conditions and readiness for social inclusion taking into account differences across cultures. There is a need to search for successful models of empowering diversity in communities from abroad and examine their transferability into local policies and educational activities. Research should also investigate the compatibility between legal and social norms. In processes of empowerment for diversity, models of collaborative conflict resolution should be explored.

EXPECTED IMPACT

Online consultation rating ★

- Improvement of communities and diversities integration, better communication and awareness
- Better understanding of barriers and enablers for social inclusion
- More tolerant and vibrant communities
- Stronger social cohesion
- Greater equality of rights for all groups of society
- Behavioural change in attitudes from tolerance to acceptance
- Behavioural change in mindset from stereotyped to complex
- Create communities of practice

Evidence-based community building

GRAND CHALLENGES :

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

Evidence based policy making often involves tapping into knowledge and evidence across various sources. Yet, there is a lot to do for overcoming the challenge of clientelism in society (that is at the basis of arbitrary and self-interested decision-making). Also, there is a need for finding the relation between the citizen contribution (problem detection) and the expert contribution (application of the solution). Moreover, the current educational system does not foster critical and analytical thinking, so citizens have a hard time understanding evidence for the purpose of policy making. There is also the challenge of strengthening the citizens' trust in science, institutions and the policies that are meant to serve the community. In building communities, we need to empower citizens to access and consult data and evidence while accepting space for their own value based judgement.

SCOPE

Research should focus on creating models for evidence based policy across multiple science sectors and creating more informed mindsets among citizens and policy makers. There is a need to study and develop evidence based intervention programs for reducing prejudices within and between communities. There is a need to explore models of participatory processes for collective agenda setting based on different and specific citizens needs and environments. This requires theoretical and empirical research on how communities can be transformed by knowledge, including:

- Introducing steps for change of mind-sets in the society, involving citizens in decision-making
- Empowering citizens through accessible informational campaigns and digital tools
- Grounding decisions in research and data
- Specifying the relation between citizens' and experts' contributions

EXPECTED IMPACT

Online consultation rating ★

- Ability to justify public policies, their sustainability and possibilities for implementation
- Empowered society capable of vision development
- Involvement of stakeholders in the analysis and policy decision-making based on substantial data using methods and tools for policy impact evaluation
- Reduced power of politicians to make decisions for the entire community on their own
- Reduced bias that is generated by disinformation
- Useful and meaningful data for citizens and communities that can be used in real life

10. Participatory governence

Empowered Citizens

GRAND CHALLENGES :

C6. Europe in a changing world - inclusive, innovative and reflective societies

C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

Disenfranchised communities, citizens, and NGOs lack awareness of and access to essential services. Moreover, digital tools cannot be applied as a slave on gaping social wounds. The lack of clear channels for meaningful citizen participation furthers the feelings of disempowerment and the distrust of governing bodies. Hampered by asymmetrical knowledge, and seemingly opaque governing process, the dream of achieving an inclusive and reflective European society seems further away than ever.

SCOPE

Understanding the dynamics and challenges of citizen empowerment and participation in a diverse, digital society and exploring, in empirical and/or experimental ways, how citizens could play an active part in designing, producing or running public services as well as democratic processes. The methods and tools, which are developed, should ensure that everyone (society in its diversity) has the capabilities and is motivated to take part in the process; all types of knowledge should be defined and included equally in the participatory processes. The research should take into account how this redesign can improve both the inclusiveness and the outcomes of public services and democratic processes. The research should also explore what are the requirements for participation to be successful, and what are the different impacts of the different participatory methods applied.

EXPECTED IMPACT

Online consultation rating ★★

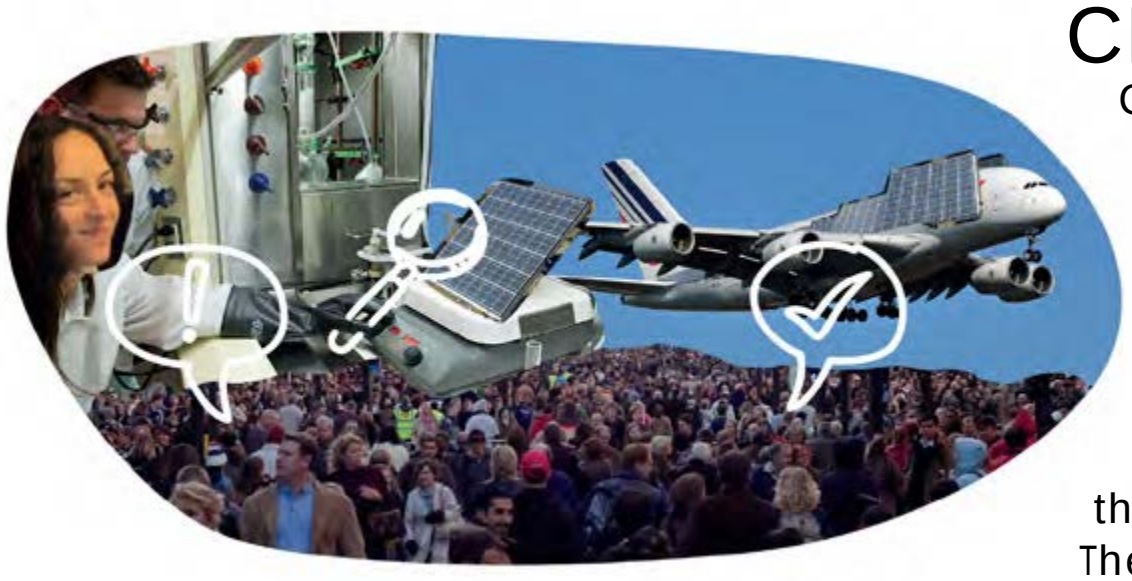
- Increasing collective responsibility and awareness; for citizens to start to understand their individual responsibility and opportunity for impact
- Finding ways, tools, and techniques to systematize the public participation and transparency of decision making. Citizens will learn about institutions, the decision making process, and the scales of decisions (learning by doing). There is reciprocity in these processes. Everyone involved (institutions, stakeholders, scientists…)will learn from each other
- Promoting new modes of citizen engagement to reduce corruption, increase transparency, and further good governance
- Respecting and treating all types of knowledge and know-how equally
- Engaging citizens in participatory processes in all stages of their lives
- Creating forums for citizen and policy maker dialogues to foster social cohesion and trust in governing institutions. Developing a simple and effective platform to collect and safely communicate data, train involved actors, and target community initiatives

10. Participatory governence

Meaningful research for community

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies



SCOPE

Research should explore:

- Ways for research to be evaluated, selected and prioritized according to its ability to contribute to sustainable development and potential beneficial impact to the community
- Better understanding of publicly vs. privately funded research for securing broad perspectives in research
- Ways of building on open access and open science

CHALLENGE

Currently there is no direct relation on how publicly funded research and innovation "gives back" to community. Academic research can be far away from everyday reality. There is a need for framework conditions for linking research, innovation and development projects closer to the potential benefit of the community.

The challenge requires:

- Democratisation of research funding (i.e. larger participation and better research assessment)
- A more transparent research process (evaluation, feedback, use of money, spin offs, and impact)
- Increasing research legitimacy (e.g. considering long term cost-benefit analysis and contributing to community's social and intellectual capacity-building)
- The general public should receive accessible information about the research process and impacts of research results

EXPECTED IMPACT

Online consultation rating ★

- Higher relevance of research through better contact with the grassroots
- Better returns for tax payers
- A deeper sense of engagement in research among citizens
- Results of important research would be put into use faster and more efficiently without private or economic interests
- There are also concerns that important research might struggle to prove its relevance in early stages of maturity and be rejected and that basic research would be very difficult to finance

Debating alternative economic models

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

C8. New economic models

CHALLENGE

The "for profit" economy does not answer to societal needs. There are concerns about the increasing poverty and income gap, social exclusion, and degradation of social values in the member states. (New) alternative economic models are existing and/or emerging around the world. They are based upon diverse social values instead of monetary values, and include different kinds of drivers (gift, exchange, rent, sharing...). Those new models may have potential to help sustain the current European social welfare standards and ensure social cohesion. Multiactors in the member states and on European level do not have the complete overview of content, advantages / disadvantages and potentials of these models. To make a robust policy strategy development it is important to have an overview and a common knowledge base.

SCOPE

There is an absolute necessity for a Europe-wide dialogue about these alternative economic models that exist and are emerging world-wide.

Method: Community Support Actions should design a multi-actor approach (scientists, policy makers, businesses, citizens, civil society organisations) to foster a dialogue about experiences with available alternative models, with the aim of:

- Exploring, assessing, benchmarking and evaluating alternative economic models to build a common knowledge base
- Dissemination to and engagement of all relevant stakeholders in co-creation activities
- Integrating and adapting models for regional / local context
- Developing strategies for policy implementation

EXPECTED IMPACT

Online consultation rating ★★

- Relevant actors have a common overview of available and emerging alternative economic models
- Policy makers and other relevant actors are able to implement strategies to implement the alternative models in their specific situation
- More diversity of alternative economic models in Europe. This might lead to an increased societal resilience
- Formation of new networks, systems, connections and cooperation that can address the societal needs
- A new challenge is added on Horizon 2020 – Challenge 8 – new economic models

Fostering equal opportunities in the digital era

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

The on-going digitalization of every-day life is predominated by big players/platforms, and a new generation of Internet provide great opportunities, but also threats to equal conditions for all. We must ensure that new digital technologies do not oppress individuals and create inequality. For this, it is important to ensure equal access to infrastructure cheap or even free devices and services, information (such as online learning resources), and tools (including the AI-based systems). Digital consumers can be empowered and become digital producers themselves.

SCOPE

Research should explore ways to implement a fully distributed information and communication system model. The next generation Internet should be a digital architecture for an information and communication system that covers everybody in an equal way. Every node of the net has similar possibilities and opportunities. Better understand inequalities and access in the next digital era (driven by Internet of Things, virtual reality, use of natural language in men-machine interaction etc), define them in terms of human rights and minimum skills required for ensuring equal opportunities. Finding ways of avoiding the monopolisation of the key capabilities of the new digital era, including of the data on various human behaviour used for training artificial intelligence.

EXPECTED IMPACT

Online consultation rating ★

- Access to digital technologies will be equal and universal for all EU citizens (“basic right of being connected” – including the right to disconnect freely)
- Digital empowerment becomes an important driver for bridging economic, social and generational gaps
- A change in culture of digital education (related to the way data is collected and used)
- Citizens have access to open learning resources, courses

13. Eucation (for sustainability)

Educational ecosystem as a driver of social innovation and local development

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Generally, the educational system lacks leadership models and well prepared teachers, technical support as well as motivated pupils. The critical and creative thinking in children is not stimulated and there is not a close enough connection to the surrounding societies. The system needs to adopt personalized approaches to empower people, to be adapted to the social needs and to ensure access to different educational levels in different geographical regions. Stakeholders should be more involved since schools play an active role in the local communities. There is a need for a culture of continuous learning (re-learning, adaptation, etc.) and therefore the educational system should work as “hubs” to reconnect educational agents.

SCOPE

Research should investigate how systematic learning could be used as driver for local innovation and development. Traditional schools should be supplemented or modified to become multi-thematic hubs, dedicated to education and collaboration among citizens of all ages. Every hub should be as integrated as possible with the human context and material culture. Thereby they should promote values and foster cooperation among learning agents (schools, families, territorial stakeholders, communities, technology, environment, etc.), to satisfy individual and community needs and expectations (including personalized and practical education), promote cohesion and inclusion, and support capacity building and the increase of social capital.

EXPECTED IMPACT

Online consultation rating

- Reduced school drop-outs
- Improved personalised education
- Much more engaging education for young people
- No shortage of specialists in certain fields
- Schools and kindergartens equipped with modern technology
- Teachers are motivated, well-prepared for their work, adequately paid and everyone respects them
- Well-educated people with critical and creative thinking build free and peaceful societies
- All education institutions form a single network
- Classes are held also in other organizations, not only in schools
- Teachers actively involve field professionals in classes and use innovative programmes/teaching applications
- Contribution to implementation of Global sustainable development goals (particularly SDG 4 and 7), taking into consideration all three aspects of sustainability (economic, societal and environmental)
- Proposals/solutions on how to develop and implement multi-thematic hubs and how to connect different forms of education (formal, non-formal, informal)
- Proposals on how to develop evidence based educational programmes fitted to national needs
- Innovative programmes for teacher’s education

Design thinking & doing and life skills for all

GRAND CHALLENGES :

C7. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

There is not enough design thinking & doing and creative co-creation approaches in schools. How do we design learning activities, settings and processes to foster the acquisition of design thinking & doing and life skills? How to integrate these settings and processes in the curricula and, simultaneously, rethink limitations of existing curricula? A lack of focus on how to support self-directed and informal learning can be observed. How do we foster educating creators of 'content' and not only consumers of 'content'. There is a need to focus on the design process instead of focusing on end-results. Only one teacher per class is not enough to achieve differentiated teaching and answer the needs of all children in class. The rigid silos of academic fields and funneled [non-bridgeable] educational tracks, leaving no room for flexibility. Current curricula are conservative and linear: not "à la carte". The tension between historically fundamental subjects and an updated common curricular core at European level which reflects societal needs is challenging.

SCOPE

The research should investigate the power of design inquiry, thinking & doing/ as a mean to foster creativity and innovation and boost learners' abilities to think "out of the box" (set and solve the so called wicked or "ill-defined" problems). By adopting a system's approach (systemic) in studying the scaling up and potentialities of design thinking & doing from individual to communities' organizations (learning ecosystem). The research should identify good practices and methods in developing creativity. Also, the development of concrete approaches and tools in order to enable teachers and schools to implement design thinking and doing as a core educational process. The research should develop methods of diagnostics of students' talents (indicating tools, stages in development of psychological knowledge, evaluation of effectiveness of changes introduced) in order to spot and encourage particular skills and inclinations.
Also, an evaluation of the implementation of design thinking & doing at every stage of the educational process and analysis of impact of the changes achieved.

EXPECTED IMPACT

Online consultation rating ★★

- Design thinking & doing-based education is seen as a key issue in tackling Grand Challenges and Sustainable Development Goals.
- Creative citizens (from kindergarten kids to senior citizens) who are open, courageous, full of self-esteem, free from inhibitions, ready to take action and responsibility.
- Capacity for collective action and solution finding at community level.
- Improved innovation action of the European social, environmental and economic spheres.
- The wellbeing of society is improved by the innovative approached to sustainable development.
- Job creation raises because people realise what they are good at, new professions and research centres emerge
- The society is happy because people are fulfilled at work, mentally healthy, and less frustrated.

13. Education (for sustainability)

Learning for society

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a Changing World – inclusive, innovative and reflective societies

C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

A more sustainable economy and ways of living, that promotes well-being, require a more balanced position between the common good and the individual good. For this shift to occur, citizens need to be educated in a life-long process, on the balance between personal fulfilment and the benefits of collective goals. Society needs to move from "I" to "we", building motivation and trust for change. We are too individualist, which exacerbates social problems. Society needs to re-think the community's political integration (participation in the collective framework and in the global dialogue), reflecting upon the social and economic cohesion in diversity. Freedom needs to be redefined. There is a need to look for interests, responsibilities and habits of people and define their fundamental needs.

SCOPE

Research should explore the following aspects:

- Educational leverages to the sense of community and common good/progress
- Promoting collective intelligence (working together, consultation and co-creation)
- Facilitate the transformation of "education into action" and development of a new civic sense
- Promoting by education the intergenerational connections for the constant rethinking and sharing of values and priorities
- Ways to acknowledge the community's problems and understanding the community/ies culture/s
- Ways to provide holistic educational lifelong learning opportunities capable of empowering people to take charge of their continuous learning and development

EXPECTED IMPACT

Online consultation rating ★

- Developing a sense of community and understanding of mutual dependencies and the effects of one's choices to others' lives
- Social cohesion: respect for human rights in order to be able to protect one's own and not hurt those of others, especially the rights of minority groups
- More collective thinking, citizen participation, and achieving common goals
- Promote innovative needs that allow to take risk and fail
- Contribution to SDG`s (Global Sustainable development goals) and in particular in SDG4 and SDG7

The 25 citizen-based research topics that were not refined at the CIMULACT Pan-European Conference

Social economy

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

The "for profit" economy does not answer the new emerging social needs. Mainstream economy has problems coping with current challenges (ageing, poverty, youth unemployment). There is an increasing need for change of the current social model that led to a degradation of social values. Commercial rivalry leads to poverty and social exclusion, raises public insecurity (wars, terrorist attacks, and civil disturbance). New economic models are emerging and include different kinds of economies. Governments/ institutions could catalyze the energy and strength coming from different stakeholders (citizens, enterprises, associations NGO) and promote a new way of networking and of recognizing the social values in order to find proper economical answers.

SCOPE

Research should explore promising economic models that answer societal needs and investigate supporting infrastructures. This research can be firstly approached by a comprehensive inventory of what has already been implemented and by promoting further studies (scientific production and manual of good practices). This research should involve citizens and multi-actors and analyze ways to make the transition from the current economy to new models. The criteria of success of these new economic models should be sustainability, education, equality, respect of environment.

EXPECTED IMPACT

Online consultation rating ★★

- Cooperation: several new agents of different sectors working in a network, enhancing the spirit of social economy. In 5/10 years, the redistribution of tasks among people to bring added value to the community (economically and in terms of time
- Sociocracy: in 2050 people becoming the decision centre and – based on more sup portive actions – reaching a level of greater cohesion and satisfaction
- Creation of a participatory platform: identification of good practices and implementation of new projects for identifying the communities' needs and the needs of other agents

11. Social economy

Basic universal income so nobody is left behind

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

The uneven distribution of wealth and the decreasing value of labour in all sectors, call for sustainable wealth distribution systems outside of current capitalism. The introduction of the Basic Universal Income (BUI) can contribute many benefits in unequal societies and ensure a decent human life to everybody. It can contribute to solving the problem of poverty, improving people's self-esteem, and reduce the basal existential stress and diseases. In addition, it can provide the new forms of distribution of value required for dealing with digital labour, robotization and peer-to-peer production models. BUI can be an up-to-date, evidence-based, reformulation of the welfare state, today in crisis.

SCOPE

Theoretical and empirical research should be developed to investigate ways to implement a BUI. This implies a preliminary understanding of the concept and its effects, through the study of best practices, and a study on the cultural change of the value perception of working. Then, the research will explore the diverse models of BUI with regard to the diversity of cultures in Europe. Finally it will investigate the question of the source of funds and the long-term sustainability. A pilot project that introduces BUI in certain Member states should be done. It implies the selection of a specific testing group of people, the piloting of different models of BUI and the assessments of its effects.

EXPECTED IMPACT

Online consultation rating ★

- Contrasting the cycle of poverty and helping the poor
- Increasing quality of life for all and wealth creation for all
- Improving self-esteem and reducing disease
- Allowing free choice of job and so increasing productivity
- Increasing of the value of quality work.
- Getting paid for activities frequently unpaid
- Making people financially independent from the labour market and less vulnerable against employers
- Reducing the total cost of the administration dealing with welfare

Community building development

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing
C6. Europe in a changing world - inclusive, innovative and reflective societies
C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

Many community building initiatives are emerging. Examples are time banking, social streets, sharing economy initiatives, community gardens, etc. Related research is under way on social innovation, governance, social networks and social capital. Digitalisation is enabling the growth of social movements. In an increasingly complex society, communities and processes of community forming are more important than ever.

How to ensure the permanence of these communities is today the question. There are many issues to tackle in order to foster community development such as: decentralization, social activism, community spaces, digital empowermen, migration, status gap

SCOPE

Theoretical and empirical research should be developed on infrastructures that could underpin inclusion, cohesion and collaboration within hybrid and diverse populations in the long term. Research areas might regard:

Decentralization: Developing local communities, their infrastructure, to keep the inhabitants and provide needed services
Social activism: Building activities, actions, platforms of engagement: involving citizens in all phases of decision-making
Community spaces: Building and evaluating new physical/social spaces for collective action and collaboration. Both should allow inclusion across generations and skills.
Digital empowerment: Building and evaluating digital tools for collaboration, collective intelligence and collective action.

EXPECTED IMPACT

Online consultation rating ★

- People have control over their own life. This will substantially change economic and state activities
- Securing public participation in co-creation of community life and decision-making
- Diversity and inclusion will free creative and innovative potential of the communities
- Self-sufficiency, interdependence, responsibility, cooperation, sense of belonging and self-esteem of the residents of the settlement
- The community can palliate the State deficiencies

11. Social economy

Alternative economic model

GRAND CHALLENGES :

C1. Health, demographic and well - being
C6. Europe in a changing world - inclusive, innovative and reflective societies
C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

In the current situation, the competitive culture resulting from our growth-based economic system hinders the inclusion of the most vulnerable members of our society. The current model is inadequate because of several reasons:

- Money is the measure of wealth. People are judged on the amount they earn.
- There is an uneven distribution of wealth. The rich get richer and the poor get poorer:
- It does not respect the (ecological) limits of planet Earth
- Short period economic interests dominate decision making.
- The two main objectives of the EU 2020 Strategy – competitiveness and employment – are in contrast to each other.

This has to change. Alternative, holistic, economic models and approaches that focus on happiness and cooperation are needed to support new forms of communities that can provide room and respect for all.

SCOPE

Research should investigate alternative economic models that promote sustainable ways of living. It needs to monitor, promote and expand the most relevant and efficient models, so policies can maintain the best possible catalogue of indicators. The directions to investigate include: basic income; reward for helping others/hard work/morals; economics of happiness; models that deal with the complexity of the transition of problems at different geographical scales; existing alternative models, based on a perspective of “lessons learned”; system of incentives that supports the current economic model and the needed incentives that would promote a shift to a new economic model.

EXPECTED IMPACT

Online consultation rating ★★

- Increase of visibility of companies that do not adhere to the constraints of growth
- Introduction of alternative economic indicators instead of / besides GDP
- Sharing economy, open access to the results and good practices of research and development
- A cooperating (win-win type) economy instead of the “competitive”/competing one
- Spreading of the economy of kindness: timeshare, payment without money
- A society which focus on wealth creation for all through education and opportunity

Data for All – Share the Power of Data

GRAND CHALLENGES :

C3. Secure, clean and efficient energy

C4. Smart, green and integrated transport

CHALLENGE

Today's data-driven economy and society can exclude people from knowledge and decision-making. Limited citizen access to data, the lack of simple, open data analysis instruments, and curtailed public participation in the generation and utilization of data for decision-making are all critical challenges this research topic seeks to overcome. Concurrently, there are challenges to overcome in making digital- and data-literacy a widespread knowledge base, and in facilitating citizenled, data-driven policy craft.

SCOPE

Research should aim at finding ways of safely and securely sharing the power of data with non-specialists and individual citizens for use in their own lives and for participating in collective decisions.

Two sets of challenges need to be addressed by research on:
- People-centered challenges: data literacy, personal data privacy, co-production of data, data access ethical data use, and
- Data-centered challenges: quality of data, openness of data, standardization of data.

EXPECTED IMPACT

Online consultation rating ★

- Increasing citizen participation in decision-making processes
- Urban Management Improvement (Traffic, Infrastructure, Resources, etc.)
- Fostering knowledge-based decision-making by citizens and communities
- Increasing transparency, Limit corruption
- Improved access to quality, standardized, resilient data setsAccessible interfaces for data analysis and visualizations
- Improved digital and data literacy
- Demonstrating successful use cases for public access and utilization of data for governance issues

10. Participatory governance

Snakes and Ladders – Connecting Scales of Issues and Actors

GRAND CHALLENGES :

C3. Secure, clean and efficient energy
C5. Climate action, environment, resource efficiency and raw materials
C6. Europe in a changing world - inclusive, innovative and reflective societies
C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

The growing disconnection between local citizens and global actors creates conditions for mistrust and abuses of power. Both sides remain convinced of the 'correctness' of their actions, and no platform for deliberation and sharing perspectives exists. These issues are compounded by the widening perception gap in understanding the consequences of local actions and behaviors as they are related to global activities and challenges, and vice versa. Even as global issues continue to impact localized ways of living, fueled as they are by local behaviors, it exists few common forums to help build understanding across these scales.

SCOPE

Research should explore possibilities for exchanging knowledge and for tak-ing joint actions in response to shared challenges between actors on diverse scales. This can include transdisciplinary development of practical, methodological, and technological experiments linking actors across scalar is-sues. Research projects can also include design and implementation of new governance structures, transparency policies, and decision-making processes.

EXPECTED IMPACT

Online consultation rating ★

- Establishing trust between citizens and decision makers
- Organizing inter-level meetings across power base
- Establishing transparency policies and ethical participatory processes
- Restoring a collective consciousness among citizens
- Giving citizens a critical comprehension of social issues in order to under-stand why/how decisions are made
- Recognizing situations to engage citizens in order to find a balance
- Changing cooperation modalities and build bridges between sectors to better attain sustainable approaches
- Shifting some decision-making power to lower governance levels
- Providing avenues for greater involvement of citizens

10. Participatory governance

The Transparency Toolbox

GRAND CHALLENGES :

C5. Climate action, environment, resource efficiency and raw materials

C6. Europe in a changing world - inclusive, innovative and reflective societies

C7. Secure societies - protecting freedom and security of Europe and its citizens

CHALLENGE

Governance processes remain opaque and inaccessible to the general pub-lic, leading to advanced forms of distrust in the institutions and organiza-tions charged with steering societies. Decision-making, priority-setting, and policy-crafting remain shrouded by layers of bureaucracy, inefficient public communications, and limited channels for citizen input. Rarely employed participatory approaches to social governance fail to accommodate citizen sentiment and opinion, and contemporary methods ignore the utility of the powerful technologies at our disposal.

SCOPE

Research should explore pathways towards transparency in diverse societal contexts and ways to transform processes of governance so they can be accessible to all. Secondly we need to understand under which conditions citizens' power, agency and influence impact upon outcomes of decision making processes. Research shall also examine barriers and restrictions to transparent governance, alongside the enablers and benefits that transparency is expected to deliver.

EXPECTED IMPACT

Online consultation rating ★★

- Developing "citizen-friendly" decision-making processes
- Finding ways, tools, techniques to systematize the transparency of deci-sion making
- Examining the citizen role of voting: awareness of the importance of the elective act
- Setting up the citizen of tomorrow [future generations] in the decision process
- Developing platforms for politicians to give arguments about the "why" of public policies and decisions
- Creating systems to help citizens navigate in this multitude of data and identify actionable levers
- Setting up the citizen of tomorrow [future generations] in the decision process.

3. Work life balance & Wellbeing

Finding a balance in a fast-paced life

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

CHALLENGE

A number of today's pressing challenges are associated with fast paced life:

- Rise of diseases such as high blood pressure, heart issues, damaged immune system, depression due to lack of activity/exercise, stress, lack of leisure time, isolation
- Limited time for personal, social and family life – rise of electronic relationships
- Some companies offer employee benefits but demand long working hours
- Pressure for continuous and increased productivity together with desire/ambition of people to earn money and status
- Too little knowledge on stress factors of mental/emotional work (e.g. care)
- Anxiety is a driver (people fear change because they do not know what might come), this anxiety hampers them to act so that they remain in the current patterns of behaviour.Imbalance between genders, age categories and regions with respect to information and opportunities on the labor market.

SCOPE

Research and innovation activities should explore ways to support citizens to manage their daily lives in a balanced way by valuing relationships, taking breaks and creating opportunities for recreation. Aspects could be:

- reducing stress at the workplace, improving the quality of educational campaigns, achieving better efficiency at the workplace, teaching people how to set goals
- better transport options including alternative ways to travel such as teleportation and space travel for saving time
- ensuring more accessible environments
- digitalisation of many of the "analog" activities
- overcoming the notion that time is money

EXPECTED IMPACT

Online consultation rating

- Happier and more efficient employees, who will be happier in their personal lives as well. This will have a positive impact on the health sector and society in general
- New adjusting of activity and work (welfare economy) + unconditional basic income
- The quality of life of European citizens will rise
- Decreased competition for resources to ensure financial security for the individual and the family
- This would define an axis of prevention and thus reduce costs associated with taking in curative care
- This will make us a more resilient society to further future change

3. Work life balance & Wellbeing

Promoting well-being through relating environments

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

Currently environments promoting well-being are rare, even though:

a) problems at work impact productivity and performance

b) many people are vulnerable in terms of mental balance, physical health, confidence

c) human relationships affect mental and physical wellbeing

d) impact on natural environment is evident.

Additionally, there is a strong divide between a short term/individualistic approach versus a long term/ inclusive approach, which can be summarized in a a dissonance between the willingness to act towards one's wellbeing and the ability to do so, a sense of instant gratification instead of planning in the long-term, a "self-centred" approach to wellbeing, shrugging off responsibility for issues happening away from our shores.

SCOPE

Research should be developed at different levels:

the working environment: environments that promote teamwork, pleasant atmosphere, cooperativeness; spaces designed for people to relax and strengthen interpersonal relationships; Flexible work conditions, work in the virtual sphere.

the community level: group counseling at a municipal level; well-designed spaces for various activities; mentorships and inter-generational programmes to foster relationships, transfer of skills.

the individual level: empowering citizens through education, improving digital literacy, upgrading learning environments to motivate&facilitate learning.

the governmental levels: transparency, accountability.

EXPECTED IMPACT

Online consultation rating ★★

- Citizens appreciating their way of life and surroundings in a holistic manner (mental and physical), with greater responsibility towards future generations
- Less discrimination / division by social groups/ stereotypes
- Technologies that are harmless to society, no tech addiction
- Aesthetic and acceptable environment
- Developed, accessible and modern infrastructure
- Safe, free, non-offensive internet, positive without censorship
- Comfort – comfortable premises and environment

4. Sustainable food

Good food research

GRAND CHALLENGES :

C2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy

C5. Climate action, environment, resource efficiency and raw materials

CHALLENGE

Food is the most basic need for human beings. Therefore it is impacting both mental and physical health in the most direct way. We have to continuously research and explore nutrition quality of the food we eat and – if required – change the way we deal with food. Knowledge on nutrition is evolving continuously. Consumers encounter conflicting nutritional information from various sources ranging from the private sector, academics, governments or media. Information must be more accessible, transparent and user-friendly and tailored to users' needs in order to allow consumers to make more informed food choices for both individual health and society.

SCOPE

Research needs to explore ways to guarantee the provision of sustainable and nutritious food. Secondly we need to identify impacts of new research driven food paradigms (e.g. biotechnology) on health, economy, environment and sustainability in a comprehensive and systemic way. Applied research can provide the knowledge and information base. It is also important to ensure the relevant dissemination of outcomes or their use in respective regulations, policies etc. Implementation of educational programmes can create awareness and promote the use of new food at schools.

EXPECTED IMPACT

Online consultation rating

- Minimising the negative impacts of agri-food production and food-related consumer behaviour on land and environment
- Identification and description of possible risks related to the application of new technologies in the food production and processing
- Ensuring the neutrality and objectivity of research, choice of research topics and full presentation of the outcomes
- Providing optimal distribution of water in drought periods
- Assess and describe the influence of nutrition on human health (the role of individual factors and their combination) and disseminate the clear information on optimal eating habits
- New plans for area utilisation, policies and regulations related to the new food-generation techniques

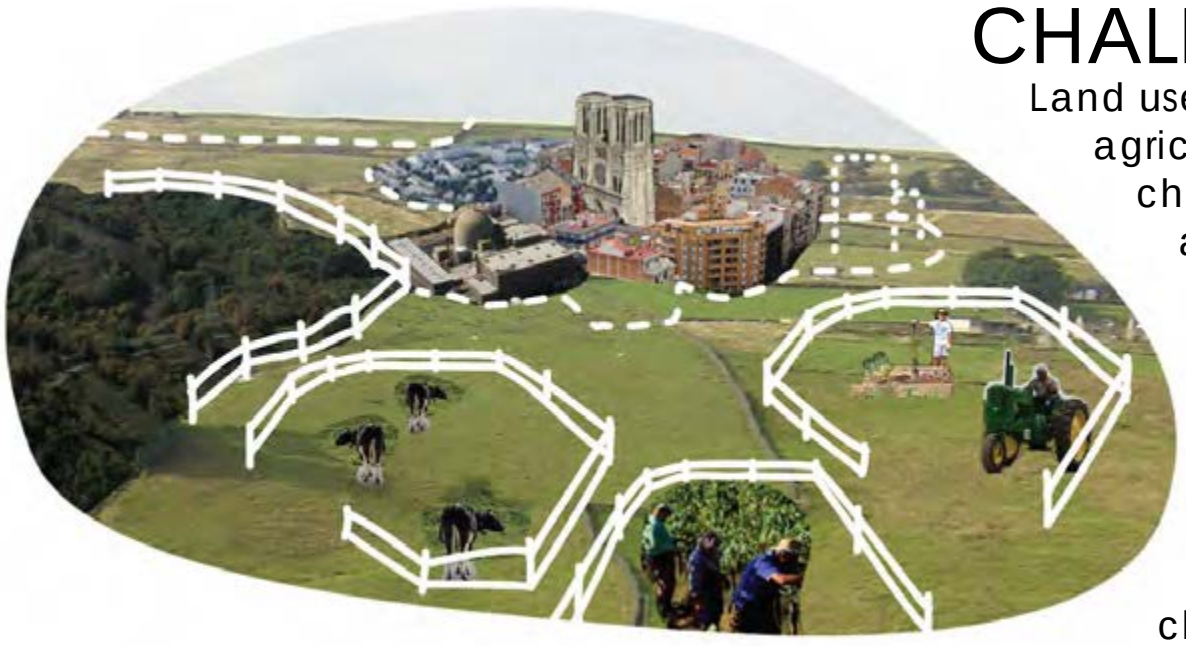
4. Sustainable food

Responsible use of land

GRAND CHALLENGES :

C2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy

C5. Climate action, environment, resource efficiency and raw materials



CHALLENGE

Land use faces a series of challenges: Intensive agriculture with the adverse effects of chemical substance use and soil erosion and its consequences on water as one side of the problem. Moreover high pressures on arable land derive from an increasing sealing for housing and infrastructure for an increasing (world) population and growing distances between production/ distribution/consumption. Also climate change has a huge impact on land use patterns and production processes.

SCOPE

We need to manage the confrontation between a growing demand for high quality food, and declining land space for agricultural production. Therefore research is needed to develop efficient systems for governing and utilizing land, and for using resources responsibly for sustainable agricultural production.
Multilevel governance is required to solve resource use conflicts and produce synergies to ensure the sustainable management of soil, water and space, taking into account the growth of population. Understanding the climate change impact, and developing innovative sustainable production processes can be approached through soil-land-water research and through responsible research and innovation.

EXPECTED IMPACT

Online consultation rating

- Land, water, (and sufficient) food without residues (e.g. synthetic pesticides…)
- Stopping the land degradation (possibly improving its fertility)
- Balance between food security and energy use
- Balance between growth, quality, and production
- Reduction of the ecological footprint, within an economy of low carbon use, namely regarding public transportation, commuting, livestock production and tourism
- Strengthen the local economy

2. Holistic health

Health empowerment through “Everyone’s science”

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

In the past, the family doctor was the only trustworthy source for health information. Today “Dr. Google” delivers an excess of information. At the same time citizens experience a delay and lack of communication of publishing scientific findings. Scientists on the other hand are trained to produce scientific outcomes, not to talk and engage public. Nevertheless, there are some positive examples of communication of science but little assessment of their effectiveness has been done. All this raises the need to reflect on ways to ensure easy access to reliable information including and ways for a direct transmission of research results from scientists to the people. Also the possibility to provide open access to information is to be investigated.

SCOPE

An open dialogue and communication (science - society dialogue) on health related research and innovation insights and activities should be explored and experimented, so as to empower citizens to look after their well-being themselves.

On the side of the recipient: target-oriented communication methods should be developed, and science should be involved in the development of new apps (in order to ensure that data will not only be collected, but also correctly interpreted).

On the side of the sender: the charge of disseminating the results should be taken also by the responsible of the research: in order for this to happen the medical curricula should be revised decreasing the weight of “classical topics” in favour of courses on how to efficiently communicate with the patients.

EXPECTED IMPACT

Online consultation rating ★★

- Longer life expectancy
- Happiness increases with the globalization of medicines
- Those with little or no financial resources would gain access to prescription drugs
- Intermediaries and media would transmit accurate information
- Healthier people, better work performance and more profits
- Discovery of non-pharmaceutical alternative medicines
- A society that is well informed and aware
- Mutual basis of trust
- Reinforcement and training of communication skills in health sciences

2. Holistic health

Deconstruction of age

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies

CHALLENGE

The way society deals with aging is important because it affects its fabric on multiple levels: demographics; the development of talents, immigration / emigration; the differences in income for different age groups; the choice of the “duty to work”; Quality of life; healthy lifestyle; availability of health care; ensuring mental health.

Also notions of aging (including prejudices) play a key role in perceptions on life’s worth such as: ‘free time is to achieve things and working time is a burden’, ‘Young are dynamic, old are slow and ineffective’, ‘We live one life waiting for “the other part”. We are slow to get aware of the importance of living the present moment’.

A more comprehensive understanding of these mechanisms will allow us to overcome the limitations induced by ageing process in learning and health, while keeping the advantages earned through experience.

SCOPE

Research should strive to understand the following aspects:

- neurobiological underpinnings of learning throughout lifetime to identify the key lifestyle factors promoting neuroplasticity and neurogenesis
- fundamental biological and psychological processes involved in the ageing process
- the conditions promoting intergenerational relationships
- the societal and economical impact of the melting of sociocultural borders between different ages
- the impact of the adoption of healthy life-styles and lifelong learning on employment, innovation and social change

EXPECTED IMPACT

Online consultation rating

- Societies better prepared for the huge challenge of demographic change ahead of us
- Improved quality of life and better interaction between young people and seniors

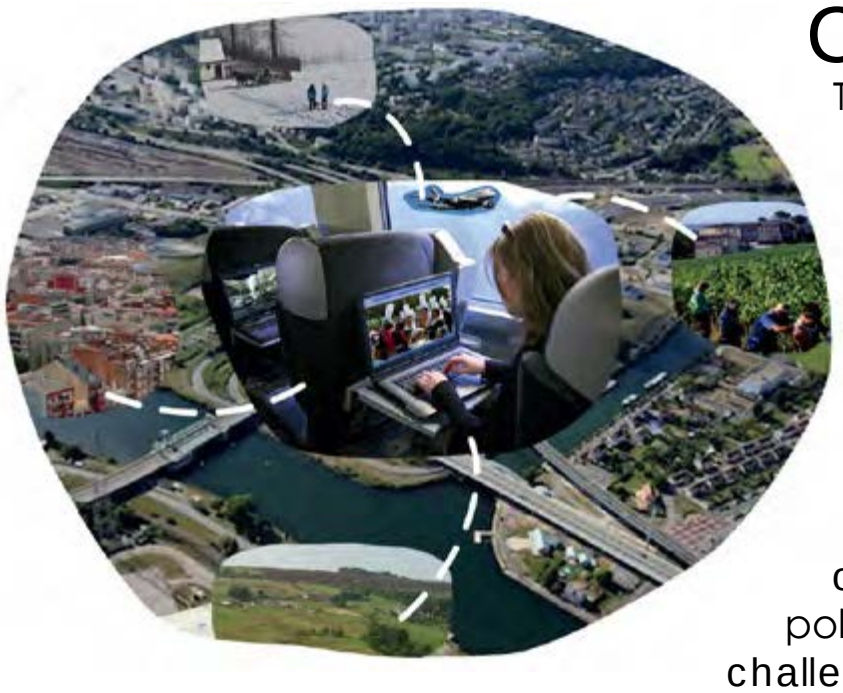
12. Technologies at the service of humanity

Here, there and everywhere

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

C6. Europe in a changing world - inclusive, innovative and reflective societies



CHALLENGE

Today, most research is on physical mobility, which is getting affordable for money, but is still time and resources consuming. But almost no research is being done on the effects of virtual mobility and reality. Very powerful realities are being opened and there is very little knowledge of how they will affect several important aspects such as self-identity, personal freedom space, physical health/addiction, personal data protection, national identity. Moreover, connectivity and participation need to be increased in order to overcome the isolationism of some countries due to political and economic difficulties. This implies facing cultural challenges and overcoming economic disparities, because owning digital devices is expensive and virtual connection is still limited.

SCOPE

Research should explore ways individuals can be encouraged in the future to move from their current context (here), to different contexts (there), and ultimately to acquire a global view (everywhere) using both physical and virtual reality tools.

There is a need for technological infrastructures and equal internet access, and for public investment into communication and mobility. This also calls for an interdisciplinary approach on the economic aspects of virtual mobility and on the medical and psychological aspects in order to understand the risks of physical and virtual mobility, and eventually raising awareness about them.

EXPECTED IMPACT

Online consultation rating ★

- More tolerant societies, more acceptance and respect, and less discrimination (religion, sex, race, sexual orientation, age…)
- Virtual communication everywhere in the world and access to Internet and knowledge for everyone
- Blurring of borders (easier to come in and out)
- Social aspect: interaction - increase in socialization, decrease in loneliness
- Economic growth and optimization of the division of labour. Progress in different fields as a result of cooperation and exchange of experience and team efforts
- Personal enrichment through exchange of experiences and ideas with the others
- Taking more appropriate decisions for personal development
- School for digital nomads

1. Personal development

Rethinking (the new) job market needs

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

SCOPE

- Investigate models of resilient educational ecosystems capable of responding in a reasonable time to the ever-changing demands of the job market and foster the acquisition of an up-to-date knowledge, ethical skills/competences and social accountability
- Develop models of sustainable growth that allow for upward social mobility (status, remuneration), inclusiveness, personal fulfilment and societal well-being

CHALLENGE

- There is a lack of cooperation between businesses and educational institutions. During education the necessary knowledge that would be useful in the professional life is not acquired. There is no separation between the theoretical and practical knowledge. There is a volatile operational framework which needs are increasing and on the other hand the educational system is static and inflexible. Furthermore, there is no institutionalized practice and no incentives are given to companies to provide internships to students. On the other hand, schools do not cultivate the institution of practice which is nevertheless essential to discover one's talents and skills
- How to structure a compelling dialog between education and companies in order to guide students towards effective choices?
- Lack of multi-disciplinary and trans-disciplinary approaches
- Lack of integration of local initiatives.
- Lack of team work and open-minded attitude for networking
- Lack of vision in promoting the need for a new breed of reflective practitioners and socially-responsible entrepreneurs
- Lack of ethical and social accountability in business (new relation between businesses and agencies)
- There is no qualification framework [no recognized criteria of excellence, measures of success, trophies or prizes, or "academic" rewards] for practical knowledge, and informal education
- Practical jobs are disappearing while ever more jobs will require technical skills as well as new forms of "STREET SMARTS" (also referred to as soft skills)

EXPECTED IMPACT

Online consultation rating

- An important step is the cultivation of an education system that promotes experiential training and lifelong learning
- To make people happier, more satisfied, therefore – more productive
- Increase of job satisfaction (life quality, health, etc.)
- Reach a better level of correlation between the education system and the needs of the job market and sociopolitical needs
- From the perspective of business groups, when employees have jobs close enough to their skills and interests, the working mechanism works better and innovative ideas and products are generated
- Society satisfied with life/work (right choice of workplace). Economic development
- Creativity – ideas and solutions are always available to help the companies
- More productive learning process (teachers and professors develop)
- Understand strengths and responsibilities
- Fighting and minimizing unemployment
- Trust of the employers concerning the quality of education: titles and diplomas versus competence (skills)

#13. Education (for sustainability)

SWOT (Strengths, Weaknesses, Opportunities, Threats) Technological empowerment

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

There is a lack of awareness of the potential of technology for didactics and learning. Today's challenge is uncovering "Strengths Weaknesses Opportunities and Threats (SWOT)" of new technologies in empowering people in self and life-long learning and making them equally accessible to all.

On a more general note, we need to better understand how to direct new technologies towards the well-being of the society and the individual and possible relationships between "smart" tech and human intelligence.

SCOPE

Research should investigate the usage of the latest technology in education, with more creativity and "out of the box" thinking and possibility of virtual education with a greater attention to cognitive processes of students. This can change the form, content and processes of education.
The SWOT analysis of technologies needs to be studied, in order to understand how to design technologies making people "smarter". Going beyond and reinventing ways of producing knowledge, reintroducing creativity in the process and making it driver of intelligent collective dynamics is part of the research scope. Finally, research needs to explore ways, models and solutions of technology-use in the creation of social and economic synergies on local and global level.

EXPECTED IMPACT

Online consultation rating ★★

- Improve the educational ecosystem into a viable, attractive, sustainable, human-centred setting
- The development of new / creative ways / learning methods
- Enable choice between learning methods
- Metrics to ensure 100% access
- Bring isolated places into the modern world
- Fears of technology are reduced
- Societal awareness of the threats of technology misuse
- Better combinations of "smart tech" and human critical thinking

13. Education (for sustainability)

Ecological future education

GRAND CHALLENGES :

C5. Climate action, environment, resource efficiency and raw materials
C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

There is a gulf between academic knowledge relevant to ecological futures and citizens' knowledge. There is a lack of robust evidence and longitudinal research on the long term effects of current provision and practices in learning for ecological futures. Effective training and knowledge transfer systems need to be designed, piloted, implemented, and evaluated together with stakeholders. Our knowledge and thinking of the conditions of human life is fragmented, and this fragmentation can be traced in the education and vocational training systems too. There is a challenge of "learning" rather than teaching, a need to better motivate the added value of the ecological perspective for the individual making ecology relevant and useful for all.

SCOPE

Research should assess the relative importance of two different approaches to create systems thinking:

1) 'The education path': Improve the knowledge transfer in education and address that we live in a fast changing world. The use of innovative learning methods that stimulate creativity such as serious gaming should be investigated. Develop efficient eco-learning concepts such as teaching the value of ecosystem services.
2) 'The narrative-action-path': It is not primarily about educating people, but engaging them in 'good' stories – both as 'ordinary' citizens and as politicians/decision-makers. Research on narratives as mobilizing forces for behavioural change in politics and society today.

EXPECTED IMPACT

Online consultation rating

- Better educated teachers
- Shifting of the paradigm to broaden the concept of ecology to include culture, technology and social aspects
- Different and new ways to raise public awareness
- Be more creative in involving individuals and communities in ecological learning/ connecting with nature
- Making an "informal" type of education "normal"
- Bring forward new knowledge on how long-term perspectives have been attempted brought into decision-making processes today
- Create, test and implement new effective education and information systems

Transforming technologies for planet and people

GRAND CHALLENGES :

C5. Climate action, environment, resource efficiency and raw materials
C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Currently, technological development is being driven by short term industrial decision-making, without considering ecological and social impacts and long term effects. Yet, a re-assessment of new technologies in the light of new knowledge about interconnected earth system and global societies is needed towards a more responsible and conscious use of technology for the benefit of the planet and its people. This requires a democratic approach to technical innovation that includes citizens and established organizations. Therefore the challenge is about:

1. Training, raising awareness
2. Integrating ethics, accountability and participation into technology development
3. Using technology for more responsible interventions
4. Assessing impact of technologies

SCOPE

In order to ensure that technology is being used for the wellbeing of people and not primarily for maximizing profits, research should consider to address one or several of the following aspects:

- Develop practices of participatory development of sustainable technologies
- Creating mandatory curricular programmes that address the subjects of technology and a more sustainable use of resources
- Establishing a legal framework for responsible technology development and monitoring the promoted practices
- Conceiving new policies and providing financial resources for the research and development of new technologies that are more environmentally friendly
- Reducing bureaucracy, speeding up the research and implementation of new initiatives

EXPECTED IMPACT

Online consultation rating ★★

- Reduction in waste and better recycling of resources
- More responsible consumption
- Use of public transports that are powered by “clean” energies
- More active [environment friendly] intervention in society and in decision making
- Make necessary changes to the research and innovation structure itself
- Creation of eco-villages
- Improve public education
- The science landscape is changed by the core competency of citizens’ new power structures, new disciplines, and new fields emerge

Personal and organizational choice management

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing
C6. Europe in a changing world – protecting freedom and security of Europe and its citizens

CHALLENGE

Uncertainty is rising due to a rapidly changing living and working environment. To meet this challenge, citizens need evolving social and technical skills. They need to be able to make individual choices and to manage career opportunities because in the 21st century the ability to make choices and the direction these take are determined both by personal skills and by the capacities and capabilities of your communities.

SCOPE

Promote life-long learning and choice management to increase organisations', communities' and individuals' abilities to cope with an uncertain future. Citizens insisted "we need solutions that promote life-long learning on both an individual and organisational level. Solutions can be social, organisational as well as technological innovations."
Citizens have defined objectives and solutions on different topics:

- Daring to be different
- The education system
- Re-definition of welfare
- Re-definition of values
- The level of well-being

EXPECTED IMPACT

Online consultation rating ★★

- Develop pedagogies that empower individuals to manage life choices in a changing world
- Study ways to enable continuous learning for individuals, organizations, and communities
- This enables individuals to be adaptable by continuously evolving their skills
- All types of organizations would benefit from more adaptable members
- This shifts risks and responsibilities from the state and employer to (vulnerable) individuals

(Business)Models for balancing time

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing

CHALLENGE

- Fostering work-life balance by shorter working hours and opportunities to work from home occasionally
- More flexible working hours and payment models: focused not on the hours put in, but on the task or the outcome
- Allow for people to choose different areas of life which make people feel safe, comfortable and happy
- To reduce waste of time for commuting between work and home (in large urban areas) and for empty chit-chat at offices
- Reducing segregation [by more flexible working conditions]

SCOPE

Experimenting with or setting up work-life balance pilot programmes e.g.

- integration of 'free time' in the work place
- new ways of employment where employees are more like volunteers / freelancers
- [ways to] increase the use of technologies in companies to enable more flexible employment relations

Assessing

- the impact of work-life balance policies,
- the impact of different business models on workers' time autonomy and quality of life
- the psychological acceptance of new forms of work, both individually and by society

EXPECTED IMPACT

Online consultation rating ★★

- More options to balance work, family and community life
- Increase efficiency by avoiding empty and unnecessary work
- Shifting focus from work hours to work results will lead to more time autonomy, thus increasing creativity and the quality of life
- In the long run this will contribute to underpin individual lifestyles
- More effective use work and leisure time reducing the overload and stress
- The emphasis on giving feedback to employees and awareness of their beneficial effect on the enterprise will increase their motivation and higher work efficiency
- Under certain conditions this can reduce our ecological footprint
- There are also concerns that shifting focus from work hours to work results can lead to less time autonomy and exploitation of workers, and that work-time flexibility will promote free-riding

Meaningful research for community

GRAND CHALLENGES :

C6. Europe in a Changing World – inclusive, innovative and reflective societies

SCOPE

Research should explore:

- Ways for research to be selected and prioritized according to its ability to contribute to sustainable development and potential beneficial impact to the community
- Explore direct research as a mean for an increased research relevance
- Better understanding of public vs. market driven research for securing broad perspectives in research
- Ways of building on open access and open science.

CHALLENGE

- Currently there is no direct relation on how publicly funded research and innovation "gives back" to community. There is a need for framework conditions for linking research, innovation and development projects closer to the potential benefit to the community.

The challenge requires:

- Democratisation of research funding (i.e. larger participation and better research assessment)
- Popular scientific integration (i.e. clarification and integration of science as a distinct but integrated sector of activity)
- Increasing research legitimacy (e.g. based on long term cost-benefit analysis)

EXPECTED IMPACT

Online consultation rating ★

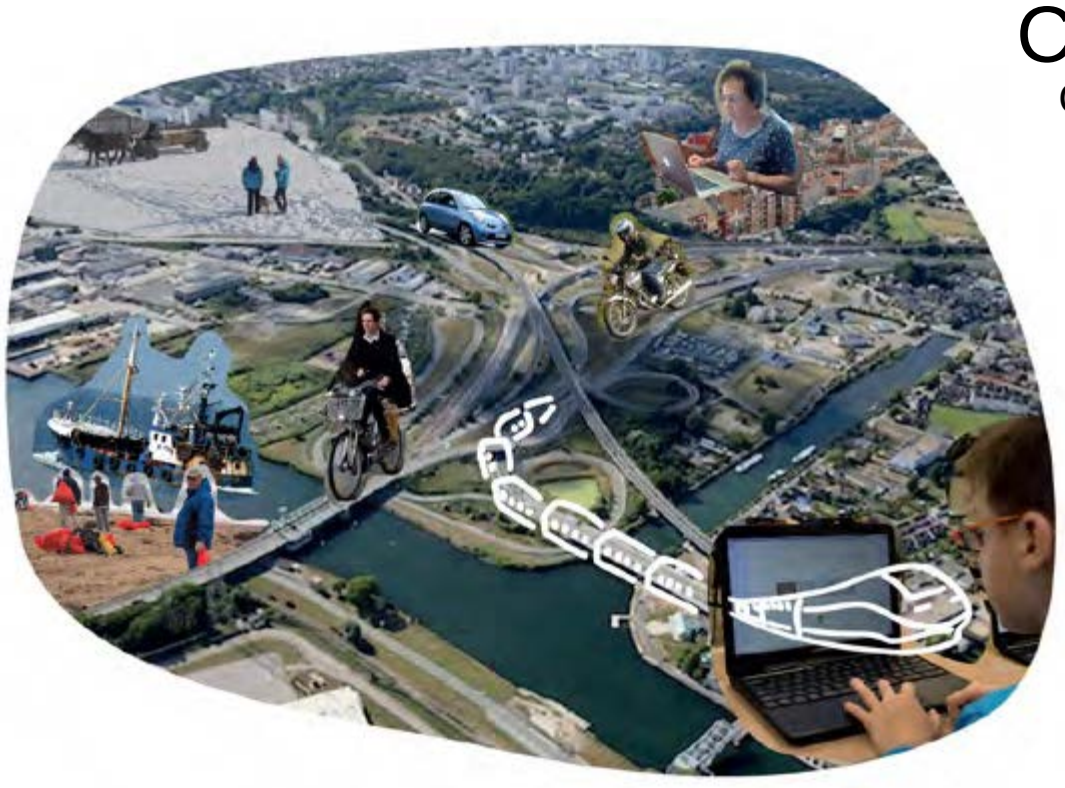
- Higher relevance of research through better contact with the grassroots
- Better returns for tax payers
- A deeper sense of engagement in research among citizens
- Results of important research would be put into use faster and more efficiently without private or economic interests
- There are also concerns that important research might struggle to prove its relevance in early stages of maturity and be rejected and that basic research would be very difficult to finance

6. Transport

Freedom to choose where to live

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing
C4. Smart, green and integrated transport
C6. Europe in a Changing World – inclusive, innovative and reflective societies



CHALLENGE

Current practices of transportation (commuting alone in private cars, etc.) are unsustainable (land use, CO2 pollution, social inequality of transport choices, etc.). There is a need for promoting a better balance of non-urban and urban areas by establishing a good connectivity between both spaces that allows boundaries of cities to spread, reduces the imbalance of transportation choices, helps to decrease the isolation of people in distant rural areas, helps to increase the number of working places in non-urban areas, facilitates more equal access to services and increases the quality of life.

SCOPE

In order to establish good connectivity between urban and non-urban areas research should investigate technological and organisational solutions for sustainable (low energy intensive/ less polluting) transport options that are adapted to the requirements of rural areas (low cost/ impact/infrastructure). To ensure that future changes work in practice, research should also analyse the actual current transport and explore innovative solutions and evaluate current users of public transport. Research should also look into the unequal access to medical and care services between urban and rural areas. Finally, research should also explore work models that could impact the transport needs (teleworking, jobs in rural areas rather than concentrated in cities).

EXPECTED IMPACT

Online consultation rating ★

- Reduced number of cars in cities
- Reduced time spent in commuting
- Increased general quality of life (physical and psychological)
- Better choices for transport solutions
- Rebalanced opportunities for urban and rural inhabitants (job access, care access, public services, etc.)
- More attractive public/collective transport solutions
- Reduced CO2 emissions

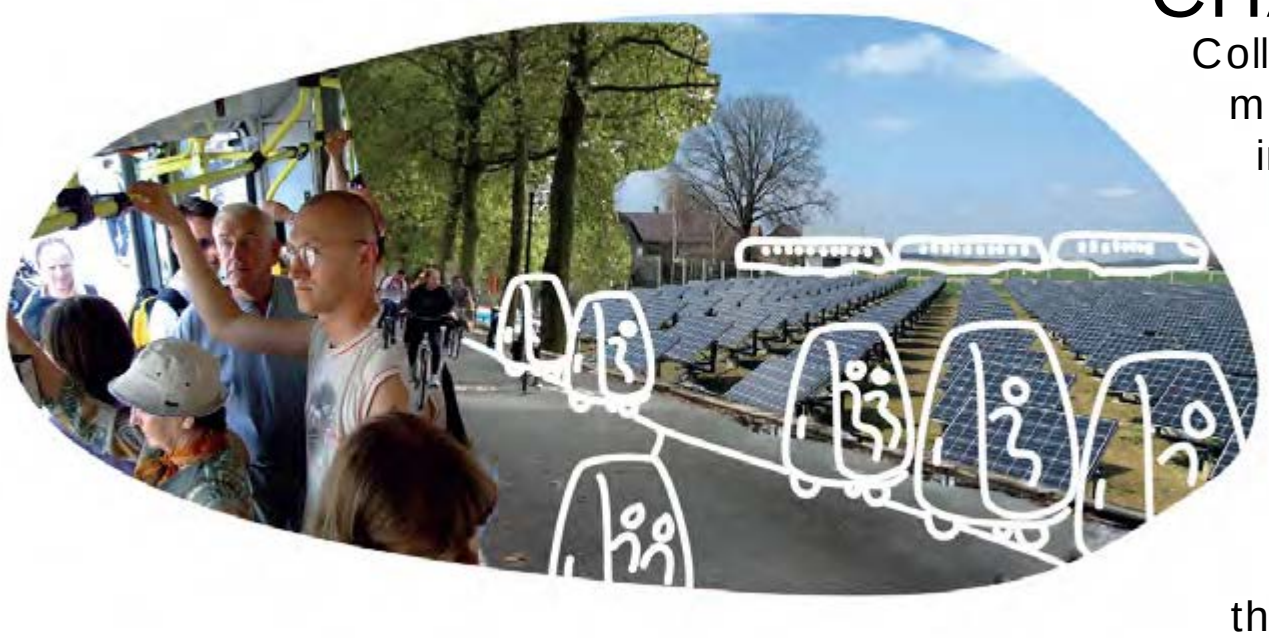
6. Transport

Moving together (more collective transport options)

GRAND CHALLENGES :

C4. Smart, green and integrated transport

C5. Climate action, environment, resource efficiency and raw materials



CHALLENGE

Collective transport should become more affordable, attractive and interesting in cities as well in the countryside. Moreover, transport is a problem of public service: it is necessary to decide whether collective transport should be a public service or profitable activity. We envisage new collective transport concepts and respective technologies that reduce transport related pollution and energy demand and, at the same time, bring people together. There is today an urgency of experimenting both green personalized solutions and collective public transport, in order to test an environmental perspective to the problem and bringing to a substantial reduction of individual private transport means.

SCOPE

Applied research should be developed on transport systems: less based on infrastructures (and more flexible) or intensifying the use of existing infrastructures; less top-down organised and more community-based, self-organised (swarm intelligence); capable to enable socialisation (i.e. being together in collective transports); based on flexible units (i.e. individual units able to temporary aggregate and disaggregate, trains of units and local capillary distribution, …).

EXPECTED IMPACT

Online consultation rating ★★

- Citizens more aware about the sustainability issue of transportation
- Incentives to use the public transportation
- Change in citizens' behaviour: citizens will prefer collective transport, their mobility habits will change
- Higher quality and attractiveness of collective transport: it should serve in big cities as well as in rural or remote areas
- Cheaper and available collective transport

Production awareness

GRAND CHALLENGES :

C5. Climate action, environment, resource efficiency and raw materials

CHALLENGE

With limited resources, it is important that business becomes more environmentally aware of implication of the product lifecycle. Ultimately, more sustainable production technologies and models lead to promotion of goods production within the scope of limited resources. An example could be the Cradle-to-Cradle Model, whereby production uses resources within a cycle in order to minimize or erase waste (e.g. a pullover produced from bamboo fiber). The production, thus, is highly aware of sustainability in all steps of the value chain.

SCOPE

Current models of production are unsustainable in respect to resource use.
Innovation is required on two fronts:
1) To discourage the use of technologies, which are not environmentally friendly, and
2) To support the adoption of clean technologies, as well as their development.
Old economic models for the production of goods that include unsustainable practices, such as planned obsolescence need to be contained and reversed.
Research needs to be undertaken to take into account cradle-to-cradle approaches and their impact on current business. The full cost and gains of 160 implementing these novel approaches are complex and difficult to quantify, especially in monetary terms. Creative ways of visualizing these costs and gains needs to be developed for the full impact to be measured.

EXPECTED IMPACT

Online consultation rating

- A different, more sustainable, mind-set on mobile phones
- A different, more sustainable, need from consumers
- A different, more sustainable, production of mobile phones & less waste of mobile phones and its components & increase of re-use and recycling of mobile phones and their components
- Better design leads to longer life spans of consumer products and a reduction of waste

11. Social economy

From Wall Street to Main Street

GRAND CHALLENGES :

C1. Health, demographic change and wellbeing
C5. Climate action, environment, resource efficiency and raw materials
C6. Europe in a Changing World – inclusive, innovative and reflective societies

CHALLENGE

Citizens request that in the future investors will make their allocation decisions aiming not just for profit generation, but also for the (positive) social and environmental impact of (real) businesses. Thus, corporations and SMEs will incorporate social and environmental targets in their strategies. In this context, we need new economic models for promoting green transformation.

SCOPE

The current financial sector needs reformation to foster sustainability and well-being. There are many examples and evidence of more sustainable approaches, as well as investment practices, but they do not easily reach mainstream. More research is needed to understand how to transform this knowledge to the right stakeholders for the greatest impact, because the system suffers from great inertia. Greater insight needs to be generated in order to understand how to overcome this inertia by looking at regulations, technical skills and other practices, thus making the "Sustainable and Responsible Investment (SRI)" approach more adopted.
To develop a green system for an effective interaction between the lender and borrowers.

EXPECTED IMPACT

Online consultation rating ★★

- Enabling consumers to make more informed decisions
- A positive effect on work-life balance and personal well-being
- A step towards a sustainable economic system
- Increasing life satisfaction, decreasing consumption
- It will awake consumerism as a lever of political power of citizens
- Positive consequences on workers' quality of personal and professional life
- The creation of new domains of expertise, new skills and new jobs
- Transparency with regard to the origin and production process of goods

The 48 citizen-based research topics full versions

1.a **Digital inclusion**

SOCIETAL NEED: **Equality**
GRAND CHALLENGE:

6. **Europe in a Changing World – inclusive, innovative and reflective societies**
7. **Secure societies - protecting freedom and security of Europe and its citizens**

Challenges

The on-going digitalization of every-day life provides great opportunities to enable equal conditions for all. To achieve that it is important to ensure equal access to information and tools for all citizens by providing access to digital education material for all. Lifelong learning as well as people from minority groups and people with special needs can be supported individually in the future. All these will empower the people to take care of their education and perhaps become digital producers themselves. [WP2]
Increasing digital inclusion of elders, "disconnected" people, people living in hard to reach and cut-off geographical areas [WP3 - Cyprus] regardless of social background and skills
Access to digital content alone will hardly influence social inequality as the fundamental competences for appropriation are not equally distributed.
Ensuring proper information on a large scale to a wide range of people and educating them about the use of the digital world and introducing the digital world at an early age (education about threats and opportunities of digital technologies).
Citizens could get better education by removing access barriers to digital learning on educational and scientific content. Digital technologies may increase general public knowledge who will then be more likely to make information-based decisions. [WP3 - Lithuania]
Understand (and solve) problems of the equal access to digital services. [WP4]
There is a concern that in the not-so-distant future, through the use of digital means, the cultural identity of each country might be dissolved. How to pursue a common globalized education while avoiding the loss of ethical and cultural values of peoples and cultures? [WP3 - Cyprus]
Digital platforms has the potentiality of fostering and promoting self-organization of European citizens in a transnational manner Exchange of opinions (dialogue) through digital means will result in new, more progressive ideas. [WP4]
There is an agreement on digital inclusion. But there are two main approaches and clusters of stakeholders: Big companies on one side, people connecting on the other side. They differ in their view of how digital information is shared/accessed: As consumer or as citizen/prosumer. [WP2]

More digital inclusion will empower people to take education in their own hands and become digital producers themselves. Despite the importance of the Information and Communication Technologies (ICT): better access to information through ICT is not equivalent to learning or co-production of knowledge. [WP4]
There are a few good practices such as: - Laboratory primary school - Intergenerational digital teaching - Start ups founded by users - Online classes - Digital platforms that facilitate mutual learning [WP2]
There is a need to examine how human exposure to the digital world affect our mental functioning, personality and social relations.
The access to technology does not guarantee by itself the use of digital knowledge/services by individuals

Scope

- Research should explore ways to implement a fully distributed information and communication system model. By this, we mean a digital architecture for an information and communication system that covers everybody in an equal way. Every node of the net has similar possibilities and opportunities. That potentially gives more equal distribution of possibilities, power, knowledge and money to the citizens, communities and local stakeholders. This way the system will ultimately become an effective platform for a more equal society. [WP2]
- Research should investigate how to achieve a minimum level of digital skills across the EU continent [WP3 - Cyprus]
- Research should investigate how digital curriculums could be integrated in schools so that students could be introduced to the digitization process, existing opportunities, threats, and so on.
- [Research should] assess the benefits of digitization and harm at a younger age.
- [Research should] assess the barriers to digital content creation and publishing (and related rights/policies) [WP3 - Lithuania]
- [Research will assess] the impact of personalized services and information oligopoly on digital inclusion? [WP4]
- [Research should involve] IT companies, Social media, Education Institutions but also relevant policy makers and other NGOs linked to digital topics
- Citizens are to be involved in the research [WP3 - Cyprus]
- Journalists/reporter (highly involved) as they create digital content.
- National Parliament/ European Parliament (moderately involved) as they make decisions related to Internet regulation.
- Ministry of Education and Science (moderately involved) as they set the goals to secondary schools.
- Secondary schools (moderately involved) as they have to teach pupils about the digitization process.

- Communities (moderately involved) as they could make the digital inclusion of the older people or those, who cannot afford it, possible. [WP3 - Lithuania]

Expected impacts

- The actions must make sure that the access to these kind of technology will be equal and universal for all EU citizens.
- They must ensure that the existing gaps will be bridged. Both the age gap, but also the gap between the different levels that is observed between different member-states.
- They must stress the economic aspects and benefits they will introduce.
- Proper education should bring about a change in culture of digital education and also integration issues. [WP3 - Cyprus]
- Digital inclusion should foster the development of critical thinking, so that people are able to discuss and listen (hear) each other, select high-quality sources and interpret them.
- Older people have better access to information through digital tools.
- People do not become or feel distant to the family as their ability to use digital communication channels is maximally efficient.
- Citizens have access to open learning resources, courses. (E.g., IT specialist learned biology, which allows him to optimise agriculture and greenhouses). [WP3 - Lithuania]

Research Questions

- How can we enable equal digital access to educational resources for all citizens independent of geographic and language restrictions?
- How can we better understand the social impact (in terms of inclusion and exclusion) of the digital transformation?
- What are suitable institutional procedures to avert the dominance of huge players and monopolies?
- How can we create a more favorable environment for a really distributed information-communication system?
- How can we implement (basic) education in the essential skills for active participants in the digital society (i.e. coding and data analytics) for all students in Europe?
- How to increase the digital access through the social environment (social access)?
- What future educational methodologies fit the needs, interests and circumstances of the life of current and future students?
- How to co-produce knowledge alliances that are relevant to society? What kind of changes/challenges will come with this and how to move forward on

this path? How to develop and promote digital platforms for participation and self-organization of European citizens?
- How could we promote in addition to the access to educational resources, the networking and the global exchange?
- How to reform the educational system in order to follow the development of information and communication system on the global level effectively and timely?
- How can new technologies be used to ensure free access to quality education for as many people as possible?
- How to empower people to make effective use of information - communication systems?
- How to stop the wealth segregation and appearance of "elitist" groups and marginalization of others?
- How to ensure an equal access and treatment for all within the labor market and public services in order to obtain higher social cohesion?
- How can we further develop the digital educational resources and knowledge itself to enable more inclusive, non-elite education?
- What is the role of information and communication systems in dissemination of prejudice and stereotypes? Caution is required to prevent that Information and Communication Technologies (ICT) do not foster the production of information that conveys prejudices, stereotypes and a boost of discrimination.
- How can user interfaces be made speech controlled and interactive?
- How may the non-use of digital tools and services lead to the marginalization to groups, communities and individuals?
- Can/should we control/supervise the content of the Internet without restricting freedom of expression? Knowledge accessible via the internet will become questionable, because the quality of it will not be verified by anyone, since freedom of publication is not restricted. [WP2]

Citizens' visions

[FIN] Vision 1: VALUES - immateriality and minimalism
"Information belongs to all: data communication is a basic right and data/interfaces open to citizens."
[CHE] Vision 3: Harmony between the social and the global
"Online education, shared values / ethics - Pacifism, solidarity, mutual aid"
[CYP] Vision 2: A just society oriented towards human rights
"a society where justice is prevailed and is oriented on the basis of human rights. A society that provides equal opportunities for all EU citizens, as well as direct access to a secure health and education system."
[MAL] Vision 4: Technology at society's service
"In 2050, all members of society have equal access to quality education and opportunities to engage and contribute equitable to fair-decision making and all

other processes that affect their lives. Family units in their various forms are accepted and supported to ensure that each individual is embedded in a nurturing social system."

[CYP] Vision 3: Human rights

"The vision is referred to better living conditions, to equal access to issues that we take for granted, such as health, education and retirement. Also, the right opportunities have to be provided to younger people in order to have a proper job school counselling in order to ensure proper career perspectives."

[SWE] Vision 1: Equality between women and men

¬"- That all parents shall have the possibility to a fair division of parental leave"

[GR] Vision 1: Humanity - Environment – Justice

Schools fully equipped with the latest technology. For example, all schools shall have digital libraries and the ability to host video conference for remote learning. [WP2]

1.b Balanced work-life model

SOCIETAL NEED: Equality
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

There is a strong feeling of unbalance between work, personal and social life. This unbalance can be felt at many levels: time wasted in commuting between home and work (traffic jams), long working hours preventing from social interactions (leisure, self-development, community involvement), work stability, lack of time for personal development, family and children care, restricted work flexibility, unhealthy lifestyles. [WP3 - Austria] [WP3 - Italy] [WP3 - Latvia]
In the future it will be important to distribute work flexibly throughout life and also flexibly shift between employed (paid) and unemployed (volunteer) work. This will enable people in every moment of life to define the time they are available for work. Thereby people will be able to take care of their loved ones when needed, pursue personal fulfillment and/or follow multiple careers and slowly shift into retirement. This will improve the overall quality of life and help balance the demographic gap.
How can a remodelling of the organizational culture promote the work-life balance, personal development, personal interests and caregiving to the beloved?
CHANGING CORPORATE CULTURE: nowadays a significant part of the working organizational model seems frozen in the bureaucratic processes and legal mechanisms of protection coming from the culture of Post-Second World War. [WP3 - Italy]
Although new and more flexible forms of work have already been developed, there is still plenty of opportunities for even better work forms, more adjusted to the needs of workers, that would allow for a more balanced work-life model. Those new forms, which need to be further developed, are teleworking (work arrangement in which employees do not commute or travel to the office), flexible working hours that are more adjusted to the needs of workers, shorter but more productive working hours, work places that are friendly to families, mentoring schemes for young that will contribute to better work ethics among young people. [WP3 - Slovenia] [WP3 - Latvia] [WP3 - Austria]

This calls also for a redefinition of work :

1. Redefinition of the "contribution" to the society and to the market (including household work and other non-economic activities).
2. Give economic value to the social involvement
3. Adjust the existing performance models considering different contexts
4. New economic forms of work compensations/rewards

The subject questions the territorial development: spaces for more relationships, easier access to public services and more space for an active involvement of citizens in the city development and its management.

Communities play an important role in providing local and mutual assistance and safety. Those communities are able to easily exchange goods and services.

Traditional paradigms of work (5x8 until retirement) have long been challenged. Diverse social movements (e.g. womens rights') have raised the question of how work is defined, valued and paid and called for multiple career options. Another driver is the rising demand for care.

Knowledge is quite poor in this field but there are a few examples of interesting practices: Family friendly companies (flexible time for parents), Intergenerational centres – retired offer their skills, Time banks where people do not pay in cash but pay with their time. [WP3 - Italy]

Scope

RESEARCH DIRECTION:

Research should rethink the definition of "work" and develop approaches that permit to recognize and reward as "work" all different kinds of human activities including socially valuable daily life activities such as domestic work, childcare, caring for the elderly and social work. [WP2]

How could it be approached?

- Research should help identify and define the different flexible forms of work
- Studies could be carried out to analyse the sectors that would fit and not fit for different flexible forms of work and identify and evaluate the barriers for introducing new forms of flexible work
- Research and technology should foresee the creation/needs of different ICT support solutions, which would allow communication between co-workers from different locations, monitoring and control over the work. [WP3 - Slovenia]
- Research should pay a particular attention to the relation of negotiation between enterprises and employees (balanced and fair) to avoid having companies demanding extreme flexibility from their employees for their single profit and encouraging situations of self-exploitation of the employees. [WP4]
- Research could investigate how the education system could evolve to support the necessary evolution (qualifications, skills)
- Research could investigate formats in which flexible working model (hours, working location, multiple employers) are agreed between employees and

employers in various jobs and fields. The consequences of this flexible/hybrid working model on the credit market, social security (respect of legal working conditions and standards), earnings security, family and social integration, emotional/mental health (burnouts, depression, dependencies, violence, etc.) are to be assessed and problems to be adressed. [WP3 - Poland].

- Research could also investigate how people could have a choice on how much they wish to work in certain stage of their careers (work models may vary all along life) [WP3 - Slovenia] [WP3 - Latvia]
- Research could investigate the impact of work standards and development of the use of robots.
  Research could investigate how new forms of work may stimulate employees' creativity, increase motivation, wellbeing at work and happiness of life.
- Research could investigate the rebalance of interests and decision-power between employers and employees.
- Research should explore hybrid models of collaboration and work management between time banks (quantitative) and a distribution of the workload based on goals/targets (qualitative metrics, reachable objectives and transparent terms, acceptance of the work terms on both sides, etc.)
- Research should study possible ways to give value to activities that are currently considered as extras and that can represent a value for the society in the short and long term. This new compensation model gives value (for companies and for the government) to the extra-work activities in terms of cultural/social investment and, in the long term, also in economic terms. [WP3 - Italy]
- Research could conduct the following:
  - Surveys of various social groups (entrepreneurs, students, teachers)
  - Comparative analysis in between countries
  - Research into costs of living of an individual/ employee and of a family
  - Research into basic living standards
  - Research into valuation of housewives' remuneration [WP3 - Poland]
  - Atmosphere at work and feeling of comfort [WP3 - Poland] [WP3 - Latvia]
  - How different work environments affect productivity? [WP3 - Latvia]

- Research should allow the creation of guidelines for employers with the description of benefits of working from home as well as the advantages of telecommuting
- Research should support the creation of Guidelines for decision makers for reforms of social and pension system [WP3 - Slovenia]

Who should be involved in solving the problem?
Research should involve researchers, governments, enterprises, entrepreneurs, employers organizations, business organizations, workers, trade unions, Chamber of Labor, Chamber of Commerce, Feminist organisations, housewives, inspectors, immigrants, trainees, auditor, non-for-profit, insurance entities, retired, unemployed,

voluntary organizations, Ministry of Education, Educators, students... [WP3 - Italy] [WP3 - Poland] [WP3 - Austria] [WP3 - Slovenia]

Expected impacts

- A work model based on balance and quality is beneficial for workers as well as companies.
- Develop and test societal models that are not exclusively focused on the role and value of productive work and employment.
- We could strengthen formulas in order to spread the perception that work is not a threat to personal and family well-being and consequently, improve its quality.
- This will emancipate individuals and social cohorts by resolving conflict between economic progress and social wellbeing.
- It will help to eliminate gender stereotypical roles and recognise the role women play in formal and informal work
- This will allow people to more freely choose their lifestyles and reduce social judgments and prejudices.
- Workers would be more satisfied overall and even more productive during working time [WP4]
- Explore/create work organization models that have impact on wellbeing. [WP3 - Italy] [WP3 - Austria]
- Research on “changing behaviours” in companies. [WP3 - Italy]
- Research “best practices” of alternative working models (working hours, remote work, etc.). [WP3 - Italy] [WP3 - Austria]
- Research on implications regarding ethic/privacy/safety.
- Research/analysis of corporate cultures.
- Understand the tangible benefits for the company, identify feasible activities.
- Evaluate the impact on the society in short and long term (about extra-work activities and personal ones).
- Identify a supporting protocol for the new monitoring entity (insurance/safety/transparency).
- Identify education models to support the “work/life balance”.
- Identify the legal limits of socio-cultural contexts, understand barriers. [WP3 - Italy]
- Evaluate the impact on family and social relations of more balanced work-life models [WP3 - Austria] [WP3 - Latvia] [WP3 - Slovenia]
- Mutual respect of the employer (for the employee's requirements, flexible working hours, a motivation system) – employee (committed to their duties and their fulfilment)
- Study minimum wages conditions to be sufficient for decent living, valuation and payment of wages to housewives (lower unemployment) [WP3 - Poland]

Research Questions

- How can the legislator design/think a law that is comprehensive of the different needs/chances and at same time efficient?
- In the education field: how can we rethink spaces, time, criteria of evaluation, and contents, considering this new model of work? [WP2]
- How to increase flexibility at work without increasing financial instability and uncertainty?
- How should such non-traditional modes of work be valued and compensated?
- How to rethink and organise a society that does not have work and the associated income as its only reference?
- How to define "value of labor" and which new definition allows a greater balance between work and life?
- How to guarantee worker equality (gender equity, salary, work schedule, equal opportunity)?
- How to create a stimulating environment for the development of self-employment and social entrepreneurship?
- What models of work organisation and management allow workers, companies and society to reap the most benefits and support a balanced work-life model?
- How flexible ways of working, including part-time work, will affect overall productivity?
- How can unskilled and poorly paid employment turn into secure and reliable livelihoods?
- How could we use technological advancements to reduce the number of hours a person has to spend working to cover subsistence costs? And when robots replace people in routine work activities, how to meaningfully employ those affected by this?
- How to support the change of mentality regarding the recognition and remuneration of poorly valued work (caretakers, household, etc.)? [WP4]

Citizens' visions

[LAT] Vision 5: Work as a means of expression
"Job is 100% flexible: work at home and elsewhere, choice of working hours, a possibility to adapt and choose responsibilities and tasks; appropriate reward. One life – a lot of roles – continues development."
[HUN] Vision 2: The rise of a backward region
"They declared their satisfaction with the shorter and flexible working hours (6 hour workdays), the higher wage that provides well for their livelihood, and the healthy working conditions."
[FR] Vision 5: Living in a balanced society

“Our working time (around 20h/week) allow us to participate to citizen actions and to be radiant in our family life and leisure time. Our free time allow us for instance to be involved in volunteering and educational fields.”
[DE] Vision 6: The future of work
“Flexible work models are par for the course
More working from home /also half days and quarter days” [...]
“flexible annual working time”
[LUX] Vision 4: Technology at society’s service
“I work 4 hours. This allows me to have lunch with my children and my partner in the community kitchen in our participatory house. Then I spend some time with my daughter in the surrounding wood. I started to get involved in participatory life in various forms ...”
[SVN] Vision 6: Equality and Human Rights – A driver of Social Development
“ Intergenerational cooperation - the transfer of knowledge and traditions, care for the elderly after working active age
[...] Fair society of responsible people who act for the common good.”
[SVN] Vision 5: Prosperity and work activity of citizens
“- optimization of labour situation today: flexibility today means working + 8 hours and a lot of working overtime;
- emphasis on individualization, rather than on the importance of taking care for the community.”
[FR] Vision 4: Sharing common values to live better together
“- Reflection of feasibility of a minimum income or unconditional income or basic income, financed through local currency
- Education”
[IRE] Vision 3: Relationships with one another and the environment
“Work / life balance will be different. More time for relationships, culture, society e.g. look at Danish model.”
[PORT] Vision 4: Culture with all for development
“In 2050 we do not concentrate on productivity (which means ultimately aiming at profit) but on everybody’s individual happiness index. That will feed the happiness of the collective.” [WP2]

1.c Empowering diversity in communities

SOCIETAL NEED: Equality
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

Equality in diversity: all people are equal, in philosophic principle, academically and politically. It is important to find ways to ensure equality in real life.
Society: acquiring inclusion of diverse communities is beneficial. In well-functioning society the quality of life rises. It is meaningful to address awareness of diverse reality - that life is not black and white, nor schematic and simplified but on the contrary. Our societies face several irreversible changes (eg. population aging, migration, homosexual couples) that we can either study and take responsibility for our actions or neglect and remain unprepared. [WP3 - Slovenia]
Nowadays individuals and specific interest groups (NGO/LGBT [1]/Patients...) are quite influential. Institutions (central, regional, local) could provide the tools and the framework for training programmes for "successful" management of the diversity in communities (e.g. neighbourhoods). The local communities plus associations/NGOs could provide the contents and can assume the responsibility in the establishing of a new diversity culture.
There are glimpses, but those few existing policies are not implemented enough e.g. in the case of same sex marriage the situation is very different in countries/communities. Furthermore there is a need for social accommodation (minorities carefully placed in the local community) and quotas (gender...) in politics and business. [WP2]
Without integration of the communities and equality of all groups, progress that all members of the community would feel as common success cannot be made.
Well performing communities increase the flexibility and resilience of a society (e.g. in case of problems).
We should actively and effectively counteract all mechanisms of exclusion.
Cooperation between citizens (the idea of community is too dividing) [WP4]

1 Lesbian, Gay, Bisexual, Transgender

There is a shift from a view on homogenous society to a multi-diversity view (gender, social, migration...). [WP2]
Conduct a survey on communities support, what the attitudes towards different communities are and develop further research based on the data.
It is necessary to specify what kind of people are inclined to support diversity and what people are not open to it. We should be aware of the fact that concentrating on selected groups in society leads to exclusion and can jeopardise the whole concept of diversity inclusion. [WP3 - Slovenia]
It can be fruitful to study not merely those communities already perceived as groups but also raise awareness about hidden (not-yet-known) communities in society.
Search for successful models of empowering diversity in communities from abroad and their transferability.
A study on existing local diversity of communities can be carried out (eg. bilingual and trilingual areas, tradition of multicultural society in country´s history).
Research could define the origins of national identities.
Legal norms: analyse legal norms and policies from the diversity point of view (empowering or suppression). We have legal norms in Slovakia directly suppressing several types of diversity (eg. muslim religious community, homosexual partnership).
Education: estimate the educational potential in empowering diversity in communities. Multicultural education is a cross-sectional subject (in Slovakia), but the quality of its tuition remains a question.

Why is it important to address this challenge?
On individual level: people suppressed or discriminated against should not be excluded but accepted. A person included as a part of society feels better and can be valuable part of community.
Technologies problem: the advantage of technologies lies in possibilities it offer in communication without borders (of one´s community, or country). On the other hand, research suggest that technologies, especially social media, can serve as means of intensified closeness of communities and strengthened stereotyped perception. It is important to pursuit ways of using technology for critical thinking development and for raising openness to diversity. [WP3 - Slovenia]

Scope

Research should investigate approaches for empowering diversity in communities. A particular focus could be on cooperative platforms that are managed by the communities themselves. A starting point could be analysis of existing successful practices. [WP2]

How could it be approached?

- Research should look for best practices: to be inspired by the best experience locally and from abroad and to spread them and disseminate them into local policies and educational activities.

- Research should explore ways to introduce the condition (of implementation) of diversity policies into the scheme of EU funds absorption.
- Research should carry linguistic and document analysis: analyze manifestations and impact of diversity denial in media, speech and legal documents. Especially in Slovakia further observe the principles of national versus civic identification of “slovakhood”.
- Capacity of art: make use of communicative potential of art, potential of society self- reflection, sensitizing, educating and connecting people and in introducing taboo topics. [WP3 - Slovenia]

Who should be involved in solving the problem?

- Ensure diversity in research teams by involving and inviting different representatives to the project team.
- Target group representatives: include target and influenced groups by inviting experts from their community to make sure the project is not remote from reality of the community.
- Bussiness sector: include representatives from smaller and bigger companies and bussiness models and experience with diversity empowerment.
- Be open publicly: involve everybody who can possibly contribute to solution, select “experts from public” for example by designing an on-line research ombudsman accessible to all.
- Art: include artists and their work as means of research outputs dissemination due to its educative and interconnective potencial.
- Press [WP3 - Slovenia]
- In processes of empowerment for diversity, processes of collaborative conflict resolution should be considered.
- It is interesting to examine how communities in different ways can turn themselves from being both heterogeneous and homogeneous. [WP4]

Expected impacts

- Improvement of communities and diversities integration, better communication and awareness
- Social cohesion
- Reduced manipulability of citizens
- Behavioural change in attitudes from tolerance to acceptance
- Behavioural change in mindset from stereotyped to complex
- Short term changes should be embedded in local policies, legal documents and norms. If implemented, they can have an impact in long term perspective.
- Change in peoples attidutes and mindset can be visible for example in the results of parliamentary elections [WP3 - Slovenia]
- This would strengthen equal rights for all societal groups.
- This would lead to more tolerant and vibrant communities.

- It will enhance a better understanding of the other components of human diversity that can help to overcome stereotypes, better communicate and cohabit.
- This would allow local and citizen communities to be empowered and to be organized.
- In the best case scenario this would prevent isolation/exclusion and radicalization of people due to xenophobia.
- This would generate more social inclusion, also considering the strong migrations. [WP4]

Research Questions

- What are success factors for establishing diversity in communities? (Case studies)
- How should a platform look like in order to attract very different actors for collaboration (Function as a socio-cultural attractor)? [WP2]
- Do such initiatives emancipate participating individuals to foster equality in diversity beyond the nurturing local community?
- How can we ensure that the people who have direct experience of disadvantage and marginalisation are at the centre of decision making?

- How can education and the arts improve socio-economically disadvantaged areas and how can they be effectively and cheaply implemented?
- How to consider diversity together with the notions of identity and belonging to the community?
- What are the failure factors for the establishment of diversity in the communities?
- How can we eliminate and/or prevent discrimination within the community?
- How can we overcome demographic and ethnocentric isolation and ensure new forms of community in diversity?
- How can diversity and its appreciation help to make society more resilient?
- What raises fears and concerns of diversity in the community? How to face these fears and concerns?
- Which construction and infrastructure factors are relevant locally and how can these be optimized?
- How can common values be established among diverse communities?
- What exclusion mechanisms (racism, sexism, dissipation, psychologically uninhibited childhood, transphobia, homophobia) appear how?
- How can a platform include vulnerable citizens, who may already have difficulties with being part of traditional communities?
- How do power relations in the community impact suppression of difference and imposition of conformism? [WP4]

Citizens' visions

[IRE] Vision 2: Expression of quality
“There are equal opportunities, access to services, job opportunities, solid quality enhancements, and equal rights for all (such as senior positions of power for: women, people of disability, people of ethnic minorities, LGBTQ, elderly…)”
“People have become more politically engaged in comparison to today, differences have become embraced and attitudes towards minorities have also changed. Ageism has been eliminated or addressed, and people have become “colour blind” towards race, in the sense that people no longer discriminate due to race.”
[HRV] Vision 3: The preservation of human health and nature for the generation XYZ
“These communities will be examples of sustainable oasis
based on truth and acceptance of the people's diversity.”
[DE] Vision 3: Diversity and self-determination
“There should be no dress code based on cultural or religious regulations.
Equality for all, independent of sex, religion, ethnic origin and solidarity
Same wage for same job.
Same educational opportunity for all
Free to plan your future
A terminally ill person is free to decide to terminate
his/her life with medical help”
[FR] Vision 1: Sociability over technology
“Respect will be a core value. Respect of laicity, of human being, of differences and of religions.”
[DE] Vision 6: The future of work
“Complete equality of men and women at work + inclusion”
[HUN] Vision 1: Naturally
“real equality for women”
[DE] Vision 5: Dream school 2050
“In 35 years’ time, even more cultures will interact in Germany than is the case today and we hope that our children are taught to be tolerant and open to others and can experience this firsthand every day in the community.”
[NOR] Vision 1: A work life for all
“Unexploited resources in parts of the population, such as women, migrants, disabled, elderly etc. must be made active and included.”
[SWE] Vision 1: Equality between women and men
“That all children are born with the same rights regardless of gender
- That all parents shall have the possibility to a fair division of parental leave and child care is available for all
- That all have the same rights to a good education regardless of gender
- That all (even girls) should be able to go home alone from a night out
without being afraid
- That employers shall make hiring and salary decisions with regard to
competence and not gender
- That retirement pensions do not differ between men and woman”
[BEL] Vision 1: Foundations for respect, equality, diversity through education

“Our vision of 2050 is : the childhood education will allow us to reach an ideal of respect, an awareness to sustainable development, a better wealth distribution and an openness to social mix because diversity and interactions bring richness.” [WP2]

1.d Social economy

SOCIETAL NEED: Equality
GRAND CHALLENGE:

6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

The “for profit” (classic) economy does not answer the new emerging social needs. In the future a new way of economic collaboration will be necessary. Mainstream economy has problems coping with current challenges (ageing, poverty, youth unemployment). New economic models are emerging and include different kinds of economies (gift, exchange, rent, sharing...). Governments/institutions could catalyze the energy and strength coming from different stakeholders (citizens, enterprises, associations NGO) from different sectors and promote a new way of networking as well as a new way of recognizing the social values in order to find proper economical answers. [WP2] The government has to identify, promote and "take advantage of" this alternative social realities in order not to make them become marginal and foster equality [WP4] and make Adjustments and redevelopment of State structures for the new type of economy.
There is a need to disrupt with traditional economy based on consumption, while focusing on gaining profit, encourages pollution, lack of resources, poverty. If nothing changes, these problems will get worse. Commercial rivalry leads to poverty and social exclusion, raises public insecurity (wars, terrorist attacks, and civil disturbance). [WP3 – Lithuania].

It is important to address this challenge because there is an increasing need for change of the current social model that led to a degradation of social values. The current model is increasingly excluding social groups and decreasing the quality of life in general. Therefore, it is urgent to fight inequalities and correct deficiencies of the system [WP3 – Portugal]. It is important to not Neglect certain groups in society as it will further deepen the crisis - a different social and employment policy is required. [WP4]

On the other hand, the importance of the economic and financial dimension in the contemporary society, has proved to be inadequate as it promotes the valorisation of quantity rather than quality. This fact found its expression particularly in the existence of pressure groups in the industry and services and by the manipulation of consumers through advertising.

Therefore, it is urgent to focus on emotional relationships, considering this social economy scenario/line of research and taking into account that the necessary change is possible and will provide a new hope. In the future, this may contribute to increasing happiness. [WP3 – Portugal]

Scope

Research should investigate:

- Research should explore promising economic models that answer societal needs and investigate supporting infrastructures.
- Research should investigate how education can help to disrupt with: Less rivalry in educational system. Education system transformation from rivalry to cooperation.
- Research should investigate how the social economy allows a greater part of society to do a job they love (not any other job they would take only to do for a living) [WP3 – Lithuania]
- Research should investigate how economy for the common good can contribute to more sustainable urban and rural development. [WP4]
- On economic models: identification of public needs, cooperation needs, cultural differences between the countries. Circular economy weaknesses, strengths, opportunities, threats.
- On business environment: opportunities and threats of transforming business from profit-based towards to non-profit organizations.
- On public goods: social economy capacity to ensure education, health care, social security and other functions on time.
- On defining an individual's „basket of essential needs“ (to ensure dignified, well-balanced life, not just survival)
- Community expectations analysis. [WP3 – Lithuania]

The research should pay attention:

- Self-exploitation of the participants in the social economy may emerge
- Take care that the new models establish a good equilibrium. Equality has to be guaranteed. If the state is “depowered”, social services must be guaranteed [WP2]
- If the state is “disempowered”, social services may be affected and equality will be compromised.
- Why is social economy favored as privatization of the public services, instead of them being managed commonly and more responsibly? [WP4]

The research should evaluate:

- We still haven’t investigated what the structural consequences of new ways of organizing welfare will be. It is important to do so before we begin.

- Some activities are already on track, we need to find the way to give value to them and understand what is working and what is not. [WP4]
- This research can be firstly approached by a comprehensive inventory of what has already been implemented and by promoting further studies (scientific production and manual of good practices). [WP3 – Portugal]
- Economies of the commons are still in the experimental phase. We need to carefully test the opportunities and limits.
- With new technologies, economy and society in the future will be more based on cooperation than competition. [WP4]

This research should involve:

- Researchers (as they objectively analyse and reflect)
- NGOs (as they implement the pilot social economy model, they should show how this social economy model should function in reality). [WP3 – Lithuania]
- In the first line of intervention we find the community leaders, NGOs, leading teachers and local authorities due to their capacity to transform mentalities and implement practices/activities that lead to change.
- Secondly, and intrinsically, there are the citizens/families who are seen as part of the solution and have an active role in contributing to resolving practices. [WP3 – Portugal]
- Business (as the transformation from profit-based towards to non-profit organizations is essential)
- Journalists/reporters (as they form a positive approach to the social economy.)
- Private and public foundations (as they provide funding during the transitional period)
- Schools (as they develop values and form attitudes)
- Higher education institutions (as they help choosing the right field to specialize on in order to be a self-fulfilled individual)
- Politicians (as they shape legislative framework)
- Ministries (as they ensure implementation of laws)
- Local communities (as social economy is directed towards community welfare.)
- Municipalities (as they are closer to the communities, they ensure the operation of the laws. Closer to the community.)
- Labour unions (as they represent the interests of employees, they also nurtures people‘s citizenship)
- European Commission (as they shape legislative framework in the EU) [WP3 – Lithuania]
- In a more distant place are, first, the religious entities and regulatory bodies, and secondly schools and artists. [WP3 – Portugal]

Expected impacts

- Cooperation: it is expected in the future that the several new agents of different sectors work in a network, enhancing the spirit of social economy. Specifically, it is expected (in 5/10 years) that the redistribution of tasks among people bring added value to the community (economically and in terms of time).
- Sociocracy: in a future year (2050) it is expected that people are the decision centre and – based on more supportive actions – can reach a level of greater cohesion and satisfaction (happiness).
- Creation of a participatory platform: in the future it is expected that the identification of good practices and the implementation of new projects allow to identify the communities' needs and the needs of other agents. These operators will work in a network, enhancing largely the feeling of satisfaction. [WP3 – Portugal]
- Local networks and women's networks will play a key role in an economy centred on common welfare.[WP4]

Research Questions

- What would a platform look like where new actors of a social economy can cooperate and share their resources (time/experience/skills/money...). On/In what kind of public squares will people gather in the social (instead of silicon) valley?
- What kind of environment (economical, institutional, social, and cultural) would enable new ways of economic collaboration to flourish and spread?
- How can we establish a good equilibrium between state services and social economy activities?
- How to ascribe value to the social sharing economy, which is really based on community (cooperative platforms)? And how to distinguish it from the "on demand economy"?
- What should be the attitude of the public, desires and expectations about the social economy?
- How can the public sector compete with commercial service providers in the long run?
- How to create favorable conditions and how to depict benefits of the social economy in order to motivate entrepreneurs to engage in some sort of this kind of activity?
- How can an economy for the common good contribute to sustainable development?
- What economic role does "social economy" plays on delocalization and unemployment brought by neoliberalism?

- Which forms of financing meet sustainable criteria and do not generate a debt spiral?
- How to foster participation of a broader range of employees (labour force) in the labour market/ economy?
- How to transform public services for them to be able to better colloborate with social economy?
- How is integration of the social economy changing the overall - mainstream capitalistic socio-economic model? [WP2]

Citizens' visions

[HRV] Vision 1: New age
"Prosperity, mutual respect, equality, solidarity and equal opportunities for all these are the goals that will be achieved by the "Man of the new era". A different system created by the man of the new era will have the following values: modesty, global solidarity, empathy."
[AUT] Vision 3: Work and the economic world: worth living
"Small-scale, non-profit-oriented businesses.
- Socially just!
- Fairly promoted!
- Reduced pace!
>The economy does not always have to grow more!"
[UK] Vision 1: The 2020 Economy
The most important difference is what constitutes a successful economy. We want as much value to be placed on the positive impact companies have on the economy as financial growth.
[...]
Economic development and growth that benefit the many and not the few, within a framework of sustainability and equality of wealth and opportunity, underpinned by the principles of trade justice and accountability and transparency.
[NOR] Vision 4: The environmental Citizen in a «short travelled» and «mega local» city in 2040
"3. Culture of sharing: People work together, share and exchange useful things; for instance: gardening tools, robot lawn mowers, snow blowers, cars, bicycles, clothes... 4. The work café: In the new work life in the mega global city, a need for a new type of café, the work café will be developed. It is more aimed at business meetings, office spaces than Starbucks or ... The work café will have small simple meeting rooms, AV-equipment... Only few days of meetings at work."
[ESP] Vision 3: Building the future
"Our vision ´From Zombies to communities´ foresees that in 2050 the following will exist:
- an unconditional basic income for each citizen
- a new local/regional monetary system without interest and banks of "well-being" for a local economy"

[DE] Vision 1: Sustainability implemented
“• Economy serves the people, not people serving the economy
• Growth is not the main motivation/indicator for economic success (post-growth society)
• Orientation towards common good (community economy)
• Technological progress does not automatically result in more production, but the time obtained can also be used elsewhere (8 hour day may no longer be necessary)”
[IRE] Vision 2: Expression of quality
“We envisage a world where:
There are equal opportunities, access to services, job opportunities, solid quality enhancements, and equal rights for all”
[IRE] Vision 1: Community Enrichment through Education
“Tolerance, moral obligations based economy”
[SVN] Vision 1: Society of Sustainable Balance
“Not-for-profit, circular economy, respect of social actors' mutual interests” [WP2]

2.a Basic universal income so nobody is left behind

SOCIETAL NEED: Unity and cohesion
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a Changing World – inclusive, innovative and reflective societies

Challenges

Money is the measure of wealth. People are judged on the amount they earn. There is a comparison of each other at school and into adulthood. The system favours selfishness. The problem is – an uneven distribution of wealth. The working classes are divided. [WP3 UK] As the value of labour becomes less in all sectors, we need to look at sustainable wealth distribution systems outside of current capitalism. [WP4]
The scenario is about the introduction of the Basic Universal Income (BUI), which in a society that is full of inequalities could contribute many benefits. BUI should solve the problem of poverty, improve people's self-esteem and reduce diseases. In short, it should ensure a decent human life to everybody. [WP3 - Slovenia]
Introducing a basic universal income promises huge benefits:

- We will have more equal societies and less of a poverty issue
- More people will be happy and fulfilled with their work because they can take their time looking for their job.

In addition it will provide the new forms of distribution of value required for dealing with digital labour. [WP2]. Universal basic income is one of the solutions of impacts on the labour force of the extending robotization and it is necessary to seek and test different solutions. [WP4]
The topic is discussed by economists e.g. in the context of digital labour analysis and peer to peer production models. Several countries are experimenting with related concepts (e.g. Finland and France).
No country at the moment has a fixed universal guaranteed basic income policy. What does exist are the remnants of various welfare states and they are set to be reduced in the future leaving too many behind. [WP2] Universal basic income would be an up-to-date, evidence-based reformulation of the welfare state, which today is in crisis. It could lead to an elimination of basal existential stress, increase the efficiency of professional specialization and motivation to work and earn more. [WP4]
In order to put BUI into force, some main challenges must be addressed, such as: understanding of the concept of BUI; what it is and what it brings? Which type of BUI

model to be used, depending on the specific environment and culture? The question of the source of funds; how to ensure funds? [WP3 - Slovenia]

Scope

We need theoretical and empirical research investigating ways to successfully implement a universal basic income. [WP2]
Establishing a universal basic income would imply a study on cultural change of the value perception of working. [WP4]

A) Understanding of the concept of BUI;
Understanding of the BUI concept is a foundation or a condition for the society to be able to give consent for the adoption of such a concept. It is necessary to have thorough knowledge and understanding of its effects. The most efficient way of getting this knowledge would be trough best practices (already established in the world).

- Education: UBI concept should be introduced in the education system at all levels (from kindergarten to university), where the positive effects of individual models should be presented. For the purposes of education, educational institutions, relevant ministries (education, welfare), family should be involved.
- Promotion; innovative ways of promotion via all forms of media. For the purposes of promotion, civil initiatives, non-governmental organizations, local-regional authorities, chambers of commerce should be involved.

B) Which type of BUI model to be used, depending on the specific environment and culture?
Given the diversity of cultures and people in Europe, each model of BUI should be adapted to the specifics and characteristics of each environment. The correct choice of the model provides efficiency and, consequently, it legitimates the use of certain BUI model in a certain area. As such, it must also ensure „a control effect“ in terms of preventing abuse. [WP3 - Slovenia]. Reward for helping others/hard work/morals. Cooperative shareholders in business. [WP3 - UK]
For the purposes of selection, drafting and review of the model some actors should be involved: University (humanities, anthropology, economics), Relevant ministries (finance, social affairs, labour, family), Civil society – NGOs, Business and companies, Public Administration.

C) The question of the source of funds; how to ensure funds?
It is necessary to demonstrate the positive effects of BUI through different socio-economic studies and already established good practices. A positive balance or savings in the state budget (with reduction of other social transfers) should be shown and, consequently, financial positive effects of the introduction of the UBI presented. BUI and its long-term positive effects can only be maintained through a sustainable

system of funding. CBA (Costs Benefits Analysis) and SWOT analysis must be done together with a projection of the future results (expected positive effects).
For the purpose of elaboration of socio-economic analysis and projections (model results), University (economics, law), Ministry of Finance, Business and companies should be involved.
"The final result of the debate is that the European Commission should publish a call for a pilot project which would introduce BUI in certain Member states (in every state different tailor-made model). BUI would be given to a specific testing group of people, which should include people from all classes and education. This project would give different models and would be able to show the effects (positive and negative) of UBI. This would give foundations for further discussions and decisions on introducing BUI." [WP3 - Slovenia]

Expected impacts

- Cycle of poverty to end and help the poor. [WP3 - UK]
- A basic universal income will make people financially independent from the labour market and reduce the vulnerability of workers against employers and the value of quality work increases.
- Free choice of job. People would be able to do what pleases them (work-wise). This would increase productivity, quality of life and soften social hotspots. [WP4]
- Improving self-esteem and reduce disease
- Less social transfers (less expenditure on treatment)
- UBI would ensure a decent quality of life for all [WP3 - Slovenia]
- Its establishment can reduce the total cost of the administration which decides on social, health and other benefits [WP4]
- To create a society which focus on wealth creation for all through education and opportunity. [WP3 - UK]
- Current unpaid activities are finally paid. [WP4]
- More social capital [WP3 - Slovenia]

Research Questions

- What are the best available models of a universal basic income?
- What possible models of a universal income could be adapted to the contexts of different countries?
- What are the implications of introducing a universal income model in different European regions? [WP2] Is it possible to eliminate the significant differences in income levels and living standards among the different EU regions with the introduction of universal basic income? What impact does the introduction of a general basic income have on the productivity of a region? [WP4]

- What are the implications for the contract between citizens and the state? [WP2] How to have universal basic income and simultaneously motivate citizens to work? What should the citizen do for society in exchange of a basic income? Pay to work universal income means that you would be guaranteed income but expected to work regardless of preferences for jobs.
- What would be the Impact of a general basic income on the distribution of wealth? Who are the winners and losers?
- Does the establishment of universal basic income encourage inclusion/integration of marginalized groups and foster stability of family situations?
- What is the current perspective/viewpoint of the different stakeholders on this issue?
- Does the universal income allow to change towards a more responsible and sustainable consumption model or not?
- Which monitoring model can ensure that this income will fulfill the objectives of its implementation? [WP4]

Concerns

- Countries don't have the budget to supply every person with a fixed income
- It is a very radical approach. [WP2]
- Realistically there is hardly a consensus for the creation of this income, so another approach could make better use of available resources.
- Lack of political will/societal acceptance (because of too little economic research on it) for this heavily normative topic.
- There will be reduced motivation to work hard and achieve. Production will decrease.
- People will loose motivation to develop and create, the majority spends all the time by cosumerism, and almost nobody will generate the profit.
- People who are financially motivated can lose motivation and stop working.
- Is there a risk that access to a guaranteed minimum income limit or deter the professional involvement of citizens?
- There is a danger in disincentivising employment of creating a society dependent on subsidies.
- Freedom says that we can spend all income by consuming obsolete goods: consuming increases [WP4]

Citizens' visions

[DE] Vision 3: Diversity and self-determination

"Every person can freely determine their own life"

[HUN] Vision 2: The rise of a backward region

“They declared their satisfaction with the shorter and flexible working hours (6 hour workdays), the higher wage that provides well for their livelihood, and the healthy working conditions, ...”

[SWE] Vision 1: Equality between women and men

“all children are born with the same rights”

[LIT] Vision 5: Sustainable Family Policy

“support is provided for each family not only those which are at risk”

[NL] Vision 2: Together for one another

“Citizens spend more time to do activities in and for the neighbourhood”

[HUN] Vision 4: The annual evaluation speech of the female CEO in 2050

“Our elderly colleagues pass on their knowledge and experience even after becoming pensioners”

[AUT] Vision 6: We are one community!

When I grow up, I can work whatever I want, like my parents. Because we have a basic income from the state, which covers our basic needs (food, drink, housing, clothing, care, health).

[PORT] Vision 2: Cooperation

In 2050, our society is based on cooperative values and in a systemic vision of the reality. There is now an unconditional basic income to ensure the basic needs of citizens (in terms of food, health care, housing, education and training).

[FR] Vision 4: Sharing common values to live better together

Reflection of feasibility of a minimum income or unconditional income or basic income, financed through local currency

[LUX] Vision 5: From Zombies to communities

“An unconditional basic income for each citizen” [WP2]

2.b Community building development

SOCIETAL NEED: Unity and cohesion
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

Many community building initiatives are emerging. Examples are time banking, social streets, sharing economy initiatives, community gardens Related research is under way on social innovation, governance, social networks and social capital.
Digitalisation is enabling the growth of social movements. [WP2] In an increasingly complex society communities and processes of community forming are more important than ever. [WP4]
The question is how to ensure the permanence of these communities?
[There are many issues to tackle in order to foster community development:] [WP2]

Decentralization
Engagement of local communities, using new technologies and innovative methods (as a tool for bonding, not separation]

Social activism
How to promote citizens' participation and citizens' solidarity [WP3 – Croatia]

Community spaces
City planning that supports encountering other people are important when building communities. Living arrangements can also contribute to joint activities. Communities and joint activities may also be an economically efficient way to build prosperity and common use of spaces, but accompanying costs should be allocated so as to promote instead of hinder such activities.

Digital empowerment
Digital devices and services create new virtual and physical forms of communities yet also enable exclusion and seclusion. [WP3 – Finland]
Currently we feel that the existing platforms are exclusive and their access is restricted to those fortunate enough. Empowering people to use these new technologies should help us to identify their needs and find appropriate solutions via

their chosen communities. We need accessibility of the tools used to build online communities. [WP2]

Migration
These days people feel in social apathy that needs to be removed towards empathy and compassion.
The identification with a nation created a feeling of difference in people. Therefore, the feeling of cohesion decreases and people forget that all of us are humans no matter where we come from. We need an open and structured discussion on migration in our society.

Status gap
The gap between the rich and poor, gentrification [WP3 – Luxembourg]

Scope

We need theoretical and empirical research on infrastructures that could underpin inclusion, cohesion and collaboration within hybrid and diverse populations in the long term.

Decentralization

- By developing local communities, their infrastructure, to keep the inhabitants and provide needed services
- Activation of community boards and town districts (as lowest level of self-government) [WP3 – Croatia]

Social activism

- By building activities, actions, platforms of engagement it is possible to create a sense of place and belonging and social cohesion [WP2]: Citizens work as a collective on ideas, that they can create themselves or pass them on to the government. The government can build up projects on a national level and create platform of the municipality [WP3 – Luxembourg]
- By citizen involvement in all phases of decision-making (through public discussions and the development of infrastructure that enables it)
- By fostering social entrepreneurship [WP3 – Croatia]
- A participatory approach in adapted places (coffees, pubs, streets and neighbourhoods) should be retained, by organizing community panels. [WP3 – France]

Community spaces

- Build and evaluate new physical/social spaces for collective action and collaboration. Both should allow inclusion across generations and skills. Evaluate and generalise good practices with an aim to scaling solutions. [WP2]
- Common functional and user-friendly spaces. [WP3 – Finland]

- It is necessary to design infrastructures that respect diversity and multiple voices in order to support engagement and inclusion without homogenisation [WP4]

Digital empowerment

- Build and evaluate digital tools for collaboration, collective intelligence and collective action. Evaluate and generalise good practices with an aim to scaling solutions. [WP2]
- Through the use of new technologies and sharing experiences it is possible to identify people's needs and possible solutions [WP2]
- By enabling access to information, including affirmative involvement of the local media

Expected impacts

- People have control over their own life. This will substantially change economic and state activities. [WP4]
- Shifting of growth policies towards the real needs of the community with participation of citizens
- Securing public participation in co-creation of community life and decision-making [WP3 – Croatia]
- "Human size" units from baby to grandpa. [WP3 – Finland]
- We will learn how to be more tolerant and involved [WP3 – France]
- The cohesion of communities helps to address some other important and current challenges.
- Diversity and inclusion will free creative and innovative potential of the communities.
- Self-sufficiency, interdependence, responsibility, cooperation, sense of belonging and self-esteem of the residents of the settlement.
- The feeling of belonging retrospectively multiplies voluntary (spontaneous) maintenance and development of the community and its environment.

- The current globalization brings the necessity of diverse communities, and hence the necessity to cope with them and ensure their functioning.
- The community can palliate the State deficiencies [WP4]

Research Questions

- How to create "we sense / community feeling" within societies and across states-regions?
- What are the social mechanisms that enable the rapid development of diverse and inclusive communities?
- What kind of digital tools and physical spaces can underpin the long-term development of such communities?

- What kind of actions can sustain development and integration of different communities in the long-term?
- Where in the EU exist cohesive and yet diverse communities and what do they do differently than communities that are not so consistent? Under what conditions can they be replicated?
- What are the cohesive forces, that are capable of maintaining common platforms in the long run?
- What effect do digital forms of communication have on community formation?
- How can we counteract compartmentalization and exclusion of different populations through political and societal means?
- What stages of group formation and what kind of personalities are essential to sustain a community?
- How to support cultural and educational backgrounds that foster the development of inclusive communities and conflicts resolution?
- What is the role of religion and spiritual tradition in creating and maintaining a community?
- How are exclusion mechanisms identified?
- How to empower communities besides through political institutions mechanisms or human rights claims?
- What educational content and values promote inclusive societies?
- Which are the points of interests around which the community is gathering?
- How can the interaction of communities and families achieve a synergistic effect on community cohesion?
- Which criteria define a community as diverse and inclusive and which measures need to be applied to comply with these criteria? [WP4]

Concerns

- Concerned actors/dissemination: research must be communicated to both participants and citizens, with back and forth notifications. [WP3 – France]
- Too expensive to maintain public spaces to be used for collectives
- There are few public spaces that invite people to come together to discuss and develop projects for the common good without having to consume.
- Participation of the civil society and its involvement in forms of collective action are key to deepening democracy.
- We need to develop and intensify collective use, public spaces, collaborative services in order to generate more social ties.
- It can be a new source of "bullying" and exclusion from society for people devote their free time to other interests and cannot participate.
- This is rather not feasible for large cities [WP4]

Citizens' visions

[PORT] Vision 5: We build the future now
“We cultivate the closeness, listen and help all the generations of family, friends, neighbours and community”
[LUX] Vision 7: On the way to a participatory community
“communication tools which are adapted to the needs of people such as social com-munity networks and management tools for an inclusive and participatory society.”
[FIN] Vision 6: Community as an asset
“The community is more than the sum of its parts. It creates security to and empowers its members.”
[DE] Vision 4: Living together – shared homes in 2050
“Additionally, there are also communal rooms and shared gardens (partial self-sufficiency, place for relaxing, barbecues, entertaining etc.). Prerequisite for a successful housing project is the shared “sense of community”
[HR] Vision 3: The preservation of human health and nature for the generation XYZ
“We imagine year 2050 as a year in which people live happily in pleasant communities”
[IRE] Vision 2: Expression of quality
“People more politically engaged”
[FR] Vision 1: Sociability over Technology
“Exchange and dialogue are developed regarding the shared building’s resources (washing machine, shared gardens, recuperation, recycling etc.).”
“Exchange and dialogue are developed”
“Everyone is connected without any modern technology; respect of human”
“Respect will be a core value. Respect of laicity, of human being, of differences and of religions.”
[BEL] Vision 1: Foundations for respect, equality, diversity through education
“Foundation for respect, equality, diversity through education”
[CZE] Vision 4: Upbringing and education towards tolerance
“People closer to each other; sharing public space”
[UK] Vision 6: Citizen empowerment
“All services should be community led” [WP2]

2.c Evidence-based community building

SOCIETAL NEED: Unity and cohesion
GRAND CHALLENGE:

6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

Evidence based policy making often involves setting up of randomized control trials. Experiments are first set up on a small scale and then scaled up. Behavioural economics is researching behavioural biases i.e. prejudices with undesired effects on human behaviour. The UK government has established the behavioural insights team consisting of behavioural economists with the aim of basing policies and public services "on more realistic assumptions of human behaviour". [WP2]
[Nowadays, however, there are many issues to tackle in order to build an evidence-based community]:

- Community decision-making is not evidence-based regardless of the level; development of strategies which are not evidence-based
- Challenge of clientelism in the society as the basis for arbitrary and self-interest decision-making
- Current educational system does not foster critical and analytical thinking
- Finding of "autochthonous" model which is suitable for a particular community
- Finding of the relation between the citizen contribution (problem detection) and the expert contribution (application of the solution)
- Understanding how to avoid over-regulation; regulations do not necessarily fit community and citizen needs [WP3 – Croatia]

When policies are based on evidence, results are to the advantage of citizens, [some examples are]:

- Speeding kills, 20 m.p.h. speed limits in towns in UK are introduced
- Alcohol and driving kills, low blood/alcohol limits when driving affect road deaths positively.
- Despite proven benefits of needle exchange for drug users, governments refuse to sponsor this effective way to reduce drug use health concerns, thus affecting communities negatively. [WP2]

Scope

Explore policy-making based on evidence and behavioural insights to reduce communities' prejudices towards those who are not (yet) part of them. Access to public data should be provided to citizens, communities, researchers and policy makers and used for the development of societies.
This requires theoretical and empirical research on how can communities can be transformed by knowledge [WP2], including:

- Introducing steps for change of mind-sets in the society, so that citizens would start to be involved in decision-making
- Empowering citizens through accessible informational campaigns
- Impact evaluation of the public policy measures; decisions being grounded in research and data (EMPIRIJA)
- Securing the relation between contribution of citizens and contribution of experts
- Digitalization of participation of citizens in policy-making
- Introducing analysis (cause-consequences)
- Strategic approach to local development [WP3 – Croatia]

Expected impacts

- Justifiability of the public policies, their sustainability and possibility for implementation
- Critical thinking in the development of children
- Empowered society capable of vision development
- Involvement of stakeholders in the analysis and policy decision-making based on substantial data using methods and tools for policy impact evaluation
- Society-building in which decision-making is participatory from the lowest levels; reduced power of politicians to make decisions for the entire community on their own [WP3 – Croatia]
- Increase social cohesion, creating a welcoming and inclusive society
- Policy makers and professional politicians are too focused on short term results, [they will not consider this process]
- Reduce the bias that is generated by disinformation
- Representation of small urban community interests at all levels of the settlement and the society with the exclusion of party interest
- Community would be able to distinguish between "good" and "bad" politicians.
- "Destroy the prejudice: the elected representative is an asshole and the citizen is an idiot" [WP4]

Research Questions

- What are successful practices of evidence-based community building?
- What were the tools and enabling practices used in these processes and how could they be scalable and replicated?
- On which particular issues were these practices focused on?
- How were citizens and policy makers involved in these processes? [WP2]

Concerns

- The issue of collecting and making available data is controversial - what type of data should those be?
- No matter what policies are proposed and adopted, there will always be prejudices.
- The research program is described on a very abstract level and could be implemented in any which way (arbitrarily).
- Information and examples of good practice will increase a society demand for the respect of the strategic plan and make it more difficult to enforce short-term interests. [WP4]
- This could be a waste of money. Some citizens will not see the benefits of this approach because of the pressure of fulfilling their primary needs. [WP2]

Citizens' visions

[GR] Vision 1: Humanity - Environment - Justice
"Democratic coexistence of all people regardless of; gender, ethnicity, appearance, age, etc.;"
"creating spaces for worship of all religions;"
"providing medical care to all people"
[SVK] Vision 3: Unlimited Possibilities of the Future: Transportation, Healthcare and Dissemination of Ideas
"Equality in opportunities and possibilities"
[IRE] Vision 1: Community Enrichment through Education
"Well integrated local community, with respect"
[PORT] Vision 5: We build the future now
"People/citizens will have more voice and weight in decision making"
[ITA] Vision 4: A school beyond times - a new education model
"The sense of belonging to the community is strong and it is a common feeling among citizens"
[FR] Vision 1: Sociability over technology
"True news is displayed; social codes"
[PL] Vision 5: I've Got Talent

“Everyone has talents worth discovering, appreciating and developing; training programs in accordance with the results of the analysis;
“Training programs will be personalized in accordance with the results of the analysis of pupils' aptitudes and interests.”
“Creating and promoting skills and talents will be correlated with the needs of the economy.” [WP2]

2.d Alternative economic model

SOCIETAL NEED: Unity and cohesion
GRAND CHALLENGE:

1. Health, demographic change and well-being
6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

In the current situation, the competitive culture resulting from our growth-based economic system hinders the inclusion of the most vulnerable members of our society. [WP2] The current model is inadequate:

- Money is the measure of wealth. People are judged on the amount they earn.
- The rich get richer and the poor get poorer: an uneven distribution of wealth [WP3 – UK]
- It promotes social conflict
- It does not respect the (ecological) limits of planet Earth [WP3 – Portugal]
- Short period economic interests dominate decision making.
- The two main objectives of the EU 2020 Strategy – competitiveness and employment – are in contrast to each other. [WP3 – Hungary]

This has to change. We want alternative holistic economic models and approaches that focus on happiness and cooperation. This will support new forms of communities that will provide room and respect for all. [WP2]
A new model is necessary that can respond to several current challenges:

- Political/institutional structures have to be amended in order to promote this change
- Social alienation must be fought against, in order to have more active and engaged populations
- Human values must be integrated in political decisions to promote a new sense of community
- The engagement of society must be effective not to incur into decisions based on incomplete information (e.g. Brexit process) [WP3 – Portugal]

Several researchers (eg. at Arizona State University, ASU) are thinking along these lines. Economics Nobel laureate Elinor Ostrom has researched ways to govern the "Commons". Other important contributions are happiness economics, degrowth theory and work on cooperatives. Amartya Sen's philosophy of development

suggests that governments should measure what their citizens can do, not just what they own (capability approach).

We feel like we as a society are heading in the wrong direction, valuing material gain over happiness. This affects everyone and primarily the most vulnerable members of our society and we feel excluded of important decisions that affect us all. eg: TTIP, corporate lobbying. [WP2]

Scope

Research should investigate alternative economic models that promote sustainable ways of living. It needs to monitor, promote and expand the most relevant and efficient models so policies can maintain the best possible catalogue of indicators. [WP2]

[Directions to investigate:]

- Basic income. Do we need money at all? Do we need to work?
- Reward for helping others/hard work/morals [WP3 – UK]
- Economics of happiness [WP3 – Hungary]
- Models that deal with the complexity of the transition of problems at different geographical scales.
- Existing alternative models, based on a perspective of "lessons learned".
- System of incentives that supports the current economic model and through research on the needed incentives that would promote a shift to a new economic model.
- Three dimensions of the sustainable development ≈ economic, ecological and social.

Scaling correctly the problems and consequently act a decision-making by interdisciplinary teams. [WP3 – Portugal]

Expected impacts

- Increase visibility of companies that do not adhere to the constraints of growth
- Increase the resonance of the political system
- Understanding persistence as a factor better [WP3 – Austria]
- Introduction of alternative economic indicators instead of / besides GDP
- The local economy vitalizes as a result of the quick internalisation of the transportation externalities
- Sharing economy, open access to the results and good practices of research and development
- Introduction of a new notion of fairness (FNA) into the public knowledge
- A cooperating (win-win type) economy instead of the "competitive"/competing one

- Spreading of the economy of kindness: timeshare, payment without money (LETS - Local Exchange Trade Systems)
- Changing the interest system [WP3 – Hungary]
- A society which focus on wealth creation for all through education and opportunity. [WP3 – UK]
- This will support new forms of communities that will provide room and respect for all.
- This would allow review the criteria of public satisfaction of prevailing economic and technological development, possibly changing the value criteria.
- Future societies should rely on economic systems that support environmental sustainability.
- An alternative economic model will enable higher quality of life to the individual and to families, especially in rural areas. [WP4]

Research Questions

- What are the existing alternative economic and governance models?
- What are indicators of citizen involvement in these models?
- How can these models be evaluated?
- What would be needed to scale these models up to the European level? [WP2]
- Is it possible to have in a global world alternative economic models and at the same time more competitive models (what is the impact of such symbiosis)?
- In which way can appropriate conditions for faster implementation of alternative economic models be created?
- How to compensate and counteract the effect that foreign trade has on the impoverishment of the local economies?
- How can these different models be integrated?
- How is it possible to balance individual, municipal and national interests in an international structure?
- What incentives can be given to large companies so that they adopt too this type of model?
- How can we specify and design a "good enough" alternative economical model? What kind of views and background should the planning team have?

- What impact do these models have on equity and population welfare?
- What are risks and benefits of various alternative economic models?
- Which are possible indicators of the alternative nature of economic models? [WP4]

Concerns

- Influence of lobbies (financial and "agenda owners")
- History of communism in the eastern part of the EU
- Revolutionary changes are scary
- Reluctance of those in charge, because they benefit from the current situation [WP2]
- All the other arguments, such as eco-friendly energy for the home etc won't be realistic if we don't have a stable economy. [WP3 – UK]
- Alternative economics is not enough, we need a paradigm change. (WP3 – Hungary)
- it is difficult to upscale certain practices. Another obstacle might lie in the lack/difficulty of using already existing inter-scale networks
- there is a need to overcome the "inertia of a system to change", either at the individual level or at the centres of public decision. [WP3 – Portugal]
- There is a lot of relevant knowledge embedded in many local arrangements all over the world, but it is being ignored or wasted.
- History of communism in the eastern part of the EU shows that such optimistic solutions cannot work
- We need to build a sustainable economy to avoid harmful wealth concentration and the irreversible destruction of the natural environment.
- Residents of the new EU states are treated as cheap labour by the 'old' states.
- Individual and party interests ignore the interests of the communities. Both have priority over the community, but it should be the other way around.
- It is easier and more effective to make individuals and companies fully exploit existing possibilities (eg. sustainable ways of conducting business).
- Unfortunately, too many people and generations would be affected by these changes, therefore this is unfortunately only utopia and not feasible.
- As economy evolves in line with the rest of the world, economic models must also be evaluated and adjusted to contemporary challenges.
- Economic growth can not continue indefinitely at the expense of others, so we have to concentrate on technical development for the benefit of the people. [WP4]

Citizens' visions

[LUT] Vision 3: Harmony between Human and Nature

"Economic performance indicators have reached its peak and new technologies have been developed so they practically disappeared and it has freed us from excessive production XXX"

[ITA] Vision 3: Return to via Gluck

"Exchange and sharing practices are the basis of this diffuse serenity"

[LUX] Vision 1: On the way to a participatory community

"The community development, characterized by involvement of people in projects aiming at cohabitation (e.g. production of energy, production of food) … Cooperative systems, cooperative living in Zurich"

[UK] Vision 4:
“Coop living: Land community trust, provision for self-builds. Citizens decide on spending priorities”
[SWE] Vision 5: Family, personal development and value system –
“Much of what we own is common property, for example technical equipment such as vehicles, lawn mowers and tools”
[PORT] Vision 4: Culture with all for development
“In 2050 we do not concentrate on productivity (which means ultimately aiming at profit) but on everybody’s individual happiness index. That will feed the happiness of the collective. Education is the main vehicle for the realization of this vision.” [WP2]

3.a **Data for All – Share the Power of Data**

SOCIETAL NEED: **Citizenship Awareness and Participation**
GRAND CHALLENGE:

3. **Secure, clean and efficient energy**
4. **Smart, green and integrated transport**
6. **Europe in a Changing World – inclusive, innovative and reflective societies**
7. **Secure societies - protecting freedom and security of Europe and its citizens**

Challenges

The following issues and challenges are being considered as the focal points for research in this domain:

- Open Data/Digital Exclusion (opening up licenses, open use of data, Data Divide). [WP3 - Slovakia, Croatia, Ireland, Lithuania, Germany] [WP4]
- Self Data/Data Ownership (an emerging field on the use of personal data by individuals, VRM6 quantified self data ownership). [WP3 - Croatia, Ireland, Lithuania, Germany]
- Big Data (Advanced methods to extract information from huge datasets generated from diverse sources). [WP3 - Slovakia, Croatia, Ireland, Lithuania, Germany]
- Data Quality, Standard, and Resilience [WP4]
- Data Literacy / Data Visibility / Digital Literacy: Education Solutions [WP3 - Slovakia, Croatia, Ireland, Germany]
- Data Ethics: Collection, Distribution, and Usage [WP3 - Ireland, Lithuania, Germany]
- Bridging Quantitative Data and Qualitative Decisions [WP4]
- Social Mapping (Analysis of human networks, discussion dynamics etc. for recognition of behaviour and preferences).
- Data access restriction is partly a tool of power, on the other hand – can be used by citizens to create good governance. Data access can be crucial for deciding control of government. [WP3 - Slovakia]

Scope

Research should aim at finding ways of safely and securely sharing the power of data with non-specialists and individual citizens for use in their own lives and for participating in collective decisions. Two sets of challenges need to be addressed by research on:

- People-centred challenges: data literacy, personal data privacy, co-production of data, data access ethical data use, and
- Data-centred challenges: quality of data, openness of data, standardization of data.

Civil society, industry, stakeholders and IT experts, media, public service providers, labour unions or even "data ombudsman" shall be involved in solving the challenges.

Expected impacts

- Increase citizen participation in decision-making processes. [WP4]
- Urban Management Improvement (Traffic, Infrastructure, Resources, etc.)
- Foster knowledge-based decision-making by citizens and communities, restore citizens trust in policy making. [WP3]
- Increase Transparency, Limit Corruption, Ethics
- Improved services – solutions including potential users
- Improved Access to Quality, Standardized, Resilient Data Sets [WP3]
- Accessible Interfaces for Data Analysis and Visulaizations [WP4]
- Improved Digital and Data Literacy
- Demonstrating successful use cases for public access and utilization of data for governance issues. [WP3, WP4]

Research Questions

- How can data become assets and tools to allow non-specialists to take more active part in decision making as well as in the design and production of public services?
- What are barriers of open data on the side of supply as well as demand?
- What are the risks and limitations of data-driven collective decision making?
- Can there be too many data? How can desirable social goals result in the production of new data?
- Should data diversity become an explicit policy objective? [WP2]
- How can the self-determined handling of one's own data be strengthened?
- What would be the impact of open data in improving the public policies?
- How to build consistent systems of sharing data across all formats (structured and unstructured)?
- Which methods of participatory and solidarity use of data are there and which are needed? [WP4]

3.b Snakes and Ladders – Connecting scales of issues and actors

SOCIETAL NEED: Citizenship Awareness and Participation
GRAND CHALLENGE:

3. Secure, clean and efficient energy
5. Climate action, environment, resource efficiency and raw materials
6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

Non-conventional mechanisms of scaling:

- Large-scale, open, collaborative datasets or knowledge production (wikipedia, open street map)
- Peer to Peer commons management (P2P foundation)
- Open source hardware, software, and development spaces and tools
- Open innovation ecosystems
- Existing knowledge exchange (academic existing models, public/private existing models, but there are less models involving citizens and other actions)
- Empathy development (Baron Cohen and Roman Krznaric are the main researchers on empathy) [WP2]
- Lack of commonalities across demographics and scales: Language, Values, Goals, Visions.
- Lack of cross-sector/actor cooperation, silo mentalities [WP3 - Sweden]
- Inequalities across knowledge bases and their impact on decision-making processes.
- Creating trust through increased layers of interaction across scalar groups. [WP3 - Sweden]
- How role-playing can help to translate specific interests into collective issues? [WP3 – Belgium]
- Sharing good practices (solutions, tools, effective models) [WP3 - Belgium]

Scope

Research should explore possibilities for exchanging knowledge and for taking joint actions in response to shared challenges between actors on diverse scales. This can

include trans-disciplinary development of practical, methodological, and technological experiments linking actors across scalar issues. Research projects can also include design and implementation of new governance structures, transparency policies, and decision-making processes.
Participatory approaches have to be fostered to give more legitimacy to research and policy making. [WP3]

Expected impacts

The impacts of this research will be visible over the medium and long term, due to the iterative nature of social research used to adjust governing structures and processes. At the end, this research should recreate links between the different actors and stakes.
Primary goal of this research program is to produce demonstrable results in the following areas:

- Establishing trust between citizens and decision makers.
- Bringing more ethics in participatory processes.
- Organizing inter-level (of power) meetings.
- Establishing some transparency.
- Reinventing the system.
- Restoring a collective consciousness among citizens.
- Give to citizens some keys of comprehension of the social issues in order to understand why/how decisions are made.
- We need to know in what type of situation we can engage citizens in order to find a balance.
- Change political discourse and cooperation modalities.
- Building bridges between sectors to better attain sustainable approaches
- Shift some decision-making power to lower governance levels
- Provide avenues for greater involvement of citizens
- Research which results in reflection of how to solve the governance issues
- To create a better decision-making system with not only vertical hierarchies but also more horizontal linkages

Research Questions

- What are the effective (new and existing) models and mechanisms for exchange of knowledge and evidences across scales and issues between citizens and powerful global players?
- How do we connect distributed actions in response to shared challenges?
- How do we evaluate the impact of such activities?
- What can be the role of education and other forms of learning in catalysing and supporting those processes? [WP2]
- How to overcome the practical limits of multilevel institutions? How to connect

simultaneously all decision-makers and citizens? How to restore citizens' trust in policy makers?

- How do we promote and evaluate local studies of different policies in order to study their feasibility and impact on a larger scale?
- How can we bring people to give quality comments and how do we get the people receiving these comments to take them into consideration?
- How can the quality of crosslinking / participatory activities (process and result) be ensured?
- How to make the decisions-makers adhere to this democratic imperative
- What is the willingness of decision-makers to join such a network and to use the fed information?
- How to achieve adequate training and preparation for empowered citizen participation in decision-making processes?
- - What king of obstacles do individuals (marginalized) face at societal participation (especially in decision making) and how are these obstacles overcome?
- How to identify disadvantage groups with regard to the solved issue?
- - How to unite citizens to the fight with external dangers supported by internal social elities?
- - How to develop European, transnational public for the debate on key social problems and citizen initiative activation?
- How can we evaluate these activities?
- How can participatory systems be used to check and balance other modes of governance? How might scaling be communicated? [WP4]

Citizens' visions

[HUN]Vision 1: Naturally.
"This decision making process is made by a globally existing direct participatory democracy".
[ITA] Vision 5: Personal Growth within Collective Growth and vice versa.
"In 20150, inside a green city – square – district the community has built an organization in which collective decisions are discussed."
[PORT] Vision 2: Cooperation.
"In 2050 citizens participate actively and consciously in governance".
[SWE] Vision 2: Education – A Standardised education system in the EU. "Through the creation of a common basic curriculum within the EU we achieve increased understanding for other cultures and people, and better integration in the EU."
[FR] Vision 2: Collective project:
"There is a new worldwide equilibrium, there is an awareness of our common and shared planet." [WP2]

3.c The Transparency Toolbox

SOCIETAL NEED: Citizenship Awareness and Participation
GRAND CHALLENGE:

5. Climate action, environment, resource efficiency and raw materials
6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

The following issues are being researched in this context:

- Non-conventional mechanisms of scaling
- Digital spaces for transparent government.
- Co-designing policy (visualization of decision making processes)
- Resistance from current governing structures
- The deployment of social media for community self-policing
- Transparency as a critical and philosophical concept is under thorough testing and has contested benefits and opponents. [WP2]
- Finding new modalities for governance and participation.
- Defining transparency in policies (code of conduct, ethics, compliance rules, commitment and exemplarity...)
- Degradation of public trust in governance and the rise of populism and extremism. (WP3 - Belgium)
- Increasing amount of data in relation to decision making processes [WP3 - Finland]

Scope

Research should explore pathways towards transparency in diverse societal contexts and ways to transform processes of governance so they can be accessible to all. Secondly we need to understand under which conditions citizens' power, agency and influence impact upon outcomes of decision making processes. Research shall also examine barriers and restrictions to transparent governance; alongside the enablers and benefits that transparency is expected to deliver.

Expected impacts

In seeking to understand the complex nature of transparent governance and the processes that it both enables and inhibits, research programs in this area will focus on impacting the following areas [WP3 - Belgium, Finland]:

- Develop "citizen-friendly" decision-making processes.
- Develop transparency to trigger virtuous participation dynamics.
- Develop mandate assessment / evaluation (in the same logic of humility).
- Develop participatory systems that can be activated for high-impact decisions.
- Conduct observational studies: how are political decisions explained to citizens (thus increasing collective understanding)?
- Examine the citizen role of voting: awareness of the importance of the elective act
- Build confidence in democratic politics.
- Develop platforms for politicians to give arguments about the "why" of public policies and decisions
- Examine how hyper-transparency could multiply the information,
- And develop systems to help citizens navigate in this multitude of data and identify actionable levers.
- Set up the citizen of tomorrow [future generations] in the decision process.
- Find ways, tools, and techniques to systematize the transparency of decision making.
- Using transparency and citizen participation to address pressing socio-economic issues (housing, food, work, etc.)

Research Questions

- What drives people to participate and to continue this participation?
- What role do education and other forms of learning have in supporting citizen awareness and participation?
- What are the barriers, enablers, benefits and problems of transparency in diverse society contexts?
- What are metrics and methods to measure and evaluate the impact of citizens' participation on decisions made and the effectiveness (or not) of methods for communicating these outcomes to participants?
- Where, how and under what conditions power, agency and influence of actors impact outcomes of processes of governance? How can this impact be measured and evaluated? How can it be communicated to citizens? How can we know that this communication was effective in raising citizen's awareness? [WP2]
- What are the barriers, enablers, benefits and problems of transparency in diverse society contexts?

- What drives people to participate and to continue this participation?
- What are the best approaches to educate people in order to assure that they make informed decisions?
- With which methods and tools and how effective can the inclusion of the participants into management processes be influenced?
- This will allow to understand mechanisms that facilitate or hinder effective (or influential) participation.
- How to attract and motivate people to increase participation?
- Who and for who takes the responsibility?
- What results do citizens expect to achieve from accessing and processing data?
- What hinders people not to cooperate and stops them from standing out?
- Why are well-known results regarding participation not taken up and taken into account?
- How can participation permanently be enhanced/configured together with participants?
- What drives decision-makers to enable transparent processes?
- How can participatory policy making succeed under the framework conditions of new technologies and an increasingly heterogeneous society?
- What encourages people to participate or not? (inclusive society model development)
- What risks are inherent in admitting incompetent individuals (without basic knowledge, sensitive to influences) to decision-making processes?
- How can people be sure of their impact on decision-making?
- What are mechanisms of ensuring access to the decision-making process without leading to automatic resolutions of particular questions?
- What can a study of the implementation of social control mechanisms (operating with reporting and recall) built on community life instead of parties (interests) reveal?
- How can the correlations between participation and the results of complex processes be more visible to a layperson?
- What role do various forms of power play? (Also discursive, symbolic)?
- How can we integrate all social classes in decision-making processes ?
- How can we strengthen more transparency at all levels? [WP4]

Citizens' visions

[CZE] Vision 6: Back to the roots.
"Balance between technologies and personal values".
[ROU] Vision 5: The socio-political structure of a global citizen.
"- We have online platform where we can upload and make suggestions for future laws;
- The Government takes in consideration the citizen's opinion when it decides the resources allocation;"
[PORT] Vision 6: My day in 2050.

“There will be cooperation among citizens and between them and the societal institutions in order to solve concrete social problems. It will be of no interest who started the initiative. In this sense, the involvement of individuals is larger and also more sincere. The institutions and the state create the conditions for that, which means that citizens can assume this role supported by active public institutions and a state that did not give up its duties.”

[UK] Vision 1: The 2020 economy.

“Eradication of corrupt and anti-competitive practices”.

[LUX] Vision 5: From Zombies to communities / coexisting solidarity and working for well-being of citizens.

“A transparent information and communication of decision making processes.”

[BEL] Vision 4: Citizen-centred vision.

“Technological innovations will make a better transparency of politicians and leaders’ speech possible.”

[UK] Vision 1: The 2020 Economy [WP2]

3.d Empowered Citizens

SOCIETAL NEED: Citizenship Awareness and Participation
GRAND CHALLENGE:

5. Climate action, environment, resource efficiency and raw materials
6. Europe in a Changing World – inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

The following issues are being researched in this context:
Non-conventional mechanisms of scaling:

- Digital inclusion with 3 different focuses: access /use focus; public service access; empowerment.
- Design of public services (co-design, re-design, user-centred design).
- Needs of disenfranchised (communities, citizens, NGOs) digital or not access to essential services, mediation (by public servants, NGOs, etc.)
- Digitization can make the gap bigger, namely between different generations and social groups (market-driven approach vs. national policy).
- Participatory budgeting – people have information sessions and can use on-line tools to present their proposals for the neighbourhood to vote on the ones to be implemented [WP2]
- Passivity of citizens due to low civic consciousness - challenge of engaging citizens
- Accessibility of information sources and information for all citizens
- Legitimacy and credibility of information, transparency
- How to reach and include marginalized groups (different kinds of marginalized groups - e.g. groups of lower social status, displaced groups, groups with low access to information)
- The base for decision-making with participation of stakeholders in the process
- In order to make right decisions
- In order to exercise one's civil rights through being better informed [WP3 - Croatia]
- Because it would enable flow of information which is faster and steadier in order to establish exchange of knowledge of higher quality
- To eradicate illiteracy and computer illiteracy
- Lack of and resistance to life-long learning
- Digitization can be a form of exclusion, because it disempowers and creates a sense of elitism
- Technology is moving very fast and many cannot keep up. Technology is

there to serve us [WP3 - Malta]

- Develop citizens' capacity and autonomy to learn and contribute [to it] online and offline.
- Empower citizens. Allow the masses to express themselves. Assert the legitimacy of all citizens and recognize each and everyone's skills and capacities.
- It is important to articulate individuals and collectives. To learn, to listen and to talk to each other. [WP3 - France]
- How can we balance information between analogue and digital data streams as they impact our daily life activities?
- Make public consultations transparent and effective in every step of the process through fostering values and commitment, increasing accessibility, and considering impacts and consequences. [WP3 - Italy]
- Increase the empowerment of citizens while limiting individualism, promoting openness, tolerance, mutual restraint, etc.
- Digital technology must empower without "swallowing up" participation, increase mutual understanding, and empathy. [WP3 - Belgium]

Scope

Understanding the dynamics and challenges of citizen empowerment and participation in a diverse, digital society and exploring, in empirical and/or experimental ways, how citizens could play an active part in designing, producing or running public services as well as democratic processes.
This research should take into account how this redesign can improve both the inclusiveness and the outcomes of public services and democratic processes. It should give citizens an active part in its own methodology.

Expected impacts

In seeking to understand the complex nature of transparent governance and the processes that it both enables and inhibits, research programs in this area will focus on impacting the following areas:

- Increase of personal responsibility of individuals; for citizens to start to understand their individual responsibility and opportunity for impact
- Motivate citizens to get involved in community life (e.g. through good practice examples)
- Work on increasing the awareness on importance of diversity
- Increase transparency, reduce corruption
- Overall good governance
- Increased social responsibility by citizens

- More engaged citizens, more impact
- Elected representatives and institutions will listen more to citizens' needs and will be ready to take care of unexpected developments.
- Allow evolutions in the professional attitudes of representatives and public officers, who are not to start with participation experts.
- Over time they will give more space and power to citizens and participation.
- There will be dialogue between citizens and policy makers. Citizens will be more involved in politics and will have a better control over it.
- Social cohesion will be stronger, citizens more involved and they will be actor in their neighbourhood life.
- Time should be spent to foster citizens' activities for all.
- Schools become a democratic and citizen area.
- Develop a simple and effective platform to collect and safely communicate data, train involved actors, target community initiatives, map digital and physical information channels, integrate information in "places of daily interest."
- Identify available technologies, engage governments and local administration, promote and communicate public services.
- Identify good existing practices of citizen empowerment and participation.
- Set up the citizen of tomorrow [future generations] in the decision process. [WP3 - Croatia, Malta, France, Italy, Belgium]

Research Questions

- What drives people to participate and to continue this participation?
- What role do education and other forms of learning have in supporting citizen awareness and participation?
- What are the barriers, enablers, benefits and problems of transparency in diverse society contexts?
- What are metrics and methods to measure and evaluate the impact of citizens' participation on decisions made and the effectiveness (or not) of methods for communicating these outcomes to participants?
- Where, how and under what conditions power, agency and influence of actors impact outcomes of processes of governance? How can this impact be measured and evaluated? How can it be communicated to citizens? How can we know that this communication was effective in raising citizen's awareness? [WP2]
- How to encourage people to be active citizens of society?
- How does the digital switchover of public services influence their efficiency and quality? What impacts will this have?
- What are the civil benefits for active citizens?
- The total autonomy of citizens in the digital production can override the role of gatekeeper and make room for disbelief and over-information?
- How will the result of participation in decision making and influencing the

individual processes be visible?

- What mechanisms do public institutions have to really involve citizens in decision-making on public policy?
- How should these tools be designed so citizens can use them flexibly?
- What role should citizens play generally in public processes? Who takes responsibility for what?
- How can people become more active and more independent citizens in a society where the rules of the game are changing?
- What challenges arise because of decisions making process digitization?
- Positive motivation (reward) and the protection of committed citizens.
- How do 'we get the citizens' to play an active role in designing, creating and managing public services as well as democratic processes?
- How do we prepare citizens to properly and consciously participate in decision-making processes?
- Are there social inequalities in the practices and uses of digital technology? If yes, how to encourage everybody's empowerment?
- How to connect the human exchange with the digital exchange?
- Who is empowered to Make Decisions, and in whose interests do decision-makers work? (how are they incentivized)?
- How can the digitalization of public services be implemented without alienating or excluding vulnerable citizens?
- What links between digital technologies and real possibilities for action are necessary and effective?
- How digitalization contributes to the human dependence on technologies?
- How to increase inclusion of the citizens for digital participation in decision-making processes with the assumption of accessibility of such services? [WP4]

Citizens' visions

[LAT] Vision 3. Responsible lifestyle.
"Each citizen's personal responsibility in decision making"
[DK] Vision 2. A democratic society with REAL equal opportunities.
"Education in democratic culture in elementary school."
[...]"Agnes participated in a lot of debates through social media. She eagerly used her freedom of speech within the "responsibility of speech."
[PORT] Vision 5: We build the future now.
"I participate every day in the construction of my future, my family and my community, in a similar way as is my participation in CIMULACT today.
Individual freedom to choose and participate in continuing education
and training, politics and citizenship is paramount, as is the study of
fundamental rights.
[UK] Vision 6: Citizen empowerment.
"All services should be community-led, geared towards maximum empowerment of groups and individuals, where all feel they have choices and access, and they are listened to."

[UK] Vision 4: Untitled.
"- Citizens decide on spending priorities (e.g. taxes, referendum, participatory budgets)
- WIDENING PUBLIC DEBATE/VOTING MECHANISMS – organising more workshops like this, electronic referendum, public debates including more political parties, groups of interest."
[SWE] Vision 2: Education – A Standardised education system in the EU. "Project work, as well as virtual classes and lessons over national borders are a reality."
[CHE] Vision 5: Together for one world.
"An attractive educational system (...) promoting the transfer of knowledge."
[PORT] Vsion 3: E.U. – We are
"A responsible society with an aware, active, deliberative and cooperative (public) participation"
[WP2]

4.a Quantitative person-centred health

SOCIETAL NEED: Holistic Health
GRAND CHALLENGE:

1. Health, demographic change and wellbeing

Challenges

Personalized health care:
Almost everyone gets a “standard” treatment for a specific symptom and not a personalized one. [WP2]
New challenges and opportunities for more individually based medical care, health support and disease prevention as well as emphasize human centric care.
This creates new challenges and opportunities in more individual treatments, health promotion and disease prevention, having economic impacts even at the national level. Biorepositories create opportunities to develop designer drugs. New technologies may realize healthcare for all which is more equal, of higher quality and more personalized. [WP3 - Finland]

Holistic approach:
Estimate the quality and potential of holistic approach to patients. By holistic approach we understand considering patients symptoms in the context of overall health condition and resign on treatment concentrating merely on symptoms.

E-health:
Examine, develop and imply models of health care operating with secure digitalised medical documentation so that the patient is not the main source of important information such as ongoing treatment, prescribed medication or his/her medical history. [WP3 - Slovakia] Health care is less and less possible in current models - new digital interfaces could provide better care. [WP4]

Accessible health care:
Analyze the network of practitioners and specialists in terms of their accessibility and patient occupancy in order to propose more effective network of health care facilities approachable to citizens even from remote areas. [WP3 - Slovakia] [Today] fragmented data hinders linkages across countries/sectors/systems. There is a need for common policy and guidelines.
Moreover, nowadays datasets are available from groups of people who are already under medical treatment and need to be constantly monitored. This data is not openly available to these people but only the involved doctor has access to it. [WP2]

Status, responsibilities and duties of health care staff:

Define more precisely responsibilities and duties of every type of medical staff in order to avoid misunderstanding and confusion. Define, redefine responsibilities and duties of health care staff according to their level of education, their preferences and seniority in order to smoothen medical services. Conduct a research on supportive psychological services provided and on ways of expanding them.

Faster diagnostics and therapy:
In case the patient is diagnosed during a minimum of visits and in case of reducing the number of specialists involved (who have access to his full medical documentation), the services can work better, faster and therapy can be more effective and save resources.
The sooner patients are cured, the better is their work performance. [WP3 - Slovakia]
In this sense, support preventative health [WP3 - Ireland]

Credibility:
Holistic approach builds a trust between patients and doctos.[WP3 - Slovakia]

Scope

Explore conditions for innovative, personalised and human-centric services for health promotion, prevention, treatment and rehabilitation. In order to achieve personalised holistic data-based health services, reliable user lifestyle profiling is required. For this purpose, large amounts of data provided by miniaturised environmentally friendly [wearable or distributed) systems could be combined with existing data from other sources (e.g. EHR7, insurance data). Research should explore ways to make health-related data from diverse sources and destinations interoperable, and to investigate new processing techniques for personalised analysis and reporting.
[WP2]

How:
Personalized health care:

- Develop designer drugs [WP3 - Finland]
- Self-care: possibility to self-monitor personal health [WP3 - Finland]

Holistic approach:

- Analyse those who are performing better in the holistic approach and what are their characteristics (eg. working in state/private facilities).
- Ensure that the system of health care insurance is set to encourage the holistic approach. Search for economical and financial arguments supporting the assumption that holistic approach is effective. Re-define payments for medical performaces so that they respond to actual value of the tasks and revise the system of insurance payments, so that it would be rewarding

facilities for curing patient rather than for sending him/her to several specialist, or multiple visits.

E-health:

- Create a database. Permissions relating to the use and updating of the database should be decided on. [WP3 - Finland]
- Investigate the danger of openness [The solution must be approached always having in mind the end-users' privacy and how exactly all the data can be interconnected). [WP3 - Cyprus]

Accessible health care:

- Improve and customize to local conditions the existing models of holistic approach and e-health from other countries.[WP3 - Slovakia]
- Patient's Historical records [need to be] shared among Public and Private Hospitals.
- Each member state of EU must be imposed with minimum standards. [WP3 - Cyprus]

Status, responsibilities and duties of health care staff:

- Change the mindset of medical staff so that they will be able to search for relations between numerous symptoms and syndroms in one patient.
- Enrich existing curricula of medical students by adding subject such as psychology, communication training, ethics and so on.
- Education on how to implement evidence based medicine. A multi-disciplinary focus is central. [Ireland – WP3]

Credibility:

- Political decision makers are in the core of creating the healthcare of and its operation in the future. Intermediaries include pharmaceutical and technological companies, as well as healthcare personnel. [Finland – WP3]

Expected impacts

- This will enable effective use of data for personal health
- This will help individuals to take care of themselves
- It can help to treat patients comprehensively, not only to solve an acute problem.
- We will be able to avoid the bureaucratic classification of sick people derived from process-based algorithms and protocolised therapies. [WP4]
- More satisfied patients
- Higher satisfaction among health staff
- New economic and financial indicators of effectiveness: number of cured patients, length of therapy, number of avoidable deaths, number of hospitalised and discharged patients, average length of hospitalisation, ability to return back to work etc. [WP3 - Slovakia]

- Reduction in primary care in the long term
- Awareness of personal health through data [WP3 - Ireland]

Research Questions

- How to overcome fragmentation of data by involving citizens, experts, professionals and policy makers?
- Which models can be used to manage, process and interpret large data sets that enable:
    - health issues identification
    - integrated knowledge about human health (physical, mental, social, environmental),
    - personalization of healthcare interventions and health promotion, according to a set of qualitative/quantitative data,
    - data access for health professionals following authorization of citizens?
- How can we implement these approaches in different countries taking into account their cultural differences? [WP2]

- What are the motivators of healthcare staff and facilities to achieve better outcomes? [WP3 - Slovakia]
- How to increase citizens awareness of preventative methods and empower awareness of possibilities to retain/promote health?
- What model of patient focus needs to be adopted to prevent healthcare institutions from treating conditions that 'pay'?
- How to develop alternative medicine/treatment solutions in such manner that they would be available/accessible for as many needy persons as possible?
- How to use and boost criteria of "integrative medicine", aimed at the individual as a whole, inseparable from his or her environment?
- What administrative and legal solutions will help to expand independence of medical doctors and patients in recovering and preserving health?
- How can people be motivated to take greater responsibility for maintaining their health?
- How can we make a quantitative, personal-centric health secure (data protection) and, at the same time, ensure high-quality care? [WP4]

Concerns

- There are ethical, legal, business, privacy, data protection and security concerns
- Some citizens don't want to share data, but want a second opinion
- Doctors don't want to be monitored
- Doctors don't have statistical expertise

- Need to constantly monitor trends and knowledge in technology [WP2]

Citizens' visions

[ITA] Vision 4: A school beyond times – a new education model
"The social security system uses smart watches both to monitor the health status and to help individuals to take care of themselves"
[CZE] Vision 3: Free citizens in the secure world of data
"Effective use of data on personal health"
"100% security of personal data against abuse it will be achieved by an advanced technology"
[ROU] Vision 1: Let's be humans through technology
"Advanced technology for health and education"
[ROU] Vision 6: The mind of the future, in a healthy body
"Nanotechnology…innovation"
[HRV] Vision 3: The preservation of human health and nature for the generationXYZ
"Technology does not alienate people and does not endanger their health."
[FIN] Vision 2: Predictive health tracking
"Developments in technology and medical sciences have prolonged people's lives and improved their quality of life. Technology is utilized in basic health care and maintenance, in the diversification of treatments and, for instance, in the prediction of different kinds of seizures." [WP2]

4.b Access to equal and holistic health services and resources for all citizens

SOCIETAL NEED: Holistic Health
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

EU citizens do not receive the same standards of health. There are huge differences in EU countries regarding:
Equity: Access to health insurance, Availability of drugs and non-pharmaceutical interventions, Access to rehabilitation and nursing (WP2) Humanity has to be prioritized over money: avoid developing a system where economic power determines access to healthcare. (WP 3 Spain)
Awareness of health: focus on health promotion and healthy living to prevent illness, Locus of control – people can do more to help themselves, public health strategies, methods of addressing mental health, awareness about how expensive medical resources are and what is their entitlement, but also knowledge access and education of health professionals (WP3 Ireland)
It is important to find solutions to this challenge: to increase individual's quality of life and society's wellbeing through health education and prevention, to ensure equal treatment of each person, so as to minimize the negative economic impact of bad health (for example: non-productive time, additional costs for the state and the economy). (WP3 Austria, WP3 Malta)

Scope

A EU healthcare strategy should promote an equal distribution of resources and knowledge and a Pan-European dimension. A kind of unique European health care system should be built through actions dedicated to:
- Education of citizens and healthcare professionals to promote health awareness (WP2). Start at infants and continue the education right through. This could be done through: mandatory course in secondary education where the basics on health education are covered (prevention, first aid, sexual education...) (Spain WP3), Education at a younger age on health issues e.g. Jamie Oliver intervention example (WP3 Ireland), reduce contamination through recycling and the use of public

transport in order to prevent respiratory and other diseases. (WP3 Spain), Educate patient in healthcare facilities about how expensive health facilities are in schools or through social media, conferences or brochures, for a period of time then measuring patient's waiting time or spending of healthcare resources if there are any changes (WP3 Ireland) and generally Invest in research projects exploring the link between education and prevention in all areas of society (WP3 Ireland),
-Allowing access to "natural" high biodiversity habitats to enhance mental and physical health. For example, wild areas such as native reserves, rivers and woods (WP3 Ireland)

- Knowledge and data distribution with open access and guidelines agreed upon by all stakeholders (policy makers, medical associations, citizen associations) (WP2). This could entail: Creating a European health network that oversees system operation through common principles and adaptation to local needs, closer cooperation between medical staff and a closer exchange of knowledge (WP3 Spain), - The harmonization of medical care (eg training standards, product standards, etc.) (WP3 Austria citizens)

- Promotion of social responsibility i.e. individual participation at a local level to reach a global community taking care of all individuals and their needs at different ages (i.e. children, adolescent, adults, elderly) (WP2). Eg: Why are we putting old people in care homes? More support at home is required. (WP3 Ireland)
- Commitment of economic resources: Define a minimum quantity of economic investment for healthcare, research and dissemination (WP3 Spain, WP3 Austria), better working conditions of the medical staff lead to a focused patient orientation, (WP3 Austria citizens)

The following actors could be involved in solving the problem:
WP3 Spain, Malta, Ireland:

- Politicians/public administration/state leaders: those who define and enforce the country's laws. They have decision-making power (invest more funding in healthcare and lower the price of the most expensive medicines)
- Healthcare professionals: those who follow established laws.
- Pharmaceutical industry: they provide prescription drugs and medical instruments and devices at prices that they set themselves.
- Citizens claiming their own rights but also living a healthy life style to prevent illness, improve current life styles: eg: bring on the market electric cars in order to decrease pollution.
- Researchers and innovators (universities, business sponsors, associations, foundations, pharmaceutical industry and medical-technical equipment industry etc): develop new projects that focus on curing rare diseases and improving existing medicines.
- Teachers/educators, NGOs
- Central Statistics Office
- Media

Expected impacts

WP3 Spain:
-Access to free quality healthcare: the wealthy, refugees, foreigners, the elderly, people with disabilities, women, men and babies, through, for eg: improvement of geographic distribution of healthcare infrastructures, Improvement of known medicines and price reduction, efficient prescription drugs should be prioritized (eg: azithromycin, an antibiotic that cures an infection in three days, should have a priority status in the market compared to other treatments that need to be taken in larger doses over a longer period of time.)
-Healthcare understood as a service, not a business. We are patients, not clients. Citizens defending healthcare services though their votes or through activism.
WP4: *"It will especially avoid a race to the bottom!"*
-Decrease in diseases caused by bad/unhealthy habits thanks to increased education/health awareness.

-Less stressful life with greater longevity resulting in healthy beings and families (WP3 Malta) Living better rather than getting better! (WP3 Ireland)

WP3 Austria (citizens) – a patient centred health system:
1) I have felt a nod in the chest and get the same day an appointment with the specialist, who is right around my corner.
2) The specialist sends me right in his ordination to mammography. A second attending doctor (comes) to examine me again, he discovers a skin rash and gets a consultant doctor.
3) The physicians perform a joint evaluation of the findings, explain even the smallest detail to me and discuss the treatment method (alternative, school medicine), clarification of the preferred hospital and choice of doctors.
4) Admission to the hospital, single or double room depending on the request and initiation of treatment on the same day.
5) Discharge from the hospital including well-trained nursing staff and doctors. And regular doctor's visits without waiting time. Afterwards, a cure for mental and physical regeneration.

WP4: The same standards would allow EU citizens to access medical treatment outside their home country.
This will help to develop a patient-oriented (not cost- and technology-oriented) standard of healthcare considering results of medical research.

Research Questions

WP2:

- What kind of strategy/regulation could be implemented to adopt and develop a common standard of care across Europe that guarantees equal access to high quality health care for all citizens?
- How to integrate administrative and clinical data, standards of care and scientific and clinical knowledge across Europe?
- How to implement the vision of an EU health care system including promotion of health and expertise of all health professionals for the integration of:
    - Administrative and clinical data
    - Standards of care
    - Scientific and clinical knowledge

WP4:

- How to design a system of education for medical doctors and healthcare professionals to offer a holistic approach to patients?
- How to integrate alternative medicine into health care and supply?
- How to build a political and social background for a project of this type?
- What added value are we aiming for when talking about standardization and harmonization ? What place and conception of subsidiarity ?
- How will the knowledge be made available to all stakeholders in the care sector?
- How to develop a positive culture that encourages healthy lifestyles, but does not regulate it through interdictions?
- What are the perceived cultural and actual negative implications of common standards for EU member states?
- What strategy and data architecture can support such a seamless health care system?
- What are ethical limits of standards ensuring equitable access to healthcare and services

Concerns

- This is a policy issue more than a research question
- "The holistic aspect is not enough considered in the question."
- What are the views on Europe that motivate this vision, or what are the drivers and needs that back up this idea of harmonization and standardization?
- Is it meaningful to develop a shared system when countries are so different? [WP4]

Citizens' visions

[PL] Vision 1: Healthy Family, Healthy Society (Flower of life) "Available, effective and innovative healthcare"
[BGR] Vision 6: Evolution in health care "... Advanced health-care [...] and minimized spread of diseases"

[HUN] Vision 3: Snapshots - Fragments of conversation in a community house “Epidemic prevention: hygiene, lifestyle, awareness-raising, not just through vaccination”
[DK] Vision 1: Physical and mental health “... healthy as whole – both lifestyle, mental and physical health”
[CYP] Vision 3: Human Rights “[...] to equal access to issues that we take for granted, such as health, education and retirement.”
[FIN] Vision 2: Predictive health tracking “One's authority over his or herself as well as one's wellbeing increases and all have equal access to health services.”
[GR] Vision 6: Five Pillars for human development “Health: access to health facilities with medical coverage regardless of economic background”
[CYP] Vision 2: A just society oriented towards human rights “A society that provides equal opportunities for all EU citizens, as well as direct access to a secure health and education system.”
[BGR] Vision 6: Evolution in health care “Health care is free and generally accessible.”
[PL] Vision 1: Healthy Family, Healthy Society (Flower of Life) “Our vision concerns available, effective and innovative healthcare which is at the heart of a healthy family and society.”

4.c Finding a balance in a fast-paced life

SOCIETAL NEED: Holistic Health
GRAND CHALLENGE:

1. Health, demographic change and wellbeing

Challenges

Main issues to tackle:

- Many people experience ill health due to fast paced life (lack of activity/exercise, stress, lack of leisure time, high blood pressure, hearth issues, damaged immune system, etc) [Bulgaria – WP3].
- Limited time for personal, social and family life – electronic relationships
- Some companies offer employee benefits but demand long working hours (and even colonize staff leisure time) [WP2]: they exploit people's desire to create wealth so they offer them demanding jobs that require long working hours. [Greece – WP3]
- Pressure for continuous and increased productivity together with desire/ambition of people to earn money and status [WP2]: people pursue social goods, status and copy the successful people "model" so they are overwhelmed at a working level in order to progress professionally putting aside their personal lives. [Greece – WP3]
- Longer working hours (even on a felt/subjective basis)
- Possible salary cuts due to the ongoing economic crisis [WP2]
- Pressure for innovation → pseudo-innovation → existing research results are not followed up, even if they would be worth doing so
- Too little knowledge on stress factors of mental/emotional work (e.g. care) [Austria – WP3]
- Anxiety is a driver (people fear change because they do not know what might come), this anxiety hampers them to act so that they remain in the current patterns of behaviour. [Germany – WP3]
- We can see imbalance between genders, age categories – in sense of informational imbalance and uneven opportunities on labour market, regional imbalance and status. [Slovakia – WP3]
- Lack of real local bonds (neighbourhood bonds).
- Diseases of affluence: depression, stress, isolation.
- Rat race as a threat to harmonious functioning of an organisation. [Poland – WP3]

Scope

Support citizens to manage their daily lives in a balanced way by valuing relationships, taking breaks and creating opportunities for recreation.
Large scale intervention studies are needed to create a framework of measures for well-being and stress management for a better life.

The proposed approaches are:

- "studies and research" incorporating studies for reducing stress on the workplace, improving the quality of educational campaigns, achieving better efficiency at the workplace (including employer-employee relationship), teaching people how to set goals and priorities, as well as how to set a timeframe for their realisation. [WP3 – Bulgaria]
- [Research should be supported by] chronobiology, anxiety research, ethics research.
- Do research through design and experimental historical research (for learning from history) together with reflection of long-term artistic consequences in the future (Long Now Foundation, John Cage "As slow as possible" (Halberstadt) [WP3 – Germany]
- There could be studies on the hours and the days of working time during the working week, in order to achieve work-life balance. One possible suggestion is some weeks of the month to work four days instead of five (one day off). Moreover, companies could provide to employees activities related to their hobbies. A survey could be done regarding the desires of employees using questionnaires and interviews in order qualified researchers and policy makers to collect data, to classify proposals and design innovative work programs, benefit programs etc. Then it could become a pilot application with the possibility of feedback on the results. [WP3 – Greece]
- "scientific approaches" including development of alternative ways to travel in space, improved transport and teleportation.
- "innovation" related to improving people's daily life and saving time by facilitating moving, ensuring more accessible environment, digitalisation of many of the "analog" activities or an information campaign on the benefits of balanced daily life. [WP3 – Bulgaria]
- Break the "time = money" equation (overcome the notion that time is money), make clear where it is more important to be at the right place at the right time or where more quality is necessary (instead of speed), decouple salary and time, decouple productivity and time (outcome per time) or measure it differently. [WP3 – Germany]

Expected impacts

- Happier and more efficient employees, who will be happier in their personal lives as well. This will have a positive impact on the health sector and society in general. Other [consequent] positive effects will be the increase in corporate

profits, and that the human will be in the center and over-consumption will be reduced. [WP3 – Greece]
- life guidance counsellor as a new profession
- new adjusting of activity and work (welfare economy) + unconditional basic income [WP3 – Germany]
- The quality of life of European citizens will rise
- To subsidize the pensions if the person needs this. Person in retirement age should not receive less than the minimal wage. Otherwise not worth it, that the person has worked.
- It will be associated to a decreased competition for resources to ensure financial security for the individual and the family.
- This would define an axis of prevention and thus reduce costs associated with taking in curative care.
- This is a socio-political problem that requires curbing of the administration's tendency to manage all aspects of the human life.
- This is a question of work organisation which needs to be transformed in line with research insights.
- This will make us a more resilient society to further future change. [WP4]

Research Questions

- How can we identify practices within cultural traditions that would empower citizens to take on board healthy lifestyles?
- How can precarious work be better regulated to protect vulnerable members of society?
- How do different people cope in managing work responsibility at a managerial level that entails long hours of work?
- How can work cultures create relating environments that also respect workers caring responsibilities and nourishing relationships with significant others on the home front?
- How does the rise of virtual relationships affect physical and mental health? [WP2]
- How to educate people on how to plan their time and prioritize their activities?
- What socio-political measures can help effectively achieve a work-life balance?
- How to persuade employers that it is worth investing in the management of the everyday personal-work life balance of employees in order to increase productivity?
- What is the effective motivation that would lead the population to a healthy lifestyle?
- What are the necessary enablers for the adoption of balanced and healthy lifestyles?
- How to integrate alternative methods that promote contact with nature into the treatment processes?

- How to enable everyone to have equal access to holistic contents?
- How can conditions in the labour market and in corporate cultures be created that better support balance?
- What is the effective motivation of employers to improve the environment in the workplace and help to face many diseases of occupation?
- How to motivate employers to foster a balance between work and private life of their employees?
- How can the issue of food such as selection, quality and preparation of food get a higher priority?
- What is the impact of existing legal, economic, social and cultural conditions on personal choices and balance of life?
- How can societal structures evolve to support a healthy, balanced lifestyle (e.g., values)?
- How to integrate an active movement as a necessary daily life part evaluated by employers and health and social system?
- How does absence of a balance between private and professional life affect depressions and mental conditions?
- Context of previous question: What lifestyles maximize happiness / quality of life at a given existence security?
- How to promote the recognition of alternative medicines (e.g. osteopathy, acupuncture)?
- What are the important adjustments to the economic system that would enable such a balance?
- What would be the multiple impacts of a collective reduction of the working time on health (physical and mental), employment, economy and volunteering?
- How can work and family life be better integrated? Removal of obstacles to remote work. [WP4]

Concerns

- This is more a matter of work regulation than of research
- In addition to the regulation of this particular area, it is also a personal decision of what kind of lifestyle an individual choose. How does one encourage those who have decided differently?
- This is a political question which deserves to be largely discussed through scientific knowledge and foresight.

Citizens' visions

[ROU] Vision 6: The mind of the future, in a healthy body
"We will be healthy and able to work properly and we will have a longer and harmonious life"

[SVN] Vision 1: Society of Sustainability
Centres around a “Society of sustainable balance i.e. a society of balanced co-existence, high quality of life fairness and responsibility”
[DE] Vision 1: sustainability implemented
Less hectic, friendly approach to each other. Deceleration / slow down the pace of life
[LUX] Vision 6: I am satisfied with what I am doing! (Do what you love, love what you do!)
“I am satisfied and I am serving society. My pace of work is being respected; I can combine my social, family and associative commitments and I have time for myself. Every moment of life is well lived. I try, I am wondering, I am experimenting, I am changing, I am building, I live free of my choices, respected by others.”
[AUT] Vision 3: Work and the economic world: worth living
Reduced pace!
[PL] Vision 1: Healthy Family, Healthy Society (Flower of Life)
“We try to maintain a healthy balance between work and everyday life, even after a lousy day, a stressfree and pleasant atmosphere awaits us, as the intelligent apartment block we live in adjusts to our mood.”
[IRE] Vision 3: Relationships with one another and the environment
Work / life balance will be different. More time for relationships, culture, society e.g. look at Danish model.
[SWE] Vision 3: Ecological sustainability and health
It is also easier for the individual to make choices about the distribution of their working time and free time to improve the work-life balance. [WP2]

4.d Promoting well-being through relating environments

SOCIETAL NEED: Holistic Health
GRAND CHALLENGE:

1. Health, demographic change and wellbeing

Challenges

This research topic is important because currently environments promoting well-being are rare, even though we now have evidence that shows: a) problems at work impact productivity and performance, b) many people are vulnerable in terms of mental balance, physical health, confidence, c) human relationships affect mental and physical wellbeing, d) human relationship with the natural environment has been disturbed (pollution, urbanization, etc.) [WP2, WP3 - Greece]
This topic stresses the divide between a short term and, individualistic approach versus a long term and inclusive approach:

- A dissonance between the willingness to act towards one's wellbeing and the ability and opportunity to do so
- A sense of instant gratification is very pervasive. There is a need for planning in the long-term for sustainable urban environment to improve the holistic wellbeing of a person and the society at large
- There is often a "self-centred" approach to wellbeing, shrugging off responsibility for issues that are happening away from our shores. We need conflict resolution and diffusing tensions between stakeholders, fostering tolerance, acceptance towards diversity, creating a sense of respect and appreciation across the professional and socio-economic backgrounds of the whole community [WP3 - Malta]

In brief, it addresses the following challenges:

- how to create an environment suitable for all social groups?
- how to get rid of stereotypical thinking within the society?
- which technologies would make people's lives easier?
- what methods should be developed to effectively inform society? [WP3 - Latvia]

Scope

Regarding the working environment, it is essential to create an environment that promotes teamwork, pleasant atmosphere, and cooperativeness. The existence of suitably shaped spaces designed for people to relax and strengthen interpersonal relationships. Training programs to address the negative effects of sedentary work

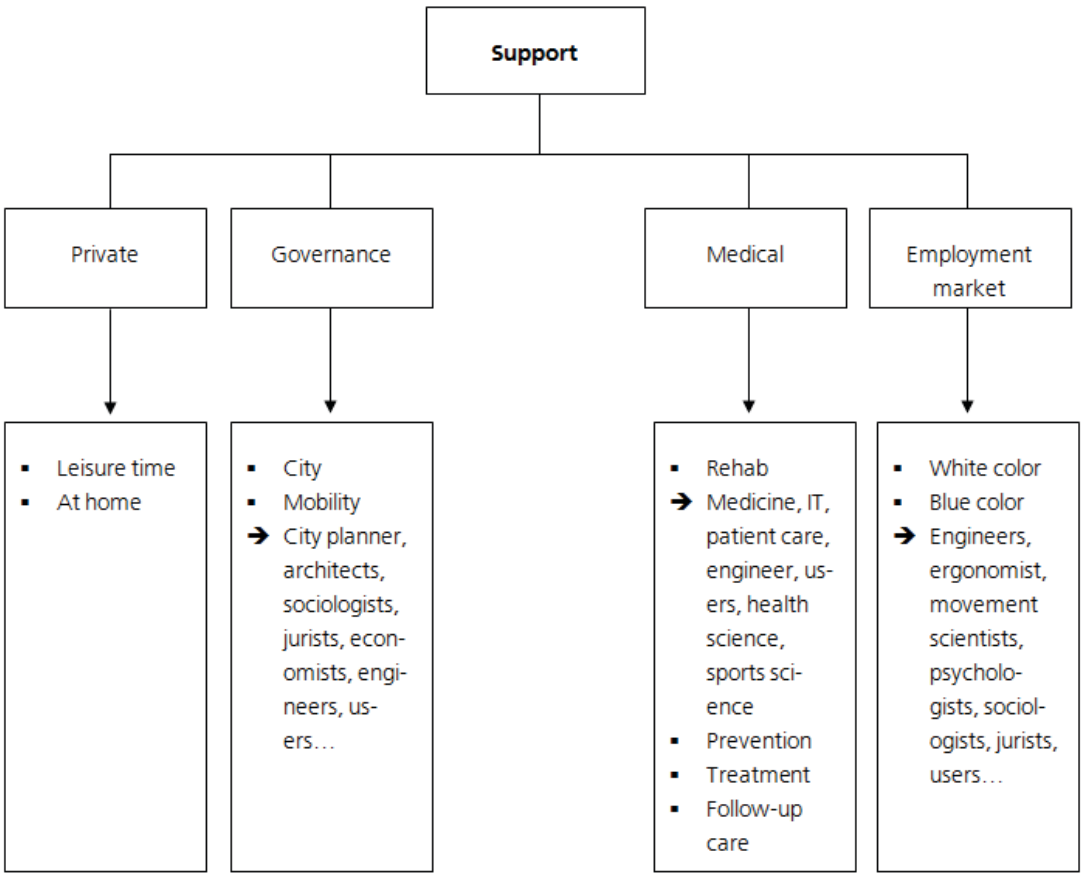
and child care spaces. The presence of a safety technician, a physician and a psychologist. [WP3 - Greece]
Flexible work conditions, incentives to take work in the virtual sphere enabling workers to work from home. Better transportation systems = shorter commutes. Better planning and more facilities to enable lifestyle changes, for example, showers at work for cyclists. Free access to gyms and sport classes. [WP3 - Malta]
At community level: The encouragement of internal search of citizens through group counseling at a municipal / state level as well as counseling for parents; well designed spaces that are environmental friendly for the implementation of activities (sports, art, etc) [WP3 - Greece] Creation of common goals to bring the community closer together and create a sense of belonging. Mentorships and inter-generational programmes to foster relationships, a sense of community and transfer of skills.
At individual level: Empowering citizens by educating them, educating families, improving and promoting digital literacy and the correct use of technology, and upgrading learning environments to motivate and facilitate learning.
At governmental levels: transparency, government and institutions held accountable, laws for everyone: no one held above the rule of law and no one discriminated against. Policy: More efficient ways to tackle and rehabilitate delinquents. [WP3 - Malta]
The approach should also consider:

- developing a set of systems that would provide more comprehensive surveying and monitoring of the society.
- promoting inter-industrial cooperation to find a diverse solution for the problem (e.g. cooperation between health science professionals and engineers).
- having short-term social experiments, assessing and analysing them.
- distributing positive information in the mass media. [WP3 - Latvia]
- Multi-criteria approaches enable individual (human) and specific (task, aim) solutions, that can be considered as adequate.
- Multiple levels must be addressed, e.g. methods, concepts, systems (socio-technological), implementation, fabrication.
- Extention of disciplinary approaches for inter- and transdisciplinary (user-integration) practices.
- Integration of diverse disciplinary methods and findings into a common deliverable.
- Participation and transparency in the overall process (RRI) to promote acceptance and usability.
- Educational advertising of risks and uncertainties. [WP3 - Germany]

Actors that should be involved:

- State, including local government representatives,
- businesses (professionals from various industries, entrepreneurs),
- research institutions,
- Education system workers,
- citizens - people from all walks of life irrespective of age,
- NGOs,

- Media [WP3 - Greece, Malta]
- Problem-setting / context-related composition / cooperation
- Participation is a basic prerequisite in all phases
- Examples: [WP3 - Germany]



Expected impacts

- The contribution of the state to promote prosperity will be Improvements / additions to the legislation. [WP3 - Greece]
- This research would enable citizens to better appreciate their way of life and surroundings in a holistic manner (mental and physical) and feel a greater responsibility towards future generations. [WP3 - Malta]
- More equality, prevent discrimination / division by social groups, less/no more stereotypes.
- Technologies that are harmless to society, people who are not addicted to them.
- Aesthetic and acceptable environment.
- Developed, accessible and modern infrastructure.
- Safe, free, non-offensive internet, also positive without censorship and with guaranteed privacy.
- Comfort – comfortable premises and environment. [WP3 - Latvia]

- The changing understanding of social responsibility in all stakeholders and different contexts / level.
- New social questions arise through the transparency of conflicts of interest.
- E.g. public transport system: ecological efficiency vs. pleasant timing (non-repetitive, but independent perspectives)
- Coordinated units of human-technology environment as opposed to grown states [WP3 - Germany]

Research Questions

- What are good practice used by companies to promote the physical and mental health of their employees through relationships at work and the creation of physical environments that are mentally and physically relaxing?
- How can relating environments be achieved outside of big organizations (or corporations) eg. in SME's?
- What are methods and strategies to achieve engagement and motivation in healthcare interventions and promotion in the workplace and on the home front?
- Is it possible to create a model of social responsibility for the implementation of self sustaining health communities? [WP2]
- What are current environmental influences on health and how to change through new values and solutions the environment and its effect on health?
- How important is wellness in the hierarchy of human values and how is it understood by various social groups?
- How to promote intergenerational coexistence?
- What type of support is relevant for whom in which living conditions and how should commitment or liability be rewarded?
- Exploring techniques that are rooted in cultural and social traditions and can establish and maintain quality relations/connections.
- How to create social spaces that have a positive effect on health and work performance? [WP4]

Concerns

- Large heterogeneity of solution space impedes the predictability of the research project
- Conflicting interests, that result from the subject matter, must be resolved
- Multiple application contexts result from multiple subject matters.
- Narrowed perspectives and one-sided solutions must be laid open or avoided.
- The relationship between costs and impact is potentially remarkable (e.g. serious games, best practice „remission" game.)
- The environmental reaction must be expected and may not be a criterion. [WP3 -Germany]

- Some relatable environments exist only to serve business interests, i.e., keep employees working long hours.
- Supportive environments are often only aimed at reducing symptoms, not controlling the causes.
- By focusing on conservation programs of nature etc., these above programs would be obsolete.
- A flexible environment may detract from the sense of safety and stability in users, exacerbating exclusion of some social group [WP4]

Citizens' visions

[GR] Vision 4: Improving quality of life - a weapon to fight cancer By creating environments promote: "healthy lifestyle", "reduced stressed" thus "improving quality of life".
[SVN] Vision 3: Green Future "To improve the quality of life to achieve mental and physical health", "Raising awareness and concern for the management of the (workplace) environment!"
[DK] Vision 1: Physical and mental health "Healthy as a whole i.e. both lifestyle, mental and physical health"
[SVN] Vision 3: Green Future "Life in and with nature ☾ mental and physical health" [WP2]

5.a Good food research

SOCIETAL NEED: Sustainable food
GRAND CHALLENGE:

2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
5. Climate action, environment, resource efficiency and raw materials

Challenges

Food is the most basic need for human beings. Therefore it is impacting both mental and physical health in the most direct way. We have to continuously research and explore nutrition quality of the food we eat and – if required – change the way we deal with food. Knowledge on nutrition is evolving continuously. Consumers encounter conflicting nutritional information from various sources ranging from the private sector, academics, governments or media. Information must be more accessible, transparent and user-friendly and tailored to users' needs...in order to allow consumers to make more informed food choices for both individual health and society.

Bio-economy: There is a lot of biological research on food that is conducted yet we do not have enough results on the economic consequences of this research ... (antibiotics, breeding, pesticides, disease resistance, etc.)The economic consequences of results of biological research are missing. Meat heavy diets are multiplying risks of heart problems. Nutrition recommendations can be provided (vitamins, fats) but the knowledge is incomplete. [WP2]

- Ensuring the relevant consumer awareness via competent, objective and balanced information
- Consensus on clear nutrition recommendations and communication of these recommendations by qualified experts. [WP3 - Czech Rep)
- Due to a conflict of interest: food industries trying to present food that is not good for our health as beneficial.[WP3 - Greece)
- Setting the rules for nutrition advisors – for their requested qualification. Suggestions on the agenda, methodological and expert support for a better dissemination of recommendations in the area of food quality and nutrition.
- Ensuring the most possible food safety and security in the globalised world, where it is very difficult to control
- Food production (namely concerning harmful substances such as antibiotics, pesticides residues etc.), and where economical factors together with consumer behaviour do not favorize local food (price remains the main decision criterion) So far organic food is more expensive and therefore less accessible to everyone. [WP4)
- Minimising the negative impacts of agri-food production and food-related consumer behaviour on land and environment [WP3 – Czech Rep)

- High quality food and balanced nutrition as factors significantly co-influencing the health condition and quality of life of the population. Life expectancy is lower for people who grew up on low-nutrient foods. [WP4)
- Food production shows apparent consistency with landscape care/management and labour market, particularly in the rural areas and agricultural regions.
- Also it is needed to react to global driving forces, which are further accenting the importance of the challenges. E.g. objective climate change is calling for food production innovations (drought, new illnesses etc.), but it has or might have even more important impacts in developing countries, which concentrate the majority of global population, are important food producers and at the same time they dispose of much more limited financial resources to react to these global trends.
- Reducing the dependency on imports. To increase self-sufficiency in food and develop new food sources that are suitable for production in the High North
- Reluctance in adopting technologies, to make them effective
- Norway has a leading edge in aquatic food production; therefore, Europe could benefit from this leadership. Enhanced aquatic food production could address several of the challenges mentioned above. [WP3 – Norway]
- There are food substances that are proven to be unhealthy, such as processed meats-charcuterie and some chemical additives that are sold legally. Indeed, there are unhealthy foods that are widely promoted and consumed massively by children.
- It is important to address this challenge as sustainable food production entails the protection of the environment. Moreover, by having a better diet we have fewer diseases, better quality of life and fewer costs for public health. [WP - Greece] Allow dietary and nutritional guidelines to be included in public health programmes.
- Create ways to protect the seeds from any kind of "trademark". Recover the original seeds of the species of vegetables, fruits and cereals.
- Control standards will only lead to more bureaucracy (and are mostly circumvented one way or other.[WP4]
- Unequal access to food will be worsened in the future because of a changing climate. Due to existing differences of economic development of countries, unequal access to food will be aggravated in future. Industrial Food production in 'the rich north' destroys the basis of life in 'the poor South' - this has to change.

Scope

Research needs to explore ways to guarantee the provision of sustainable and nutritious food. Secondly we need to identify impacts of new research driven food paradigms (e.g. biotechnology) on health, economy, environment and sustainability in a comprehensive and systemic way. [WP2]

Clear messages might also include options – in case where the current evidence does not allow to make one single clear conclusion (e.g. we do not know if positive or negative attributes prevail) Optimal approaches differ one from another – based on the specific task. But, it is important to emphasize that a lot of phenomena are characterized by multifactorial conditionality and to solve them separately does not make any sense. [WP3 CZ]

- We need to consider the Ethics of food management – in order to avoid wastage of precious food items.
- We need to educate the public on challenges facing us, with respect to food availability and sustainable ways of production and consumption. [WP3 - Norway]
- Incentives for local, fresh, organic and healthy food manufacturers. [WP3 - Poland]
- Using of quality food with an appropriate composition will anable cost reduction of medical treatment of diseases (cancer, obesity etc.). [WP4]

- Distinguish the main quality indicators– the key one is definitely safety that must be guaranteed by the regulatory and controlling institutions (with research knowledge and support). Another indicator is the authenticity, or nutrition and sensoric value. These are features that need to be communicated to consumers.
- Applied research provides the knowledge and information base. It is also important to ensure the relevant dissemination of outcomes or their use in respective regulations, policies etc. There is a great potential for participatory activities with a significant involvement of all stakeholders and mainly the civil society and policy makers. There is a need to involve stakeholder from the whole agricultural-food chain, i.e. farmers, producers, processors, distributors, store chains as well as consumers. Institutions involved in the regulatory process have a specific role to play [WP3 - Czech Rep]
- Create awareness (particularly among the younger generation) on the health benefits of consuming aquatic food products, and reduce the dependence on terrestrial farmed animals and plants. Introduce new alternative food sources – e.g. microalgae, microalgae, insects etc. [WP3 - Norway]
- Advertising campaigns, restrictive adherence to label descriptions, serious penalties for violations of these rules, comparative research into specific consumer groups: 1 group – consumers of fast food, 2 group – consumers of healthy food.
- Easily accessible, free preventive (simulation, visualisation) testing to show impact of unhealthy food on your body.
- Introduction of game-based education systems starting in the kindergarten.
- Development and industrialisation of new technologies. Innovation in farming – combining production systems, and cultivation of low-trophic organisms such as microalgae should gain greater momentum.
- Ocean-based technologies to cultivate new food sources. These production systems have to be engineered to make them economically viable.
- Friendly conditions and motivation for local (small) manufacturers to make

healthy food and sell it locally through subsidies and development of small, local associations of passionate farmers.

- Cut intermediaries out of the way from manufacture to sales, direct relations of farmers and consumers. [WP3 - Poland]
- Invest in research and development of sustainable agricultural crops in climatic hostile environments, (e.g. droughts) or others. [WP4]

Expected impacts

Minimising the negative impacts of agri-food production and food-related consumer behaviour on land and environment

- Identification and description of possible risks related to the application of new technologies in the food production and processing. Identification of effects (including the ones not assessed yet) of genetically modified food on human health and nature.
- Ensuring the neutrality and objectivity of research, choice of research topics and full presentation of the outcomes – mainly through public financing of research with high societal relevance (this must be the parallel activity to the activities of partial lobby groups where you can assume limits in neutral assessment).
- Providing optimal distribution of water in drought periods, using detailed scenarios how to deal with this in concrete situations to minimise damages.
- Assess and describe the influence of nutrition on human health (the role of individual factors and their combination) and disseminate the clear information on optimal eating habits. [WP3 – Czech Rep]
    - This would lead to new food and related food-habits. Implement educational programmes for creating awareness and promoting the use of new food at schools.
    - This will lead to value-creation among communities that will depend on the technology for their livelihood – Initiation of new and sustainable value chains, commercial activities or products.
    - New plans for area utilisation, policies and regulations related to the new food-generation techniques. Extended aquaculture adds new production areas that do not compete with land use. Explore and extend our use of production areas in the seas. [WP3 - Norway]

Substantial reduction in diseases of affluence

Improved relation between the city and the country

- Greater innovation of the agricultural sector
- Considerably improved quality of food and the consequent improvement in quality of life
- Better, cheaper, fresher, healthier food [WP3 - Poland]

At the same time, with less meat consumption (as required by the science of nutrition) the following could be achieved: presumably better conditions for animals

(less massive animal rearing), less wasted food (animals need enormous amounts of food for their breeding), less methane production [WP3 - Greece]
Allow to prevent waste of food, to reduce emissions that are associated to food production and to adjust consumption to the producing season, which is sustainable. Responsible and healthy nutrition for all reduces the social costs in public health and increases the quality of life in a collective sense [WP4]

Research Questions

- What is the impact of food control standards on economic and local level development, quality standards and sustainability?
- What are social-economic and environmental impacts of the application of results of biological research?
- What are the health impacts as well as socio-economic impact of pathogens and pesticides remaining on our bodies?
- How can we close the information gap between results of research,consumers, governments and producers?
- What is nutritious food for the individual, the community and the society? [WP2]
What is the impact of food control standards on economic and local level development, quality standards and sustainability?
Bringing to everyone (both economically and physically) better quality foodstuffs (local, organic and fair trade)
What is the difference (in terms of nutrition and ecological impact) between the local organic production and the production from large multinational companies?
How can we develop the most sustainable food production possible from aquaculture and simultaniously keep the ocean clean and reduce the environmental footprint?
how can consumers get easely insight in the footprint of food products? How can consumers be better trained to buy healthy food and prepare it properly
How can we, as consumers, do direct tests on food when buying it?
What kind of communication channels are the most effective for informing consumers?
What is the impact of food distribution system on food quality (nutritional and health value) and on national and regional economic development?
How can we incorporate food intake patterns into citizens' medical records in a way that improves public knowledge of its impact?
How can a good taste become the key attribute of quality besides sustainability, absence of hazardous substances and costs?
How could sustainable food look like (i.e. soci-economic acceptable in terms of natural limits in the specific European regions)?
What is the role of the big food industry in controlling the policy agenda, e.g. advertising, charitable donations, political pressure? [WP4]

Citizens' visions

[IRE] Vision 4. Decision-making for a Sustainable Future.
"We live in a world where cultivation is 100% sustainable. Our laws ensure that we protect and preserve our environment because carbon neutrality is the cornerstone of all our legislation. Carbon trading must have a deadline for elimination with penalties for excess carbon production thereafter. Cultivation should be local as much as possible and sustainable by reducing air miles. International trade agreements (such as TTIP) must be transparent at all stages and must prioritise sustainability and the personal well-being of citizens and communities. Food should be unpolluted, safe and nutritious. All food cultivation should be produced using green energy (100% renewable). All actions will have been given targets for compliance and will have been achieved by 2050. Farmers and citizens have the power to make decisions about agriculture and how we grow our food."
[IRE] Vision 3. Relationships with one another and the environment
"Food production done ethically. Work with nature."
[ITA] Vision 4. A school beyond times - a new education mode.
"Everybody takes care of the urban territory and respects it: bike paths, green areas and solar panels are widespread around the city.
Nutrition is governed by laws that make it organic, sustainable and accessible to all. The social security system uses smart watches both to monitor the health status and to help individuals to take care of themselves."
[NOR] Vision 6. Ensuring sustainable use of natural resources.
"To contribute in covering the global food demand (due to population growth) in such a way that the resources may be reused
- We have more knowledge about nutrition (and therefore are more conscious of consequences) and throw away less food."
[PL] Vision 2. Vision of a Healthy Life "From Kindergarten to Seniors."
"Our vision of a healthy life in Europe is based on the usage of natural resources in the production of food, and their balanced and ecological management. Sales of unhealthy food are prohibited and junk food is replaced with a healthy alternative. Only natural ingredients are used in animal husbandry. Examples of how these ideas can be implemented include apiaries set up on the roofs of apartment blocks, aquariums in each city, and serving fish and sea food in every school canteen. Biology lessons would be connected with degustation of healthy food in accordance with the principle of - "I know what I eat". [WP2]

5.b Good quality food for all

SOCIETAL NEED: Sustainable food
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
5. Climate action, environment, resource efficiency and raw materials

Challenges

Access to food : Equal access to food can be considered as a basic human right. This provides both social and economic benefits. We contribute to bridging the gap between developed and underdeveloped regions and promote social and economic cohesion. We know that pricing is not the only limiting criteria to good food access. Education and culture levels are also sources of limitations.
There is limited research on the global consequences of unequal access to food. The export of EU overproduction to developing countries has perturbed local producers' businesses. There is policy research on the validity of using unsold products to give to the poor. There is too little research on good practices on dealing with food excess or availability of food. [WP2]
It is very important to address not only the food quality issue, but also the food shortage, that the EU will deal with in the not-so-distant future. It is also important to mention that according to calculations, approximately 40% of the food production is being "lost" during transport and until they reach the final destination. Thus new, more effective, methods of preservation and transportation must be researched and implemented. [WP3 - Cyprus]

- We know that there is a diversity of standards for quality among countries.
- We know about the socio-economic disparities in food choices.
- We know that there are discrepancies in food quality and quantity.
- We know we need more information to make sustainable + healthy choices.
- We know there are price differences between organic and non –organic. [WP2]

Food quality: Health and wellbeing of the citizens is closely related to the food quality. It's been proven over and over again, that eating habits might have an impact on the likelihood of various types of Cancer and, most certainly, they have an impact on obesity and cardiovascular diseases. Factors that are influencing food quality are the quality of air and water, but also the production method and all the additives that are included. [WP3 - Cyprus]

- Up to now mainly upper class people have access to high-quality sustainable food, this division will grow further.
- Life expectancy is lower for people who grew up on low-nutrient foods. [WP4]

Social challenge: regarding demography (how to feed everyone and feed them well?). Access to a healthy diet is linked to a social justice issue: an equal right to healthy food.
Education challenge: education for "healthy eating", to avoid feeding waste, to taste, to cooking etc.).
Ecological challenge: implying another way of farming and producing food that will preserve natural resources of ground and water.
Health challenge: healthy feeding has its role in the quality of life and the wellbeing. Healthy diet helps fighting against some diseases (cardiovascular ones, obesity etc.).
Economical challenge: access to sustainable feeding is more expensive than having access to industrial and intensive farming food. Equally, for farmers producing sustainable food is less profitable from an economical point of view and asks for a professional reconversion;
Cultural challenge: sustainable feeding implies a change in food habits, in consumption habits, in perception, and in productions models. Access to healthy and sustainable feeding encounters several drags, especially financial ones but also cultural when one thinks about the production and consumption patterns. There is a need for raising public awareness by information.
Political challenge: sustainable feeding has to allow the creation of another society model. This transition needs to be politically supported. This new model should allow for production territories optimization and it should aim to a feeding sovereignty at small scales.
Conceptual challenge: one does not know what is behind the label of « sustainable food », « short circuit », « reasonable feeding », « organic farming », « quality product » and so on (can we rely on them, is it transparent, is it a neighbourhood circuit, organic, good?). Many of these terms are used but misunderstood. The example of short circuit is accurate: do we refer to short circuit meaning the less possible of intermediaries or do we mean the less distance possible from the farm to our table? [WP3 - France]
Set the link between quality and diversity and decide the criteria to be considered to define the quality of a product (health, nutrition, taste ...). [WP3 - Belgium]
European Commission and researchers need to grab this topic because it is urgent: it is a social justice urgency, an environmental urgency, an answer to epidemics and diseases, an urgency regarding the growing urbanization, the uneasiness of peasants and the loss of small scale farming.
Challenge: "quantity" and food security: not at the production level but on peoples' tables. Concrete data are missing because it is sometimes difficult to discuss this subject. [WP3 - Switzerland]
The EU policy for agricultural products and the sharing of production and consumption per country is inadequate. Lack of information on ingredients in food and deficient rules. There is no policy on management of overproduction. [WP3 - Greece]

It is not a matter of access, but of regulation regarding cultivation and farming. [WP4]

- How to review the production systems / recovery / distribution of products to be sold on a large scale?
- Rethinking distribution system to analyze its impact on access to quality food.
- Make research percolate towards the citizen. [WP3 - Belgium]

Scope

Unequal access to food has a strong local and global impact in both urban and rural areas. This is expected to become even worse in a changing climate. It is therefore important to take an interdisciplinary approach to understand and assess the processes generating food inequalities and examine how this affects social and economic cohesion locally and globally. [WP2]
Research should be approached at three different levels :
a) Transnational level: look at supply regulation and issues connected to distribution and prices.
b) National level; looking at the socio-economic inequalities existing inside the country with regard to food and nutrition.
c) Local level : analyzing all questions surrounding sustainable nutrition: quality, health (use of pesticides), access to healthy food. [WP3 - Switzerland]

Research results from both applied and basic research does exist, which unfortunately remain unutilized. Focus on applied research and innovation, using existing results to produce high quality food at a lower price, without of course excluding the need for basic research.
In many EU countries less and less large land areas are available for agricultural cultivation, because of continuous urbanisation. Focus on alternative methods of cultivation that does not rely on such large areas. [WP3 - Cyprus]

- Run an analysis of packaging/marketing impacts on consumers' choice.
- Appetite products: make organic and local products more attractive (no additives, etc.)
- Make general terms like "sustainable, organic, etc. " understandable.
- There should be a study on the fair price: how to understand the price? How is the value added in the production chain?
- Assess the impact of different types of food (quality / no quality, health, environment, ecology ...) to highlight the food types to promote (diet, mode of production ...)
- Working on new mechanisms of access to good quality food.
- A new labeling on food products (price per kilo, price based on nutritional value, production method, origin, fair or not, transport ...)
- Analyze the way the major producers can impact the traceability of quality products.

- Working on the role of government in the product communication and standards to meet.
- Have a medical and curative approach of food. [WP3 - Belgium]

Information and education : People need to be informed (where does what I'm eating is coming from? what is its production circuit? Its provenience?) and sensitized to the question of healthy feeding (what does it mean? does it mean organic, fair-trade? what differences exist between labels ? How to understand the labelling?). Raise awareness and educate citizens through seminars and visual publicity. Develop hands-on activities in schools that engage youngsters on the topic.This awareness to healthy and sustainable eating must been culturally done and from the youngest age through school with cooking workshops, gardening classes, taste classes. But it has to be raised for adults too, so adults can « relearn » to eat and to consume (because we are used to eat whatever we want when we want it, without respecting seasons and without knowing the distribution circuits).Research on alternative models of farming and production to ensure quality feeding need to be pursued (organic, permaculture etc.) [WP3 - France]
An approach through education by building new teaching methods to learn to eat differently. [WP3 - Belgium]

Multidisciplinary research : between engineers, sociologists, economists, etc. Sustainable feeding has to be thought globally and coherently (for instance we can eat Spanish organic tomatoes but grown by cheap workers in poor labour conditions).

Who needs to be involved ?
Producers (raw materials), farmers in all their diversity (intensive farming, organic on or small exploitations), experts, food industrials, citizens (as users, consumers, "conso-actors"), associations, cooperatives, purchasing networks, public officers from municipalities or states, health sector (doctors, nutritionists, toxicologists), representatives, agencies (audit, studies, expertise), education associative networks. The actors need to be directly present (and not represented) to start by assessing the needs on the ground. Lobbies that sway a lot public policies on feeding (e.g.: labelling enhancement finally dropped because of their pressure) need to be under watch. Research has to be participative. [WP3 -France]
Ensure that local authorities engage citizens and producers. [WP3 - Belgium]
With regard to innovation, there could be actions for the distribution of the excess of food, for a more efficient distribution of food and in order to organize transnational partnerships in the form of humanitarian operations. [WP3 - Greece]
Funds should be allocated to low-income countries and regions in order to boost local production and sales.
Tougher policies that ban the use of chemicals should be implemented in order to remove additives that are harmful to our health. Companies that don't comply with the law should be penalized. [WP3 - Spain]

Expected impacts

- Reducing imbalance regarding food, Strengthen local producers, fewer diseases due to quality food, enhance trade, better food management [WP3 Greece]
- This will help bridge the socio-economic gap between developed and underdeveloped regions.
- It will help to improve the individual physical- mental health, social cohesion and economic redistribution of income in order to achieve less inequality.
- Less inequality will improve health and intellectual capacity on an individual level and reduce carbon footprint on a societal level. [WP4]

- Support production modelling (aquaculture, viticulture) and evolution of distribution patterns (from the farm to the table). [WP3 France]
- Locally: identification of good practices and proposition of concrete action for communities (quality, price)
- National level: (food insecurity, quantity) : identification of good practices by international comparison, identify the dynamics which contribute to food insecurity.
- Transnational level: Identify actors / institutions responsible for inequalities in food distribution worldwide.
- Identify strategies to neutralize actors /institutions contributing to food injustice / inequalities around the world.
- Identify strategies to fix the flaws/instances of injustice of the transnational food commerce. [WP3 Switzerland]
- Offer different types of supply.
- Change the scale of the production and the distribution of good quality products.
- Bring more ethics in the product information.
- Convince citizens of the need for sustainable food.
- We must aim for a reduction of the impact of food on the environment.
- Ask questions on access to employment that new systems would generate.
- Find effective incentives to promote a quality food supply (public authorities, private sector ...)? -> What policy?
- Ensure that the supply influences demand rather than demand influences supply (eg. seasonal vegetables, consumers want tomatoes in winter so we will import tomatoes) [WP3 – Belgium]

Research Questions

- What are the impacts of globalization on access quality food?
- How can access to quality food facilitate social and economic cohesion in a local and global perspective?
- What is the impact of climate change on the access to quality food?
- Is access to quality food a human right? [WP2]
- What are the social, behavioural and economic mechanisms generating food access inequalities?
- How can access to high-quality food facilitate social and economic cohesion?
- How to promote sustainable food habits?
- How will application of new technologies improve equal access to food?
- How to gain equitable access to quality food? How to prevent the production of inferior food?
- How to help manufacturers to manufacture quality food?
- What obstacles keep new food production technologies from increasing equitable access to quality food products?
- Which food production system for quality food?
- What is the impact of local communities that are already very active and how to integrate them into an large scale action in order to preserve them?
- Could sustainable cultivation of algae and seaweed for e.g. animal and human food, biofuels and fertilizers contribute to reducing emissions of CO2?
- How to encourage consumers to purchase only high quality food of non-animal origin?
- What measures decreasing inequalities in access to food would be the most effective and acceptable in society?
- How can one increase or restore people's dietary sovereignty (proximity, independence from induced systems)?
- How do we select food? Are foods chosen by social groups and through consensus?
- How can existing regulations be changed to ensure equal access to healthy, natural food?
- How does food secure lifelong wellbeing and cost-effectiveness of health services? [WP4]

Citizens' visions

[CHE] Vision 4. Less is more.
" The number of children born in 2050 will not exceed the number of people dying. Less food will be produced and it will be handled more responsibly.

There will be a decision-making system permitting to extract or use natural resources in a sustainable and economical manner and, at the same time, give a bigger share to the global south.
Schools will not only educate in view of the needs of the job market, but give more room to creativity. There will be less monoculture and more biodiversity. “
[EST] Vision 6: Life in your age
“healthy fast food and different snacks are easy to find and consume”
[IRE] Vision 3: Relationships with one another and the environment
“Food production done ethically. Work with nature.”
[HRV] Vision 3: The preservation of human health and nature for the generation XYZ:
“People will grow healthy food for themselves, with minimal or no ecological footprint.”
[ITA] Vision 4: A school beyond times - a new education model
Nutrition is governed by laws that make it organic, sustainable and accessible to all.
[PL] Vision 1: Healthy Family, Healthy Society (Flower of Life)
“We all eat healthy because we have easy access to organic food produced locally” [WP2]

5.c Responsible use of land

SOCIETAL NEED: Sustainable food
GRAND CHALLENGE:

2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
5. Climate action, environment, resource efficiency and raw materials

Challenges

We need to develop efficient systems for governing and utilizing land, and for using resources responsibly for sustainable agricultural production. Multilevel governance is required to solve resource use conflicts and produce synergies. [WP2]
Governments have to finance long term projects, implementing dedicated solutions for different geographical areas and fostering dialogue between citizens-administration-scientists [WP4]
It addresses the need of a holistic planning of territory taking into account the distances that have to be overcome between the sites of production/distribution/consumption. It aims to ensure the sustainable management of soil pollution, different resources and space, taking into account the growth of population. [WP3 - Portugal]

Tradition and economic development means there's a high demand for meat and products that require large amounts of land to produce.

- If this problem isn't addressed, food shortages will become more of a problem in the future. Current habits will not be able to be sustained as demand continues to increase. Current demand is not sustainable. It will affect everyone in and beyond Europe.
- If food becomes more scarce process may rise and people's quality of life may decrease. In some societies lack of land will lead to mass shortages of food and may also struggle to develop. [WP3 - UK]

This is influenced by lobbies (agricultural industry and politics – governance) that challenge the implementation of legislation and its support in research (substantiated and applied).
Another basic challenge lies in education and training, integrating all previously mentioned challenges. Some examples of this challenge (education and training):

- Education as an awareness tool.
- Integration of urban gardens and education.
- Discuss the issue in the community.
- Integration of rural and urban ("rurban").
- Better understand the physical and chemical structure of soil. [WP3 - Portugal]

- Adaptation of land management on climate change (also mitigation) [WP 3, Czech Rep]
- Multi-dimensionality of the issue of land use (eg. public health, employment, population mobility, etc.)
- Disseminating and giving visibility to new value creation models dealing with farmland use.
- Expand/open alternative models to the current model (i.e. intensive, industrial) operating farmland [WP3 - Belgium]
- The current production system leads to an almost irreversible erosion of water and soil quality;
- The need to protect biodiversity. [WP3 - Romania]
- Research across sectors
- We need basic science to know the impact of increasing land use, for example is it more relevant to put aquaculture on land or keep it in the sea. [WP3 - Norway]

Little is known on the consequences of a continuous loss of arable land. We do not know the consequences of an actual food shortage. We know the economic advantage of urban extension over lands but not the economic loss of fields being used up by cities. We have few studies on the loss of biodiversity.
We are losing agricultural land for housing, transport, infrastructure and other primary sectors. We have problems with water quality and quantity. We know that eating less meat has a favourable impact on the environment. We see little efforts from the government to address and solve these problems. [WP2]

Scope

We need to manage the confrontation between a growing demand for high quality food, and declining land space for agricultural production. Therefore we need to have an efficient system of territorial land use management, and an activity impact assessment. This will allow changing land use more flexibly and thus create a buffer. We need to develop methods and tools to improve the appreciation of costs and benefits of resources that are not economic goods such as ecosystems for more effective and responsible land use management through the conduct of qualitative and quantitative social, environmental and economic research.
Understanding the climate change impact, and developing innovative sustainable production processes can be approached through soil-land-water research and through responsible research and innovation. [WP2]

- Finding the best ways of integrating the population that is not engaged in food production, in the process of sustainable farming, with the aim of strengthening the self-sufficiency in food [WP3 - Slovenia]
- Supermarkets could donate food that they may not be able to sell – this would reduce food waste.

- Subsidies could be provided to farmers to grow less land intensive produce, such as insects. The subsidy would incentivise more farmers to set up these new processes. [WP3 - UK]
- Paying attention to factors which influence (ir)responsible behaviour; providing research on physical, chemical and biological processes which may lead to land detoxification – in cooperation with experts from various relevant disciplines
- More research is needed on energy crops of the 2nd generation
- Externalities should be incorporated in the price of land (how to rate them?) [WP3 - Czech Rep]
- Develop projection work on current trends and on alternative models in order to support debate and decision making
- How to progress in research on arbitration between local production and transport: new de/re-location of production (e.g. tomatoes produced in Sicily and transported versus local greenhouses heated.)?
- Multidimensional and experimental research, involving a variety of actors
- Develop action-research methods for sustainable food, combining researchers and practitioners in a close relationship (eg in forms of living-labs) (WP3, Belgium]
- Academia and scientists (biologists, agronomists, economists, etc.);
- Urban planners and landscape architects;
- Farmers;
- Technology developers;
- Government;
- Civil society. [WP3 - Romania]
- Raising community awareness through the transparency of information on food products (simple labelling with information about cause-effect relationships of chemicals in soil in the short term).

- Orientate studies/projects on spatial planning towards ecological functions and structures (reforestation, delineation of more areas of green building). We emphasise the importance of sharing the acquired knowledge, in a sense of multilateral cooperation between the southern and northern hemispheres in order to protect the biosphere.
- Level of involvement:
    - the future generation (intergenerational transmission of knowledge), the citizens and the media (communication and dissemination of information)
    - the relevant technicians and professionals such as cooks and chefs, national producers, food safety experts, trainers, nutritionists, civil society organisations, associations and trade unions
    - policy makers and regulatory bodies as they are responsible for decision-making and for setting regulations and laws; and researchers (as the carriers and transmitters of knowledge and directly involved in responsible land use. [WP3 - Portugal]

- Microalgae production leads to more healthy fish and reduce land use pressure (soybean fields).
- Relation between ownership and interest – decentralization of food production.

- Research to identify who should decide about land use. Regional/local ownership
- Research should contribute to forecast climate change impacts to identify early counter-measures. [WP3 - Norway]
- (Re)thinking the administrative model, reinforcing the academy's position and the transparency of the planning processes.
- Economic agents, taken as a stakeholder group, provide different and specific sectorial visions of the territory and land use.[WP3 - Portugal]

Expected impacts

- You can compare the ratio of production to land used and look at the overall health of the population to see if it is improving over time. This can be especially evident in people with the extremes of obesity and malnutrition. [WP3 - UK]
- Applied research outputs with results you can use in practice – for innovation, by the industry (otherwise e.g. returning the financial support)
- Land, water, food without residues (e.g. synthetic pesticides...)
- Stopping the land degradation (possibly improving its fertility)
- Balance between food security and energy use. [WP3 - Czech Rep]
- Better assessment of induced effects of the CAP and feedbacks on this type of policy framework
- Develop reversible actions on the ground [WP3 - Belgium]
- The general public/citizen should have changed behavior to actively decide for or against food.
- Politicians should be more patient with growth and new technologies.
- Better balance between growth, quality, and production.
- The food producer needs to evaluate its activities for sustainability [WP3 - Norway]

We expect to increase biodiversity applying a responsible land use in combination with:

- the adoption of good practices in the management of contaminants (urban waste);
- reduced use of phytopharmaceuticals in agriculture;
- and, indirectly, the reduction of the ecological footprint, within an economy
- of low carbon use, namely regarding public transportation, commuting, livestock production and tourism.

Strengthen the local economy, as well as arise the sense of community, by increasing the consumption of seasonal and local products and reducing the number of intermediaries in the distribution chain.
We hope we can identify/obtain crop varieties which are resistant to drought and salinity, and that organic products are accessible to all citizens. [WP3 - Portugal]

Research Questions

- How could land use and management embed a reversibile character for various/evolving activities (food production)?
- How can we adapt production processes in regard to climate change?
- How we can sustain quality and fertility of soils?
- What is the role of territorial governance for responsible use of land and resources?
- How to improve evaluation of non- commodities benefits for more effective and responsible land use management? [WP2]
- How to ensure that governance supports sustainable ways of agricultural/livestock production and respective projects in the short, medium and long term?
- How do the European Union level policies affect land and resource management at the national level?
- How to produce calorie-rich food on existing agricultural surfaces with as little resources as possible?
- What are the main obstacles to an effective land use? [WP4]

Citizens' visions

BEL] Vision 5. Moving sustainably.
"Food is local (less transports, less costs, better quality, less CO2, less pesticides, ...). I share a plot with others. I'm a fair consumer: I know my coffee, tea, milk producer. I pay a fair price! They send me their products by train and/or boat. Farms are ecological, methane gas reduction, CO2, (ecological footprint), fertilizer reduction, H2O consumption. Food production done ethically. Work with nature".
[FIN] Vision 4: The future of responsible consumption
"There is an increase in the consumption of protein from insects together with organic and locally produced food. An ecological way of life has become mainstream".
[EST] Vision 1: Human-friendly and safe environment
"Food safety (drinking water, control over the production process and raw material)."
[SWE] Vision 5: Environmentally and socially adapted living spaces
"We live in a multiple-family dwelling in a small town; everyone has their own apartment and a plot of land to cultivate. Much of what we own is common property, for example technical equipment such as vehicles, lawn mowers and tools. We have many common areas such as a greenhouse, a chicken coop, an orchard and areas for various purposes. We grow everything ecologically and we have retained older plant varieties and species of animals".
[LUX] Vision 1: On the way to a participatory community

“The biological garden would be an integrated part of that co-living and represents the food base for all of us.”

[NOR] Vision 6: Ensuring sustainable use of natural resources

“Green and local food production”

[IRE] Vision 4: Decision-making for a Sustainable Future

“Food should be unpolluted, safe and nutritious. All food cultivation should be produced using green energy (100% renewable). All actions will have been given targets for compliance and will have been achieved by 2050. Farmers and citizens have the power to make decisions about agriculture and how we grow our food.”

[SVN] Vision 3: Green Future

“Locally produced food, reduced import routes, access and care” [WP2]

5.d Evolving food culture in growing cities

SOCIETAL NEED: Sustainable Food
GRAND CHALLENGE:

2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy

Challenges

We want to ensure more sustainable food production and consumption by taking into account urbanization and the rapidly increasing mix of food cultures and habits.

- We know that there is an intimate relationship between food and culture.
- We know that sometimes new food cultures are accepted and sometimes are met with scepticism.
- We see urbanisation happening and that local production is difficult.
- We know that newcomers want access to their cultural food ingredients. [WP2]
- Locally grow-able food cultures will ensure sustainable food production in the future.
- This is important to effectively provide more sustainable food options.
- This kind of interventionism will upset the intimate relationship between food and culture.
- It will enable more energetically and spatially efficient production of food, both in and out of cities.
- This allows to understand the urban land use patterns beyond the built environment, which will lead to a change of the detailed/urban development plans.
- It is important that city dwellers feel close again to food production and get more connected to the land.
- Culture is not important, when the entire existence of humanity is in question because of excessive influence of the
- meat-dairy-egg diet on health and the environment.
- Education regarding cultural diversity and food as cultural expression should be integrated in school programs
- A system of the sustainability evaluation in restaurants could help consumers to choose according to the various criteria
- (local food, fair trade).
  [WP4]

Understanding the economic and social environmental impact of diversity of food cuisines. [WP3 - Belgium]

- Loss of local diversity with simultaneous increase of global diversity
- Behavior of consumers: reality versus wishes
- Inconsistency of consumer behavior
- Urban planning – challenging questions of ownership/ basis for local production
- Promote the coexistence of different cultures
- Conflicts of interest
  (better to have sun panels on the roof or a vegetable garden?) [WP3 - Switzerland]

Is it important from your point of view to address this challenge? Why?

- In order to preserve the environment and the well-being of the population
- To help consumer live according to their needs
- Integration of different cultures, defuse social tensions
- Change happens anyway – at least we can try to influence its direction
- The possibility to learn [WP3 - Switzerland]
- Because of the intensification of the mix of food identities/cultures
  (large cities > medium cities)
- Because of the diversification > new food practices
- Diversity related to food globalization. [WP3 - Belgium]

Every 10 years, population in the world will be increased with 1 billion. Cities will increase its surface and because of that, less space for agriculture and livestock will be available.
Our challenge is to achieve healthier and more sustainable food, focused on the meat sector. We need to find a way to produce more efficiently, healthier, with less natural resources and also reducing the waste.
The population will increase at about one billion each 10 years (U.S. Census Bureau, International Database., 2015). And all of these people need food. Cities are expanding and there's less space available for food production, in most cities there's almost no food that's being produced.
Livestock has a considerable impact on the environment. Growth of the livestock sector has been a major factor contributing to deforestation in some countries, particularly in Latin America. Overstocking land with grazing animals can cause soil erosion, desertification and the loss of plant biodiversity. Public health hazards are increasing with the intensification of urban and periurban livestock production. Waste from industrial livestock facilities can pollute water supplies and livestock are major sources of greenhouse gases. (FAO, 2002)
Meat has long formed an important part of the European diet, providing a high quality source for European consumers' protein requirements. Due to a diversity of species, traditions of livestock production and terrain the EU has a wide variety of livestock types and meat products derived from them. EU consumers eat roughly 35 million tons each year of the various meat types. This

averages to an amounts of around 92 kilograms per person per year (plus 5 kg per head of edible offal's) (European Commission, 2003)
The economic relevance of animal production in agricultural accounts is underlined by the fact that it accounts for 43.1 % (EUR 167 billion) of the total EU-28 agricultural output. Animal production covers two items: output for animals and animal products.
Because people want to buy meat as cheaply as possible, the animals are neglected by putting them in small spaces and give them supplements to let them grow as fast as possible. Most people don't know about the quality of life of the animals. If they knew, people probably wouldn't buy the cheap meat anymore.
Sustainable and healthier food is a solution to get better meat products on the market. By doing that, animals will have better life expectancies, and citizens have more sustainable products.
It will connect universities, farmers, companies and governments to research, innovate, produce and validate the solutions.
Afterwards we will promote this healthier and more sustainable system with all off the meat industries for improving the wealth of the animals and people.

Replace animals that need supplements for animals that don't need supplements
Most parts in the world can't do without supplements. Without supplements animals don't grow fast enough for customer demand. Supplements that are used are far example hormones and antibiotics. Hormones and antibiotics can cause health problems for people all around the world. So can these 'unhealthy' animals that use supplements be replaced by healthy animals without using supplements?

There are limited economic benefits of a healthy production method
A possible solution is a change in the society. It must be more aware of the problems producing animals brings with it. In this case the behaviour of people has to change. By changing the production method, the problem is not really solved. It will be less damaging to the environment, give the society and economy more benefit, but the population of the earth is still growing, and by changing the animal production methods this will not solve the problem.
We think it will be very hard to change the society, because it is still very normal to eat animals. This could change but will take a very long time because it's part of the culture and habits. [WP3 - Netherlands]

Scope

Understanding the character of the mixture and evolution of food cultures in ever growing “cosmopolitan” cities as well as assessing the socio-economic impacts and challenges of this phenomenon is key to effectively provide more sustainable food options. Challenges may be arising e.g. if a city hosts Italian, Portuguese, Greek, African and Chinese food cultures which are not necessarily locally grow-able.

How could it be approached?

1) Social Marketing / behavioural changes with regard to food consumption → who are the consumers, what are their motives and motivations?
   → understand obstacles, needs → plan and implement interventions accordingly
2) Environmental performance evaluation (as specific to cities) completed with an assessment of social and economic sustainability and ethical reflections
3) Estimation of the potential for change: what will be possible in an urban environment in 2020? What can be produced? What would such a city look like? Who will be in competition, what conflicts of interest? Develop strategies for an integrated local food production for different cities in different climate zones (dynamic modelling).
4) Historical research of nutrition flows during periods of migration: what functioned when and in what way? [WP3 – Switzerland]

- Study the impact of imports (transportation, local farming practices, economic impact)?
- Research on improving the "sustainable" yields according to their country of origin + develop non-indigenous growing techniques locally in Europe.
- Have a sociological approach on eating practices and diversity.
- Research on the impact of education on food practices (culture-based).
- Comparative study of supply chains
- Studies on mixed food cultures management policy tools (stick / ban, carrot / promoting good practice)
- Studies on meaning and values of food identities (food + integration community)
- Food and nutrition research (virtuous mix)
- Biological studies (health impact of the diversity?)
- Sociological research on food practices: Who does consume "exotic" products? All consumers? Consumers from different cultures? Immigrants?
- Research on social impacts and indirect links to other eating behaviors.
- Environmental impacts of local and non-local products (sustainability criteria)
- Does the debate on sustainable food exclude / polarize / caricature some social groups? Eg. Some belgian hipsters looking for organic and local food
- Survey the different type of food of the different communities. Who uses these exotic products? Are those who consume exotic food (non-indigenous) from different cultures or immigrant communities?
- Practice + experiments = citizens empowerment of citizens

- Find an indicative, informational, non-prescriptive tool to define the footprint of products. What footprint (co2, water, land use) does this food product have? What quotas (co2, water, land use) do wehave ? Linking / compare this footprint and quotas to other things (housing, transport ...)
- Take a historical perspective on the impacts (impact 0 does not exist)
- Research on the social impacts and indirect links to other eating behaviors.
- Analyze the environmental (and other impacts) of local and non-local products (sustainability criteria). [WP3 – Belgium]

Who should be involved in solving the problem?

For 1) research in Social Marketing (economy, psychology, consumer behaviour)
For 2) environmental sciences, ethics, philosophy, social science
For 3) agronomy, urbanistic, architecture, sociology, future studies, economy, physics, biology
For 4) history, anthropology [WP3 – Switzerland]

Problem area: Meat production/farming
Specific focus:

- The food the animals are fed with
- The space which is needed per animal
- Supplements (to improve the time to grow/produce)
- The age of the animals (life-span)
- The geographical location where the farms are placed

Approach:

- *Get animals that do not need supplements (industrial/technical)*
  The main stakeholders are farmers, universities, business experts and financers. Especially these four stakeholders have to invest in innovations to provide animals that don't need supplements anymore. Farmers have to implement the innovations. The innovations are mainly made by universities and business experts. At last we need someone who would finance the project. The stakeholder group will change into farmers, companies, shops and customers. Farmers stay stakeholders because they provide the animals. Also customers might provide animals in the future and customers have to force companies to 'create' animals that are healthy. For the same reason shops and companies are stakeholders, they also have to force the farmers.
- *Create plans to reach future goals (policy)*
  The main stakeholders which are involved in this constrain are the government and the farmers. When they make plans, we think they still are important stakeholders, but another stakeholder will also become more important. This stakeholder will be the business experts. Business experts have more knowledge about how the business will change, so that's why we think they will become more important in the long term.
- *Create innovations which are investable (policy)*

The main stakeholders are farmers, governments and financers. Farmers need innovation for new products for farm animals. Governments should force farmers to invest in innovation to produce animals on a sustainable and smart way. The financers have to finance the project.

- *Promote the economic benefit of healthy production methods*
  The main stakeholders which are involved in this constrain are the government, companies, shops/gastronomy and promotion. This section could be divided in production methods and public awareness. We expect that in the long term universities are needed to investigate which alternatives can be found for producing animals. So this will become a new stakeholder. But another part of this, which is maybe a little easier, is to promote alternative protein sources so people don't eat that much meat anymore. Possible and attractive alternatives are: fish, insects, plants, algae etc.

Goals:

The main goals are:

- Production methods
- Public awareness

In the next tables goals and stakeholders and their roles are represented.

Goals	Stakeholders
No supplements	Universities Business experts Financers Farmers
Create plans, future goals	Governments Farmers
Innovation investments	Governments Financers Farmers
Promotion	Governments Companies Shops Gastronomy

Table 4.1: goals and stakeholders

Stakeholders	Role
Farmers	Production Knowledge sharing
Government	Knowledge sharing Finance
Universities	Research
Companies	Manufacturing Packaging Transport

Business experts	Knowledge sharing
Financers	Government Investors
Charities/lobby organizations	Promotion
Shops/gastronomy	Motivation Knowledge sharing
Consumers	The end of the supply chain

Table 4.2: stakeholders and their roles
[WP3 – Netherlands]

Expected impacts

- More sustainable cultural mix!
- The multicultural integration objectives> Food as social cohesion lever and health vector ...
- Improving the understanding of the homogeneity of food cultures throughout Europe.
- Taking care not to be prescriptive. [WP3 – Belgium]
- Find functioning interventions for the implementation of change and the promotion of new and sustainable ways to consume food. For example, by changing framework conditions and by exploiting cultural mechanisms to develop best practices for the stabilization of positive nutrition strategies. Find out how different stakeholders can be reached best and in a long lasting way.
- Assemble a sound knowledge basis (in an objective way and with an broad approach i.e. not by considering economic aspects only). An example could be the analysis of all aspects of meat production, not least its ethical implications and its effects on climate, health and agricultural politics (subsidies) → translate all this knowledge into solid and clearly phrased decision bases which are easy to understand for consumers (clear messages and communication of results)
- Build a solid basis for planning, avoid overlapping of initiatives → create a complete practical guide for implementation [WP3 – Switzerland]
- Study the history of food consumption including the influence of the food industry → learn lessons from positive and negative experiences, get a larger view of what happens today and put cultural realities into context

Four possible scenarios, for every topic one, are made. In the impact we evolved: Environment, Society and economy.

1. Replace animals that needs supplements for animals that don't need. supplements

Solutions will be new supplements that don't cause health problems or let animals grow naturally. It's almost impossible to

grow animals so fast without using supplements. So in the future solutions will be combined.
The future society will look much greener with more animals everywhere. Because they can't grow animals faster, animals need more time to grow. How about the space where animals can grow? In the future animals will go up in the air same as people, in a flat for example. Also it effects the economy, customers have to pay more for meat demand. Farmers can't provide healthier meat without using the cheap and fast way. Why isn't this already happening? The knowledge shows that hormones and antibiotics are bad? The answer is the government; it does not control good enough. In the future governments will carry out more checks.
So at the end the society will provide healthier meat and the environment gets a greener look. There are more animals around and within cities and villages. To achieve this investment must be made and farmers have to give their animals more time to grow. Because of this customer need to pay more at the end.

2. Define future goals and come up a plan
We think when you define future goals and make up a realistic plan, this will have a positive influence on the society, economy and the environment. Still the consumption of meat is not healthy and not good for the environment. But when good policies are made, it has the least effect on the environment. A well designed plan can have a positive effect on the society because less supplements will be used and the life span of animals will be extended. On the economy side this will have a positive effect because this kind of business brings a lot of jobs with it.

3. The need for money to invest in innovation.
In the future these stakeholders will be farmers, consumers and promotors. Consumers and promotors can ask for other products that are better for the environment. When farmers cannot fulfil this demand consumers won’t buy their products. In the future this market will be eventually the same as all the other markets that no longer ask for a one size fits all product.

4. There are limited economic benefits of healthy production method
If production methods are being changed this will have a large impact on the healthiness of the animal. A result of better healthiness of animals is a happy society and the stakeholder promotion won’t be as important as it is now. Then there is something negative what can happen. Because producers are using less supplements, animals

will grow slower, so the economic benefits are limited. This also brings with it that companies will do anything possible (illegal methods could show up) to keep the production as high as possible.
Also, producing animals has a bad influence on the environment because the sector causes a lot of CO_2. [WP3 – Netherlands]

Research Questions

- What are the socio-economic impacts and challenges of evolving and mixing food cultures when aiming at more sustainable food provision?
- What is the character of the mixture and evolution of food cultures?
- What are future scenarios on mixing food cultures?
- What are the impacts of evolving urban food cultures on sustainable food provision?
- Which are the best economic configurations for working local food systems?
- What are the most sustainable cultural techniques to produce food that is beneficial to health?
- How to connect different manufacturers of food in cities?
- How to supply cities with healthy and nutritious food instead of food made to the bottom line requirements?
- Which infrastructure in urban areas is necessary for safe production of healthy food?
- What drives (motivation/need - environmental psychology) the agricultural practice in urban space?
- How can the food system of the world population can be changed to vegetable products?
- How to encourage people to eat in “common kitchens”, where staff would cook delicious vegetable dishes proposed by users?
- How can one determine what sustainabel food is?
- What foods can be locally (possibly even urban) cultivated, and which of them in a sustainable way?
- To what extent does lower meat consumption contribute to sustainability?
- What aspects should meet "sustainable restaurants"? (places with increasing amount of consumers?)
- How can we use available space in cities - rooftops etc - to assist in the production of food? [WP4]

Citizens’ visions

[LUX] Vision 1. On the way to a participatory community.

“Economy has changed a lot, it has become participatory and is considered as a common good, part of which would be the unconditional basic income. Children are raised and integrated into the community and nobody is excluded from society. Thus the basic income allows each person to take chances based on their motivations, their competence and capacities.
The biological garden would be an integrated part of that co-living and represents the food base for all of us.”
[LUX] Vision 5. From Zombies to communities/ Coexisting in solidarity and working for the well-being of all citizens.
“Healthy food due to sustainable and social production.”
[NOR] Vision 6. Ensuring sustainable use of natural resources.
“- To contribute in covering the global food demand (due to population growth) in such a way that the resources may be reused
- We have more knowledge about nutrition (and therefore are more conscious of consequences) and throw away less food
- More knowledge on consumption and the consequences this will entail
- Green and local food production
Private and commercial food production.”
[ESP] Vision 5 Always young: It is within our reach
“ We will eat healthy and sustainable food (products from organic farms, local cooperative and fair trade). This will enable us to know and supply ourselves with everything we have near. We will enjoy a better quality of life, also when we become old. We imagine a longer and active old age in a jointly responsible society in order to make life better and with dignity for all at any age.” [WP2]

6.a Health empowerment through "Everyone's science"

SOCIETAL NEED: Life-Long Processes
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

In the past, the family doctor was the only trustworthy source for health information. Today "Dr. Google" delivers an excess of information, without any interpretation, and no transparence with regard to sources.
The expert status of the doctors is more and more questioned – not least because there often seem to be financial interests involved.
Moreover, society has become highly diversified. Not everybody disposes of the same information and can be reached by the same information channels. [WP3 – Switzerland]
[There is a need to have easy access] to reliable information, ensuring that research results come directly from scientists to the people, but: [WP3 – Spain]

- Scientists are trained to produce scientific outcomes, not to talk and engage public.
- There are some positive examples of communication such as science cafe, science research night "you tube", TED talks, TV shows (real human), but little assessment of the effectiveness.
- Citizens experience a delay and lack of communication of publishing scientific acknowledgments and studies to the public and the experts. Data is not always referred to in a reliable empirical way. [WP2]
- Prioritizing research on issues that affect people's health is needed.
- Open access to information is needed (example: research, reports…)
- [Today there is not enough] education for healthy behaviour. [WP3 – Spain]

Scope

Open dialogue and communication on health related research and innovation insights and activities, so as to help empower citizens to look after their well-being themselves.

Research needs to explore options for setting up such science - society dialogues based on an in-depth investigation into the effects and dynamics of such processes and their effects on society as well as suitable formats and tools. [WP2]

Recipient:

- Find out how to address different social groups. Identify communication processes → develop target-oriented communication methods.
- Science should be involved in the development of new apps (in order to ensure that data will not only be collected, but also correctly interpreted). Consumer organizations and organizations should defend the interest of patients: data security has to be guaranteed in order to maintain the public's trust. [WP3 – Switzerland]
- There should be a public fund in charge of distributing basic resources (water, food, medicines, etc.) for people with financial difficulties all over the globe, giving priority to state responsibilities. [WP3 – Spain]

Sender:

- Research should focus on developing answers to people's needs, regardless of the potential to make a profit.
- Those responsible for the research should also be in charge of disseminating their results in order to bypass intermediaries that could potentially manipulate these findings. Develop a law that mandates informing society on all scientific research findings. [WP3 – Spain]
- Revisit the medical curricula and decrease the weight of "classical topics" like physics and organics chemistry in favour of courses teaching future health practitioners how to efficiently communicate with their patients.
- Compare worldwide curricula in medicine: what proves to be useful?
- Promote the culture of communication in science (including knowledge of social media). [WP3 – Switzerland]
- Create commercials on healthy behaviours that reach a wide public. [WP3 – Spain]
- In general: learn to handle incertitude and probability. [WP3 – Switzerland]

Expected impacts

- Longer life expectancy (decrease in death rates through R&D&I)
- Larger population due to longer life expectancy
- Happiness increases with the globalization of medicines
- Those with little or no financial resources would gain access to prescription drugs, thanks to the support from developed countries
- Intermediaries and media would transmit accurate information
- People have more health knowledge
- Healthier people, better work performance and more profits
- Discovery of non-pharmaceutical alternative medicines

- A society that is well informed and aware [WP3 – Spain]
- Empowerment of citizens by promoting their competences with regard to health issues and being able to find, understand and evaluate information in order to draw the right conclusions from it.
- High quality information its transparent and targeted dissemination will create a mutual basis of trust.
- Reinforcement and training of communication skills in health sciences. [WP3 – Switzerland]
- This has a great potential to improve health and wellbeing
- Savings in treatment and better quality of life for people [WP4]

Research Questions

- How to communicate the results of validated scientific research to the general public?
- What kind of information should be communicated and how to select sources?
- What methodologies, infrastructures and programs are needed to make an efficient communication?
- What is an easy to access platform, personal and virtual infrastructure, as also other, yet unknown media, which are secure and reliable to provide effective spreading and access of knowledge?
- How to guarantee usability for the community?
- How to create interpreted education processes able to bridge between the scientific/non scientific world?
- What quantitative index is needed to validate the liability of sources of information (in the dissemination to the public), as a disseminator are you measured?
- What are the effects of active communication of health relevant topics for citizens and health care professionals? In particular effects on
    - Health (nocebo/placebo...)?
    - Structure of a communities
    - Everyday healthy lifestyles/Individual and collective awareness (learning versus unlearning)
    - happiness and capacity to act in the “right” way? [WP2]
- How to integrate obtained research results from different disciplines into one holistic health awareness model?
- How to intervene effectively against social and professional setbacks that affect the life project of each individual?
- Self-determination or wage-slavery? Separation from natural resources and means of production.
- What are the most suitable motivation tools for the active engagement in self-care for health? [WP4]

Concerns

- Addiction problems, since medicines would be less expensive [WP3 – Spain]
- Science must adequately give back what society has directly or indirectly contributed in the generation of scientific progress.
- Successful uptake of innovations by citizens requires an open and early dialogue between scientists/innovators and the public on the innovation and its consequences.
- It is crucial, as currently many citizens cannot make sense of medical information on their own, this kind of information is both abundant and controversial. [WP4]
- Liability of the sources of information [WP2]

Citizens' visions

[UK] Vision 6: Citizen Empowerment
"People feel empowered to look after their health and well-being themselves. The highest levels of available health/care/education/resources are available for all".
[MAL] Vision 3: Education leading to a new way of life
"With education come healthier lifestyles"
[ITA] Vision 6: Technology at the service of man
"An easier access to advanced technologies, with more intuitive and functional interfaces"
[IRE] Vision 1: Community Enrichment through Education
"More effective education leading to more engaged, active citizens. How to think?"
[ITA] Vision 4: A school beyond times - a new education model
"The social security system uses smartwatches both to monitor the health status and to help individuals to take care of themselves."
[EST] Vision 6: Life in your age
"People can live up to 100 years old without any problems because they are taught from childhood to make the right choices concerning their health." [WP2]

6.b Deconstruction of age

SOCIETAL NEED: Life-Long Processes
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

The way society deals with aging is important because it affects its fabric on multiple levels:

- Demographics (mortality)
- Development of talents
- Immigration / emigration.
- Differences in income for different age groups;
- The choice of the amount of remuneration, duty to work: Everyone can choose how much they want to earn; not everyone wants to do the dirty job (duty to work). [WP 3 Latvia]
- Quality of life, healthy lifestyle, availability of health care, ensuring mental health (eg: Research on neuroplasticity has demonstrated that in older age new brain cells are generated if you act and learn as young people – [WP2].
- Listening to what society has to say, wiping out rumours and prejudice, involving society in processes.
- Ignorance does not relieve from responsibility towards the different age groups, each person is an important part of society
- Perceptions on life's worth: Life patterns are divided in their values. Active life is seen as meaningless. Free time is to achieve things and working time is a burden. Young are dynamic, old are slow and ineffective. We live one life waiting for "the other part". We are slow to get aware of the importance of living the present moment. [WP2]

Scope

- Developing a more complete understanding of neurobiological underpinnings of learning throughout life-time, with the final goal of individuating the key life-style factors and tools with the higher probability to promote neuroplasticity and neurogenesis.
- Deepening our knowledge of the fundamental biological and psychological processes involved in the ageing process, both physically and cognitively. A more comprehensive understanding of these mechanisms will allow us to

overcome the limitations induced by ageing process in learning and health, while keeping the advantages earned through experience.
- Advancing the understanding of the conditions promoting intergenerational relationships, and how educational programs can effectively impact integration between individuals of different ages.
- Analyzing the societal and economical impact of the melting of sociocultural borders between different ages
- Increase the understanding of how the valuable and effective adoption of healthy life-styles as well as lifelong learning, can impact employment, innovation, change and social asset. [WP2]

How can it be approached?

- Fund the spheres which interests society.
- More active participants are awarded scholarships.
- Volunteers are granted discounts.
- Development and support of business incubators.
- Skill tests.
- To turn to higher institutions.
- To understand how large is the part of the society in need of health care support.
- Young people help seniors to exercise (to stay physically active).
- Impulse for helping to provide a home for students.

Comment:
Participants discussed uncomfortable life environments for students'. Dormitories have anti-sanitary conditions. Students are desperate to live in humane conditions. What is the alternative to the terrible dorms? Is there a cheap solution which ensures a proper life environment?

- Preventive medicine (change the way you think to change your health condition)
- Scientific basis for folk-medicine.
- Work on cognitive (thinking) research.
- Lifelong learning workshops (training).
- To accept a single opinion on health issues.
- To improve the education system by ensuring regular exercises, etc.

Comment:
Youth were distressed that EU countries have different health care systems. The one in Latvia is the most inefficient in comparison to Switzerland, Austria and other countries. The participants suggested that our health care system be monitored by the EU, and that common solutions should be offered.

Actors to be involved
Affected parties:

- entrepreneurs;

- the state;
- patrons;
- field professionals.

Involved parties:

- youth;
- seniors;
- charity sponsors;
- “Brussels”;
- scientists;
- media;
- inhabitants;
- Ministry of Health;
- Doctors’ associations;
- students of medicine;
- Red Cross;
- parents;
- World Health Organisation. [WP3 Latvia]

Expected impacts

Money = equality

⬇

Chance to improve health

⬇

Quality of life improved

⬇

Communication improved

⬇

Respect

Images:
Interaction between young people and seniors. They exercise together in a park.
Society’s health improves. No queues at hospitals.
Financial condition improves. Everyone is satisfied with their finances.
Equality among generations.
The average Latvian becomes more positive. People become kinder and politer.
Young people and seniors use products from nature. [WP3 – Latvia]

A better understanding of the ageing process, both physically and cognitively will allow overcoming the limitations induced by ageing process in learning and health, while keeping the advantages earned through experience.
This will prepare our societies better for the huge challenge of demographic change ahead of us

We have to understand old age. It is a process that affects us all and that we all have to live. [WP4]

Research Questions

- How to promote neuroplasticity of all ages? What type of activities have a major impact on the brain flexibility?
- Which forms of ageing? Reverse ageing, no-ageing? Ageing as accumulation of cells and experiences?
- Which educational processes enable integration among generations?
- Does informal and experienced based education contribute to lower the barriers in educational programmes?
- Stereotypes of old age: which are the effects of collective and individual perception of ageing? Personal and collective identities.
- What scenarios/trajectories choices of development of societal value do we imagine? How will society produce social relations?
- Which cultural and generational conflicts may occur in a scenario in which people live and keep active for longer time? How does society deal with these conflicts?
- Unemployment/longer employment: Which are the effects of owning brain capacity for long time? Are we envisaging a jobless society or a super-work society? What are economic issues and models?
- Innovation and change: In a society of aging population how will innovation be produced? Who is the innovator? Young or old? [WP2]
- How does health-focused physical activity affect the aging process and the quality of life?
- What are the societal and economical impacts of the melting of socio-cultural borders between different ages? [WP4]

Concerns

The decrease in well being is not a problem of ageing, but nutrition-related, chronic degenerative illnesses, see China studies, that persist because governments and multinational companies have conflicting interests. [WP4]

Citizens' visions

[ROU] Vision 4: The Golden Age "The life expectancy will have increased considerable by 2050, and the quality of life will have improved tremendously for senior citizens"
[UK] Vision 6: Citizen Empowerment "The highest levels of available care/education/resource are available to all"

[CYP] Vision 1: Pension System “Qualitative and dignified way of living… to be able to maintain comfortable lifestyle.”
[DE] Vision 5: Dream school 2050 “Children work together with older people We want change/improvement in education for all generations [...] we want the opportunity for lifelong learning at every age, tolerance, and general openness in society.”
[WP2]

6.c Here, there and everywhere

SOCIETAL NEED: Life-Long Processes
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

Main issues to tackle:

- Even if flights and travelling are getting affordable for money, they are still time and resources consuming. Real travel is not affordable for everyone.
- Although virtual connection is still limited; owning devices is expensive.
- Most research is on physical mobility, but almost no research on the effects of virtual reality
- Identity itself is modified by using virtual reality. Virtual reality is freely accessible
- We are opening very powerful reality and we do not know how it will affect self-identity [WP2] (personal freedom space, impact on the physical health, personal data protection)
- Connectivity, participation [WP3 – Croatia]
- In order to build cultural and social connections, the cultural challenge needs to be faced. This implies accepting each region's ideologies, without questioning their integrity or attempting to change them.
- The existing political and economic difficulties include the isolationism of some countries. This makes it difficult to break down barriers and build connections, as not all countries have the same economic possibilities. [WP3 – Spain]
- Administrative and financial support for physical mobility (how "here" can become "there"; insufficient resources to ensure physical mobility);
- Addiction to internet;
- Lose of national identity; [WP3 – Bulgaria]

Scope

Explore ways individuals can be encouraged in the future to move from their current context (here), to different contexts (there), and ultimately to acquire a global view (everywhere) using both physical and virtual reality tools. [WP2]

Cultural challenges could be addressed through global education that instills respect for other customs and cultures. To achieve this, physical interaction should be fostered in order to experience daily life elsewhere; virtual support should also be

much more present in society to support this [WP3 – Spain] for example through multiculture platform for citizen cooperation [WP3 – Bulgaria]. Secondly, the creation of a supra-national organism is important. This organism would have the competency to self-regulate (without impediments) and this way accomplish things like universal free movement. This organism would need to have the collaboration of government agencies and businesses in order to reach consensus. [WP3 – Spain] Social policy for funding physical mobility, reducing the requirements between states for traveling and tourism [WP3 – Bulgaria]

Need for technological infrastructures and equal internet access. There will be a need for public works dedicated to communication and mobility. All these points should be regulated in order to make the least environmental impact possible. [WP3 – Spain]

[Therefore it will be necessary to carry on an] interdisciplinary approach and research on:

- Economic aspects of virtual mobility
- Medical and psychological aspects [WP3 – Croatia], including how virtual mobility over the psyche of the individual [WP3 – Bulgaria]

And then raising awareness about the risks of physical and virtual mobility. [WP3 – Bulgaria]

The actors involved in this scene include the entire world's population. The pioneers in this challenge are politicians and the government, together with the big corporations in collaboration with experts in different fields like sociology, technology, economics, etc. [WP3 – Spain]

Expected impacts

- More acceptance and respect, and less discrimination (religion, sex, race, sexual orientation, age…)
- Virtual communication everywhere in the world (education, linguistic practice, jobs…) and access to Internet and knowledge for everyone
- Language practice with native speakers
- Blurring of borders (easier to come in and out). Thus, more student exchanges, opportunities to work abroad and collaborative work online (enhanced through traveling)
- International friendships [WP3 – Spain]
- Social aspect: interaction - increase in socialization, decrease in loneliness
- Economic aspect; virtual visit to different locations accessible to all of the citizens regardless of their economic situation [WP3 – Croatia]

- Economic growth and optimization of the division of labour. Progress in different fields as a result of cooperation and exchange of experience and team efforts;
- More tolerant societies, which are aware of the problems of the others: [WP3 – Bulgaria] this experiential learning will promote information exchange and connectedness and ultimately smooth out the borders between nationalities, gender, cultures etc., giving more choices to the individual and raising acceptance of diversity. [WP4]
- Personal enrichment through exchange of experiences and ideas with the others;
- Taking more appropriate decisions for personal development;
- People will have awareness on global issues;
- Access to internet as a human right;
- School for digital nomads;
- Creating free economic areas for online entrepreneurs. [WP3 – Bulgaria]

Research Questions

- What are the effects of virtual mobility on our individual and social identity, intimacy, etc.?
- What are the long-term effects of virtual mobility (the use of virtual reality) on brain and body?
- How will the physical and virtual mobility interact?
- What will be the sustainability (in all possible aspects) of virtual mobility?
- What are the limits of our capacity for virtual life? (addiction, emotional, affectional) [WP2]
- [What is the impact of virtual reality] on the development of personality?
- Which forms of physical and virtual mobility are the most appropriate for the different ages and different activities?
- Why are people reluctant to be active? What negative consequences does that have? [WP4]

Concerns

- Virtual mobility fosters a sedentary lifestyle which negatively impacts the holistic health a man. [WP4]
- Brain development in children is affected and they miss important experiences with movement and life, so they should be protected until they are 10-14 years old. After that they have great opportunities.
- There is a danger of manipulation, conditioning and brutalisation (apart from addiction) through virtual realities. [WP4]
- With VR we are opening a very powerful reality and we do not know how it will affect self-identity, so research is needed.

- There are limits to our capacity for virtual life (addiction, emotional, affectional)
- There are limits to the capacity of humans to find their way in virtual and real worlds at the same time.
- Virtual mobility is not sufficient if not accompanied by real mobility
- There is a danger of manipulation, conditioning and brutalisation (apart from addiction) through virtual realities.

Citizens' visions

[ITA] Vision 6: Technology at the service of man
"Technologies at the disposal of education, in order to enable a learning process which is continuous and not limited to school classes."
As a challenge to the sentence:
"A technology that fosters face-to-face relationships instead of virtual ones, empowering actual sociality".
[DE] Vision 5: Dream school 2050
"National borders in our minds are abolished and friendships are made across different languages"
[ESP] Vision 2: Small changes are powerful
"More scholarships at all educational levels and promotion of the international students' mobility." [WP2]

6.d I’m empowered to lead my changes

SOCIETAL NEED: Life-Long Processes
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

- Challenge of economic growth: entrepreneurial spirit (or lack of) together with abilities like goal setting and time management impact economic growth heavily [WP3 - Estonia]
- - Skill requirements are changing fast – people need to be empowered to deal with this in a proactive way [WP4] This topic addresses the quest for flexible and adaptive careers over a lifetime, that could reduce exclusion of some individuals [WP3 - Luxembourg]
- Research on unemployment is mostly from the point of view of economy: little of any psychology knowledge on barriers for changing life-job-education paths, flexibility. Some people don’t have the will to develop themselves [WP3 - Estonia], while many people express desire to learn or change their lives but lack the courage to do it [WP2]
- In education, there is a real challenge of connecting theory and practice [WP3 - Estonia]. Also, the education system is still a system where de-valorisation creates limitation within children and people. Cultural and religious premises inhibit programs in this matter. [WP2] and sometimes raising methods (bringing children up) are also restrictive [WP3 - Estonia]

Scope

How could it be approached?

- adapt the process of life (school, work, rest) by putting the individual in the centre of it's decisions and by rewarding these.
- the unconditional basic income can be seen as a tool that helps to give people the freedom to develop.
- Ensuring education "à la carte" and free in a life-long approach.
- Re-activate the link between school and society and taking into account the corporate social responsibility as an integral part of this process. [WP3 - Luxembourg]

Basic education should be reformed:

- reading success stories instead of fiction
- being a work shadow
- not to limit freedom of thought [WP3 - Estonia]

+ A greater flexibility in individual thinking ought to become an educational goal [WP4]

+We see opportunities emerging like online courses, e-learning, lifelong learning programmes. [WP2]

Extra-curricular / further training should be reformed [WP3 - Estonia]:

- financial grants
- include more practical elements
- promote further training in all age groups (life-long education)

The research topic will require a multi-disciplinary approach, combining:
1) Analysis of work requirements, as well as capacity of individuals to use/go alternative educational paths towards an effective work fulfilment (psychology, sociology, educational theory)
2) the changing structure of labour portfolios due to accelerated scientific and technical innovations (science, engineering, forecasting).
4) an analysis of possible approaches to quality control of the alternative educational instruments (is an "institutionalised" quality control needed? If yes, in what form?) (system analysis).
5) assessment of effectiveness of the alternative educational paths (longitudinal empirical research).
6) Analysis of possible models for sharing responsibilities for introducing alternative pathways in education-role of state, private sector, civil society (governance analysis, political science). [WP2]

Who should be involved?

- the government [WP3 - Luxembourg, Estonia]
- research institutuons
- public finances
- citizens [WP3 - Luxembourg]
- Entrepreneurs
- ministries
- schools, pupils, teachers, educational institutions
- Unemployment Office
- volunteers (mentorship)
- employers
- media
- EU
- Family [WP3 - Estonia]

Expected impacts

- operating models (financial change devices, etc) that allow the person to manage their processes throughout life.
- Assessment of the acceptance of society regarding different models of personal development as well as assessment of the impact of the model by means of indicators defined as welfare, finances, employability etc.
- Expected societal impact [WP3 - Luxembourg]
- Interest and emphasis of higher education increases.
- Actions of people are planned and targeted, Setting goals increases satisfaction
- Society of future is built upon freedom of thought
- People can, want and have the courage to lead their own lives
- Higher rate of entrepreneurial spirit brings economic growth [WP3 - Estonia]

Research Questions

- How can individuals build their capacity to embark on alternative pathways and acquire new skills?
- How can the effectiveness of the alternative paths to education/skills be assessed?
- How to raise among general population desire to obtain new knowledge and skills (+ to show their long term effects)?
- How to adjust the education system so that everyone could choose it according to his/her needs and interests?
- The individual's new abilities require new attitudes?
- How to provide individuals with tools to empower them and make them accountable collectively and individually?
- How can people contribute and be recognized?
- Will the willingness for life-long learning be affected by social inequalities? [WP4]
- How will the portfolio of human labour develop, mainly taking into account the acceleration of innovations and educational needs?
- If alternative paths to education/skills will be introduced, how will quality control work?
- What are the possible models for sharing responsibilities for introducing alternative pathways in education? [WP2]

Concerns

This is not so much a matter of research but more an issue for reform of education
A very important issue - but not a research program. Rather a topic for political and societal debate. [WP4]

Citizens' visions

This part should include the contents from Deliverable 2.1 + national citizens' reports if needed
[UK] Vision 2: Community Empowered Learning for the 21st Century "There is freedom of choice about whether to use life-long learning [...] education is not age based on result dependant. Qualifications are elective. Access to these resources is unlimited throughout a person's life"
"Every person has the right to be educated in a way that allows them to reach a full potential"
[NOR] Vision 1: A work life for all "Qualitative change in employment"
[HUN] Vision5: Education in the world of transforming work: "lifelong learning has been accepted as an important value" [WP2]

7.a Educational ecosystem as a driver of social innovation and local development

SOCIETAL NEED: Strengths-based education and experiential learning
GRAND CHALLENGE:

6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

- Lack of motivation among young people as a pressing challenge.
- Improve the relationship between teachers and parents. Parents need also be more active in students' life. [WP3 - Bulgaria]
- The negative attitude towards the education system. [WP3 - Lithuania]
- Lack of well-prepared and qualified pedagogical experts at universities.
- Improving school facilities
- Lack of technical support [WP3 - Bulgaria]
- More practical classes for students.
- Lack of connection between education and local realities (business, economy, political situation). [WP3 - Lithuania] [WP3 - Bulgaria]
- Critical thinking in children is not stimulated.
- Improvement of teaching methods and the update of the academic workload of students which needs to be adjusted according to their age. [WP3 - Bulgaria]
- Adopt personalized approaches and new methods to empower people
- The cooperation between different networks is not efficient and there are still problems in the area of cohesion and integration, there is a disadvantage in social background and problems in the non-formal education. [WP3 - Luxembourg]
- Fragmented networking at local level with other institutions (distributed and connected intelligence)
- Access to quality education: the education system is not adapted to the social needs. The high dropout rates of students from disadvantaged groups.
- The varying quality of education at the geographical level.
- Lack of stakeholders' involvement in the education system.
- Bureaucracy interferences in implementing new initiatives.
- Lack of leadership models in education system.
- Ensuring access to lifelong learning we can continually guarantee the necessary professionals for labour market demands. [WP3 - Lithuania]
- Creating balance between education and upbringing;

- Upgrading innovation, proactiveness, entrepreneurship and co-creation with the goal of contributing to sustainable development; [WP3 - Slovenia]
- Schools to play active role in community [WP3 - Romania]

Scope

Educational systems are one of the most capillary diffused networks on the territory and this is why they should assume the role of "hubs" to reconnect educational agencies: learning institutions, families and territorial stakeholders.
Research should consider following :

- Developing models for improved learning initiatives, ecosystems and processes designed to recover the centrality of the schools and capitalize on their capillary diffusion on the territory.
- Foster cooperation among educational agencies (schools, families, territorial stakeholders), to satisfy individual and community needs and expectations (including personalized and practical education), promote cohesion and inclusion, and support capacity building and the increase of social capital.
- Finding ways to connect the hubs into an integrated network in order to equalize education throughout Europe and to favour a harmonious and equal growth all over Europe. [WP2]
- Encourage even more the non-formal commitment and to better enhance the existing institutions. It is not necessary to create levels, one only has to enhance those that you already have. The creation of ONE non-formal convivial education portal is a solution, with different admissions for adults/parents and children/young people.
- Another thing is the introduction of a new class in school where young people learn important things for their daily routine, a ´school of life´. Further a system of multiple literacy is offered at school, students can make a choice of language.
- Teachers, the socio-educational team, students and their parents should be involved. In addition you need the ministers and the participating companies. [WP3 - Luxembourg]

- Using MOOC's in the teaching process.
- Introducing single and common evaluation system in schools (such as ECTS in higher education), including to the scale of assessment such criteria as volunteering, social engagement, citizenship, and so on.
- Developing game-based learning.
- Creating an electronic platform in order to share the teaching / learning methodologies, tools, job offers, courses and seminars.
- Organising career planning courses according to the higher education or business needs.
- Developing leadership in schools

- Educating not only in schools, but also through workshops (in social partners' organizations).
- Research on consolidation effectiveness (geographically optimal networking)

- Organising training, seminars for discussions and sharing areas of common interest between the education system actors/parties.
- Perform „needs analysis" with pupils, students, business and other interested stakeholders which would answer the question, what are the exact needs of the community from „educational centres"

- Create a platform in which the education system can interact with the environment (family, child, teacher, business)
- High involvement needed : Local communities , teachers' unions , municipalities (decision-making, resources), schools' communities
- One general approach that considers clear responsibilities, rights and obligations for students and teachers as well as for parents. Changes in weight of the authority of teachers and stricter sanctions for parents were also included. [WP3 - Lithuania]

- Utilize digitalisation
- Open up educational institutions
- Expanding the scope of tasks (social, ...) of both institutions and actors
- Habitat education, ("living in/with school")
- More communication between sectors/regions
- Include external opinions/views in the education system
    - Creating mutual understanding (economy, science ...)
    - Providing space/time for communication
- Issue-oriented integration of different stakeholders from different areas
- Individual promotion + put promotion into the centre of the daily teaching
- Human being at the centre – NOT PERFORMANCE
- Cooperation instead of concurrence
- Promotion – image increase – fair wages (for teachers)
- Unified RIGHT for education & STANDARDS → EU(-wide)
- Bilateral cooperations – GLOBALLY
- (Research should consider to involve): Ministries of Education, EU-policy, unions, teachers and learners, therapists & advisory staff , family [WP3 - Austria]
- Education ecosystem must become the central system in the society, implying full engagement of all decision-makers and stakeholders.
- Higher entry criteria should be established for educators – as they are molding the next generations
- and adequate conditions for their work, including salaries – should be provided.
- The level of competences of decision makers at all levels should be elevated. [WP3 - Slovenia]
- School network (classroom, teachers' lounge, offices beyond the teachers' lounge)

- New ways of training teachers
- Community participation
- Research in primary and secondary education cycles
- Good practices models (pilot schools) [WP3 – Romania]
- Greater focus on local communities—and their needs—can bring about continuous social innovation and lead to local development (economy and business).
- There are geographical barriers/difficulties to reach different regions/localities where there are relevant institutions
- There are geographical barriers/difficulties to reach different regions/localities where there are relevant institutions
- This will allow the sharing of experience in dealing with barriers to education, but also in fostering peoples interest in the education.
- An only educated person can make the right decisions. Educated people are the greatest asset of every society. Investments in education have been always paid off historically.
- Recognise, deepen and replicate existing examples of best practice, e. g. Escola da Ponte (liberal educational system). Fight against school failure and dropout?
- Determining the supporting and deterring factors in education that allow/discourage the alignment of knowledge to the requirements of the future society.
- It is a complex process to consolidate the centrality of the logic of "learning" in education and in the co-production of empowering, collective knowledge.
- Increasing future competitiveness through differentiated and individualised curricula.
- The programme will enable working on strengths of youth and adults and foster development of business
- Critical thinking & the ability to engage in multiple perspectives will foster a sense of agency in individuals so they feel empowered to take action
- Personalised learning improves motivation and learning success for each individual and thereby increases the capacity of the community as a whole.
- Education based on the encyclopaedic knowledge does not lead to the ability to apply knowledge in practice.
- his will facilitate the introduction of alternative and decentralized education programs in the educational process. [WP4]

Expected impacts

Schools as experiential settings and multi thematic hubs embedded in a wider network of connected and cooperative intelligence, both at a local and larger scale to promote a holistic education (whole person development), as well as professional skills.

- There are no children that are not covered by the education system.

- No school drop-outs;
- Students with special educational needs will be educated with appropriate programmes and textbooks;
- All children will be engaged in useful and enjoyable activities;
- Education will be more attractive for the young people;
- No shortage of specialists in certain fields;
- Find jobs locally
- Modern schools and kindergartens equipped with everything necessary for the education process;
- Teachers are motivated, well-prepared for their work, adequately paid and everyone respects them;
- Well-educated people with critical thinking build free and peaceful societies;
- People have more free time to spend with their children. [WP3 - Bulgaria]
- The main goal should be an education that should forget the development and the welfare of the student. [WP3 - Luxembourg]
- All education institutions form a single network
- Classes are held in other organizations, rather than schools
- Teachers actively involves field professionals in classes
- Pupils from rural places come to one bigger regional “science centre”
- Business are involved in education - once a week there‘s a lesson, letting students gain practice
- Academic campuses, incorporating the latest technology, are located in the near surroundings, including higher education institutions, business, HUB‘s, schools, institutes and so on
- Several times a week, students go to meetings with other members of the community to interact, share ideas and create something new.
- Many outdoor activities with friends, community
- Common space where all the stakeholders can meet and communicate
- The virtual communication without leaving home. Learning in virtual classrooms.
- Grandparents and grandchildren can learn together and create art or new products. Learning brings together! [WP3 - Lithuania]
- Stabilization of the social structure ("age pyramid") [WP3 - Austria]
- Society and its values will advance in terms of the quality of relations among its members. The quality of human capital will improve essentially, and that will enable a more innovative, efficient and internationally competitive economy, without social exclusion. [WP3 - Slovenia]

Research Questions

- How could local hubs foster a stronger cooperation among the educational agencies (schools families, territorial stakeholders), and satisfy individual and community needs and expectations (including personalized and active practical education), foster cohesion and inclusion, support capacity building and the increase of social capital?

- How could cooperation boost collective intelligence, counteract the deterioration of the social value of learning and foster critical thinking?
- How could hubs be integrated into a network to develop a superior level of cooperating collective intelligences to favour a harmonious and equal growth all over Europe, where access to resources like data, physical places, competences etc. is open to everyone?
- -How to provide awareness on a critical and optimized use of resources across the network? [WP2]
- How could cooperation boost collective intelligence, counteract the deterioration of the social value of learning and foster critical thinking?
- What are models for improved learning initiatives, ecosystems and processes designed to recover the centrality of the schools and capitalize on their diffusion throughout the area?
- How could local hubs be integrated into more cooperative networks to favour a harmonious and equal growth all over Europe, with access to all kinds of resources?
- Which model to use to encourage economic agents and local community into implementation of innovative solutions and cooperation with experts?
- How can the intrinsic motivation to learn be encouraged for the development of an innovative society?
- How to develop Educational Centers that promote and engage in global and human development?
- What changes need to be done in order to evolve from an"educational system for the masses" to the "individualized timetable"?
- How to measure (evaluate) efficiency of the experiential learning?
- How to adequately examine and effectively use natural behavioural preferences of youth and adults in business?
- How to change the current model of education focusing on individual subjects to education interconnecting knowledge from different fields?
- Which countries have well-functioning learning systems and why? Explore and adapt these models.
- How to efectively use modern technology (webinars, e-learning) to develop the current educational system?
- How to reach the required / expected standards of education (output) concerning alternative modes of education?
- how to achieve that the education system will include real practitioners and theorists who are motivation for student? [WP4]

Citizens' visions

Following visions have been addressed:
[ITA] Vision 4: A school beyond times - a new education model
"In 2050 the traditional schools will be replaced by multi-thematic hubs dedicated to education and collaboration among citizens of all ages. Every hub is as integrated

as possible with the human context (...) Every hub consists of pavilions for specific subjects (...)"

[HUN] Vision 5: Education in the world of transforming work

"Education today does not only happen within the confine of school rooms, but also at external venues such as, for example, demonstration sites, visitor centres, organic farms, waste management plants etc. "

[IRE] Vision 3: Relationships with one another and the environment

"Children will be educated in a well-rounded manner i.e. educated in trades/environment/etc. a holistic approach."

[SVK] Vision 1: Popularization of Science and Technology

"There are many centers of scientific information around the country. The general public is regularly involved in scientific activities and research. The quality of science education at kindergartens, primary and secondary schools improved considerably."

[WP2]

7.b Rethinking (the new) job market needs

SOCIETAL NEED: Strengths-based education and experiential learning
GRAND CHALLENGE:

6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

- The research scenario concerns the lack of cooperation between businesses and educational institutions. During the studies the necessary knowledge that would be useful in the professional life is not acquired. There is no separation between the theoretical and practical knowledge. There is a volatile operational framework which needs are increasing and on the other hand the educational system is static and inflexible. Furthermore, there is no institutionalized practice and no incentives are given to companies to provide internships to students. On the other hand, the school does not cultivate the institution of practice which is nevertheless essential to discover one's talents and skills. [WP3 - Greece]
- This research scenario addresses the issue of finding a common ground between parties involved in the fields of education and the labour market, as well as of timely motivating children to find their sphere of interest. [WP3 - Latvia]
- How to structure a compelling dialog between education and companies in order to guide students towards effective choices? [WP4]
- How to not lose creativity in children?
- How to teach children to develop work habits?
- How to help youth to overcome fear of physical sciences?
- How to involve schoolchildren in entrepreneurship / how to promote entrepreneurship?
- How to reach a balance between the demand and supply of the labour market?
- How to modernize professor / study programmes?
- How to ensure more productive acquisition of skills at universities? [WP3 - Latvia]
- Should I orientate my education exclusively in the direction of the job market?
- Balance between private and publicly financed education → disparity in quality
- Globalization of the job market and education system [WP3 - Switzerland]
- Lack of multi-disciplinary and trans-disciplinary approaches
- Lack of integration of local initiatives
- Lack of team work and open-minded attitude for networking

- Lack of vision in promoting the need for a new breed of reflective practitioners and socially-responsible entrepreneurs
- Lack of ethical and social accountability in business (new relation between businesses and agencies)
- Need to reflect on who is sponsoring what for the benefit of whom
- There is no qualification framework [no recognized criteria of excellence, measures of success, trophies or prizes, or "academic" rewards] for practical knowledge, and informal education.
- Practical jobs are disappearing while ever more jobs will require technical skills as well as new forms of "STREET SMARTS" (also referred to as soft skills) [WP2]
- How can the educational ecosystem be reconciled with the ever-changing demands of the job market to produce up-to-date knowledge, ethical skills/competences and social accountability?
- There needs to be [...] better incentives for retraining and qualification in the field of socially needed sectors.
- Giving importance to the humanities and critical thinking to improve the tools that students have to face life.
- The requirements of the labour market are changing rapidly, while impacts on the education process will show up after many years.
- How to turn the education of a person into a tool of insertion in the economy without alienating their personal fulfilment.
- Students receive up-to-date knowledge. Research topics can get closer to actual socio/economical needs. [WP4]

Scope

- Investigate models of resilient educational ecosystems capable of responding in a reasonable time to the ever-changing demands of the job market and foster the acquisition of an up-to-date knowledge, ethical skills/competences and social accountability.
- Develop models of sustainable growth that allow for upward social mobility (status, remuneration), inclusiveness, personal fulfilment and societal well-being. [WP2]
- Connect the educational system with technological innovation resulting from research.
- Existence of interdisciplinary approaches that promote the effective exchange of ideas and technologies and being able to integrate them in education.
- Project where there are partnerships amongst organizations including companies and educational institutions and the results should be analyzed by specialists such as sociologists, economists in order to create new guidelines.
- Create a single qualifications framework, common and widely recognized throughout the European community. [WP3 - Greece]
- By letting students solve problems of real companies to acquire practical skills during the study process.

- By substituting lecture-type content with project-based learning.
- By having the potential employee create his/her own workplace based on his/her interests, skills, knowledge, and offer (sell) his/her ideas to the company.
- By everyone having access to effective career and development coach/advisor.
- By researching future jobs and skills.
- By understanding the advantages of the mandatory study-process internship for one's career.
- By studying the balance between the academic and professional programmes.
- By students having the opportunity to participate in workshops organized by professionals via competitions. [WP3 - Latvia]
- Analysis of the state of the supply and demand in the job market in order to identify actors involved and needs, to monitor the interface between the job market and education system, and to identify good practices.
- Agile education governance
- Develop possible alternatives to paid work [WP3 - Switzerland]

Who should be involved in solving the problem?

- Common and organized efforts must be made since everyone will reap the benefits, common platforms for cooperation should be established with the contribution of the EU, which will assist the communication among researchers, social organizations, companies, educational institutions and will focus on a common goal. These partnerships aim at implementing objectives that could be measured. The role of the state is important, as it will create an institutional framework that will be consistent with the needs and the decisions of institutionalized internships. [WP3 - Greece]
- Parents/ grandparents
- Entrepreneurs
- Teaching staff
- Intellectuals
- Career consultants / State Employment Agency
- Students / Student governments
- Researchers / innovators
- NGOs [WP3 – Latvia]
- Industry unions, trade unions and employers [WP3 – Latvia, Switzerland]
- Local governments [WP3 – Latvia]
- Economists (in the field of job markets and education)
- Educational institutions
- Politicians
- Career guidance, employment offices
- Think Tanks, Future Studies [WP3 – Switzerland]
- Business (as it upholds the demand and allocates funds) [WP3 - Lithuania]
- Ministries - of Education, of Finance, of Economy, of Labour (as they shape the policy direction and its execution). [WP3 – Lithuania, Romania]

- Parliament (as it adopts laws that contribute to the scenario)
- Private or public foundations (as they support and provide funding to any projects related)
- Local communities (as they are affected) [WP3 - Lithuania]

Expected impacts

- The establishment of a new educational system adapted to modern needs which will equip the young not only with technical skills but also with theoretical.
- The research activity should have a people-oriented approach and focus on the prosperity of all people.
- An important step is the cultivation of an education system that promotes experiential training and lifelong learning. It's a difficult task that cannot be completed in a short time and with a small number of programs.
- After each effort has ended, we can evaluate the results and quantify on the basis of specific indicators such as unemployment, welfare, product production and know-how. [WP3 – Greece]
- Young people to have better understanding of their achievements.
- To make people happier, more satisfied, therefore – more productive.
- Wisely-allocated state budget.
- After graduation, students have practical skills, therefore they are prepared for work. No brain drain. [WP3 – Latvia]
- Optimal exploitation of the economic growth potential
- Increase of job satisfaction (→ life quality, health, etc.)
- Integration of job market through a better coordination of the education system and the job market
- Reach a better level of correlation between the education system and the needs of the job market and sociopolitical needs. [WP3 - Switzerland]
- Business would have an interest to support the schools, growing competent and motivated employees for themselves. [WP3 - Lithuania]
- From the perspective of business groups, when employees have jobs close enough to their skills and interests, the working mechanism works better and innovative ideas and products are generated. In conclusion, the solution of the problem will lead to a more effective management of human and natural resources. [WP3 – Greece]
- Society satisfied with life / work (right choice of workplace). Economic development.
- Creativity – ideas and solutions are always available to help the company, etc.
- Well-managed resources
- More productive learning process (teachers and professors develop).
- Understand strengths and responsibilities. [WP3 – Latvia]
- The human right to have access to (good) education and a job
- Fighting and minimizing unemployment

- Covering job market needs
- Trust of the employers concerning the quality of education: titles and diplomas versus competence (skills) [WP3 - Switzerland]

Research Questions

- How can the educational ecosystem be reconciled with the ever-changing demands of the job market to produce up-to-date knowledge, ethical skills/competences and social accountability? [WP2]
- How can the educational ecosystem be reconciled with the ever-changing demands of the job market to produce up-to-date knowledge, ethical skills/competences and social accountability?
- How to favour the acquisition of updated practical knowledge through custom-made educational training complementing theoretical knowledge, with the aim of responding to a continuously evolving job market?
- Develop a qualification framework [recognized criteria of excellence, measures of success, rewards] for practical knowledge, and informal education.
- How can we, with tools and criteria, reduce the gap between theoretical and practical education?
- How to construct a system that would accommodate 'practical' and 'impractical' (philosophy, quantum physics, literary theory) knowledge?
- Turn education to the certification of theoretical and practical skills acquired formally or during professional life.
- Can this be a risky path that is measured just by career achievements and success? What if these achievements don't arrive?
- How could you make future generations learning and preparation to the world of work palatable again?
- How can we show the benefits of a nonmarket driven education that insists on critical synthesis? [WP4]

Citizens' visions

[PL] Vision 5: I've Got Talent
"Creating and promoting skills and talents will be correlated with the needs of the economy."
[HUN] Vision 2: The rise of a backward region
"They have jobs that are appropriate for their skills and interests. This has been made possible by tailor-made vocational training."
[HUN] Vision 5: Education in the world of transforming work
"Lifelong learning and the development of skills and creativity are guaranteed for economic recovery and unfolding of a happier society."

[SVK] Vision 6: School of the Future
“Change of the form, content and processes of education, usage of the latest technology in education, more creativity and out-of-the-box thinking, possibility of virtual education. Greater attention to cognitive processes of students.”
[NL] Vision 6 Education is the foundation of civilisation
“The training college for teachers has become must and is better equipped to the new developments in the future. Education is not only focused on knowledge and on economic thinking but also on art, culture, science of nutrition, appropriate social behaviour (good manners), ethics, sport, values and norms, environment and multiculturalism.”
[DE] Vision 5: Dream school 2050
“For the future in 2050, we want to change and improve the educational concept for our children and our children’s children. In 35 years’ time, even more cultures will interact in Germany than is the case today and we hope that our children are taught to be tolerant and open to others and can experience this firsthand every day in the community. Ways to solve conflicts are revealed, “national borders in our minds” are abolished and friendships are made across different languages. School is a place where being together in a small space is possible in a sheltered, protected way. Learning happens as a group and can be subjectively shaped.”
[CYP] Vision 3: Human Rights
“Development of a career guidance system and creation of an environment which allows practical profession application. Society should make available practical training even from school age.”
[HUN] Vision 3: Snapshots - Fragments of conversation in a community house
“useable knowledge; security; supporting one another; satisfaction; tranquillity; peace; neighbourhood communities; security of social care; epidemic prevention: hygiene, lifestyle, awareness-raising, not just through vaccination; charity; volunteering: more engagement from people; more equal distribution. […] Today we provide lexical knowledge to the young generation, in the future they will receive practical knowledge. Life expectancy just as well as the quality of life today are lower. Today fossil fuels predominate [energy] use.” [WP2]

7.c Design literacy and life skills for all

SOCIETAL NEED: Strengths-based education and experiential learning
GRAND CHALLENGE:

6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

- Change the perception of "mistaking" as an obstacle for the self-reputation and trust, instead it should be faced as a way to tackle a problem.
- 'TRY IT AT LEAST FOR ONE TIME!': Nowadays we are missing not only the awareness of the value of Design (Thinking), but even of its existence and the benefits it provokes.
- Today the challenge is to create and scale experimental learning paths to all education and societal levels. [WP3 - Italy] Not enough exposure to different experiences which broaden students' horizons. Less and less time to think, dwell, explore [WP2]
- Motivation of teachers/trainers - Teachers are the foundations of education. Lack of their understanding will prevent this change from being introduced. [WP3 - Poland]
- Lack of staff with current qualifications - A long-term process of teacher training is necessary for success.
- Lack of support by the environment (parents, society, job market, no cooperation) restricts the implementation of project thinking; release of creativity is conditioned by a supportive environment.
- Unavailability of centres teaching project thinking to all citizens equally will restrict a universal development of creativity (school institutions with better financing 'manufacture teachers'). [WP3 - Poland]
- Too much "teacher bashing": can't improve education by holding teachers responsible for societal ailments they can't fix
- No design literacy in schools (design thinking and inquiry) [WP2]. How do we design learning activities, settings and processes to foster the acquisition of design literacy and life skills? How to integrate these settings and processes in the curricula and, simultaneously, rethink limitations of existing curricula? [WP4].
- No knowledge of competence framework
- No transformation of knowledge to competences
- Lack of focus on how to support self-directed learning
- Confusion between purpose and process of design versus artistic creations.
- Differentiated teaching is not achieved because one teacher cannot cater for the needs of all children in class
- No common standard among different realities/territories. No equal educational conditions for all

- Rigid silos of academic fields and funnelled [non-bridgeable] educational tracks, leaving no room for flexibility. Current curricula are conservative and linear: not “à la carte”.
- No practical activities to ground theoretical knowledge, not enough job shadowing. Mistaking success for understanding
- Tension between historically fundamental subjects and an updated common curricular core which reflects societal needs [WP2]
- How can we promote education that instills a lasting desire for inspirational change, which does not cater to the market or other political interests?
- How to educate creators and not mere consumers of 'content' in a digital economy?
- How to maximise and enhance the skills that were already acquired throughout life?
- How to switch attention from the education system (teaching) to what a student learned and gained qualification everywhere?
- How can the legal framework be more flexible regarding a curriculum based on societal needs?
- Alignment of the learning outcomes at all levels of education and in all educational programmes at the level of all of the EU countries, compatibility with EU QF
- Meta-design skills will enable people to re-define processes on the fly in response to changing framework conditions and foster self-development to get ready for life.
- In organisations this will help build the expertise needed to ensure a more human-centred, sustainable technology-enabled future. [WP4]

Scope

- Investigating the power of design thinking / design inquiry as a mean to foster creativity and innovation and boost learners’ abilities to think “out of the box” (set and solve the so called wicked or “ill-defined” problems).
- Adopting a system’s approach (systemic) in studying the scaling up and potentialities of design thinking from individual to communities’ organizations (learning ecosystem). [WP2]
- Education: giving value to what has been done and what we have learnt from every situation promotes a culture based on errors. In this sense, it is necessary to understand which is the problem, highlight different kinds of error and give them the right value and judgement.
- As a support we could generate a toolkit: a student diary in which he/she can write what he/she learned in 3/4 words and an emoticon to represent what was positive and negative. The content of the diary can be shared with the teacher during a dedicated moment. In addition, we could think of a moment dedicated to ask questions that don’t have right answers.

- The aim is to promote a culture that allows students to become aware of the importance of making choices and even being wrong, because mistakes are insights for growth that create opportunity and space for analysis.
- Create an open and moving open space (Lab) managed by some local actors (activators) that offers experimental learning paths for people who are interested.
- At the same time, inside schools, it is necessary to integrate students' curriculum with some courses held by professionals who teach Design with a hands-on approach.
- In this new ecosystem the Lab elaborates challenges, problems and visions while the school conceives solutions and vice-versa. [WP3 - Italy]
- Pilot, diagnostic studies of the most effective ways of knowledge acquisition.
- Analysis of education systems existing in well-developed countries and identification of factors fostering development of innovation
- Identification of good practices in developing creativity and research into new methods of developing creativity
- Developing methods of studying diagnostics of talents of students (indicating tools, stages in development of psychological knowledge, evaluation of effectiveness of changes introduced) to be involved in the research
- Evaluation of the implementation process of project thinking at every stage of the process and analysis of impact of changes to teaching on creativity
- Development of a 'Business plan' for such an undertaking
- Research into teachers' motivations and readiness to change their ways of teaching
- Development of creative education programmes
- Social campaigns to raise awareness of benefits from such a solution. [WP3 - Poland]
- Finance research: mapping the cases/instruments that foster lateral thinking and collect exercises to train lateral thinking.
- Allocate resources to develop the learning toolkit and the "continuous learning".
- Add a specific course on Design Thinking to the didactic programme.
- Allocate funds for the creation of labs and experimental learning paths at all levels in schools.
- Integrate the designer/facilitator in the education ecosystem to support teachers.
- Fund the evaluation of the social impact of education paths based on Design Thinking.
- Create voucher/incentives to participate in Design Thinking paths.
- Promote an environment that stimulates emotional sharing.
- Forster the exchange of knowledge and the creation of networks among practitioners like professors/experts/students. [WP3 - Italy]

Who should be involved in solving the problem?

- Teachers
- Students

- Experimental Lab
- Designers
- Schools
- Experts/scientists/creative people
- Experts/designers/artists
- Families
- Citizens
- Parents
- Public Administration [WP3 - Italy]
- Ministries of Science and Education
- Researchers (pedagogues, psychologists, culture experts, sociologists, economic analysts)
- Representatives of the labour market
- Mass media
- Social authorities
- Politicians [WP3 - Poland]

Expected impacts

- Creative citizens (from kindergarten kids to senior citizens) who are open, courageous, full of self-esteem and free from inhibitions
- Capacity for group work and group problem solving
- Improved innovation of the European economy
- The society gets richer by doing jobs in innovative sectors of economy
- The unemployment falls because everyone realises what they are good at, new professions and research centres emerge
- The society is happy because people are fulfilled at work, mentally healthy, and less frustrated. [WP3 - Poland]

Research Questions

- How to design learning activities, settings and processes to foster the acquisition of design literacy and life skills.
- How to integrate them in the curricula and, simultaneously, rethink limitations of existing curricula? Design thinking is more than STE(A)M!
- How to integrate evaluation and co-design to manage and improve the learning ecosystem and learning processes with a special focus on individual interests, abilities, and preferences? [WP2]
- How can we promote education that instills a lasting desire for inspirational change, which does not cater to the market or other political interests?
- How to educate creators and not mere consumers of 'content' in a digital economy?

- How to maximise and enhance the skills that were already acquired throughout life?
- How to switch attention from the education system (teaching) to what a student learned and gained qualification everywhere?
- How can the legal framework be more flexible regarding a curriculum based on societal needs? [WP4]

Citizens' visions

[LIT] Vision 1: Freedom to Create – Responsibility. Sustainable Future
" Education (practical, unlimited, experiential)"
[CYP] Vision 6: Future Experiential School
"Development of an experiential school without closed structures."
[LUX] Vision 6: I am satisfied with what I am doing! (Do what you love, love what you do!)
"Skills evaluation: as a student, I study at my own pace; I am being encouraged to try / to experiment."
[ITA] Vision 4: A school beyond times - a new education model
"The education of the child is continued and structured in order to strengthen his real aptitudes."
[ESP] Vision 2: Small changes are powerful
"There will be more teachers training and restructuring of the educational content."
[EST] Vision 4: A united world
"Work and school: personal satisfaction. Learn to do what you love and you shall be rewarded for the created value"
[AUT] Vision 4: Education means freedom
"Citizen X finalises his/her studies in Austria and goes on studying in France, Italy, ... it will be approved throughout Europe!! In addition to the standardized basic knowledge the individual talents are promoted in special facilities → musically, artistically, socially, technically, craftsmanship, ..."
[SWE] Vision 6: An expanded view of human competencies
"In our vision people are assessed on the basis of their talents and abilities, rather than just their documented knowledge (for example school grades). The school system is adapted to the individual; for instance it is possible that each person learns at their own pace and that studies can be done from home, through e-training , etc."
[PL] Vision 5: I've Got Talent
"The premise of our vision of the future is the conviction that everyone has talents/aptitude worth discovering, appreciating and developing.
On this, an education system of the future should be based. Training programs will be personalized in accordance with the results of the analysis of pupils' aptitudes and interests. Creating and promoting skills and talents will be correlated with the needs of the economy."
[NL] Vision 6: Education is the foundation of civilisation
"The training college for teachers has become a must and is better equipped to the

new developments in the future. Education is not only focussed on knowledge and on economic thinking but also on art, culture, science of nutrition, appropriate social behaviour (good manners), ethics, sport, values and norms, environment and multiculturalism."

[MAL] Vision 6: Education and Society (community)

"Holistic education is not a reality today (just technical today)"

[DE] Vision 5: Dream school 2050

"For the future in 2050, we want to change and improve the educational concept for our children and our children's children. In 35 years' time, even more cultures will interact in Germany than is the case today and we hope that our children are taught to be tolerant and open to others and can experience this firsthand every day in the community. Ways to solve conflicts are revealed, "national borders in our minds" are abolished and friendships are made across different languages. School is a place where being together in a small space is possible in a sheltered, protected way. Learning happens as a group and can be subjectively shaped." [WP2]

7.d SWOT (Strengths, Weaknesses, Opportunities, Threats) Technological empowerment

SOCIETAL NEED: Strengths-based education and experiential learning
GRAND CHALLENGE:

6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

The challenge is to :
Enhance quality and smartness of the educational ecosystem.
Raise awareness about SWOT of technology in supporting job placement and individual self and life long learning. [WP2]

Understanding the SWOT of technological empowerment:

- Equal access to technologies in education [WP3 - Poland]. There is a danger technology is being used to replace experts and even education.
- Directing of new technologies towards the well-being of the society and the individual is hardly accomplished because complex modelling by a few experts is needed.
- Lack of a critical adoption of tech models and tech-based methodology. [WP2]
- Equal access to technologies in education.
- The need of an individual approach to students. The recognition of the strong aspects of each student and the use of technologies in the development of students.
- The development of new / creative ways / learning methods (maths, music, art and other topics).
- The achievement of equilibrium through the use of new technologies. Neutralisation of the mind-numbing impact of selected technologies. [WP3 - Poland]
- Technology has not brought more freedom to the human being, rather it has caused higher unemployment. [WP4]
- Insufficient understanding of the relation between “smart” tech and human intelligence.
- Lack of nuance in the generally polarized debates between technophobes and techno-fetishist. Technologies are tools! It is what we make of them that matters

- Lack of awareness of the potential of tech for didactics and learning. Digital technologies can be stifling or empowering depending on "who uses them to control what". In other words, it is not the same to use computers to track and control student outcomes, to use a word-processor, Photoshop (or other authoring tools) to write a report, or to search for resources online [WP2]
- Access to technology is not enough to develop technological literacy
- Will technology replace experts and education?
- Schools have varying amounts of technologies but in cases teachers are not sufficiently "trained" on how to use them
- There are free classes that teach digital literacy to seniors
- Not everyone has access to tech devices for education
- Raise awareness about SWOT of technology in supporting job placement and individual self and life-long learning.
- Enhance quality and smartness of the educational ecosystem. [WP2]
- This is important because there is still insufficient understanding of the relation between "smart" tech and human intelligence.
- There is a danger in creating an outlier of the older generations who may not be up to date with the latest technologies.
- There is a risk of dependence on technology and the inability to focus, work and live in an environment where their use is not possible. [WP4]
- Technologies – instead of giving time for maintaining relations between people – enable one to do additional portions of work.
- Technologies are time-consumers.
- Many people are addicted to technologies. [WP3 - Poland]
- Citizen empowerment – need more data to inform decision
- Need feedback from users
- Cost is a major challenge – ned to judge cost, benefit and risk
- People are sometimes disempowered by their reliance on technology i.e. e-reminders, GPS
- Tackle techno-phobia (user friendly technology)
- Challenges of too much information – overwhelmed by technology [WP3 - Ireland]
- Lack of competence not only on the part of the users, but also on the part of the developers, designers, teachers ... [WP3 - Germany]

Scope

We wish for a society in which strengths, weaknesses, opportunities and dangers of technologies are studied and taught. [WP3 - Germany]. Instead of "smart technologies" we need technologies designed to make us "smarter". In our desired future the term "smart" has been redefined and includes concepts like wisdom, young children's urge to socialise and abilities as self-directed learner, and the psycho-biological-social-motivational "needs" (Maslow pyramid) without which no one can grow or thrive! [WP3 – Germany and WP2]

We need to go beyond and reinvent new ways of producing knowledge, reintroduce creativity in the process and make it an intelligent collective dynamics. Explore ways, models and solutions of technology-use in the creation of social and economic synergies on local and global level. [WP2]

Reasearch should consider to adress:

- Comparative analysis on “face-to face” and virtual communications. Understanding the results coming from these differences.
- The development of technologies for virtual communication in order to move it closer to “face-to face” communication (a source of emotions, gestures, etc.).
- Needs diagnosis in the area of technological support of education. The recognition of needs and qualifications of students and teachers.
- The development of genetics and neuroradiology for diagnosing strong and weak sides of students. [WP3 - Poland]
- Research on the effectiveness and adjustment of new technologies in education in different age groups and thematic groups. The development of cognitive science.
- Research on the trust of students to various sources of information. Research on the negative effects of the development / the use of new digital technologies
- An open understanding of Smart - Smart is not related to subjects, but rather to interactions
- Opposition critical, instead of "smarter". Tenor of control loss. [WP3 - Germany]
- Not limiting the use of technology to one purpose, and diversifying resources to increase resilience
- Makin state-of-the-art technology more accessible and oriented to all ages and sociocultural environments, etc.
- Ensuring stronger security for digital content.
- Motivating different groups to use these methods and making the right arguments that will convince people to choose this technology.
- Foster open access to information and prevent privatization and creation of monopolies [WP3 - Spain]
- Investigating the role of technologies to support students’ self-directed learning and develop critical thinking and creative adoption of effective technologies for learners’ benefit.
- Investigating the dimensions of human “smartness” and put them in relation with “smartness” or lack of thereof of technologies and infrastructures in order to improve the educational ecosystem as viable, attractive, sustainable, human-centred settings for enabling individual and collective well-being and development. [WP2]
- Living labs – get people to test tech before distribution – involve the use [WP3 - Ireland]
- Tech should be developed on a needs basis rather than just trying to push the state of the art [WP4]
- Use public money in the public’s interest

- Identify and train children to try out technology
- Academic research should consider ethical areas of SWOT [WP3 - Ireland]
- Investigation of the genesis and socio-technical dimensions of prudence.
- Infrastructures that make ecology of learning a viable, attractive, sustainable, human-centric framework, that promotes individual and collective well-being and development.
- Development competence (user centering, forms of participation) [WP3 - Germany]
- Encourage educational seminars that share examples of past catastrophes related to poor use of technology, making the people affected the protagonists of the story. [W3 - Spain]
- Comparative analysis on “face-to-face” and virtual communications
- The development of technologies for virtual communication in order to move it closer to “face-to face” communication
- Needs diagnosis in the area of technological support of education
- The development of genetics and neuroradiology for diagnosing strong and weak sides of students
- Research on the effectiveness and adjustment of new technologies in education in different age groups and thematic groups
- Research on the trust of students to various sources of information. [WP3 - Poland]
- Analysing the impact of “Smart” technology: E.g. e-Learning, life-long learning, Artificial intelligence (robotics in healthcare), Personalised medicine, internet diagnosis
- How to include children and how to protect them? [WP3 - Ireland]

Expected impacts

- A SWOT test, presumably on computing, done by someone who seems not to understand computers in great detail. I see zero merit in this.
- The possibility to pick talented people from the crowd.
- The development of new / creative ways / learning methods (maths, music, art, and other topics).
- Enable choice between learning methods, which are preferred by a student and a teacher.
- Metrics to ensure 100% access (ideal!)
- Identify target groups i.e. elderly, rural, able / disabled, income level
- Define specific areas to engage social groups i.e. health
- Bring isolated places into the modern world
- Re-evaluate QUERTY keyboard [WP3 - Ireland]
- Technological fears are reduced [WP3 - Germany]
- Societal awareness of the threats of technology misuse
- Education methods have improved and are more attractive, therefore more motivating. [WP3 - Spain]

Research Questions

- What are the activities in which human intelligence cannot be replaced by technology and what is the role of creativity in the development?
- How to foster understanding of differences between tech and human "smartness" (intelligences) and use the latter to boost student development and school improvement?
- How to develop critical thinking and foster penetration [adoption] of effective technologies for learners' benefits?
- What if technologies will be used to support students' self directed learning?
- How to foster understanding of differences between tech and human "smartness" (intelligences) and use the latter to boost student development and school improvement?
- How to develop critical thinking and foster penetration [adoption] of effective technologies for learners' benefits? [WP2]

Concerns

There is a concern about a loss of competences, autonomy and control. On the basis of existing competences, we want to gain new skills without losing old ones. We rather aim to strengthen them at the same time. [WP3 - Germany]

Citizens' visions

[GR] Vision 1: Humanity - Environment – Justice
"Schools fully equipped with the latest technology."
[SVK] Vision 6: School of the Future
"Change of the form, content and processes of education, usage of the latest technology in education, more creativity and "out of the box" thinking, possibility of virtual education. Greater attention to cognitive processes of students."
[ROU] Vision 3: Back to [our) roots
"Technology will develop in harmony with the environment and individuals' needs."
[WP2]

8.a Top Trending: At one with nature

SOCIETAL NEED: Harmony with Nature
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
5. Climate action, environment, resource efficiency and raw materials
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

Humans are part of nature or should be part of it. If humans do not learn to live in harmony with nature, they will be in great trouble. We cannot exceed our ecological limits in the long run. Not acting like humans beings who are aware of the planet's environmental limits leads to self-destruction. It is important to live in harmony with nature, because ecology has an enormous influence on our lives and we cannot live without her. [WP4] It is vital to guarantee a liveable environment for future generations and thereby ensure their rights [WP2 + WP4] We need to think of posterity – the world is not ours. We did not inherit it from our ancestors but borrowed it from our descendants [WP3 - Malta]. It is [however also] imperative to ensure the rights of the environment itself are respected [WP4].
However, in our thinking we always want to dominate nature. The unity between humans and nature has been broken. The challenge is restoring this unity [WP3-Hungary].
In Europe consumerism exploded post World War II, and it is now part of culture, identity, values, and considered part of economic and national progress [WP2]. The tolerating capacity of the natural environment is finite. Because of human greed, unsympathetic behaviour and hunger for profit the resources of the Earth are running out and there is ecological imbalance: climate change, decreasing biodiversity, endangered species, etc. [WP3 - Hungary].
In order to change perspectives towards ecological futures, sustainability must become trendy and desirable. Today only 10% (or less) of population is planting food: to be green is not trendy. The awards for ecological programs are not sufficient, art projects for ecological thinking and political protests are not regular, lack funding and are not trendy. Charity shops and some swapping exist but too little. [There is] not enough swapping of goods in schools. [Eg.] In Bulgaria there are eco-farms, but [they have] only small production [WP2].
Research exists on sustainable consumption, low-carbon lifestyles and behaviour change, on social marketing of sustainability and lifestyle changes, and also on social innovation for sustainability (e.g. the TRANSIT project)[1]. But there is a lack of

[1] Transformative Social Innovation Theory: http://www.transitsocialinnovation.eu/

knowledge about many aspects. The solutions for living "at one with nature" seem so counter-intuitive nowadays that they need scientific proof for them to become acceptable. [WP4] [We need to] make citizens aware of the dangers of loss of quality in the public space and the consequent degradation of citizenship space (human-nature).
A particular challenge relates to realising “top trending at one with nature” in large cities eg by creating “green islands in the city”. [WP3 - Czech Rep].
This is because:

- The city is a substantial “consumer” with an enormous ecological footprint
- Anonymous and isolated lifestyles prevailing in cities, and citizens´ lack concern about their environment
- Lack of interest, awareness and competence of responsible authorities in extending the cohabitation with nature in cities
- Public support for education, educational models which are more in touch with nature , i.e. emphasizing outdoor activities is especially required
- The city, which does not live at one with nature, is disruptive to the environment of the region (for ex. hydrological cycle, disruption of biocoridors, sources of contamination...).
- The reality as well as the feeling of isolation of city inhabitants negatively affects their physical as well as mental health (city seen as a “manufacture” not as a place for living).

Scope

[Research should explore] how to move away from consumer society [WP3 - Malta] and to make environmentally sustainable lifestyles "fashionable" as a way to engage a significant portion of society in forming new consumer habits [WP4]
Changing our attitude and thinking must be the starting point: building responsibility, commitment, complexity, new values, new priorities. The relevant educational, communicational, etc. forms need to be researched which are necessary for spreading the good practices. The economic and legal environments, in which the good practices can be realised, as well as the methods to remove the barriers to it also need to be researched. [WP3 - Hungary].
[The following aspects should be taken into account]:

1. [The role of legislation]
    - Ecological civilization included in constitutions: Comparative studies of giving nature rights in constitution and the impact of this? [WP2]
    - Research on the social and environmental effects of environmental legislation should be conducted to inform future development, looking to examples of excellence etc.
    - Including the rights of nature in legislation is important for the transition of ecological lifestyles.

- Research should also be an agent for legislation that reflects changing social norms;
- It's clear that today's regulations are ineffective. Regulatory pressure should be strengthened, mostly on the large companies.

2. [Basic understanding of nature and the human within it]
   - The concept of nature is wider than flora and fauna. The final goal is to protect all living beings.
3. [Understanding behavioural and mentality change]
   - It is not an environmental trendy lifestyle, but rather a default setting we had and we should return to with changes.
   - How to establish a green economy in the "traditional" cross-generational cultures and what is the implementation methodology? [WP4]
   - Learning to consume less (minimalism)
   - Deglamourizing trendy consumerism
   - Understanding our impact on the world (education)
   - Reduce, reuse, recycle
   - Media coverage of environmental issues
   - Consciousness of own carbon footprint
   - Changing rusted-on mentalities
   - Media feeding image to people that may be counter-productive
4. [Economic aspects]
   - Achievement of long term sustainable growth
   - Use methods to decouple economy/business/profits from environment
   - Money is a dominant factor when deciding on consumption patterns
   - Making environmentally sustainable businesses more profitable
5. [Implications for society]
   - Redefine what one would do to be happy/successful
   - Can sustainability be trendy for the poor? [WP3 – Malta]
6. Possibilities for concrete actions
   - Everybody fosters a tree
   - Everybody grows fruits and vegetables (food)
   - Award for most ecological living (“Harmony with nature award”), Nobel Prize, e.g. for small-footprint living (i.e. for those who have a small ecological footprint/low environmental impact)
   - Swapping activities at festivals and culture activities
   - More support to the arts that promote sustainability
   - Develop media campaign to showcase examples of excellence [WP2]
7. Special focus: Top trending: a tone with nature – Green islands in cities“.
   - Experts define forms of city´s integration into natural cycles
   - Decision makers examine the application potential of the solutions proposed and their feasibility in economic terms
   - Selected solutions or alternatives are presented to public (NGOs, citizens, local movements etc.) through social media (but not exclusively) to be considered

- By applied research – for example creating a system for monitoring animals and plants in the city, especially city green areas → web/mobile application for wide public (public participation)
- Support and promotion for public involvement, civic participation – interrelation between public involvement and sustainability trending, impact of such activities on changing perspectives and opinions
- Making sustainable living more acceptable, desirable and less controversial by finding new names, terms for "being/living green" (which is frequently associated with environmental activism or marginal alternative lifestyles only), re-labelling (media research?) [WP3 – Czech Rep]

Who should be involved in solving the problem?

All stakeholders:

- Individuals
- Corporations (multinational ones as well)
- Governments
- Local councils
- NGOs
- Social entrepreneurs
- Best practice
- Parents
- Educators
- Media
- Impartial experts and academics [WP3 - Malta]
- Every "Earth dweller". More precisely, families, teachers, civil organisations, decision makers, etc. And the Media! It should penetrate public thinking. [WP3 - Hungary]

Expected impacts

[Future for the coming generations]

- Establish an alternative to the future scenario dominating today. [WP4]
- Survival [WP3]

[Earth]

- Impact on the environment – less environmental pollution and contamination (the city reduces its ecological footprint), boosted continuity of the natural character of the wider city region [WP3 - Czech]
- Biodiversity [WP3 - Malta]

[Increased quality of life]

- Being in nature and nurturing it is powerful in promoting good mental health and healing. Creating habitats is rewarding. [WP4]

- To live / work with nature, rather than against it, improves the quality of life on practical and spiritual level and reduces resource input and costs. [WP4]
- Impact on city population – improved quality of life [WP3 – Czech Rep]
- Health (physical/mental) [WP3 - Malta]
- Aim - healthy life of citizens which gives priority to near natural solutions [WP3 – Czech Rep]
- Happiness [WP3 - Malta]

[Society]

- Humans should live in harmony with nature and they should be able to recognize the problems and to solve them. They should think systemically and in a long range. [WP3 - Hungary].
- The consideration of nature is necessary due to sustainable growth and therefore societal equality and safety. [WP4]
- Channelling energy to more pressing issues [WP3 - Malta]

[Economy]

- It reconciles the ambition of human progress with sustainable development.
- Such a change, even if big, would not threaten employment; it would force a transformation instead. [WP4]

Research Questions

1. Legislation
   - Which countries included nature rights to the constitution? What are the effects on nature and society of these clauses? Can examples of excellence be identified to be transferred to European states? What might be the relationship with developing global initiatives such as the proposed law of “ecocide”? [WP2]
   - How would including the rights of nature in constitutions and other legislation impact the adoption of ecological lifestyles?
   - How do environmental regulations affect people's life? [WP4]

2. Basic understanding nature and the human within it
   - How to increase personal happiness through a lifestyle in harmony with nature?
   - What is the role of the scientific (ontological) perception of nature in developing technology for sustainable development?
   - How can we rediscover nature in ourselves? [WP4]

3. Mentality & behavioural change
   - How to switch perception from consumption being trendy to ecological living being trendy? How are social media being used to make sustainability trendy?
   - How to reward low-impact lifestyles? What kind of examples already exists and what was their impact on behavioural change? [WP2]

- What are the main barriers of today's society to a culture and society in union with nature? How to overcome these barriers?
- How to create interesting interpretation of "green" towards all the generations and influence further development through educational activities?
- How to make it clear to society that environmentally sustainable way of life is the best known way for humankind to sustain life on Earth?
- How can we raise individuals' awareness that their actions or lack of action is fundamental to their relationship with nature?
- How can we achieve that living in harmony with nature becomes the norm and people who do not follow are acting "unusual"?
- How do we ensure a shift in paradigm where we move from an understanding of organic lifestyle as something you can either live by or not, to the understanding that an organic lifestyle is absolutely necessary and fundamental?
- How can people be supported to switch to more environmentally friendly practices?
- How to convey to the people that there is only one Earth with limited resources that are not owned by any state, corporation or individuals?
- How can we transfer the idea of wellbeing related to green lifestyle when there are no immediate benefits?
- How to implement large-scale measures to promote the secular ecological and spiritual consciousness that we are only a part of the whole?
- What is the role of environmental education? Is it possible/necessary to start to teach children about ecological lifestyle in schools? [WP4]

4. Economic aspects
    - Should tax incentives be given for lifestyles that self-regulate and behave in accordance with agreed ecologically harmonious benchmarks?
    - How can we promote "green" product design and business planning for the product's full life cycle, supported by cooperation among the companies?
    - How does the consideration of nature contribute to sustainable economy and growth?
    - How can we produce goods without affecting nature and without sacrificing the basic features of the developed world?
    - What fundamentals of the socio-economical system need adjustments in order to reduce the economic pressure on nature, as resource provider?
    - How to make neo-liberalism and the adverse effects that it has been producing in the world visible?
    - How to set / change the values of the society so that environmental protection has a higher priority / value than economic growth / profit?
    - How can we keep the profit motive within reason?

- How do we ensure a shift in paradigms, which entails the acknowledgement that growth and overuse are not consistent with a sustainable society?
- How can support for sustainable lifestyles be transferred from being the responsibility of consumers to becoming the responsibility of producers?
- Technical development is more important than economical development and can contribute to environmental protection. [WP4]

5. Implications for society/governance

- What are the social, cultural and environmental impacts of the "so-called" green initiatives and social innovation? E.g. clothes swapping, car sharing, urban community gardening, local exchange systems, etc.
- What might be the limits for the rights of future generations in different countries? [WP2]
- How to find a balance between considering needs of nature vs needs of humanity?
- How does living in harmony with nature affect physical and mental health and wellbeing of individuals and communities?
- What kind of governance of society can stimulate sustainable development?
- What changes must the civil society of tomorrow be willing to co-shape for implementing environment friendly systems?
- How to minimize the human impact on the environment of two biggest polluters - livestock production and traffic? [WP4]

Concerns

- Unemployment: where will the new jobs come from?
- Lack of involvement fostering nature and growing trees and food.
- Lack of space for people to grow their own food and trees
- Safety concerns of contaminated soil and water if people grow their own food.
- A de-celeration can also create jobs and is probably healthier for all [WP2 + WP4]

Citizens' visions

[CYP] Vision 5: Environmental Conscience
"Environmental conscience shall be introduced"
[LIT] Vision 3: Harmony between Human and Nature

“Restored forest, fresh water available for everyone, stabilized climate change problem, suspended biological extinction; green energy (renewable sources). Nature friendly technology.”

[IRE] Vision 4: Decision-making for a Sustainable Future

“We live in a world where cultivation is 100% sustainable. Our laws ensure that we reserve and protect our environment.”

[CHE] Vision 6: Social living space: “...a new form of equitable coexistence of people between age 0-100, animals and plants.”

[SWE] Vision 4: A healthier Europe

“We have fewer dioxins and less pollution. For instance there are alternatives to plastics and new substances and products are launched only after they are made safe for the environment and health.”

[LIT] Vision 2: Human and Environment

“Pure barter; generation of non-consumerism...”

[HRV] Vision 3: The preservation of human health and nature for the generation XYZ

“we imagine year 2050 as a year in which people live happily in pleasant communities, as a part of nature. These communities will be examples of sustainable oasis based on truth and acceptance of the people's diversity. The development of new technologies, in accordance with the laws of nature, will lead to the improved quality of life. People will grow healthy food for themselves, with minimal or no ecological footprint.” [WP2]

8.b Urban-rural symbiosis

SOCIETAL NEED: Harmony with Nature
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
2. Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy
3. Secure, clean and efficient energy
4. Smart, green and integrated transport
5. Climate action, environment, resource efficiency and raw materials
6. Europe in a changing world - inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

[Better integration and balance of rural and urban areas both physically and culturally is urgently required for several reasons]:
It is seen as a vital part of smart strategies for sustainable development due to the following promises : reducing waste and emissions, boosting renewable energy, promoting optimal land use and establishing short supply chains for safe local (metropolitan area) products issued from eco-innovation; [WP3 - Romania] Reduce the footprints of urbanisation, locally and globally (WP3 Sweden) Reliable estimate of energy requirements, materials + infrastructure needs (resource requirements) to enable sustainable planning decision in a transparent and participative way [WP3 - Austria SH] Because sustainability is also something social. There must be change in culture, behavioral change, and change of attitudes. Therefore, it is important to break down the barriers between the countryside and the city. A greater mutual understanding and knowledge gives incentive to green transition, e.g. because of an understanding of where food comes from. [WP3 - Denmark]
Secondly urban rural integration is seen as vital for increasing the quality of life for both urban and rural citizens. For rural areas it is expected to increase attractiveness integration in the ecosystem; Exchanges of cultural services between rural and urban areas will be promoted. [WP3 - Romania]

[In several countries there is a concern about declining quality of life in the countryside.] Eg. participants in Slovakia are witnessing large differences in quality of life. In the current situation we can observe in Slovakia a certain kind of parasistism, something like antithesis of the symbiosis. This raises the urgent need for rural revitalization. [WP3 - Slovakia] Rural migration into the city and over-population in the city leads to the extinction of the countryside life. Too few economic sites in the

countryside re-inforces the effect of the rural depopulation. Isolated bureaucracy (no networking) increases the separation between city and countryside. The lack of public transport has the same negative effect (separation between city and countryside). Cultural offers for the rural population decreases. The basic supply and quality of life are declining, services are becoming less available because there are fewer work places. Social services are getting out of balance, which means that crime and the need for security are growing. Decreasing food standards and quality. [WP3 - Austria]

We need to ensure that rural citizens are not "left behind", Integration, minimize the effects of segregation [WP3 - Sweden] If everybody wants to work only in the cities, there will be no agricultural workers. (WP4 AG)

Finally, there is a more general challenge of better understanding different kind of residential conditions – politics barriers and facilitators for their development. [WP3 - Slovakia]

This integration however poses several challenges

- Participation of all stakeholders/citizens;
- Lifestyle and consumer patterns need to be adapted to the characteristics of the area;
- Clear differentiation and preserving the specific characteristics of the urban and the rural respectively
- Physically connecting the rural and the urban (e.g. infrastructure);
- Terminological distinction urban/rural is very different according to the respective contexts, dissolving of the classical dichotomy? [WP3 - Romania]
    - Reasons: technological progress, economic connectedness, structural change, etc.
- Political and administrative structures do not reflect the reality
- Community aspects a lack of analyses
- Design of the communal space, transparency of the administration and early involvement of the public (if changes are made)
- Balance between common interests and economic interests [WP3 - Austria]
- The challenge is that there is a tendency to focus on differences rather than common features between the countryside and the city. This helps to maintain a division between the countryside and the city. We must avoid, that agricultural tourism and purchase of products with a special country-branding maintains the mind-set people might have of the difference.
- It is a challenge to figure out whether "mega farming" or "urban farming" is sustainable. It is a challenge to raise awareness so that is provides mutual ownership, without it becoming pseudo. Increasing urbanisation leads to more people driving far, and that there will be barriers between the countryside and the city. [WP3 - Denmark]

It is sustainable with local production. Data can be sent far, while production takes place locally. It promotes local jobs.

- Urban studies (Habitat UN) separate from UNEP and UN Sustainable Development work.
- In academia rural studies separate from urban studies.
- Studies of agri-tourism?
- We suspect that the contribution of smaller rural producers is under-researched compared with corporate funding for agri-business survival in the country. Lack of research that crosses one city and country, and bio-regional themes. Gap between NGO- sponsored research in e.g. urban wildlife.
- Unsure about (linked to advocacy) existence of comparative studies about the links of city dwellers to the countryside (e.g. small holdings)
- More public space and green spaces needed to explore in the city.
- New planning does not ensure balconies and yards for every resident. This would allow people to grow more food.
- Some exchanges: Austria – some urban gardening and green spaces. Should plant more food in these spaces rather than ornamental plants?
- Bulgaria – some people grow their own food in their yards in cities, but there is need for more.
- Ireland – some green spaces, not much community gardening in cities [WP2]

Botanical tourism is one of the possible links between urban and rural.
Promote reflection on the taxonomy of land use, under the Spatial Planning and Management Regulations.
The increasing suburbanisation is a dangerous development. The most urgent task is to preserve the distinction of living spheres.
Economical strategies should put liveability and justice in the first place instead of profit.
Primarily: only this can enable sustainable development within the limits of global sustainability.
It is possible to improve the standard of living in rural areas without compromising its intrinsic quality. [WP4]

Scope

We want to develop and support cooperation between cities and countryside, linking rural and urban culture and land-use planning to improve living environments. [WP2]

Understanding the basic dynamics and concepts around urban rural symbiosis:

- To define what is meant with urban and rural areas [WP3 - Sweden]
- How do we define city and countryside and how can it evolve according to nature and human's needs? [WP4]
- How to shift the current urban-rural paradigm?
- To understand the driving forces/motives behind urbanization [WP3 - Sweden]

- Demographic challenges: Overpopulation/growth in urban areas [WP3 - Sweden&Austria]
- Identify differences between rural and urban areas such as connectivity, social and physical dimensions [WP3 - Sweden]
- For the support of symbiosis it is important to identify possible barriers. [WP3 - Slovakia]
- Meta-studies to better grasp the situation in different regions (also across national borders)
- [Understand] Forced + voluntary mobility [WP3 - Austria]
- Qualitative studies (anthropological, ethnological, sociological, social studies, psychological) e.g. about why people move from the city to the countryside and vice versa.
- Knowledge sharing on counter-tendencies. Studies on where dualism (division between the city and the countryside, and the focus on differences) comes from and what it means.
- Prevalence of common understanding and overcoming prejudices. [WP3 - Denmark].
- How do urban and rural links of citizens in different European countries compare with each other?
- What are the material and energy flows of past, present and future cities – and how do they feed from and impact the rural hinterland? [WP2]

Sustainable urban rural resource flows:

- Integrated urban development in terms of circular economy; food-energy-water nexus; mobility-transport-accessibility; and urban governance and participation [WP2]
- Life Cycle Assessment as the basis of decision making and actions;
- Implementing Blue Economy (Green economy + citizen participation); [WP3 - Romania]
- More green energy in non-usable areas. [WP3 - Austria]
- Research on the advantages and disadvantages of “mega farming” – both organic and conventional and the advantages and disadvantages of “urban farming”. Is it sustainable? [WP3 - Denmark]
- The research should identify opportunities, advantages and disadvantages, to live and work locally (e.g. if people do not commute much the transportation is reduced and you have surplus energy to make sustainable choices [WP3 - Denmark].
- How to build sustainable systems (closed loops and non-emission activities) through urban-rural interaction?
- How can we reduce the impact of society on nature without losing quality of life?
- How to promote the production and consumption of organic farm goods?
- How can the entire population be fed without massively polluting?
- "How can we prioritize local development and citizen initiatives to preserve the environment?

- How can we achieve that cities become increasingly self-sufficient by relying on their urban fringes, thus decrease their environmental impact?
- How to establish permaculture instead of monocultures? Avoid long transport routes, avoid agricultural monopolies, use urban land for agriculture
- Economic success should be measured by sustainability and liveability instead of the amount of profit. [WP4]

Improve quality of life in rural areas and attractiveness of countryside stop migration from countryside:

- The main goal should be to research life quality. The aim of research should be to clearly monitor the quality of life and environment and to propose scenarios / tools for its improvement. [WP3 - Slovakia]
- It must be clearly identified how to improve the quality of life and how to actually measure it? What are quality indicators? GDP?
- Better integrated public services in rural areas [WP3 - Romania]
- For the countryside it is the crucial to undergo not only agricultural revitalization, but also cultural and community revitalization - it would be desirable to identify appropriate models from abroad, which could help revitalize in our region. Support in the form of subsidies for small and medium enterprises at this level appears to be one of the possible solutions.
- Decision-making should be done based on the values and strategic vision of the company.
- The goal is to generate a better residential environment – with emphasis to protect their diversity.
- As primary research activity we propose to identify actual valid policies in the area, audit of politics and reality. Which policy tools are used, which are abused and what we can do about it. [WP3 - Slovakia]
- How to increase the attractiveness of rural areas and reduce the rural out-migration of inhabitants to urban areas?
- How to offer to the rural population the services that exist in urban centers? This applies to health care, education and culture.
- Causes of rural-urban migration have to be eliminated.
- How to apply measures in a way which preserves the rural areas from over-industrialisation?
- How can we make rural life just as valuable as urban life on all levels?
- How to promote the rural and urban development to avoid an undesirable depopulation of the rural areas?
- Make rural life and agricultural work more attractive for citizens.
- How would it be possible to refresh the ageing rural population with urban youth who are willing to do farming and make it a satisfactory option of earning a living?
- How can we foster well-being in rural areas to avoid the massification of large urban areas?
- How to preserve the rural character taking into account the challenges of the 21th century? [WP4]

- How can you optimize the public transport from the countryside to the city? [WP4]

Urban rural matchmaking:

- Encouraging cultural exchange and mutual respect and appropriation of these spaces, to explore in your own way, reviving local studies.
- Bring growing and agri-leisure tourism into the city, with planning for urban wildlife, spaces/niches (e.g. housing and design)
- Supporting cultural activities in the rural area, making niches.
- Exploration of cities and countryside for study, pleasure and innovation. [WP2]
- Access to urban technology and information for the rural.
- Putting culture and tradition to good use;
- Actions to promote agri-tourism; [WP3 - Romania]
- Does agri-tourism have any beneficial effects on the behaviour of urban dwellers? [WP2]
- How can the relationship between countryside and urban areas be enhanced with the help of networks and smart concepts? [WP4]
- So far, in our region there are matchmaking tools, concepts upon which it would be possible to work on the elimination of competition between the settlements and the development of settlements and the regions.

Integrating urban rural planning approaches, concepts & spaces:

- How do we integrate urban and rural planning at different levels? How do we update the smart city concept? To link the urban and the rural? [WP2]
- How to conceive an integrated management of the territory from the point of view of urban-rural-ocean and the implementation of a shared management? [WP4]
- Linking human use of the space of the city and the countryside: right of access to culture for rural dwellers; right of access to countryside for city dwellers [WP2]
- Rethinking the linkage of the functionality of rural areas
- Include the rural perspective in spatial and regional planning
- Strategic, interdisciplinary, long-term planning and keeping to the planning;
- Adapting rural landscapes to urban environments (e.g. urban forests).
- Urban – gardening agriculture; [WP3 - Romania]
- Better physical and social connectivity
- Technology use and enable meaningful exchanges (work, leisure, culture) [WP3 - Austria]

Integrated concepts of rural/urban spaces:

- It is also necessary conceptualization of what are cities and rural areas and especially in the conceptual framework of Slovakia / region. There is indeed no consensus on the designation of settlements, the difference between urban and rural areas may be the most significant as the difference between cities and towns. This raises the issue of refusing conceptualisations of town and countryside and find a symbiosis in noncategorial resolution. While

differentiation of cities themselves is huge compare cities like NY and Senec. The question as to refer to each residence occurs primarily in the dynamics and fading - when strict limitation of terms rural and urban is not possible. [WP3 - Slovakia]

- How to change from the “urban-rural” paradigm to the “expanded value chain”, in order to better understand cause-effect reactions
- How to redefine separation of urban and rural areas to better understand the symbiosis between them and opportunities arising from that?
- How do we cultivate urban-rural symbiosis without damaging the existing dichotomy and threatening the well-being of the countryside? [WP4]

Participatory governance

- A significant moment of the debate is also to draw attention to finding incentives citizen participation in the development and planning of settlements. Civic participation is also clearly influenced events, strategic planning, reflection and decision-making concerning the region. Decision making and planning cannot be based solely in monetary terms of the needs and benefits, but it has to be reflective.
- Very effective seems to be developing long term strategic planning with citizens participation.
- There is also need to make audit of participative governance tools. [WP3 - Slovakia]
- factors of success for participatory processes
- Roundtable of all stakeholders (politics, research, economy, population)
- More binding citizens' decisions [WP3 - Austria]

New practices & solutions

- Developing awareness within communities across age groups (from children to the elderly); [WP3 - Romania]
- Create games so that you can experience the differences and the flows between urban and rural life [WP3 - Sweden]
- Cross-sectoral collaboration
- Technology as a link
- There are some mental barriers of cooperation between the towns and rural areas there is fierce competition in the context of dotations (EU grants) and competitions for them. It is desirable to redefine support - grants, the revitalization of individual settlements. [WP3 - Slovakia]
- Regional specialization on niche products
- Improve crime/security compared to other regions (city/country). [WP3 - Austria]
- Setting Standards for basic medical care. [WP3 - Austria]
- How can the shared use of community areas be more promoted?
- "How to break the influence of the capital of agro-food companies, supermarkets and supply chains while promoting retail and direct sales?"

Green city spaces

- How to prevent the further construction of the buildings supporting the consumer way of life and replace it by the city green areas?
- How can urban planners incorporate transitional areas between natural surroundings and city centres? [WP4]
- Does urban gardening foster social cohesion? What are the benefits? Which unused urban spaces can be used to encourage and foster urban gardening? How and why? [WP2]

Policies

- Government bonds to promote the settlement of local enterprises is win-win situation [WP3 - Austria]
- Studies in structural incentives/policies in the field. [WP3 - Denmark]

Technologies

- Precision farming + ICT => agriculture 4.0;
- Industry 4.0; [WP3 - Romania]
- Production paradigms
- Develop new models, identify the "infrastructure" + preserve local supply chains (medicine, lifestyle, etc.)
- Creating centers to take over production; [WP3 - Slovakia]
- Developing awareness about the quality of products and the production process; [WP3 - Romania]

Research Approaches

- Integrating rural and urban areas in a clearly defined metropolitan area; [WP3 - Romania]
- Interdisciplinary approaches (workshops, studies, dialogues) [WP3 - Sweden]
- Need for interdisciplinary planning. [WP2]
- Qualitative studies
- Mapping of the capacity and potentials of each area [WP3 - Sweden]
- The research must not, however, put emphasis not only on the parameters of the city or countryside but of the entire region - the territory. We need to take into account - the regional context, as an essential priority.
- It would be appropriate to implement into research ethical study that focuses on the dependence of cities and rural areas. This study examined the relationship fairness and sustainability, and also whether they are symbiotic or is a parasiting. [WP3 - Slovakia]

Who should be involved in solving the problem?

- Both urban and rural people
- Technicians/engineers
- Stakeholders like farmers, planners, authorities, politicians
- Everybody? [WP3 - Sweden]
- Academia;
- Citizen representatives;
- Businesses;

- NGOs. [WP3 - Romania]
- Citizens, community and city government are needed to cooperate. For example cooperation to fulfil urban planning development, development strategy planning of to gain subsidy from EU. [WP3 - Slovakia]
- Broad involvement of all persons concerned
- Local and regional decision makers
- Different interested parties
- Citizens [WP3 - Austria]
- NGOs, citizens and politicians. Cooperation between actors. Local initiatives. This should not be a new form of control, but from the bottom up. [WP3 - Denmark]
- Involved (inner circle): [WP3 - Austria]
- federal and state politics
- municipalities
- Economy (regional)
- Researchers
- Involved outer circle:
- Citizens

Expected impacts

- The tendency to focus on the differences between the city and the countryside has been minimized and there is a mutual understanding, increasing incentives to contribute to green transition (local jobs, local production, identification with nature, and other things). [WP3 - Denmark]
- Ways to develop rural areas to preserve their identities and to attract more inhabitants. [WP3 - Romania]
- Better urban-rural linkages
- Creation of tools for dialogue and communication
- Equality and complementarity, e.g. between rural/urban development and Agenda 2030, fair and sustainable redistribution of resources
- Social sustainability. [WP3 - Sweden]
- Functioning community system, options of choice
- A differentiated view on diverse conditions [WP3 - Austria]
- The benefits of the short supply chain for rural and urban economies;
- Solving the surplus problem;
- Reduced Ecological footprint;
- Energy efficiency; [WP3 - Romania]
- Reliable calculation methods [WP3 - Austria]
- Food safety; [WP3 - Romania]

1. Breakfast with regional healthy products. Because an agricultural general enterprise for food production was established by government bonds, I drive the

short distance with my electric bike to work. In the late afternoon, I have time for leisure activities and cultivating my social contacts.

2. I am an entrepreneur located in the immediate vicinity. At my place of residence, I live in a passive house with photovoltaics and without heating. Due to expanded regional infrastructure, it is possible for me to deliver goods quickly to customers in the city.

3. Many of my employees come by public transport. Among them are many employees with migratory background. Through good contacts to the highly networked and de-bureaucratized municipality, these people are well integrated.

4. The over-population of the city has thereby decreased and the balance between city and country has greatly improved. In the evening we have a round table with local entrepreneurs, the mayor, our farmer and a professor of social economy and citizens of our community on urban rural symbiosis. [WP3 - Austria]

- This will improve everyone's quality of life by promoting short circuits of some products that will enable economic development and a healthy life.
- This could make self-sustaining lifestyle more tempting and drive people back to smaller settlements.
- It will improve knowledge of the natural environment for urban citizens, increasing their respect for nature
- I think that the creation of jobs in rural areas would lead to improvement of the quality of food, which would have a big impact - less diseases ...
- This will allow to understand the territorial proficiency of each space and take it into account for a better spatial planning.
- This may help us to redefine our living spaces and radically innovate them.
- The countryside would be less vulnerable and would not depend on the city as much.[WP4]
- This will ensure access to culture for rural dwellers and access to country for city dwellers (e.g. green spaces, community gardening).
- This will encourage cultural exchange and mutual respect of rural and urban spaces.[WP2]
- This could result in an urban development which brings "nature" into the cities.
- This ensures the development of a unique identity of each space, and does not target at standardised lifestyles and consumption.
- This will result in better quality of life for all.
- The vulnerability of the city dwellers and the environmental impacts of the cities would decrease.
- This will contribute to the development of agriculture and will potentially create new jobs related to this process.
- If rural areas are not depopulated, more green city areas will be available. [WP4 AG]

Research Questions

1. Legislation
    - Which countries included nature rights to the constitution? What are the effects on nature and society of these clauses? Can examples of excellence be identified to be transferred to European states? What might be the relationship with developing global initiatives such as the proposed law of “ecocide”? [WP2]
    - How would including the rights of nature in constitutions and other legislation impact the adoption of ecological lifestyles?
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    - How to increase personal happiness through a lifestyle in harmony with nature?
    - What is the role of the scientific (ontological) perception of nature in developing technology for sustainable development?
    - How can we rediscover nature in ourselves? [WP4]

3. Mentality & behavioural change
    - How to switch perception from consumption being trendy to ecological living being trendy? How are social media being used to make sustainability trendy?
    - How to reward low-impact lifestyles? What kind of examples already exists and what was their impact on behavioural change? [WP2]
    - What are the main barriers of today's society to a culture and society in union with nature? How to overcome these barriers?
    - How to create interesting interpretation of "green" towards all the generations and influence further development through educational activities?
    - How to make it clear to society that environmentally sustainable way of life is the best known way for humankind to sustain life on Earth?
    - How can we raise individuals' awareness that their actions or lack of action is fundamental to their relationship with nature?
    - How can we achieve that living in harmony with nature becomes the norm and people who do not follow are acting "unusual"?
    - How do we ensure a shift in paradigm where we move from an understanding of organic lifestyle as something you can either live by or not, to the understanding that an organic lifestyle is absolutely necessary and fundamental?
    - How can people be supported to switch to more environmentally friendly practices?
    - How to convey to the people that there is only one Earth with limited resources that are not owned by any state, corporation or individuals?
    - How can we transfer the idea of wellbeing related to green lifestyle when there are no immediate benefits?

- How to implement large-scale measures to promote the secular ecological and spiritual consciousness that we are only a part of the whole?
- What is the role of environmental education? Is it possible/necessary to start to teach children about ecological lifestyle in schools? [WP4]

4. Economic aspects
   - Should tax incentives be given for lifestyles that self-regulate and behave in accordance with agreed ecologically harmonious benchmarks?
   - How can we promote "green" product design and business planning for the product's full life cycle, supported by cooperation among the companies?
   - How does the consideration of nature contribute to sustainable economy and growth?
   - How can we produce goods without affecting nature and without sacrificing the basic features of the developed world?
   - What fundamentals of the socio-economical system need adjustments in order to reduce the economic pressure on nature, as resource provider?
   - How to make neo-liberalism and the adverse effects that it has been producing in the world visible?
   - How to set / change the values of the society so that environmental protection has a higher priority / value than economic growth / profit?
   - How can we keep the profit motive within reason?
   - How do we ensure a shift in paradigms, which entails the acknowledgement that growth and overuse are not consistent with a sustainable society?
   - How can support for sustainable lifestyles be transferred from being the responsibility of consumers to becoming the responsibility of producers?
   - Technical development is more important than economical development and can contribute to environmental protection. [WP4]

5. Implications for society/governance

   - What are the social, cultural and environmental impacts of the “so-called” green initiatives and social innovation? E.g. clothes swapping, car sharing, urban community gardening, local exchange systems, etc.
   - What might be the limits for the rights of future generations in different countries? [WP2]
   - How to find a balance between considering needs of nature vs needs of humanity?
   - How does living in harmony with nature affect physical and mental health and wellbeing of individuals and communities?
   - What kind of governance of society can stimulate sustainable development?

- What changes must the civil society of tomorrow be willing to co-shape for implementing environment friendly systems?
- How to minimize the human impact on the environment of two biggest polluters - livestock production and traffic? [WP4]

Concerns

- Concern of the growth: if everybody in the city has a garden, is there enough "natural" space left (or the cities become too big, spread too much)? Or do we have to think to other different form of gardening, e.g. vertical gardening?
- If balanced wrongly, this may increase decentralized living and thus traffic.
- People's need for nature must also be covered in the crowded urban area in order to stop the sprawling of the landscape (exurbs). [WP4]

Citizens' visions

[DK] Vision 4: The nature city of the future"The composition of the apartments allow spaces and terraces for common activities, city is car-free."
[AUT] Vision 5: Smart living with nature
"Intelligent living with nature…"
[SVN] Vision 3: Green Future
"Green oasis in the urban areas, in cities garden."
[HRV] Vision 4: Erasing the borders
"• A balanced urban and rural development
• EU Member states are self-sustaining in terms of food production
and utilization of renewable energy sources, demographic representation will be equal in the city and in the countryside. The racial, economic, ethnic, gender and political equality is present in the societies
• Planet Earth is a desirable place to live. By taking care of the Earth - we take care of ourselves"
[SVN] Vision 4: Clean Environment – Common Sense
"Europe 2050 will be a society of balanced citizens taking care of their environment."
[DE] Vision 1: Sustainability implemented
"Smart nature" creating ecological cycles (fish: excrement leads to plant growth in water), cradle to cradle (complete material cycle without residual products/waste)." [WP2]

8.c Ecological future education

SOCIETAL NEED: Harmony with Nature
GRAND CHALLENGE:

5. Climate action, environment, resource efficiency and raw materials
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

Current education focuses too much on the past and the present, with insufficient attention to ecological futures thinking. Current patterns of learning are not capturing the imagination of people whose consciousness is formed in the digital age. At the same time policy systems tend to reflect disciplinary silos. There is a gulf between academic knowledge relevant to ecological futures and citizens' knowledge. There is a lack of robust evidence and longitudinal research on the long term effects of current provision and practices in learning for ecological futures. Effective training and knowledge transfer systems need to be designed, piloted, implemented, and evaluated together with stakeholders. More emphasis on futures education and the impact of future generations is imperative for a healthy planet and healthy people. [WP2]

1. Education, which lacks good examples, discipline of adults and of the adolescents.
2. Relevance of the used methods for education: the applied methods for ecologic education lead to lack of understanding and lack of awareness on the importance of this issue; there is lack of interest, lack of communication and lack of motivation among citizens and young adults.
3. Theory doesn't match practice – there is discrepancy between what is taught in school and the practice; discrepancy between the development of technology and the development of ecologic education. [WP3 - Bulgaria]

The current situation – state of play – is according to experts :
There is a body of research on education for sustainability – but not much focus on policy makers, e.g. where such studies and programmes exist and are they effective? There is very little funding for evaluation and impact studies of programmes. Studies of computer gaming exist but they are limited for sustainability. Do we have research on the effects of green advertisements? What research on comparing approaches to responsibility for future generations and the use of legal frameworks to effect changes exist? Ethical arguments exist, they are developing and much debated - what are the effects of this work? What research is there to test claims of PR? Is there comparative research of different approaches to future education? [WP2]

And according to citizens :
We are unsure about availability of education for sustainability for policy makers and civil servants. In Austria and Ireland there are only advertisements for consuming but in Bulgaria and Hungary there are “green” adverts ("clean Bulgaria/Hungary for one day"). Not much thinking ahead by governments and consumers about sustainability, just reacting to wider legislation. At the moment, games are not focused on outdoors, only indoors.
Teaching about ecosystem is inadequate. In Ireland, there are some short courses in sustainable living for adults. There is some teaching of ecology (in biology) and waste management (in geography). [WP2]

Aspects of importance :

- The challenge of “learning” rather than teaching
- Need to communicate that in the long run there is no loss in prioritizing ecology over economic growth, need to better motivate the added value of the ecological perspective for the individual
- Need to make ecology relevant and useful for people with different backgrounds and interests. Humans are also part of “nature” and environmental issues are bound up in complex ecologies.
- Need to change mind-sets, and a need to reflect on our values. Otherwise it is hard for people to be motivated and even make personal sacrifices for the environment.
- Everybody needs to be at the same “level” in order to be able to have good discussions and practice.
- Education is a cost-efficient measure compared to “fixing” the environment later on. [WP3 - Sweden]
- The current education system does not manage to react quickly enough to the changing world surrounding us.
- Person educated today will in the future need a knowledge which now does not exist yet – it is necessary to prepare people on this, educate them mainly in the area of working with information, critical thinking.
- Current education system is not sufficiently connected to praxis and its requirements on skills and qualifications structure.
- Education insufficiently (inter)connects individual disciplines. [WP3 - Czech Rep]

We live in an unsustainable way. The most important reason behind this is that we do not think in an ecological way, e.g. our knowledge and thinking of the conditions of human life is fragmented, and this fragmentation can be traced in the education and vocational training systems too. Society does not reward systems thinking.
Learning systems thinking is difficult as we do not have traditions in this field.
The lack of systems approach in our thinking threatens sustainable living [WP3 - Hungary]

Scope

Research should focus on developing efficient eco-learning concepts such as teaching the value of ecosystem services. A special emphasis could be on fostering a foresight attitude and providing spaces for futures thinking that considers the rights of future generations. The use of innovative learning methods such as serious gaming should be investigated. Training material for all civil servants + policy-makers should be developed and translated into all European languages. Mentoring + support e.g. through trained facilitators should be provided. [WP2]

[Research should assess the relative importance of two different approaches to create systems thinking:]

The education path

- Education is one of the essential ways to improve any negative trends in the society.
- If education on sustainability does not exist, negative trends in wasting resources will continue and these resources will be exhausted → collapse of the society + high unemployment rate, social crisis.
- Education ensures knowledge, skills and means for making us happy in future. [WP3 - Czech Republic]
- Having lessons in the nature as part of education;
- Modern schools to attract the interest of the young generation;
- Strengthening the connection between humans and nature, organising different ecologic initiatives;
- Initiating ecologic programmes for environmental protection, which are integrated into the educational system;
- Activities for awareness raising on the benefits from environmental protection;
- Using media for drawing attention to certain challenges, such as aid and water pollution; [WP3 - Bulgaria]

The narratives-and-action path

- The future is not taken sufficiently into account in decision-making today (this applies to several levels, from the individual to the societal, the private and the public, the institutionalized and not). This we agree with. We do not; agree with the claim that this is fundamentally due to a lack of knowledge.
- The scenario exhibits a strong belief that sustainability/ecology is difficult to address due to a lack of knowledge. If only we can diffuse the right knowledge effectively, things will work out. Experts and researchers are portrayed as active knowledge producers, while citizens are considered passive recipients.
- We do not believe that such a deficit model provides a solid foundation for research aimed at handling major sustainability issues. [WP3 - Sweden]
- We do not accept the “diagnosis” that lack of information and knowledge transfer regarding climate/ecology is the cause of missing long-term perspectives.

- Such a deficit model fails to reflect the large amount of information existing today on how to change behaviours/what behaviours create large CO2 footprints, without this leading to actual behavioural change. Experiences from other parts of climate research shows us that we can produce as much knowledge as we please without this leading to actual change.
- The question should rather be articulated something like this: "what leads to behavioural change and how to best achieve this?" Is it necessarily more knowledge production of a specific kind (ecology) that is the solution to creating desirable actions?
- We also disputed another premise of the scenario: the assumption that today's education focuses too much on the past and present. Several held up that if only more people had known their history, faith in the free market might not be as dominating in political action and peoples' beliefs. History shows that it has not always been this way and that it may be arranged differently.
- This underlines a central point for the group: how conceptions/narratives are greatly influential, and that alternative narratives to the dominating stories on how we can solve the climate/energy crisis (e.g. better technology) are important to highlight. It is not primarily about educating people, but engaging them. In "good" stories – both as "ordinary" citizens and as politicians/decision-makers.
- To achieve change, it is of central importance to understand and explore the "emotional drive" as change agent. How to link affect ("how does this concern me") to values ("what is important to me"). The stories about the future must make a difference to people. [WP3 - Sweden]

[Research should take a critical approach to the theory of behavior change:]
Projects considering the effect of different measures (linguistic and other framings, institutions, legislation). At all levels in all parts of society so that the future will be taken into account in decision-making.
E.g.: empirical studies of the effects of institutions who have as their goal to ensure systematic long-term perspectives in politics (e.g. future commissioners, horizon scanning unit, committee for the future).
Projects that assess how/what mobilises affect/feelings/values to consider the future (these may be broad – rhetorical, political suggestions, physical environments (access to nature) etc.).
If it is behavioural change we seek, it must be made an explicit matter of concern for research to investigate (from many points of view and within many fields) what contributes to changes in behavioural patterns. There is some research on this today, so the problem is not lack of knowledge, but perhaps how such diverse knowledge can be combined into stories and narratives that engage? This could be a matter of concern for research. Affect theory may provide some interesting insights here.
Another thought is how one can approach these challenges by taking some of the claims of the scenario and turning it on its head. E.g., challenge the scenario's story of the active researcher against the passive citizen, based on the scenario's own claim that there is unrealized creativity in the younger generation. If this is the case,

and this is understood more as an active citizen, how can we think expediently about utilizing this capacity? Not only limit it to (as the scenario suggests) a form of creativity, that should be utilized better in systems of learning, with more customized learning situations (e.g. computer games), but rather articulate this as a matter for research; explore this claim empirically, to say something about how such creativity/capacity among the younger generating can be stimulated, and in doing so, become knowledge which may be considered research and/or policy relevant. [WP3 - Sweden]

[And, it should explore future needs for new education approaches:]

- Research on implementation of new education procedures/education practices (basic research) – critical factors of what works and what does not work and in what conditions
- Testing new education methods (in school classes, community centres) in the real environment (applied research)
- How to teach about "big" issues, so that people are not unnecessarily frightened (work with particular/tangible "small" examples – i.e. to introduce global topics on local examples) [WP3 - Czech Republic]

Research should take the following concerns into account:

- Politicians might not support this as it threatens their power
- Need for research on how education on climate change results in depression among children
- We are under pressure to translate and implement knowledge quickly [WP2]

The following actors should be engaged:

All participants of education should be involved (teachers, technical stuff), parents, education governors (education ministry, local leaders), from nursery school teacher through the public schools to university professors everyone, the influencing people of the smaller local community (e.g. local entrepreneurs, artist, priest/vicars). [WP3 - Hungary]

An inter-mediator shall be active between the research and it´s outcome on one side and schools as knowledge recipients, maybe even directly in the research organisations – something like "PR" of research. [WP3 - Czech Rep]

Institutions on different levels and spheres, media, local authorities, municipalities, because they have mechanisms and means to change policies. NGOs in the field of environment, science and education, research organisations – because they have the means to raise awareness and stimulate public participation. Volunteers, teachers, citizens, family members (parents) – because they educate the youngsters and give personal example. [WP3 - Bulgaria]

Expected impacts

- Better educated teachers and making the teaching profession more attractive to get the best teachers
- Shifting of the paradigm to broaden the concept of ecology to include culture, technology and social aspects.
- Different and new ways to raise public awareness and be more creative in involving individuals and communities in ecological learning/connecting with nature.
- Making an “informal” type of education “normal”

The main objective will be to bring forward new knowledge on how long-term perspectives have been attempted brought into decision-making processes today. Research on affect/narratives as mobilizing forces for behavioural change in politics and society today. [WP3 - Sweden]

The main goal should be to create, test and implement new effective education and formation systems (involving all relevant stakeholders) within “ethical borders” framework. [WP3 - Czech Republic]

Research Questions

- What is the best way / best method to reach and teach the technology infused generation?
- What is the best way to translate and transfer academic knowledge (e.g. about future thinking) to citizens and policy makers? How do we do this fast?
- How do we ensure that sustainability and future thinking education has a long-term and lasting impact on key stakeholders? [WP2]
- What are the benefits of an ecological education in the short and long term and how will this become reflected in civic behaviour and in quality of life?
- How could the early education of children and/or parental education be shifted towards the future?
- How can we insure that this kind of education is accessible for everyone?
- How to ensure that policy makers and officers of other relevant issues (Plan development, transport etc.) would pay attention to the environmetal impacts of their decision. [WP4]

Citizens’ visions

[LIT] Vision 3: Harmony between Human and Nature
“Our children teach us to plant forests and conserve vital, fresh water, which reserves after many years at last began to increase”
[SVN] Vision 5: Prosperity and Work Activity of Citizens
“Education based on emphasizing community life and the importance of protecting the environment and the common good”

[DE] Vision 1: Sustainability implemented

“Training and education: teach the greatest possible respect and understanding for people and the environment...”

[SVN] Vision 3: Green Future

“Raising awareness and concern for the management of the environment [and] adoption of eco-laws...”

[CHE] Vision 4: Less is more

“Schools will not only educate in view of the needs of the job market. But give more room to creativity. There will be less monoculture and more biodiversity”

[SWE] Vision 2: Education - A Standardised education system in the EU

“the education system naturally highlights ecological issues in all subjects where it is possible to drive environmental thinking into the future.” [WP2]

8.d Transforming technologies for planet and people

SOCIETAL NEED: Harmony with Nature
GRAND CHALLENGE:

5. Climate action, environment, resource efficiency and raw materials
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

We have many current technologies that are embedded in the system. How do we re-assess them in the light of our new knowledge about our interconnected Earth system and global societies?
How do we ensure that new technological development helps people and planet? Currently technological development is being driven by short term industrial decision-making, without considering ecological and social impacts and long term effects. A democratic approach to technical innovation should include citizens and established organizations. [WP2]

[The following challenges have been emphasized:]
1. Training and raising awareness as basis for all action, towards a more responsible and conscious use of technology. Using communication technologies for the training and raising awareness.
2. Ethics and accountability as a principle applied to technology that serves and supports people in the creation of a common well-being in harmony with nature.
3. The use of technology, aiming at a sustainable and sustained development of the different needs of the planet and of mankind, with a special focus on energy production and sustainable mobility.
4. The impact assessment of technologies, as well as the evaluation of associated risks.

1. and 2. Training, raising awareness, ethics and accountability are important because we need more knowledge and consciousness to define strategies and plan actions that will stop the planet's degradation, and promote quality of life (e.g. urban planning, mobility, eating, etc.).
3. The use of technology is important to ensure a more responsible interventions while using the planet's natural resources.
4. The impact assessment allows us at an early stage to learn about the positive and negative impacts, and consequently to adopt minimization measures or to abandon

technological proposals that would prove harmful to people and the environment. This way we would prioritise the interests of mankind and of the planet, rather than economic interests. [WP3 - Portugal]

The situation – state of play – is, according to experts:

- There is a growing philosophy of technology movement / research, but not so far well linked to sustainability. There is a body of EU research on responsible innovation. Appropriate technology studies tend to be confined to the developing world. Re-thinking current technologies is mostly done by movements, NGO, trough research and campaigning. There is work on the ethics of new technologies and citizen views. There is a lack of research on the potential for new job creation in repairing/ reuse / etc. as resource depletion rises.
- There is existing research on ecological design. Making links between research areas might be the main task, skills in assessing system impacts need to be spread.
- Action research linking social and technological innovation in developing countries needs more support.

And according to citizens:

- We use technology too little - too much -use of paper, not enough control.
- In Eastern European countries people tend to repair and reuse more, e.g. technology and clothing. But in Western European countries people tend to waste much more. [WP2]

Scope

- Create mandatory curricular programmes, that are transversal to any course (from elementary school to higher or professional education and lifelong learning – both formal and informal training) and that address the subjects of technology and a more sustainable use of resources. Use of media to raise public awareness towards positive practices.
- Establish a legal framework, focused and clear, with policies and guiding principles of practices that are in harmony with nature!
- Effective control and monitoring of the promoted practices!
- Conceive new policies and provide financial resources for the research and development of new technologies that are more environmentally friendly. This is specifically important for activities related to energy production, such as the improvement of the use of wave energy and the transformation, recycling and reuse of materials, such as plastic, metal and electronic equipment, in order to reduce waste!
- Urban and rural restructuring as a way to encourage collective mobility providing more comfortable, efficient and ecological public transport (e.g. electric transports).

- Reducing bureaucracy, speeding up the research and implementation of new initiatives. [WP3 - Portugal]
- Address and communicate the consequences of sustainability in Europe – it will also come to affect citizens negatively (in a short-term perspective). [WP3 - Norway]
- [Address] technofobia
- Use greentech more efficiently

[Following actors should be involved in addressing the challage]:

- (by descending order from the more involved to the less involved): citizens, national and international governing authorities, legislators, judges, companies, NGO's, UN, opinion leaders and social media, teachers and educators, researches and scientific community. [WP3 - Estonia]
- Researchers must improve their ability to manage their own knowledge and its limits, as well as their understanding of risk and uncertainty – to become "citizen scientists". There is a need to design research education in such a way that their expertise is continuously challenged. Researchers need to problematize their own (knowledge) power – a prerequisite for this is improving scientists' reflections on what they do *not* know.

  It is not sufficient to engage more than "the usual suspects". There must be transparency in how and why calls on technology assessment are decided upon. Who is choosing the experts? What expertise do they have and what is their understanding of the call? What is the role of industry?

[Reflections:]
There is a need for more transparency and openness on power and processes in the decision-making of how, why and what calls for technology assessment come into being – how to ensure such transparency and avoid this leading to "hallway decisions" being made?

For this to have impacts scenarios must avoid the trap that models have fallen into within economics - scenarios are not funded in empirical data and do not give us the ability to predict the future: "the future doesn't exist". It must rather function as a means of preparedness for the unpredictable than assume that it can predict. Scenarios must contribute to reflect on how and where we wish to move forward, rather than attempt to foresee.
It is equally important not to approach research as something existing "outside" of society. A gap between science, innovation and society is presented in the scenario. This regards the entire CIMULACT project: there is a need for reflexivity on the science/innovation/society distinction made.
To approach this in a global perspective: there are different ethical and conceptual preconditions globally, which must be taken into account. There are different

conceptions of solutions (and problems) which requires adaption of RRI to local conditions to make it manageable. [WP3 - Norway]

Expected impacts

- Reduce waste, recycle and reuse resources. Use technology in agriculture and in air/water (for consumption) quality's monitoring.
- Responsible consumption resulting from reduction (of consumption) and local consumption.
- Use of public transports that are powered by "clean" energies ("clean" energies come from renewable sources: sun, waves and wind).
- Citizens and companies should provide more active intervention in society and in decision making, in harmony with nature.
- Taking us to a greener world, to a richer life and to a healthier eating.
- Creation of ecovillages: cleaner and non-polluted cities that are calmer and less noisy because they are better integrated in the environmental ecosystem, in nature.
- Development of local production and economies, making use of sustainable construction and technologies: the range extends from energy production to sanitary, electrical and shared mobility infrastructures (including public recycling bins).
- Community gardens, application of agriculture management, energetic systems for water heating and air conditioning, lighting of houses, use of renewable energy, adjusting the devices to the most effective sources (sun, wind or other) depending on the location. [WP3 - Portugal]
- Make necessary changes to the research and innovation structure itself. The incentive system and measuring principles must be altered for this to lead to actual changes, and the notion of quality and culture are of central importance in this context. The specific economic conditions that researchers are working under and what institutions are being measured on must change for this to have real impacts. If today's principles of assessment and competition are upheld, nothing will change. There must be stakes involved, which commit the institutions to change the criteria of what it means to undertake technology development responsibly.
- Public education should be a goal in itself. The obstacles for sustainability are not clear enough to the public. There is a need to communicate the societal consequences to those who must consider and take action towards these challenges. Sustainability will also involve making uncomfortable decisions – there is a need to clarify what these consequences are and how they will affect people's lives.
- Another goal should be to address nature in and of itself, as a "silent stakeholder", without human agendas or as a resource. Who is nature's spokesperson in such a process? Nature must be addressed as an actor and with intrinsic value, as an existential and ethical frame. [WP3 - Norway]

- More people are enabled to live a dignified life in a healthy environment and in an intact social environment (no poverty, access to drinking water, decent working conditions).
- The spheres of science and technology, on the one hand, and citizens and people, on the other hand, will approach each other.
- The science landscape is changed by the core competency of citizens' new power structures, new disciplines, and new fields emerge. [WP3 - Germany]

Research Questions

- What are the best ways of preserving knowledge and skills of more sustainable technologies (e.g. closed-loop farming, repair, reuse) and transferring them across borders?
- What different models to use for involving citizens in technology assessment?
- How to assure that lobbies do not have more power over the governing bodies than the interests of citizens?
- How can we use economic principles for the common good, incentivising the best technologies and discouraging unsustainable production models?
- How can we avoid implementation of technologies that are NOT environmentally or human friendly?
- How to make producers minimize the negative social and environmental impacts of their production?
- Which models / incentive systems to use to involve individuals in implementation process of technological solutions?
- How could we achieve that environmentally friendly technologies increase the profit of the companies, so they become interested in implementing them?
- How is it possible to avoid the rebound effect caused by creating and using more effective technologies?
- What different types of technologies can we use to involve citizens in decision-making (participation)?
- How can we get consumers to make decisions based on more athan economic criteria alone?
- How to implement policies that effectively target the reduction, reuse and recycle as a new paradigm of industry and consumption?
- How to encourage people to recycle everything that can be recycled and how to use only clean energy sources?
- What kind of measures to utilize for birth control and for reduction of planet's overpopulation?
- How are the impacts of transforming technologies assessed multi-dimensionally?
- How can we to a higher degree ensure that the technological development is for the greate good of the public, and who should decide what is for the public good?

- What are the legal frameworks for bringing sustainable technologies extensively to use without side effects?
- How to allow citizens to have a critical and informed look at the ethics of research (technological, etc.)?
- How can we prevent that impacts on the environment are not neglected compared to the benefit for humans?
- How to develop technology based on non-reductionist research?
- What is the best way to stimulate technological development?
- How to make circular economy more socially sustainable and fair having the natural and human values as reference?

Arguments

- This will foster technology designed for durability, biodegradability, repair and reuse.
- This will enable ecological and social impacts and long-term effects to be considered in technology development.
- The innovation process will slow down if more citizens and stakeholders are involved.
- If it is not used smartly, technology can have the function of the solving of the symptoms instead of the source of the problem.
- An use of mineral raw materials or products created by child labour will be decreased.
- It goes against profit maximization. Its feasibility is questionable in capitalism.
- Real sustainability begins with the commitment of the society, not the commandments of the ruling classes.
- The involvement of citizens and stakeholders will stimulate the market and the technological development.
- It is useful to develop other technologies, for example in order to gain free energy.
- As work totally changes, innovations relate comprehensively to almost all professions – how does one get training for this?
- There is need to establish principles of shared scientifc ethics to frame research and development activities.
- This will allow scaling up of already established environmental methods. [WP4]

Citizens' visions

[EST] Vision 5: A new hope: "In 2050, technological and scientific breakthroughs have led to 1) minimised pollution, air pollution, water pollution and domestic waste, 2) the use of clean energy sources growth of the share of renewable and sustainable energy"
[LIT] Vision 2: Human and Environment
"[in our vision] there is just enough technology to serve ecology and harmony…"
[ESP] Vision 3: Building the future

“to regulate the role of new technologies in order to avoid damaging the quality of human relationships”
[LIT] Vision 2: Human and Environment
“…pure barber; generation of non-consumers…”
[UK] Vision 1: The 2020 Economy
“a cyclical economy built on ‘cradle to cradle’ philosophy; built on 100% reusable recourse, including supply changing production, energy usage and consumption”
[PORT] Vision 3: E.U. - We are
“existing technology allows us to have comfort and optimal management of resources”
[PORT] Vision 1: Alice in tomorrow’s land
“technological development has evolved and contributed to finding solutions for better resource management (and natural disaster prevention)”
[ROU] Vision 4: The Golden Age
“ quality of life will have improved tremendously for senior citizens aided by technology“
[FIN] Vision 2: Predictive health tracking
“Developments in technology and medical sciences have prolonged people's lives and improved their quality of life. Technology is utilized in basic health care and maintenance, in the diversification of treat- ments and, for instance, in the prediction of different kinds of sei- zures.”
[IRE] Vision 5: Balance of Nature, Humanity, and Technology
“We want technology to be used for the betterment of society”
[LUX] Vision 3: A quantum leap in development
“Technology is being used for the wellbeing of people and not in order to maximize profits“ [WP2]

9.a Technology as a means of well-being

SOCIETAL NEED: **Personal Development**
GRAND CHALLENGE:

1. **Health, demographic change and wellbeing**
7. **Secure societies - protecting freedom and security of Europe and its citizens**

Challenges

- Individual perspective: free to choose / self-determination, what does a "good life" on the individual point of view mean and in which way will technology be used ("well-being" in the sense of long term well-being (i.e. including sustainability) [WP3 - Switzerland]
- Public (state) perspective:
  - Guarantee the access to technology with equivalent opportunities, in order to ensure to each person a self-determined "good life". "Balanced and ethical use of technology" [WP3 - Slovenia]
  - Creation of frame conditions in order to avoid abuses [WP3 - Switzerland]
    - Raise awareness for the possible risks and educate people to be able to cope with technologies
    - To protect against intolerable risks
  - Encouraging engagement from citizens [WP3 - Ireland]
  - Health system [WP3 - Switzerland]
    - Demographic changes – need to promote wellness across the spectrum
    - Age related healthcare rationing
    - Financial issues – limited budget in healthcare system
- Keep in mind: technology is a means, not a goal. The objective is to reach a good life (self-determined). This presupposes first of all a sustainable livelihood for all.
- Area of conflict between individual freedom to determine of our own life, "the power of the factual world" and the necessary use of technology. [WP3 - Switzerland]
- Meaning of wellbeing:
  - Emotional, mental and spiritual well-being as well as physical
  - Encourage view of health in a more holistic manner [WP3 - Ireland]

Citizens feel these are crucial challenges because the Virtual World is increasing very quickly and is:

- restricting every individual's self determination

    - Because they are prepared well enough to cope with technologies they use voluntarily in order to have a "good life" (there is a lack of awareness and of appropriate education)
    - Because with technologies the use of which is mandatory there is not enough protection with regard to health risks, environmental risks, unequal chances, etc. ("sustainability"). Also there is no protection against the risk that not using technology leads to being excluded from society.
- Technology "a priori" is not a means for a better life, but can contribute to it. [WP3 - Switzerland]
- Technology requests more time than we have: loss of quality time, too much information to absorb.
- Our mood (health) suffers of always being connected: stress, social pressure, loss of human contact & potential threat [WP2 Citizens]

The pace of technological developments endangers stability. Adapting to as well as understanding and integrating new technologies becomes more and more difficult.

- Decision making
    - Data can help us to understand ROI on different healthcare investments
    - Clinicians today make decisions without the benefit of data visibility
    - Research "sits on shelves": need to find way to disseminate fruits of such research
    - Disconnect between research and action – not leveraging current knowledge before looking to research further
    - Framework for decision making around healthcare priorities therefore important, including risk attributes, neutrality of, or confidence in, data, … goal should be to strive to make better decisions, rather than finding solutions (DC)
- Healthcare budget
    - Impact healthcare budget – finite resources
    - Healthcare spending involves choosing your battles (e.g. investment in depression prevention and treatment) but also taking risks on research with unpredictable outcomes
    - Age related healthcare "rationing": choices are made in apportioning resources to those requiring healthcare, elderly citizens deserve a say in the matter [WP3 - Ireland]

Experts state:

- There is research on addiction, but addiction to tech is different than other addictions because tech is pervasively present. Another consideration is that treating addiction is retrofitting:
- You should try to solve awareness of media use before addiction happens
    - There is sociological/philosophical research about how tech mediates relationships (hard and especially soft impacts), but it is not used – by citizens, nor in education, nor in technology development and design. [WP2 - Ireland]

Scope

Instead of being governed by technological devices we want to govern them. The promotion of a higher level of awareness in the use of technology will allow reaping the benefits it offers without suffering negative consequences such as screen addiction, shifting relationships from physical to virtual space, thinner boundaries between virtual and real actions.

Citizens consider it should be approached

- By not only developing scenarios for positive impact, but also and particularly – and with as much imagination - scenarios for the possible negative effects of each technology and each of its applications.
- Generate knowledge about the probability, that these scenarios will occur.
- Support research about risk and risk governance
- Ensure appropriate communication to reach different target groups (if necessary by developing new methods).
- Approach knowledge transfer as an iterative process (the communication should not go only in one direction, but include and ensure the possibility of feedback-loops)

➔ Interventions
- Design interventions for social good i.e. address misuse or abuse of technology
- Gamification - incentivise users to change behaviours

➔ Policymaking
- Engagement - Some sections of society cannot access technology (old, illiterate)
- Government definitely needs investment in research
- Citizen involvement in policymaking – democratic and openness

➔ Education
- Improved health and lifestyle education – changing the focus to prevention
- Learning from the start how to mind oneself i.e. what they should eat
- Enable self-empowerment
- H2020 themes – prevention and education
- Educational content which is appropriate for different education levels, promote and enable normative thinking, to ensure that individuals and society as a whole will be able to make the appropriate risks assessments.

➔ Investigate and/or refine the existing participative methods in order to ensure the best possible knowledge transfer and the establishment of the knowledge base necessary to take decisions. [WP3 - Switzerland]

Who should be involved in solving the problem?

- Start with the victims [WP3 - Ireland]
- The entire educational system (all educational levels) → promote critical thinking, develop skills
- Everyone who is implicated in technology development and application (Universities, private research organizations, enterprises, public organizations) → generate technical knowledge (scenarios and probabilities)
- Everyone concerned with knowledge transfer with regard to fundamental research and or technology application → development of efficient methods for knowledge transfer
- Everyone taking normative decisions → everyone involved in regulation and lawmaking. [WP3 - Switzerland]
- Lobbies, companies, researchers [WP3 - Slovenia]
- Promote spirit of collegiality versus culture of instant gratification [WP3 - Ireland]

Expected impacts

We need multidisciplinary research for the development of guidelines for personal devices governance to avoid being governed by them. Also research needs to concentrate on how to transfer existing knowledge on how technology impacts us and our relationships to society at large and to actual daily life practices.
From online consultation:

- Prevention of dependency to virtual space
- Better understand the relation between virtual and real
- Better deal with privacy issues
- Dialogical development of our claim to technology, society and self.
- Promote critical thinking as a basic requirement for all that follows
- Promoting risk assessment research (generate data + evaluate data)
- Iterative knowledge transfer mechanisms (no "one-way" communication, but also being able to give answers)
- Avoid being overwhelmed by the constant pressure to make far-reaching decisions with regard to fast-paced technological developments which are outside the reach of but concern every single person? (How can we promote trust in trustworthy decisions - making instances?) [WP3 - Switzerland]
- Holistic focus:
    - Need to focus on the overall health system rather than 'high risk' groups
    - Life course model – look at health and wellbeing from different stages of life
    - Need to balance the tension between right of the individual vs. benefit of society
    - Spiritual – avoiding compromise of natural environment, cultural shift in long term
- Measuring wellbeing:

    - Notions of well-being are complex, incorporating different interconnected elements.
    - New measures for sickness and health, wellness
- Use data sets from technology to improve health based on analysis of individual and population profiles
- High ethical standards of societies and constant dialog [WP3 - Ireland]

Research Questions

- How can we use personal tech devices responsibly in everyday life?
- What are criteria to create guidelines for the people?
- How does tech use affect our social and emotional relationships?
- How to assess existing knowledge on responsible tech use?
- How to transfer new and existing knowledge from science to society?
- How to transfer existing knowledge on our relationships to technology to actual daily life practices? [WP2]
- Understanding the impact of technologies:
    - How does using personal technology affect our social and emotional relationships?
    - Does it lead to isolation or social communities?
    - How do technologies influence how we present ourselves and self-awareness?
    - How the use of augmented reality is reflected in the physical feature?
- New, human centered applications:
    - Technology used for social inclusion
    - Technology as link and platform for ensuring of better social, educational, health offer and delivery of service [WP4]

Concerns

- Personal digital security (identity theft); use of our data by third parties? Where is our data and where does it travel?
- Generational differences on the ability to perceive the downsides of technology
- Increasing level of dependence on technology in all aspects of life

Citizens' visions

[LIT] Vision 6: Emotional Intelligence for Positive World Creation
"Not only technology can save the world, but above all human selfknowledge".
[HRV] Vision 3: The preservation of human health and nature for the generation XYZ
"[in our vision] Technology does not alienate people and does not endanger their health"
[MAL] Vision 6: Education and Society (community)

“[now] Technology is not completely at our service […] To give man a vision. What makes man is not what man makes, and our creations should not become our creators.”

[FIN] Vision 2: Predictive health tracking

“Developments in technology and medical sciences have prolonged people's lives and improved their quality of life.”

[CZE] Vision 3: Free citizens in the secure world of data

“Free citizens in the secure world of data”

[IRE] Vision 5: Balance of Nature, Humanity, and Technology

“We want technology to be used for the betterment of society”

[ESP] Vision 3: Building the future

“To regulate the role of new technologies in order to avoid damaging the quality of human relationships”

[SVK] Vision 2: Technology for Better Health

“People will live a quality life because of the support for research and development, improved access to its results and better cooperation of the included actions” [WP2]

9.b Personal and organizational choice management

SOCIETAL NEED: Personal Development
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

Uncertainty is rising due to a rapidly changing living and working environment. To meet this challenge, citizens need evolving social and technical skills. They need to be able to make individual choices and to manage career opportunities because in the 21st century the ability to make choices and the direction these take are determined both by personal skills and by the capacities and capabilities of your communities.

The participants detailed the challenges faced thereafter. They have been classified in four categories:

1) Justification of choice:

- social pressure [Latvia WP3]
- in addition there must be a change, a modification of the structure of the economy and its values, its too monetary and focused on profit [WP3 - Luxembourg]
- understanding the choice of the most important values; [WP3 - Latvia]
- guarantee autonomy and flexibility but also rights and duties [WP3 - Luxembourg]
- teachers' attitude;
- other factors (skills, hobbies, finances).

2) How to arouse people's interest?

- Life phases during which people have to make decisions.
- Going to school with pleasure.

3) Crowd vs. the individual:

- people who follow the crowd;
- how being an individual differs.

4) Improving the education system:

- finding new ways to arouse pupils' interest in seemingly boring topics;
- statistics on children's satisfaction at school. [WP3 - Latvia]
- Promotion of skills [WP3 - Luxembourg]

It is important for the citizens to address these challenges for their:

- Interest:
  - ability to generate interest in a child (school, family etc.);
  - everyone's personal responsibility for being interested;
  - interest is a crucial factor affecting future choices;
  - attitude can change the level of interest. [WP3 - Latvia]
  - The values need to be reassessed, to promote them and to teach them [WP3 - Luxembourg]
- Well-being: being informed increases capacity for work, which improves well-being / quality of life. [WP3 - Latvia]. A good personal welfare creates less tensions in society and guarantees a much more harmonious atmosphere [WP3 - Luxembourg]
- Differing opinions:
  - being aware of the problem;
  - basic facts / opinions on data;
  - society / herd mentality;
  - involving children in their future.

Scope

Promote life-long learning and choice management to increase organisations', communities' and individuals' abilities to cope with an uncertain future. Citizens insisted "we need solutions that promote life-long learning on both an individual and organisational level. Solutions can be social, organisational as well as technological innovations."

Citizens have defined objectives and solutions on different topics:

- Educational psychology:
  - a grade is not an evaluation, but an instrument;
  - do not use the designation "MANDATORY";
  - exercises at school help to determine interests.
- Teachers' skills:
  - teachers must have good psychology skills;
  - increasing prestige of teacher's profession means increasing competition;
  - teachers explain why something should be done.
- Daring to be different:
  - how to express one's opinion without being afraid?
  - to encourage society to accept the different.
- Education system:

  The use of technologies during classes:
  - for work and well-being;
  - on-line internships.

  Not everyone is taught the same way:
  - presence of psychologists, improvement in the education system;
  - comparing education in the world;
  - pupils' questionnaires.

Non-traditional teaching methods:
    - alternative methods and methods suggested by consumers.
- The level of well-being:
    - to make people value themselves, not money. [WP3 - Latvia]
- Re-define welfare:
    - More home-working and home-education for a bigger flexibility to work-time and workplace
    - To be able to develop, you have to guarantee a non-conditional basic income, for example from 18 years
- Re-define values:
    - A monitoring centre of personal growth-ethic committee
    - Define the orientation of change and restructure the economic system through motivation that isn´t monetary
    - Restructure agriculture and promote alternatives [WP3 - Luxembourg]

Solutions should be developed by a group representing:

- volunteers,
- not lobbyist,
- non-discriminatory,
- intergenerational (parents, family, children, young people, youth organisations),
- multinational,
- multicultural,
- governement
- observatory at a national and European level complementarity with other observatories. [WP3 - Luxembourg & Latvia]

Expected impacts

- Develop pedagogies that empower individuals to manage life choices in a changing world.
- Study ways to enable continuous learning for individuals, organisations and communities.
- This enables individuals to be adaptable by continuously evolving their skills.
- All types of organizations would benefit from more adaptable members.
- This shifts risks and responsibilities from the state and employer to (vulnerable) individuals.

Expected impacts as they have been formulated by the participants:

- To ensure personal freedom and development in order to increase the quality of life and well-being [WP3 – Luxembourg]
- Fully changed education system (Montessori/ Waldorf principles).
- Global development of humanity – innovations, achievements in medicine … flying cars … and expressions of general education and well-being.

- Society accepting the different.
- Children knowing what they wish to become in the future.
- Changed priorities – money vs. epicureanism.
- People acknowledging problems, getting involved in solving them.
- People being less afraid of the unknown.

Affected parties:

- children, young people – decisions affect their future;
- teachers – different, changed style of work;
- society – feel the change in young people;
- employers. [WP3 – Latvia]

Research Questions

- What are the specific responsibilities of the state/ community/individual?
- What are the best practices of communities coping with uncertainty and increasing the number of choices?
- (How) can technology help with coping with uncertainty?
- What is the acceptable level of risk (social security) for the individual that at the same time reflects sustainability criteria? Because at the moment high social security standards are achieved at the expense of the social security of future generations.
- Is life-long learning addressing the underlying cause of increased uncertainty in people's life, or it is just a coping mechanism?
- Is life-long learning a good solution for the actual settlement of people's life of is it just covering up the real causes of problems? Or is life-long learning shifting the risks from the state and the work organisations to (vulnerable) individuals?
- Is it possible to find unbiased research? If so, how can we ensure that research on the life-long learning is unbiased?
- The community/individual should not be overloaded with the responsibilities of the state and/or the employer. [WP2]

Citizens' visions

STATE OF PLAY - CITIZENS VIEW (Everyday life):
New tools (drones, autonomous cars, industry 4.0) are emerging and we will have to deal with it and make choices about new ways of managing our way of moving, communicating, consuming and living. We are running into the digital age, where we have to deal with so much information to make choices and to manage our life.

STATE OF PLAY - EXPERTS VIEW (Scientific research):
There is knowledge on:
- risk society (+ liquid society) but not so much on coping communities,

- personal development (individuals),
- companies as life-long-learning organisations, but not on life-long-learning communities.

IMPACTED CITIZENS VISIONS:
[HRV] Vision 1: New age
“If we desire an alternative and better future, we must change ourselves and the entre educational system and up bringing methods”
[PORT] Vision 3: E.U. – We are
“All generations are invited to participate in the change process, we all feel that we are heard and that we are part of a shift in consciousness”.
[BGR] Vision 5: Towards better life through a change in thinking and attitudes of people.
“Investing in your personal and spiritual development to be the main priority in 2050.
[...]
Family to be the place for building a value system that is sustainable for society.
[...]
Society invests in the spiritual development of people, and thus enables people to invest in society.”
[LIT] Vision 6: Emotional Intelligence for Positive World Creation
“Enabling personal development to grow more settled, balanced and happy individuals and by consequence communities”
[NOR] Vision 3: Society and the individual in balance
“The digital tools have given public participation a universal form. Accessible for all. This has led to a significant increase in public participation.”
[IRE] Vision 3: Relationships with one another and the environment
“Children will be educated in a well-rounded manner i.e. educated in trades / environment / etc. a holistic approach.”
[ROU] Vision 1: Let’s be humans through technology
“Living in a society in which technology helps people throughout all aspects of life (food, health, environment, economic activity) in order to afford the “luxury” of investing in personal development”
[BEL] Vision 3: Digital Mind
“New things to discover and explore that will make our life easier. We’ll keep our critical mind and our freewill in front of all these new technologies that will be able to dictate to us and take gradually control of our lives.”
[NOR] Vision 2: From fossil fuels to value based renewed energy
“The high-tech knowledge we have acquired, is being channeled into new solutions. By using all resources (people, technology, money), continued welfare and sustainable growth is created.”
[UK] Vision 4: Untitled
“- Citizens decide on spending priorities (e.g. taxes, referendum, participatory budgets)
- WIDENING PUBLIC DEBATE/VOTING MECHANISMS – organising more workshops like this, electronic referendum, public debates
including more political parties, groups of interest.”

[PL] Vision 5: I've Got Talent

“On this, an education system of the future should be based. Training programs will be personalized in accordance with the results of the analysis of pupils' aptitudes and interests.” [WP2]

9.c Models for balancing time

SOCIETAL NEED: Personal Development
GRAND CHALLENGE:

1. Health, demographic change and wellbeing

Challenges

- More flexible work hours and payment models: focused not on the work hours put in, but on the task or the outcome.
- Fostering work-life balance by shorter work hours (when the employee's presence at the work place is necessary) and opportunities to work from home occasionally. [WP3 - Romania]
- Allow for people to choose different areas of life which make people feel safe, comfortable and happy
- Allow for people to experience different activities throughout their lives.
- Find ways how people would be satisfied with what they are doing
- To reduce waste of time for commuting between work and home (in large urban areas) and for empty chit-chat at offices.
- Reducing segregation [by more flexible working conditions]. [WP3 - Estonia]

Scope

- Experimenting with or setting up work-life balance pilot programmes; integration of 'free time' in the work place.
- Assessing the impact of work-life balance social interventions and improving them, e.g. impact assessment
    - of flexible schedule on the family ethos;
    - of organizational change following the increase of schedule flexibility on employee relationships;
    - of flexible schedule on productivity and efficiency;
    - of changed employment relations on the economy
- Researching good practices in societies more advanced in terms of work-life balance.
- [Ways to] Increase the use of technologies in companies to enable more flexible employment relations.
- [Ways to] fighting employers' abusing the employees' 'free time' (with laws and more). [WP3 - Romania]
- Explore new ways of employment where employees are more like volunteers / freelancers

- [Explore] psychologically accepted new forms of work, both individually and by society [WP3 - Estonia]
- Explore original structures to coordinate and promote new business models that provide more working-time autonomy for individuals to balance work, family and community engagements
- Study how business models relate to workers' time autonomy and quality of life
- Identify impacts of new business models on balancing work, family and community life [WP4]

Expected impacts

- Increase efficiency by avoiding empty and unnecessary work [Estonia]
- This will create more options to balance work, family and community life.
- Shifting focus from work hours to work results will lead to more time autonomy.
- Shifting focus from work hours to work results can lead to less time autonomy and exploitation of workers.
- More work-time flexibility will promote free-riding.
- Taking advantage from time outside the compulsory working hours will increase creativity and the quality of life.
- More effective use work and leisure time reducing the overload and stress.
- The emphasis on giving feedback to employees and awareness of their beneficial effect on the enterprise will increase their motivation and higher work efficiency.
- In the long run this will contribute to underpin individual lifestyles.
- Under certain conditions this can reduce our ecological footprint.

Research Questions

- What are the personal, social and economic implications of increasing the time autonomy of individual workers?
- How do individuals use additional free time?
- How can the new business models help to build a more balanced society and to improve the well-being of the individual?
- How to establish a balance between measurement of the working time and measurement of efficiency of the working time?
- What is the relationship, the benefit and the loss of the increased availability of time? What value will be the one that increases the quality of life?
- What are good practices of the new business models oriented towards balancing of professional and private life?
- How does the quality of life enhanced by the perception of a greater autonomy and flexibility?

- How can an unconditional basic income serve this kind of autonomy in (spare)time, work and social activities?
- How do the new organizational structures modify the relations among workers?
- Which is the impact of the new business models on the other macroeconomic indicators of a country?
- How to create measures for happiness at workplace?
- How can we create remote working opportunities in the public spaces? [WP4]

Citizens' visions

[SVK] Vision 2: Technology for Better Health: "More time for relax, family and travelling (including trips to other planets)."
[GR] Vision 2: Work - Self-realization and Environment Protection
"Treating fears (social ethics) and personal liberation e.g. people work in fields they chose as opposed to what society dictates"
[HRV] Vision 2: Science and technology in the service of mankind
"People have time to freely and at no cost engage in different activities which enrich their lives."
[LUX] Vision 6: I am satisfied with what I am doing! (Do what you love, love what you do!): "I can combine my social, family and associative commitments and I have time for myself. Every moment of life is well lived. I try, I am wondering, I am experimenting, I am changing, I am building, I live free of my choices, respected by others."
[PORT] Vision 4: Culture with all for development
"Technology has allowed free time for focusing on personal and collective development based in the various dimensions of life."
[NL] Vision 2: Together for one another
"In this future vision jobs have changed, because of technical changes. A 40 hours work week is no longer necessary. Citizens spend more time to do activities in and for the neighbourhood."
[NOR] Vision 4: The environmental Citizen in a "short travelled" and "mega-local city in 2040": "In 2040 we will be concerned with living responsibly, each and every one of us."
[LUX] Vision 2: Generate a life ethic
"- In work life, the contrast between private life and life at work has disappeared, and people make their living through ´meaningful activities.´"
[ITA] Vision 2: A simply special city: "Young people are taught to work for the community and everyone dedicates a part of his time to the others"
[ROU] Vision 2: "More free time for personal development"
[EST] Vision 5: "A change in the nature of work – a shorter workday, contribution to society/social dimension"
[LUX] Vision 4: "We live in a community of participation and of democracy. We choose our daily working hours and our contribution to the local community"

[LAT] Vision 5:“Job is 100% flexible: work at home and elsewhere, choice of working hours, a possibility to adapt and choose responsibilities and tasks; appropriate rewards”
[LAT] Vision 4: “Work is remote” [WP2]

9.d Meaningful research for community

SOCIETAL NEED: Personal Development
GRAND CHALLENGE:

6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

Currently there is no direct relation on how publicly funded research and innovation "gives back" to community. Research should explore framework conditions for linking research, innovation and development projects closer to the potential benefit to the community:

Democratisation of research

- How and who will decide the right level of democracy in a research process?
- If research is going to be measured, what kind of criteria should be used and which indicators must be taken into account?
- What can citizens contribute with in research?
- How can we raise citizen participation?
- Who will pay for it?
- Is it possible to document actual change?

Popular scientific integration

- The role of research in society must be clear; it is not necessarily equal to the other institutions.
- It is important to distinguish between the research's political and professional role. Why money is spent on research and the person/institution that gets the money may differ.

Research legitimacy

- Research long-term consequences, we need a cost / benefit perspective
- Economic perspectives are under-communicated in this scenario; there is too much focus on publicly financed research. It is important to look at the economic part and show what role commercialization plays, to create a broader legitimacy [WP2]

Scope

[Ways for] research to be selected and prioritized according to its ability to contribute to sustainable development and potential beneficial impact to the community [WP2]

Research relevance

- The relevance of research is important to develop further. The relevance of the project is often only known by the researcher
- We need to rethink the research relevance. There is a need for direct research

Public vs. market driven

- Research that is publicly funded should not be controlled by market driven forces or commercial interests.
- It is important to secure broad perspectives in research

Public access

- Open access and open science [WP3 – Norway]

Expected impacts

Secure the research relevance

- The potential of contributing with meaningful research lays in the contact with the grassroots.
- Bottom-up perspectives in research institutions.

Open arrangements and meet-ups

- Involvement and dialogue [WP3 – Norway]

This will create a deeper sense of engagement in research among citizens
This would return value to tax payers in terms of beneficial impacts
Important research might struggle to prove its relevance in early stages of maturity and be rejected
Results of important research would be put into use faster and more efficiently without private or economic interests
This would allow to know in detail what are the real needs of society and the impacts of the dissemination of results
This would make any basic research impossible. Democracy does not make sense in this case because complex interlinkages require Background knowledge [WP4]

Research Questions

How to involve citizens in research, more actively, to secure its relevance also for them?
Which kind of actions do we want the research to lead?
What criteria should be included in publicly funded research projects to secure a sustainable society (institutional, environmental, social and economic)
Which social criteria or standards should be used in the selection of research projects?
Which are the consequences of the adequate dissemination of the results?
What criteria should be used for results and impacts evaluation?

Citizens' visions

[SVK] Vision 4: Futurofarma and Space Tourism
"Combining science with nature in a rational way from which both side effects"
"People will live a quality life because of the support for research and development, improved access to its results and better cooperation of the involved actors"
[SVK] Vision 2: Technology for better health
"People will live a quality life because of the support for research and development, improved access to its results and better cooperation of the involved actors"
[ROU] Vision 3: Back to (our) roots
"Technology will develop in harmony with the environment and individuals' needs"
[CHE] Vision 5: Together for one world
"[...] Funding of the research for the development of environmentally friendly technologies and working models that must be designed keeping human needs in mind"
[GR] Vision 5: Man in the center of education and attempts of development
"The development of the society, technology and our economy must be done in a manner beneficial to mankind. There should be no development that harms humanity or the environment. We need to respect and utilize every places' benefits"

10.a Freedom to choose where to live

SOCIETAL NEED: Green Habitats
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
4. Smart, green and integrated transport
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

We want to promote a better balance of non-urban and urban areas by establishing a good connectivity between both spaces that:

- allows boundaries of cities to spread,
- helps to decrease the isolation of people in distant rural areas,
- helps to increase the number of working places in non-urban areas,
- facilitates more equal access to services.

State of play - experts view (scientific research):

- Bad connectivity and imbalance in transportation services
- Big need to commute to the city
- A lot of congestion problems
- Insufficient public transport connections
- Difference in quality of life between urban and rural areas
- State of play - citizens view (everyday life):

State of play - citizens view (everyday life):

- Transportation system much worse in non-urban areas
- Lack of internet and phone connection in distant areas
- Empty houses in villages in non-urban areas
- More elderly people with less healthcare and services [WP2]

What challenge(s) does this research scenario address?

- Efficient transportation and addressing problems of segregation
- Accessibility to public services in a wider perspective, i.e. urban and sub-urban, town and rural areas
- The life-work balance (between private life and working life) [WP3 – Sweden]

Is it important from your point of view to address this challenge? Why?

- To counteract social and spatial segregation
- To address enlargement of local labour market areas

- To make collective transportation more efficient (both cost-effective and cleaner) [WP3 – Sweden]

This research scenario aims to solve the challenge of transport between urban and rural areas. There is a significant social need for a balance of high quality living, reduction of environmental issues and new methods of transportation between urban and rural areas. The current movement of people commuting from rural to urban areas for work or pleasure is unsustainable. The primary mode of transportation is privately owned vehicles. The constant pressure and congestion on road networks causes delays in travel times but from an environmental perspective transportation is one of the main causes of carbon dioxide emissions. The challenge arises to encourage people to:

- Change their behaviours
- Reduce private vehicle ownership and usage
- Encourage the use of public transport.

From our point of view it is important to address these challenges because it will reduce the isolation of the rural areas, and thereby make them more attractive as living spaces. In a lot of cases people live in the cities because it is more practical. A well-structured public transport system could ensure that people living in the rural areas will not have to use cars to get to work in the cities.

Improving the transportation system will affect the city in an economic, environmental and social way. [WP3 – Netherlands]

Scope

In order to establish good connectivity between urban and non-urban areas research should investigate technological and organisational solutions for sustainable (low energy intensive/less polluting) transport options that are adapted to the requirements of rural areas (low cost/impact/infrastructure). [WP2]

How could it be approached?

- Economically: By discussing who will pay taxes and how will make investments
- Technologically: by understanding the limits of virtual mobility vs physical mobility and development of technology in physical mobility
- Environmentally: by reducing the ecological footprint
- Lifestyle/attitudes: through education and culture [WP3 – Sweden]

To ensure that future changes work in practice, we must analyze the actual current transport and explore innovative solutions and evaluate current users of public transport.

We have to focus on different groups, carry out interviews and analyze their lifestyle and habits. As for the economic part we have to know how much will this cost the

government, how much will it cost the citizens to use public transport and how much they are willing to pay.

Research and innovation should aim at:

- Less cars on the streets
- Provide incentives for people to use public transport
- Parking out of the city, public transport into the city (Park & Ride), bike parking in the city
- One payment system/membership for all public transport (bike, bus, train)
- Better access roads to the cities.
- Research: figure out which are the most frequented roads during rush hour
- Smart shifting traffic lights providing better flow of traffic. (green wave)
- Improved transition between the highway and the city (e.g. more exits)
- Flexible road lanes
- Public transport
- Time/frequency
- Costs
- Convenience
- Park and ride near transport hubs in rural areas
- Bikes from transport hubs in the city [WP3 – Netherlands]

Who should be involved in solving the problem?
Stakeholders in this research project would include the Government, private businesses and the general public. The government has a responsibility to supply funding, and create and enforce the policies in order to instigate behavioral changes. Private businesses need to work in tandem with their employees to encourage more sustainable methods of transportation to and from work. This could involve subsidizing public transport passes. The citizens have an important role as well, they have to change their lifestyle and behavior and start acting in a more sustainable way. The responsibility of the citizens, to employ and actually make use of the solutions, with strict policies from the government, will instigate change in methods of transportation. [WP3 – Netherlands] [WP3 – Sweden]

- This will increase the number of working places in non-urban areas
- This will decrease isolation of people in distant rural areas
- Cities, especially city centres, may become empty in the afternoon if they are treated only as a working place.
- The trend of depopulation of the rural areas and smaller cities and concentration of people to metropolis will be reduced.
- Development can contribute to decentralisation.
- Increasing the quality of life (physically and psychologically, coexistence with nature, the flow between urban and suburban zones).
- Efficiently organised light and public transport enables releasing of land area from traffic relying on private cars.

- To increase accessibility of medical and social care of elderly and retired people living outside urban areas. For instance by providing transport for reasonable cost.
- Can the matthew effect of large cities getting larger be reduced by upgrading transport to smaller towns/cities and hence number of employers there? [WP4]

Expected impacts

Consider the different kinds of knowledge that everyone needs to be involved in decisions
Overcome the limitations of technology today
Understanding of the limits of our freedom of choice and our responsibility

- Goal: Less cars on the streets 2030 (long term)
    - Expected impacts: Proven ways to reduce commuter traffic
- Goal: Better access roads to the cities by 2025 (long term)
    - Expected impacts: Distribution of traffic into the city, numerous routes which can handle the reduced number of commuters. The expected result from this will create a reduction of time spent in traffic jams along the main access routes into the city during peak rush hour times.
- Goal: More attractive public transport by 2022 (long term)
    - Expected impacts: Behavioral and policy changes in society which discourage the use of private transportation and encourage the use of public transport. A collaborative incentive scheme between private and public investment which provide a reduced rate on public transport for all commuters from outside the urban area who regularly use private transportation into the city. [WP3 – Sweden]

Research Questions

- How to achieve fluid integration of diverse transportation means in local hubs that serve local capillarity and long distance transport alike in a quick and efficient manner? Specific solution could include:
- small transportation units that can aggregate (in "trains of units") and disaggregate (in individual units serving multiple locations)
- Good/reliable/instantaneous inter-modal transport information systems
- Organisation/distribution/scheduling of transport means between homes and workplaces.
- How to rebalance local tax payment and location where services are consumed? [WP2]

- How to spread the culture of alternative mobility and make it advantageous compared to private mobility?
- How can land use for traffic significantly be reduced in urban areas and channeled to living and green belts? [WP4]

Citizens' visions

This part should include the contents from Deliverable 2.1 + national citizens' reports if needed

[BEL] Vision 5: Moving sustainably

"My city has changed! No more fuel-powered vehicle but public transports on rails (ecological electricity) connecting schools, shops, living areas (any activities).

"Transport means are co-responsible and eco-responsible."

[SVN] Vision 5: Prosperity and work activity of citizens

"Public and affordable transport for greater flexibility and mobility;"

[EST] Vision 5: A new hope

"environmentally friendly means of transport—public transport solutions, fuels"

[DE] Vision 1: Sustainability implemented

"technology overcomes spatial distance problems"

[LAT] Vision 4: Ecologically independent

"Fast, cheap and comfortable transport is available. That will be able to change the ratio between the rural and urban population. A lot of people live in small centres but in case of necessity they are able to get to the work place very easy which is located in larger centres. The transport is fast, comfortable and available upon request at particular time by calling operator upon necessity – the means of transport arrives to the necessary place and brings to the destination."

"Life outside a city (far away) does not limit comfort of living and provides additional comfort;"

[HRV] Vision 4: Erasing the borders...

"A balanced urban and rural development"

[ITA] Vision 4: A school beyond times - a new education model

„Every hub is as integrated as possible with the urban context, meaning that it is easily reachable with public transportation, surrounded by a green area with cycling paths and zero impact on the environment (solar panels, recycling bins etc.)"

[WP2]

10.b Freedom to live where we choose

SOCIETAL NEED: Green Habitats
GRAND CHALLENGE:

6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

- Integrating the large scope of "sustainable communities"
- Motivate people to live a "limited" local life, e-g- with limited provisions such as education
- Accommodating all needs for rural area populations by moving or changing facilities needed for a sustainable lifestyle.
- Reduce the carbon dioxide gases caused by transport, but still accommodate the rural areas' needs for transport.
- Acknowledge the potential of invention in rural areas and the diversification possibilities of rural business.
- Improve the quality of life of people, with lower stress, better health and a healthier environment
- Showing the economic benefits of sustainable and resilient lifestyles [WP3 - Sweden]

Scope

- Developing new/innovative business models and virtual tools for provision of public services
- Changing the mind set by showing the benefits and value of resilient communities
- Policy measures should acknowledge the diversity and needs and potentials of communities
- Creating flexible jobs/workplaces and virtual mobility
- Developing equal access to social services based on the strengths and weaknesses of places
- Creating functioning infrastructures
- Developing alternative mind sets.

Research should consider involving:

- Politicians, local citizens, authorities, farmers and local producers [WP3 - Sweden]

Argument for distributed living

- This is important for sustainability
- This will increase social cohesion and quality of life within the local hubs
- This is important in order to promote a development of a diversified economic base.
- This can help to improve the rural population
- The digital economy can very quickly lead to a depletion of entire regions or be used wisely to integrate the population in general. [WP4]

Expected impacts

- Having an overview and fulfilling the needs of the local citizens
- Equal opportunities and sustainability
- Changing the mind set of policy makers
- Providing policy solutions to support local communities
- Tools and models that can show the socio-economic benefits of distribution of sustainable communities. [WP3 - Sweden]
- Services and goods available locally in short distances
- People/inhabitants move outside their local living area only occasionally
- Employment and work opportunities are available locally
- Attractiveness of non-urban quality of life is High [WP2]

Research Questions

- How to design/produce a “distributed living” in technological/ organisational/environmental/sustainable/ behavioural terms?
- How to design/produce a “distributed connectivity” for occasional transport infrastructures adapted to “distributed living”? [WP2]
- How can social and psychological research contribute to sustainable lifestyles, apart from technology fixes. [WP3 - Sweden]
- How to design/produce “distributed living” in technological, organisational, environmental, behavioural terms? .
- How to design/produce “distributed connectivity” for occasional transport infrastructures adapted to “distributed living”?
- How to organise a number of small production areas, whose needs could be overcome by the nearest neighbours?
- How can people be happy where they like it best?
- How can a healthy level of social cohesion be maintained under conditions of dispersed living?
- How to ensure the support of the state (or the EU), which would be beneficial for the exchange of products and services in such settlements?

- How can the evident and serious drawbacks of distributed living such as traffic increase be avoided?
- How can we allow ALL the citizens from different educational level to participate to the new digital economy streams (eCommerce Platform, City pneumatic mail system) [WP4]

Concerns

- Lack of socialisation
- Rural sprawl (people living everywhere)
- High costs of distribution of services everywhere [WP2]
- People should not be given the freedom to live where they choose. It might constitute
- to more environmental problems [WP3 - Sweden]
- This may lead to rural sprawl (people living everywhere)
- We will lose specialization and economies of scale if everything is produced locally, and we will destroy competition on the market.
- Distributed living is not in accordance with sustainable development.
- This is not an optimal solution, as there should absolutely be large spaces, if possible WITHOUT humans, total urban sprawl and not covered in concrete. [WP4]

Citizens' visions

[MAL] Vision 1: At one with the environment
"Stronger emphasis on local economies reduces carbon footprint of goods resulting in cleaner seas and cleaner air."
[DE] Vision 1: Sustainability implemented
"technology overcomes spatial distance problems"
[LAT] Vision 4: Ecologically independent
"More people live outside urban areas. Direct production and sale is characteristic in the future because people will be able to produce a lot of things for themselves, especially due to 3 d printers and there will be less need to buy something." [...]
"The population provides electricity, heating, etc. energy resources itself."
"Self-sufficiency in supply of food/ energy."
[NOR] Vision 4: The environmental citizen in a "short travelled" and "mega local" city in 2040
"New ultra flexible ways of working will dramatically reduce the need for commuting" [WP2]

10.c The bigger (cities) the better

SOCIETAL NEED: Green Habitats
GRAND CHALLENGE:

4. Smart, green and integrated transport
5. Climate action, environment, resource efficiency and raw materials

Challenges

We want to make highly dense big cities more livable for everybody. Our challenges are:

- Making big parks from urban neglected areas.
- Interstitial public/private shared spaces. Reactivation of public spaces. New use of urban infrastructures. [WP2] How to architecturally integrate more green into cities and to efficiently combine transport between the residential parts and industrial parks. [WP4]
- Renovation and revitalization of public/private housing. [WP2] Develop the ecological city: develop energy renovation of housing, reduce ecological footprint (carbon, CO2), encourage environmentally positive externalities (use waste as a resource), and choose cleaner, cheaper and smarter transportation that will answer the needs. Think about collective housing with common and share spaces and services. [WP3 - France]
- Traffic limited areas/shared spaces/ pedestrian zones. Cycling and healthy mobility.
- Big cities have more cultural services/amenities. Better health care and quality. More education possibilities, better variety and quality. Better possibilities to get work. Easy access for products and big variety. [WP2]
- It is difficult to keep better cities affordable. [WP4] How to finance tomorrows' desired city? What new funding models can we invent?
- The bonds between metropolis and peri-urban or rural areas need to be enhanced (economic, cultural bonds etc.) [WP3 - France]

Scope

- Keeping a mixed/integrated urban fabric (i.e. keep affordable prices/ keep minority/variety of people) [WP2] Small cities in a big city: Distribute common services in time and space in order to avoid centralization and crowding and reduce tension between centres and suburbs. [WP3 - Italy]
- Making highly dense cities more livable (i.e. less pollution; safer streets; walkable neighbourhood) [WP2] Less use of cars in cities will be promoted. [WP3 - Italy]

- Facilitating adoption of new efficient sustainable practices (i.e. behaviour change; sustainable lifestyles)
- Diffusion/dissemination of "promising/good" practices (i.e. advanced urban sustainability; urban agriculture; urban regeneration…) [WP2]
- Creation of an integrated system of public (macro) and private (micro) transportation. This system its empowered by sensors of traffic control (open data) in order to guarantee more fluidity and by a unique payment system for the two kinds of transportation. [WP3 - Italy]
- Focus research also on the peri-urban, not only on dense territories. [WP3 - France]

Expected impacts

- Research could bring answers to the following challenges: density, diversity, ecological city, development and respect of populations, finances of the city. The actors impacted are the ones that make the city, local decision-making actors, architects and urbanists, economic actors, and inhabitants of the city. [WP3 - France]
- Analysis and mapping of land and people flows.
- Elaborate a strategy to identify places and services to integrate. [WP3 - Italy]
- This will increase sustainability, e.g., by reducing the need for cars. This will foster vibrant cities both in terms of economic and cultural activities. [WP4]

Research Questions

- How to collect good practice examples of cities' governance and maintenance and how to adapt them to different cultural and territorial contexts?
- How to preserve the "city desirable mix" during and at the end of transformations? [WP2]
- How to adapt cities to the needs of their inhabitants?
- What kind of "Smart City" solutions are applicable in local setting (+ raising awareness of society of existing technological solutions)?
- How to develop the property (land) market, driven by people escaping from 'concrete' cities, and should it be interfered with? [WP4]

Citizens' visions

[FR] Vision 5: Living in a balanced society

“Proximity businesses are developed and offer essentially local products. Spaces dedicated to goods and services exchange and sharing do also exist, along with collective cultural spaces self-managed.”

[DK] Vision 4: The nature city of the future

“The city is car-free: the transportation system should completely replace the use of private cars. The system could be electrical, magnetic highspeed trains. The city is green.”

[ITA] Vision 2: A simply special city

“The places thus become sharing spaces that encourage the development of active and participating citizens.”

[NOR] Vision 4: The environmental citizen in a “short travelled” and “mega local” city in 2040

“Good collective solutions, a strong multi-use mode of thought and high population density will contribute to a lower aggregated environmental burden and higher well-being.” [WP2]

10.d Moving together (more collective transport options)

SOCIETAL NEED: Green Habitats
GRAND CHALLENGE:

4. Smart, green and integrated transport
5. Climate action, environment, resource efficiency and raw materials

Challenges

We envisage new collective transport concepts and respective technologies that reduce transport related pollution and energy demand and at the same time bring people together. [WP2] It is very important to have both personalized solutions and collective public transport, and is also important that these solution are "green", so we should analyze the environmental perspective of the problem. [WP3 - Cyprus] The planning of traffic, traffic solutions in the far countryside and pollution pose challenges to transport. [WP3 - Finland] Collective transport development should consider criteria of sustainability and ecology. [WP3 - Slovakia] To increase awareness of personal ecological footprint and to direct attention to reviewing of one's values (changes, solutions, consequences) [WP4]

- Examples for good integrated transportation solutions already exist and are available to researchers and scientists. Existing driverless and automated transport solutions. Car-sharing exists in many EU-cities.
- New forms of transport organisations –not just public for collective transport like community organised and shared transport. [WP2] Transport as a problem of public service: it is necessary to decide whether collective transport should be a public service or profitable activity. [WP3 - Slovakia] The real challenge is to change individual behaviours, not come up with new technology. [WP4]
- Car-pooling is used in lack of public transporting and to have cheaper travelling (Blabla car – Uber). [WP2] Collective transport should become more affordable, attractive and interesting in cities as well the countryside. [WP3 - Finland]
- Depends where you live inside the country. Big cities have good collective transportation. [WP2] Should rural areas take over some urban functions, is it desirable to prevent the escape of economically active population from chosen areas? Collective transport as a public service raises the quality of life of great number of citizens. It should be accessible even to citizens in remote areas. [WP3 - Slovakia]
- Use of current infrastructure is already maxed out, so any improvement will be minimal. [WP4] In today's society the transportation sector is extremely

important even in the split second, because even the slightest “hiccup” in the transportation process, might cause a huge problem. [WP3 - Cyprus] Congestion is prevented by spreading residency to interconnected centres, and also working hours can be spread out and opportunities for distance work improved. [WP3 - Finland]

Scope

- Transport systems are less based on infrastructures (and more flexible) or sensing existing infrastructures (intensifying their use) [WP2] Up-to-date and real time information about traffic and mobile services are important. [WP3 - Finland]
- Small/individual units that are able to temporary aggregate and disaggregate (trains of units and local capillary distribution)
- Transport systems that are less top-down organised and more community-based, self-organised (swarm intelligence) (eg. self-organised mini-buses)
- Units are shared
- Transport systems that enable more socialisation (i.e. being together in collective transports)
- Substantial reduction of individual private transport means. [WP2] The concept of public transport will never cease to exist. [WP3 - Cyprus]
- Connectivity on the final segment (“last-mile”) is important to provide links to small cities and rural areas. [WP4]
- A detailed comparison should be developed (if it haven’t already) between all EU countries, in order to determine their exact capacity/capabilities regarding mass transportation methods [WP3 - Cyprus] For collective transport to be affordable, public support should increase or cooperation with businesses should be carried out. [WP3 - Finland] Behavioral research: research on decisions, habits and behaviour, for example why are decision for personal transport (car) more attractive (is it a question of habit or poor conditions of collective transport?). Is collective transport a public service or profitable activity? Search for the best, most effective means of transport that serve to higher quality of life.
- Intermodality research: combination of different means of transport (compatibility, complementarity) and supporting services (assembly parking places] for a smoother transfer of citizens. [WP3 - Slovakia]

Expected impacts

- A direct outcome of this is that citizens gain awareness (and maybe incentives) in order to use the public transportation.
- Secondly, we need to cultivate a proper culture across Europe, of how important is exactly to strengthen and enhance mass transportation (e.g. DRT

– Demand –Responsive Transport) and contribute to ease the traffic congestions and emissions. [WP3 - Cyprus]

- Affordability (fares, public support and/or sponsorship)
- Opportunities for citizen influence
- Good connections (comprehensive network, quick)
- Comfort [WP3 - Finland]

- Higher quality and attractiveness of collective transport: collective transport should serve in big cities as well as in rural or remote areas.
- Strengthening the position of collective transport: for better quality of life, for development of sustainable mobility and for protection of environment.
- Cheaper and available collective transport for citizens
- Change in citizens' behaviour: citizens will prefer collective transport, their mobility habits will change.
- Implementation of research findings into policies and legal documents: make sure the research findings are adopted by politicians, consequences for not following the binding acts are implemented too.
- Recommendations: each research should contain recommendations for involved parties. It should be formulated briefly, comprehensibly and should be structured by long-term and short-term goals, activities and expected impact. [WP3 - Slovakia]
- Creating new networks of sustainable collective mobility with high connectivity will have a significant impact on the economy, environment and purchasing power. [WP4]

Research Questions

- How can we go beyond the current common understanding of "collective transport"; i.e. less infrastructure inquiring, more flexible community based organisation more based on temporary aggregation of shared individual systems?
- How can we intensify the use of existing infrastructure "more trains on railways and collective sustainable transport motorways"? [WP2]
- How to make a public transport more attractive for those who drive´?
- How to optimise collective transport networks using renewable energy in order to offer better mobility?
- How to incorporate cycle routes in existing infrastructure and to prefer such methods of transport for short distances in the city? [WP4]

Citizens' visions

[ITA] Vision 2: A Simply special city

“The city is an intelligent organism that optimizes use of resources and energy. There are meeting places where every citizen participates bringing his own requests, which generally correspond to the collective ones. The places thus become sharing spaces that encourage the development of active and participating citizens.”

[CHE] Vision 5: Together for on world

“Urbanistic measures: construction projects promoting and rewarding the cohabitation of young and old, able and disabled”

[MAL] Vision 2: Better quality of life towards sustainable approach to local and global issues

“Less traffic due to self-driving cars, Higher use of scooters and bicycles”

[DK] Vision 4: The nature city of the future

“The city is car-free: the transportation system should completely replace the use of private cars. The system could be electrical, magnetic highspeed trains.”

[BGR] Vision 1: The smart city – this is me!

“Car sharing instead of urban transport.“

[ITA] Vision 4: A school beyond times - a new education model

“Every hub is as integrated as possible with the urban context, meaning that it is easily reachable with public transportation, surrounded by a green area with cycling paths and zero impact on the environment (solar panels, recycling bins etc.)” [WP2]

11.a Learning for society

SOCIETAL NEED: Sustainable Economy
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
6. Europe in a changing world - inclusive, innovative and reflective societies
7. Secure societies - protecting freedom and security of Europe and its citizens

Challenges

We live in a society that greatly values the individual human being. To some extent, a more sustainable economy, that promotes well-being, requires a more balanced position between the common good and the individual. For this shift to occur, citizens need to be educated in a life-long process, on the negotiation of the personal fulfillment and the promotion and benefits of collective goals (for example, volunteering for a local communal garden means giving up personal resources for the benefit of the community).
For this cultural shift to occur, education has to be both formal and informal through example and engagement at different levels of society, from the individual to the local, regional and national levels. [WP2]
To move from "I" to "we", building motivation and trust for change.
To re-think the community's political integration (participation in the collective framework but also in the global dialogue), reflecting upon the social and economic cohesion in diversity. [WP3 - Portugal]
We are immersed in a culture that is not favourable to participation.
We are too individualist, which exacerbates social problems.
Nowadays, there is an imbalance concerning the well-being in society which is reflected in various types of crises (religious, economic, psychological).
Today there is a dominant pattern of success (happiness) that limits the opportunities of personal realisation and prevents the creation of new models.
We see an increasing environmental and social unsustainability, wherein the alternatives are expensive and/or inaccessible or unknown to citizens.
[WP3 - Portugal]
Freedom needs to be specified again, look for interests, responsibilities and habits of people and define their fundamental needs. While growth and resources are limited, population increases. On one side we need to work with restrictions and on the other side appeals must be created. Another problem is the financial mentality of the companies, their accounts rely on financial factors at the expense of sustainable management [WP3 - Italy]

What role should economy play in our society? To be a basis or to be a destroyer? Europe achieves to develop alternatives and to be a precursor for the rest of the world. That always needs to be a force that takes the lead and indicates the way. [WP3 - Luxembourg]
Prevent the loss of social resources that are 'rich' and full of skills (as retired people or free-lancers), building upon their capacities to contribute to improve society [WP3 - Italy]

Scope

- Educational leverages to the sense of community and common good/progress
- Promoting collective intelligence.
- Solving problems together (with flat hierarchies and broad opportunities for participation) for strengthening social cohesion.
- Facilitate the transformation of education into action and development of a new civic sense [WP3 - Italy]
- By offering a specific education on the third sector (and on its related practices) and by receiving benefits that are directly connected to the effective actions that are carried out. These may be intended as a sort of 'empathy income', free services, tax breaks...In this scenario the voluntary work may actually become a 'second job' and allow an income integration. We can figure out specific moments of intergenerational education-action. [WP3 - Italy]
- Promoting by education the intergenerational connections for the conservation and transmission of values
- To remove the intergenerational barriers, achieving greater mutual understanding, sharing of experiences and demystification of knowledge
- [Ways to] acknowledging the community's problems and understanding the community/ies culture/s [WP3 - Portugal]
- [Ways to provide] holistic educational lifelong learning opportunities capable of empowering students to take charge of their learning and development [WP3 - Malta]

Expected impacts

Sense of community

- This will enable a more balanced awareness of the individual and the collective.
- It also develops peoples thinking on self-awareness and self-discovery level.
- This education should lead to the better understanding of the potential consequences of own acts.

- This increases understanding of mutual dependencies and the effects of one's choices to others' lives.

Social cohesion

- Thinking of the collective benefits over the personal ones creates a fairer, more balanced society with opportunities for everyone.
- Knowing and assessment of the importance of respect for human rights in order to be able to protect one's own and not hurt those of others, especially the rights of minority groups
- Standardization of procedures in order to increase the variability of responses enabling a greater personal and collective connection.

Democracy:

- This strengthens citizens' empathy, solidarity and problem awareness and is therefore crucial for a stable democracy in a colorful society

Collective intelligence

- This will contribute to more collective thinking and enable common goals.

New impulse in education

- Searching and finding livable concepts for education, work and economy is essential and defines our readiness for the future.
- Our society is confronted with many problems, which are solvable yet persisting. The key is, in many cases, education.

Social innovation

- Get away from 'zero-error-culture' and 'nanny society', innovative ideas do not thrive without trial & risk.

Welfare

- Reduction of unemployment and improvement of public well-being by boosting employment and thus welfare security

Wider awareness

- This education should help an awareness of wider context and mutual links between the disciplines.
- It will enable satisfaction of needs while taking into account environmental constraints and satisfying thought-out social needs

But there are also concerns

- This can lead to practices that rely too much on outside control.
- there is a risk of displacing a debate about the power distribution
- Negative connotation of the word “collectivism” and possible bad practices (too controlling) [WP2]

Research Questions

- How can we make people think about the individual as well as the collective impact of their actions?
- How could environmental and inter-generational ethics be made central to lifelong learning?
- How to provide literacy with an education tool crossing different generations and with individual/collective responsibility to society
- In which political and economic systems, lifelong learning is used optimally for learning individuals and the community?
- How do individuals value personal gains/losses as opposed to collective gains/losses in their decisions?
- What are the values of individuals and society? How are they perceived and what is the connection between them (personal and collective)?
- How the economy can serve the needs of the man and the society vs. current market principle which ruins both man and society in the "boiling frog" manner?
- How do we give a greater importance to values other than money?
- How to make people more aware of the responsibility for their actions?
- How do we develop cooperation skills and methods across all cultural, national and socio-economic divisions?
- What kinds of targets are people prepared to achieve through participation in the common interest?
- What structural interdependencies exist between the economic system and its values and the education system?
- How can genuine enlightenment and critical thinking be encouraged?
- How to transform education systems based on competition (individual grades) towards more valueing of collective knowledge ?
- How does the perception of one's own autonomy affect the openess towards new and unknown things and persons?
- Which sectors may be considered in order to activate an education process that is diffuse and specific? [WP3 - Italy]

Citizens' visions

[PORT] Vision 2: Cooperation

"In 2050, our society is based on cooperative values and in a systemic vision of the reality. There is now an unconditional basic income to ensure the basic needs of citizens (in terms of food, health care, housing, education and training). Citizens actively participate in governance, thus guaranteeing sound management of resources (material and immaterial). Moreover, the interests of people and of the planet are placed above economic-financial interests."

“All citizens have enough time to develop quality human relations and maximize their capacities.”
“Social recognition is based on each person’s contribution to society instead of material wealth.”
[UK] Vision 1: The 2020 Economy
“The measures of success today require dogmatic and ruthless pursuit of profit based on short-term production and consumption at the expense of human rights and individual security and happiness. The 2020 economy requires mass redistribution of power and decision-making to democratic bodies and representatives for the common good. The most important difference is what constitutes a successful economy. We want as much value to be placed on the positive impact companies have on the economy as financial growth.”
[...]
“Economic development and growth that benefit the many and not the few, within a framework of sustainability and equality of wealth and opportunity, underpinned by the principles of trade justice and accountability and transparency.”
[FRA] Vision 2: Collective Project
“Society in general will exit from overproduction and thus from overconsumption. Waste and polluting products are reduced to a minimum. Basic equipment and needs (housing, food, energy, and security) will be ensured for everyone thanks to a better repartition of wealth. Proximity solidarity is more active and developed. The absence of patents on living things, and the free availability of seeds as open source allow self-sufficiency and knowledge transmissions between generations.”
[SVN] Vision 1: Society of sustainable balance
“Not-for-profit, circular economy, respect of social actors' mutual interests;”
[LUX] Vision 2: Generate a life ethic
“Liberty ends where liberty of others begins.”
[ITA] Vision 4: A school beyond times - a new education model
“Every hub is as integrated as possible with the urban context, meaning that it is easily reachable with public transportation, surrounded by a green area with cycling paths and zero impact on the environment (solar panels, recycling bins etc.)” [WP2]

11.b Production awareness

SOCIETAL NEED: Sustainable Economy
GRAND CHALLENGE:

5. Climate action, environment, resource efficiency and raw materials

Challenges

With limited resources, it is important that business becomes more environmentally aware of implication of the product lifecycle. Ultimately, more sustainable production technologies and models lead to promotion of goods production within the scope of limited resources. An example could be the Cradle-to-Cradle Model, whereby production uses resources within a cycle in order to minimize or erase waste. (E.g. a pullover produced from bamboos fiber). The production, thus, is highly aware of sustainability in all steps of the value chain.
Participants listed the following main challenges:

- Awareness – Extension of the education/awareness system (increasing the intellectual capital) in the area of sustainable production of goods and services – the aim of the system would be a better access to information on production for the end user (information). [WP3 – Czech Republic]
  The current production put the planet's environmental resources under pressure (the final products contains problematic and harmful substances, transparency is lacking and accountability in the mode of production as well as lack of long-life products) [WP3 - Denmark]
- Materials and resources – Rational and effective use of current resources/products and searching for new/alternative materials which allow to replace the current limited (non-renewable) natural resources or minimise their necessary pumping. [WP3 – Czech Rep]
  To make mobile phones more sustainable [WP3 - Netherlands]
  Limited natural resources and their more efficient use & the later this problem is addressed, the more radical actions are needed. [WP3 – Finland]
- Technologies – Development and use of technologies of production of goods and services which minimise negative externalities o of the whole process towards environment. Better (re)use of waste in order to eliminate the waste completely. [WP3 – Czech Republic]
  Change the methods of production if we are to make sure that future generations will have enough resources, and at the same time a deceleration in the amount of waste and pollution of the planet and thereby protection of the public health, will happen. And we as socioeconomically advantaged nations have an obligation to be trendsetters. [WP3 - Denmark]

Scope

Current models of production are unsustainable in respect to resource use.
Innovation is required on two fronts:
1) To discourage the use of technologies, which are not environmentally friendly, and
2) To support the adoption of clean technologies, as well as their development.
Old economic models for the production of goods that include unsustainable practices, such as planned obsolescence need to be contained and reversed.
Research needs to be undertaken to take into account cradle-to-cradle approaches and their impact on current business. The full cost and gains of 160 implementing these novel approaches are complex and difficult to quantify, especially in monetary terms. Creative ways of visualizing these costs and gains needs to be developed for the full impact to be measured.

The participants listed the following objectives:

- Roadmap for companies converting to environmentally sustainability. [WP3 - Denmark]
- Development of new materials, which will replace the limited natural resources, through applied interdisciplinary research (incl. technical, economical environmental aspects). Production processes and materials, which minimally burden the environment or exploitation of critical natural resources, shall be introduced and recommended by the respective legislation. This includes proposals and design of new technological and production procedures focused on the improvement of quality and durability of products. Production technologies must be less energy demanding [WP3 – Czech Republic]
- Change the production of mobile phones and supply chain
- New mobile phone designs
- The research on how to educate and involve people in a green cycle will be important. Because it will lead to recycling and reusing parts of mobile phones. Therefore, a good outcome will be that there will be less waste.
- The mind-set and the awareness of consumers need to change. This is probably the most important reason to research the challenge, because when the mind-set of consumers changes, the demand will change as well. Companies would be incentivized to adjust their production and this way the problem of the production could be solved.
- Besides reducing waste and changing the mind-set, the challenge being a global issue is an important reason to research it. When a solution is found to change the awareness of the consumers, the solution can be used in other countries as well. Therefore, the problem can be solved on a large scale. [WP3 - Netherlands]
- People need transparent information of products to make ecological decisions.
- The research direction responds to the opportunity to develop cleaner technologies and encourages to make ecological choices. [WP3 - Finland]

- A suitable legislative framework which compels/forces producers to state true and complete information on goods and services to the extent required by the regulation. The legislative steps must be fully supported by regulatory and audit activities respectively, which will effectively exact and control the implemented system framework. The form of information transfer has to be implemented in a way which is accessible to as large as possible number of end users of the specific product. [WP3 – Czech Republic]

Expected impacts

- A different, more sustainable, mind-set on mobile phones
- A different, more sustainable, need from consumers
- A different, more sustainable, production of mobile phones & less waste of mobile phones and its components & increase of re-use and recycling of mobile phones and their components [WP3 - Netherlands]
- Better design leads to longer life spans of consumer products and a reduction of waste [WP3 - Finland]

Some countries focused on sustainability for mobile phones [WP3 – Netherlands and Czech Republic]

The main goal for the proposed challenge would be a solution that concentrates on changing the mind-set of (possible) consumers.

We are eager to approach our challenge by organizing an online questionnaire to gather information from citizens so they have a platform, which can be used to express the common needs demands from mobile phones also how interested they are in environmental issues. These will be worked on by different stakeholders with multiple backgrounds: the project stakeholders should include, but not be limited to: consumers, companies (producing and selling), researchers, government and technical, social and environmental experts and environmental activists. [WP3 - Netherlands]. Or also the Ministry of Education (Finland). Cooperation of research and industry is crucial for the development of new technologies and procedures. Research institutions act here as the knowledge base producers for the legislative as well as production process. [WP3 - Czech Republic]

There should be legislative actions to regulate the sustainability and recyclability of products. Tax-like tarifs should be introduced to unsustainable products (all products should be classified according to their sustainability, which would be the knowledge base for a “sustainability tax”). The next generation of people should be awareness-raised. A sustainability certification would be a prerequisite for exemptions for taxes on negative externalities (i.e. if a product is sufficiently sustainable, it can be exempted from the “sustainability tax”). [WP3 - Finland]

Research Questions

- How can we ascribe value beyond money to some aspects of sustainable production awareness that are not easily quantifiable in monetary terms?
- How can we assess and account for the full cost of the value chain?
- What role can "good" companies play in spreading sustainable best practices to the rest of the value chain?
- What are the most beneficial sustainable production technologies and models (cradle-to-cradle, industrial symbiosis, clean technologies etc.) and how can they best be implemented into current production patterns?
- How can we include negative externalities into the cost of production/goods? On the other side, what are the long-term effects of clean technology initiatives?
- How can we ascribe value beyond money to some aspects of sustainable production awareness that are not easily quantifiable in monetary terms?
- How can we assess and account the full cost of the value chain? What role can "good" companies play in spreading sustainable best practices to the rest of the value chain?
- Which changes need to occur to stop the practice of planned obsolesce? What is the impact of changing this model for companies relying on it?
- What will be the impact for poor consumers if prices go up due to the new processes?
- How do we create incentives structures, like transparency, regulation, and possible gain that support a switch to environmentally sound production and change of attitude among consumers and companies, so the use of labour and environmental resources are being responsible?
- How do we create change in attitude, so production is true added value (not damaging the environment and labour?) [WP3 - Denmark]
- How to raise the consumers awareness for a sustainable production and supply chain of mobile phones and how can they become more reparable?
- What is the best way to realize available technological ideas and implement them in a sustainable way to produce mobile phones more sustainable?
- How to overcome required resources as a barrier to hold back sustainable solutions: Turnout is still a very important drive for a lot of companies, aiming to get profits. This is holding back sustainable solutions and a sustainable mind-set. Research should focus on how to overcome this problem. How to make the profit factor less important or take it out the equation completely [WP3 - Netherlands].

Citizens' visions

STATE OF PLAY - CITIZENS VIEW (Everyday life):
CSR (Corporate Social Responsibility), Cradle to cradle, Labels (fair trade).
IMPACTED CITIZENS VISIONS:
[FIN] Vision 3: Efficient recycling

“Sampo goes to work to a self-sufficient food factory, dials his workplace code, and a road elevator picks him up. Aino lives in the same community that consists of smart homes operated by solar energy and wind power. The homes collect energy in batteries and also utilize deepdrilled groundsource
heat. Smart homes use the energy that is available at the time: for example wind power during the winter and solar energy during the summer. In the morning, Aino forks over the compost, which gives warmth to her grasshopper and shiitake mushroom cultivation. Aino has been developing superconductors at the energy plant and this technology has been put in operation in 2050.”

[LUX] Vision 5: From Zombies to communities/Coexisting in solidarity and working for the well-being of all citizens

“a transparent information and communication of decision-making processes [...] healthy food due to sustainable and social production”

[CZE] Vision 1: Society without plastics

“Efficient use of resources and new materials, recycling economy minimize reduction of waste. [...] the efficient use of existing sources as well as of new materials. Recycling and economy with a minimizing production of waste is a common part of life in the European Union.”

[FR] Vision 2: Collective project

“Society in general will exit from overproduction and thus from overconsumption. Waste and polluting products are reduced to a minimum”

[CHE] Vision 3: Harmony between the social and the global

“Production is adapted to the effective needs, which implies an economical paradigm shift. The growth and the maximization of profit are no longer an objective. Sustainable economy is a reality.”

[LUX] Vision 3: A quantum leap in development

“Technology is being used for the wellbeing of people and not in order to maximize profits. Consumable goods have high quality and are very durable which leads to a general reduction in mass production. Ecological impact is steadily decreasing”

[LIT] Vision 4: From Harmonious Personality to Recycling Technologies

“Universal material and technologies allow us to remake old things and turn them into new ones. [...] This invention frees society from the use of the surplus
and creates conditions for harmonious personalities.”

[DE] Vision 1: Sustainability implemented

“Cradle to cradle (complete material cycle without residual products/waste)
production to continuously re-use resources after product end-of-life
Supporting the natural cycle”

[SVN] Vision 1: Society of Sustainable Balance

“Not-for-profit, circular economy, respect of social actors' mutual interests;”

[FIN] Vision 1: VALUES – immateriality and minimalism

“Products are not designed to break, and they have longer warranties. Goods can be repaired and spare parts are available for longer periods.” [WP2]

11.c Consume less, enjoy more

SOCIETAL NEED: **Sustainable Economy**
GRAND CHALLENGE:

5. **Climate action, environment, resource efficiency and raw materials**
6. **Europe in a changing world - inclusive, innovative and reflective societies**

Challenges

- Foster positive change in consumption behaviour.
- Study ways of increasing adoption of "responsible consumerism" on a big scale.

Today conspicuous consumption is the norm and goods are used and thrown away with a very short life cycle. There are good examples of responsible consumerism but only limited adoption on a bigger scale. We want to support citizens to become more responsible consumers by making information about the product lifecycle more transparent and available than it is today. The increased information should enable better-informed decisions. We expect these to affect (positively) work-life balance and personal well-being.

The challenges as they are detailed by the participants:

- Overconsumption causes civilization diseases (e.g. obesity), caused in part by inferior fast food. [WP3 - Austria]
- Conscious consumption by reverting to old cultural assets increases the quality of life and reduces the ecological footprint [WP3 - Austria]. Putting quantity before quality as well as focusing on the consumers' individual needs. Qualitative is associated with sustainability and durability.
- New methods for dissemination and outreach must be developed (information about the negative effects of the consumption, e.g. waste problems, has not been proved sufficiently effective). [WP3 - Denmark]
- Our responsibility to our children and the generations to come [WP3 - Austria]. Ecological issues – air pollution, pollution of the environment, water and soil – as a consequence of the overproduction and disposal of goods. [WP3 - Bulgaria]
- Influencing the purchasing behavior through marketing/advertising
- (Contrariety of purchase decisions - marketing - and trend towards sustainability) [WP3 - Austria].
- Social change in values [WP3 - Austria]. Shift in values – people put more value on the material things rather than on the spiritual experience; there is decreased desire for spiritual growth and development among people. [WP3 - Bulgaria]
- Unequal distribution of public goods worldwide [WP3 - Bulgaria] or Global injustice caused by overconsumption [WP3 - Hungary]

- Health issues – excessive supply and purchasing of all kinds of goods leads to „chronic“ shortage of financial resources in households, which causes stress and anxiety in people and makes them look for alternative sources of funding in order to satisfy their desire of possessing many and different products. This overconsumption leads to accumulation of fatigue, nervous disorders and depressions. [WP3 - Bulgaria].

- There is a lot of research on consumer behaviours, as well as a lot of academic and non-academic research on whether context or value is driving consumer choices. Research is needed in fostering positive change in behaviour. Also, to decrease consumption, a greater visibility of goods' production should be explored/implemented. [WP2 - Experts].

Scope

- Instead of garbage dumps and mass waste, we want to create a lovable environment worth living in for them. Safe waste processing [WP3 - Bulgaria].
- Political framework conditions (such as grants, bonuses, research)
- Information: should begin with awareness raising in kinder garden and school. And strengthen consumer information through concerted information campaigns, disclose the production conditions, etc.
- Responsible handling of the resources: e.g. subsidies for recycling and renewable energies, premiums for long-used technical equipment, production of long-life appliances, clothes swaps, resource recovery through companies. [WP3 - Austria] Looking for alternative forms of production of goods, according to the available resources
- Developing programmes and strategies for production according to the needs of the regions
- Developing methods for ecologic production
- Developing clean energy sources [WP3 - Bulgaria]
- Self-responsibility: exemplifying through one's own life, strengthening the regional economy (for example farmers and micro-enterprises) [WP3 - Austria]
- In order to promote the green transition, we must analyse existing initiatives and campaigns that has been proven to have impact. From this we can generalize experiences.
- Specific fields of work may be the use of media (“a green Paradise Hotel”), information for institutions (kindergarten, school, workplace), social experiments (smaller units: residential street, block of flats, village). (WP3 - Denmark]
- Research on the impact of media and advertising to consumption patterns
- Study of the main factors that influence consumer behavior
- Research on the relationship between values and motivation for consumption
- Regulating the quantity and quality of advertising information [WP3 - Bulgaria]
- More knowledge transfer and transparency (of product-specific data)
- Use digitalization (continuous learning → awareness-shaping)
- Educational assignment from childhood on → change of values to sustainable consumption and lifestyle

- Controlling via fiscal policy measures [WP3 - Austria]
- Stimulating the economic development of particular regions so that they can produce and provide needed public goods
- Introducing scientific methods for using bio-resources for production
- Innovation in wastewater treatment and green production technologies
- Development of programmes for early childhood education for ecological awareness and responsible consumption
- Research on ways to overcome stress
- Studying how satisfaction affects the selection of purchased goods
- Available information on the origin of goods, their benefits and their quality [WP3 - Bulgaria]
- Long term thinking, re-evaluating our consumption and shifting the emphasis from material wealth to healthy wellbeing are all essential for the development of proper values which are necessary for sustaining our environment.
- Education based on changing views is a prerequisite while legal regulation is the secure background of consumption reduction.
- The power of the Community, human relationships, networking, local possibilities, experience, energy and tools provide opportunity. [WP3- Hungary]
- Long-term consumer goods should not remain status symbols, they should be repairable and their lifeline should be increased and be traceable.
- Values generated by society and real ones should be separated.
- Work should be handled by politics & involve persons from these: research, education, environmental organizations, media, commerce, business (production), us and our offspring (Austria), consumer organisations, individual consumers in all social classes, the media, businesses, foundations, NGOs. [WP3 - Denmark]

Expected impacts

In the future people will adopt a different lifestyle where they will consume less, but enjoy more. They will work less and enjoy more time of higher quality with family and friends. More value will be assigned to non-material assets. People will be more conscious about how their choices would impact the environment.
Top priority is the careful use of resources. The goal is also a better quality of life and better health through quality rather than cheap goods and a conscious life in harmony with the environment. [WP3 - Austria]
Responsible consumption would bring more effective management of household budgets and reduction of stress and anxiety caused by the continuous search for additional jobs and sources of income. This will reduce the rate of mental disorders and other health issues. At the end, responsible consumption will bring forgotten values forward, such as personal development and pleasure from spiritual experiences (art, culture, literature, etc.)

- Generation of new businesses, products and services
- A cleaner planet with a longer life - preserved nature, water, air

- Higher standards of living
- Healthy people, less stress and more time for culture, art and inter-personal communication
- More meaning in human existence and a more fulfilled life [WP3 - Bulgaria]
- The objective is the preparation of a social guide (methodological and practical), which contributes to the shift from wealth to wellbeing, bearing in mind the prevention of overconsumption and environmental pollution [WP3 - Hungary]

Research Questions

- How do we ensure the quality of the information that companies provide regarding how a good is produced?
- What kind of incentives/enablers do we need to implement for consumers to make more responsible/sustainable purchasing decisions?
- What kind of incentives/enablers do we need to implement for consumers to make more responsible/sustainable purchasing decisions?
- What is the right amount/form of information we need to provide for enabling consumers to make better purchasing decisions?
- How do we ensure the quality of the information that companies provide regarding how a good is produced (trustworthiness)? What kind of organisation/system should be the watch-dog? How can we avoid conflict of interest?
- The difficult business environment for certain companies needs to be dealt with.

Citizens' visions

[FR] Vision 2: Collective project
"Society in general will exit from overproduction and thus from overconsumption."
[CZE] Vision 1: Society without plastics
"In 2050, children will be educated at school as well as at home in ecological behaviour."
[SVN] Vision 1: Society of Sustainable Balance
"Maintenance of healthy environment (nature-friendly food production, renewable sources of energy, clean water, recycling)."
[FIN] Vision 1: VALUES – immateriality and minimalism
"Social value is not based on consumption. […]Information belongs to all: data communications are a basic right and data/interfaces open to citizens. […]Co-owning of products is commonplace."
[FIN] Vision 4: The future of responsible consumption
"Citizens no longer value throwaway culture, unethical production nor low quality. Hence children and citizens are educated in a long term to become responsible

consumers. As a result, less waste is produced and it is more efficiently processed to energy, for instance. […] Responsible consumption also boosts business and the economy as well as creates new businesses and jobs. Information on responsible consumption and innovations developed based on them could be a new Finnish export product. Responsible consumption comes forth especially in the cities of the future, where people live densely and in harmony with nature. Responsible consumption extends from choices in transport to choices in foodstuffs and commodities such as textiles and home electronics."

[DE] Vision 1: Sustainability implemented

"Economy serves the people, not people serving the economy

• Growth is not the main motivation/indicator for economic success (post-growth society)

• Orientation towards common good (community economy)

• Technological progress does not automatically result in more production, but the time obtained can also be used elsewhere (8 hour day may no longer be necessary)"

[BEL] Vision 5: Moving sustainably

"I'm a fair consumer : I know my coffe, tea, milk producer. "

[CHE] Vision 1: Conscious Consumption

"We know the impact of our actions. We are informed about the origin and the composition of what we consume." [WP2]

11.d From Wall Street to Main Street

SOCIETAL NEED: Sustainable Economy
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
5. Climate action, environment, resource efficiency and raw materials
6. Europe in a changing world - inclusive, innovative and reflective societies

Challenges

From Wall Street to Main Street means that in the future investors will make their allocation decisions aiming not just for profit generation, but also for the (positive) social and environmental impact of (real) businesses. Thus, corporations and SMEs will incorporate social and environmental targets in their strategies (in their core business). [WP2]

New economic models for promoting green transformation. [WP3 - Denmark]

Scope

The current financial sector needs reformation to foster sustainability and well-being. There are many examples and evidence of more sustainable approaches, as well as investment practices, but they do not easily reach mainstream. More research is needed to understand how to transform this knowledge to the right stakeholders for the greatest impact, because the system suffers from great inertia.
Greater insight needs to be generated in order to understand how to overcome this inertia by looking at regulations, technical skills and other practices, thus making the "Sustainable and Responsible Investment (SRI)" approach more adopted.
Ways to incentivise the business and financial community towards long-term investment and gains.
[Ways to] develop appropriate risk analysis and mitigation practice in order to include social, economic and environmental dimensions. [WP2]
Transition concept for green investments
To develop a green system for an effective interaction between the lender and borrowers. [WP3 - Denmark]

Expected impacts

- This will enable consumers to make more informed decisions
- This will have a positive effect on work-life balance and personal well-being
- This will allow society to live in balance with the resources and limits of the planet
- This is a crucial element within the transformation into a sustainable economic system.
- Increasing life satisfaction, decreasing consumption
- It will awake consumerism as a lever of political power of citizens.
- Positive consequences on workers' quality of personal and professional life
- The creation of new domains of expertise, new skills and new jobs.
- Transparency with regard to the origin and production process of goods.

Research Questions

- Which are the main changes that regulations and the system need to go through in order to foster sustainable and responsible investments?
- How can we incentivize the business and financial community to shift their thinking towards long-term investment and gain?
- How to bring the consumer closer to local markets?
- How to develop from globalization to globalization (globalization + localization)?
- How to persuade shareholders that financial profit is not the only profit and to give part of the profit for the common good?
- What might be a way of not drastically reduce corporate profits when they produce and sell more locally without depending on subsidies?
- What is the social function of financial markets in the current system and who are the central actors?
- How do we create the transition from a competition to a cooperative economy?
- How to make decreased and dispersed consumerism (sufficiently) profitable?
- How should the turnover from investment in shares and derivatives be taxed to ensure that the investments go towards sustainable businesses?
- How to build a new inclusive and equitable economic paradigm that respects the environment?
- How to confine finance-oriented decisions and profiteering?
- How to change the color of money - finding a way from the financial markets to the principles of life?
- How to give power to influence the financial world to people who stays outside of it?
- If there are already standardized bots for financial advice that are cheaper than people, where does individuality remain?
- Can private companies meet the requirements of the public?

Concerns

- Slow consumption means less economic growth.
- How can one remain competitive on a global scale by using these approaches?
- This will lead to difficult transitions for businesses.

Citizens' visions

[LUX] Vision 5: From Zombies to communities/ Coexisting in solidarity and working for the well-being of all citizens
"an unconditional basic income for each citizen.
• a new local/regional monetary system without interest and banks of "well-being" for a local economy."
[DE] Vision 1: Sustainability Implemented
"Economy serves the people, not people serving the economy
• Growth is not the main motivation/indicator for economic success (post-growth society)
• Orientation towards common good (community economy)
• Technological progress does not automatically result in more production, but the time obtained can also be used elsewhere (8 hour day may no longer be necessary)"
[UK] Vision 1: The 2020 Economy
"The measures of success today require dogmatic and ruthless pursuit of profit based on short-term production and consumption at the expense of human rights and individual security and happiness. The 2020 economy requires mass redistribution of power and decision-making to democratic bodies and representatives for the common good. The most important difference is what constitutes a successful economy. We want as much value to be placed on the positive impact companies have on the economy as financial growth.
[...]
Economic development and growth that benefit the many and not the few, within a framework of sustainability and equality of wealth and opportunity, underpinned by the principles of trade justice and accountability and transparency."
[DK] Vision 5: Holistic management and ethical economy
"When I watch the news and hear about a large economic decision made by the government, I will know that also non-economic aspects have been taken into consideration. " [...]
"Life and investment by the society are approached from a long-term perspective."
[WP2]

12.a **Governing smart energy**

SOCIETAL NEED: **Sustainable Energy**
GRAND CHALLENGE:

3. **Secure, clean and efficient energy**
5. **Europe in a changing world - inclusive, innovative and reflective societies**

Challenges

We are very heavily dependent on fossil fuels at the moment. We need to find new efficient ways. If our resources run out we don't have any energy left. Smart energy slows down how quickly these disappear. It might also speed us up in looking into renewable sources for energy [WP3 – UK]. A decentralised energy supply system can be severely hampered by even small groups. Therefore balancing interests is important [WP4]. It is urgent to find locally managed, decentralised, non-polluting, fair and democratic energy solutions. [WP4] We need to be early, so that we're ahead of the curve and are creating alternatives, therefore we would put research into renewables.
The challenges that would need to be addressed fit into four main categories:

1) Who should govern the use and separation of smart energy usage?
2) What security issues surround sharing this data from the smart meters?
3) What energy is used – renewable or non-renewable?
4) What are the official issues that surround measuring data and also the implementation of smart energy? [WP3 – UK]

The situation in Europe (state of play) is according to experts:

- Smart energy is only at pilot scale now
- It is mostly centred on cities or at a regional level, missing important international dimensions
- No cross-cutting analysis, no multi-disciplinary approach is present
- Planning models are needed [WP2]
- Decision-making criteria are often based on poorly defined or explained parameters.
- A decentralised energy supply system with a basic-load-grid will most likely be the smartest solution in terms of timing and implementation. [WP4]

And according to citizens:

- There are protests against wind turbines (sound and view)
- Protests against water gates at large rivers [WP2]

Scope

Research should explore ways towards a decentralized energy management system that is optimizing the integration of resources and takes into account all stakeholder interests. Projects should provide a definition and validation of a methodological basis and tools for transparent, participatory and multi-disciplinary energy governance, enabling multi-layered integration of stakeholders' interests. [WP2]
This could be addressed in the following way:

- Sociological research into the groups that would be affected and any public opinion on this.
- Teaching younger generations.
- Economics research into how we could fund this and break it up. [WP3 – UK]
- Enabling business models [WP3 – Netherlands]
- Smart coupling of central and decentral governance [WP4]
- Put research into how much energy is produced vs. how much is used. [WP3 – UK]

The research needs to include clarification on the following concerns:

- Responsibility may be split too much. Regional "accent" or ownership may increase xenophobia.
- (In a decentralised system) who is responsible for the energy system as a whole? [WP2]
- Concerning the issue of Nord Stream 2 and energy as a public service, it is all about private monopolies and their profit - the more you spare, the more you pay
- It is necessary to prevent the misuse of aid (biomass, recirculation of electric energy) and to improve its utilization (solar panels to cover car parks and not farm land).
- The solution is the decentralization of responsibilities and power.
- The holders of the current centralized system need to be identified. Payback models need to be analyzed thoroughly. They rely on fossil comparisons. [WP4]
- It is important that we realise that there are security issues and ethical issues that need to be thought about before going ahead.
- A challenge may be that many non-professionals would be involved [WP3 – Netherlands]
- Make sure that everyone has access to the monitors – government funded.

The following societal actors should be involved in solving the problem:
Overall control from:

- Energy companies that exist
- Government regulation of security

Others involved in research process:

- Scientists looking at renewable or alternative energies and more efficient energy grids
- Social scientists researching social structures and governance [WP3 – UK]

Expected impacts

- Make energy renewable for smart energy [WP3 – UK]
- "To make life easier in rural areas where availability of energy-generating products is very small or non-existent and savings are great.
- It can create a counterpoint to centralization and privatization of the energy sector on the premises of big business.
- The decentralization of energy enables reducing impacts of a global power outage caused by higher power or human intervention.
- Decentralizing energy management could shift power to lower levels, since it is currently essential for the economical/political balance. [WP4]

Research Questions

- Which are the experiences of bottom-up multi-layered energy governance systems in EU and other countries?
- Which are the barriers and success factors for such governance models?
- What is the structure of data needed for supporting efficient multi-layered governance and how would it be made available?
- Which are the skills required for experts involved? [WP2]
- What are the factors that facilitate the adhesion of the population to an intelligent governance system for energy management?
- What laws are necessary to enforce such concepts?
- How can we convince energy companies to convert the type of energy produced from non renewable to renewable?
- How to include meteorological and hydrological prognostic models into a system for management of large numbers of renewable energy sources?
- What optimization models and decision-making criteria should be applied to systems of governance?
- What are the barriers for research and implementation of free energy sources that exist in nature, but which use is being blocked by human lobbies?
- To what extent does European liberalization hinder a fruitful cooperation between states and companies on smart-energy-systems?
- Creating a smart electricity network is a basic requirement. How does individual contribution help the completion of the system?
- How to end the use of fossil fuels: oil, shale gas, oil sands extraction, etc.?
- What energy storing solutions are best suited for decentralized energy management?
- How interested would the end user be in implementing IZE and participating in a programme like DSM?
- Weigh the pros and cons for centralized and decentralized energy production systems.
- What are the security aspects of decentralized energy policy in comparison with the current model? [WP4]

- How can we provide a safe and secure environment for smart grid technology?
- How can we design effective policies for the energy sector, so that people will be stimulated to use and produce green energy?
- What kind of business model can be developed to make renewable energy storage more attractive? [WP3 – Netherlands]
- Find out whether smart meters works/are effective.
- Finding some way to store energy. [WP3 – UK]

Citizens' visions

[NOR] Vision 5: A world to live in, a world to live of, a world to live for
"Responsible management of resources (pharmaceuticals, energy, food (production + distribution))"
[IRE] Vision 1: Community Enrichment through Education
"Sustainable energy systems
    o Global collaboration
    o Respect for environment, resources"
[GR] Vision 6: Five Pillars for human development
"Surroundings: green thinking and living: environmental awareness through education for a "green" lifestyle and renewable energy sources"
[DK] Vision 3: A sustainable Planet
"The sustainable energy sources are: Wind energy, solar cells, solar panels, heat pumps, biomass fuel which includes household waste, manure and slurry, water power and excess heat from the industry. In 2050 we will not use fossil fuels such as oil and gasoline/petrol. We have invented new forms of sustainable energy, such as waste separation which provides energy for the city. The Industry is the driving force behind the development, because there is a demand for and profits to gain in green initiatives." [WP2]

12.b Enabling markets for energy prosumers

SOCIETAL NEED: Sustainable Energy
GRAND CHALLENGE:

3. Secure, clean and efficient energy

Challenges

We envisage an energy landscape where people, families, communities and companies are not only consumers but also producers of energy. Externalities included in big producers' costs make the small producers more competitive. The vision could have a sharing economy component and increase the energy efficiency and the share of low carbon energy in Europe. [WP2] It is important to address this challenge because it will have many effects on sustainable energy production. In the current situation energy is bought from a local energy company and although there is a possibility of choosing a renewable energy contract there really is no certainty in where your energy originates from. Decentralized and local energy production increases transparency of the production. It is also more efficient, because there is no need for long distance transfer and therefore energy does not get lost in the process. Prosumers have a straight impact on the increase of renewable energy sources, since they always produce it sustainably by the use of solar panels or windmills. This will also most likely drive large energy companies towards sustainable energy production (supply and demand), since the future megatrend is to decrease the use of fossil fuel.
The present situation – state of play – is, according to experts [WP2]:

- Feed-in tariff / self consumption
- Pilot projects in smart grids (smart metering)
- Successful cases with heating supply
- Pilot schemes for business models for non-energy actors
- Virtual power stations
- EURES directive.

And according to citizens :
Connection of solar panels of houses to the national systems is possible in Spain, Poland and Malta.

Scope

Research should explore how to foster innovation in policies, technologies and business models for enabling the expansion of the EU energy prosumers market. [WP2]
[Furthermore empirical practice oriented projects should be carried out along the following lines]:
When enabling a market for energy prosumers we have found that the first step of the challenge is to find the potential prosumers. Secondly we have to inform potential prosumers about their opportunities, possibilities and advantages they have as a prosumer. The third part of the challenge is to create a market which these prosumers can participate in. [WP3 - Netherlands]
To delimit the problem area and specify the focus, the project team needs to define the main prosumers target group. In order to identify them, the project team should check a few characteristics a household must meet in order to potentially become a prosumer:

- Home owners, in order to become a prosumer someone must have a home to live in. This is necessary for placing solar panels.
- 25+, the focus is on people or households that are above the age of 25. This is because students or even younger people just simply don't have enough to spend or are not in a part of their life where they want to think about putting solar panels on their roofs.
- It only consists of households within a range of 20km from a suburban area. This is to exclude rural areas because the density of the population there is not suitable for the concept.

After this definition of the target group, the next step would be to gather information about the potential prosumers. How big is the target group that meets the characteristics, what is their average income, how much energy can be potentially gained from the household, etc. To gather this information municipalities and data-organizations must be contacted and convinced to provide the project group with the information they need.

After understanding the potential prosumers group, they have to be convinced in entering the new market (concept). In order to convince them they can be informed through (e)mail or their municipalities, but the idea is to create a European wide service-platform. The service platform will consist of a website with all of the necessary help and info in order to become a prosumer. You will be able to just enter your postal code and the website will provide the information you need. For example, the service will offer you the following information:

- Information about potential your household has to become prosumer. How many solar panels fit on your roof, how much energy will you potentially be able generate and it might also tell you if there are already enough prosumers in your area.

- It will contain information about the investment. How much will the investment be for your household, what are other technical costs and of course the return on investment. It would be important to know what you could potentially benefit from becoming a prosumer.
- At last it should provide with technical info. There should be some kind of manual, or even another service, which will guide you towards becoming a prosumer.

Parties which are needed to establish the new service-platform are:

- IT-Companies, for the management of data and building a website.
- Local governance,
- Energy experts, to provide information about energy costs or fluctuations.
- Economic experts, provide financial information and design a profitable business model.
- Engineers, to provide the technical information.

The gathered information should lead to a list of necessities, what are the must-haves for creating the new market and the service platform. The next step would be to check the state of art. What can already be provided and what still needs to be established. An important thing could be a physical infrastructure for the transportation of energy.
After meeting the requirements for the new market, the concept will have to be tested. A few field tests will take place to create best-practices.
At last an advisory report will be provided with a few of the best practices. The stakeholders can then decide which scenario they would like to implement. [WP3 - Netherlands]

Expected impacts

The expected impacts for this innovation project can be divided into direct results after the end of the project and indirect impacts that may emerge due to the direct influences at a long time scale.
The impact that should be aimed at is to create and share knowledge and experience in this new challenging area. Furthermore, the project will raise more awareness of the possibility to directly trade energy and renewable energies in general, either to members directly taking part in the project or people hearing about it. This will hopefully also be a trigger for next phases of developing markets for energy. The project is going to create a new knowledge community for decentralised energy production and the collected data can also be used for educational purposes.
Another important impact is the creation of a first platform for the trading of produced energy. This will then lead to the development of a new market. On a long term scale this could result in creation of new business models for producing and

storing energy. This way every prosumer can take part in sustainable energy production and also help to stabilize the grid.
Further indirect impacts are the significant increase in usage of renewable energies. The market for solar energy and also wind power technology will expand and this triggers further development in this areas. Besides this, storage technologies are becoming more important, because renewable energies are not flexible and the produced energy may be stored directly at a prosumer to sell the energy when the price and the demand for energy is high.
Additionally, the project should have an impact on electric mobility, as a prosumer could store the produced energy in an electric car.
The digital trading platform will increase the profitability to become a prosumer, the energy bill is going to be lower or may also be negative as some prosumers produce more energy than they need. Because of this, subsidies may become redundant and the government will have more resources to spend on other purposes. The more renewable energy sources are used; the less fossil fuels are burned. This an important impact for saving the environment, as carbon dioxide emissions are reduced. This improves the quality of life in urban areas.
Furthermore, it should be easier to become a prosumer with the help of the information website, that helps to calculate the profitability and mentions necessary steps. On a long term view everyone or every household acts as a prosumer and takes part in the energy market.

The following more general impacts are expected from research and innovation in this domain:

- The market for energy prosumers increases independency in two ways and stabilizes the current situation. All consumers are less dependent on the tariffs of large energy companies and countries are also less dependent on each other since energy is now produced within its own borders. This reduces ascendancy of countries that are big energy exporters and might therefore prevent conflicts. [WP3 - Netherlands]
- In cases where connection to an energy grid is not possible, each house in Romania should be 100% equipped with an unconventional energy source.
- This will increase energy efficiency and the share of low carbon energy in Europe.
- This can help to eliminate the energy lobbies that largely control humanity. It promotes energy democracy and free access to it.
- Allow the active participation of citizens and the local use of waste.
- It will enable construction of distributed energetic facilities outside of Natura2000 habitats and watercourses, inside of the urbanized area, closer to consumers.
- Cooperation within the EU on energy efficiency and energy distribution can provide EU with competitive advantages and a leading position in the global race on energy conversion.
- It creates an incentive for the application of new materials and technologies - it may thus contribute to the dynamics in mechanical engineering, electrical engineering and so on.

- It develops and systematises the public and collective consciousness towards a more rational and respectful use of the environment.
- This will make families less dependent on fossil fuels. [WP4]

Research Questions

- Which are the experiences of bottom-up multi-layered energy governance systems in EU and other countries?
- Which are the barriers and success factors for such governance models?
- What is the structure of data needed for supporting efficient multi-layered governance and how would it be made available?
- Which are the skills required for experts involved? [WP2]
- What are the factors that facilitate the adhesion of the population to an intelligent governance system for energy management?
- What laws are necessary to enforce such concepts?
- How can we convince energy companies to convert the type of energy produced from non renewable to renewable?
- How to include meteorological and hydrological prognostic models into a system for management of large numbers of renewable energy sources?
- What optimization models and decision-making criteria should be applied to systems of governance?
- What are the barriers for research and implementation of free energy sources that exist in nature, but which use is being blocked by human lobbies?
- To what extent does European liberalization hinder a fruitful cooperation between states and companies on smart-energy-systems?
- Creating a smart electricity network is a basic requirement. How does individual contribution help the completion of the system?
- How to end the use of fossil fuels: oil, shale gas, oil sands extraction, etc.?
- What energy storing solutions are best suited for decentralized energy management?
- How interested would the end user be in implementing IZE and participating in a programme like DSM?
- Weigh the pros and cons for centralized and decentralized energy production systems.
- What are the security aspects of decentralized energy policy in comparison with the current model? [WP4]
- How can we provide a safe and secure environment for smart grid technology?
- How can we design effective policies for the energy sector, so that people will be stimulated to use and produce green energy?
- What kind of business model can be developed to make renewable energy storage more attractive? [WP3 – Netherlands]
- Find out whether smart meters works/are effective.
- Finding some way to store energy. [WP3 – UK]

Concerns

- Grid stability
- New kinds of monopolies
- Speculations and gaming the networks
- Energy hacking and terrorism. [WP2]
- Differences in incentives and subsidies and affordability often does not allow for the participation of the poorer sections of the population.
- Energy and other supply systems (e.g. water) should be treated as a public service - which would prevent the problem of monopolies.
- Does it make sense to create a market for individuals, who produce and consume energy at the same time?
- "Prosumers" may uncouple themselves of the social aspects of an energy supply system designed for and by the whole society.
- Without assessment of the existing legal conditions of small, dispersed production activities, this can adversely affect energy security. [WP4]

Citizens' visions

[NL] Vision 5: Energy: "all kinds of energy resources we did not use in 2016 are being used and every house has a solar power installation. Energy in being generated in diverse and creative ways, e.g. from physical exercising also at home or waste that cannot be recycled is converted into energy."
[LUX] Vision 3: A quantum leap in development: "the energy market is not generating profit anymore, but there is democratic energy."
[NOR] Vision 4: The environmental Citizen in a «short travelled» and «mega local» city in 2040 : "Energy recycling from smart shoes and body heat supply the smart watch and the smart glasses. Mandatory installation of solar cells or solar lamps on all buildings. Energy recycling on roads, buildings and other infrastructure."
[AUT] Vision 5: Smart living with nature: "By now, all housing covers its own energy demand."
[FIN] Vision 3: Efficient recycling
"Aino lives in the same community that consists of smart homes operated by solar energy and wind power. The homes collect energy in batteries and also utilize deepdrilled groundsource heat. Smart homes use the energy that is available at the time: for example wind power during the winter and solar energy during the summer. In the morning, Aino forks over the compost, which gives warmth to her grasshopper and shiitake mushroom cultivation. Aino has been developing superconductors at the energy plant and this technology has been put in operation in 2050. "
[EST] Vision 5: A new hope: "the use of clean energy sources growth of the share of renewable and sustainable energy" [WP2]

12.c Interconnected open energy systems

SOCIETAL NEED: Sustainable Energy
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
3. Secure, clean and efficient energy
4. Smart, green and integrated transport
5. Climate action, environment, resource efficiency and raw materials

Challenges

The current situation – state of play – is according to experts :

- Virtual power stations
- Limitation in the full integration of RES (Renewable Energy System) into network
- Demand side management
- Power to gas research
- Pilot for electrified storage; big centralised storage (hydro, compressed air).

And according to citizens :

- Roads lighting in the night because of nuclear power (Belgium)
- Tesla batteries [WP2]

[A motivation is that] Energy conversion efficiency is an important part of its availability and cost (including externalities) [WP4]

Scope

The key challenge for achieving this goal is the heterogeneity of the energy system. In order to create the synergies required we need multidisciplinary methods and tools such as prediction tools, infrastructure and protocols for system access, new business models and incentive systems [WP2]

Research should take the following concerns into account :

- Missing political will (i.e. for collaboration between regions)
- GRID stability (for shocks on short term and for long term structural changes)
- Cost of infrastructure could be too high (no return on investment) if the current producers continue to sell chip energy, which does not integrate externalities. [WP2]

Energy democracy, and connection and socialization of the systems are ecological survival criteria.
Citizens will become aware of the real cost of energy production and will act accordingly. [WP4]

Expected impacts

- Whole transportation is based either on biogas or power (TESLA)
- All building are energy efficient (passive houses)
- Waste-free nuclear energy (hydrogen energy)
- Consumption is actual need-based (consumers are environmentally aware)
- Responsible and ethical entrepreneurship and manufacturing [WP3 – Estonia]

Research Questions

- How to integrate urban/regional systems optimally (optimisation models based on multi-disciplinarity)?
- How to integrate energy system design into rural/urban planning (including social dimension)?
- What are suitable prediction tools, infrastructure for access and protocols of access, business models and incentive systems [WP2]
- How do we ensure that system regulations work for rather than against non-profit energy delivery models?
- What are the needs and aspirations of customers and end users, and how to meet them?
- How to store advantageously spare energy?
- System standardization and scalability of units are key issues. [WP4]

Citizens' visions

[EST] Vision 5: A new hope
"The use of fossil fuels decreases and the use of clean/renewable energy sources increases."
[NL] Vision 4:
"Clean and renewable locally produced energy will be used, creativity self-sustaining regions in terms of energy use. This means that, based on the regional characteristics and circumstances, an energy mix will be used that differ for every region." [WP2]

12.d Beyond energy efficiency

SOCIETAL NEED: Sustainable Energy
GRAND CHALLENGE:

1. Health, demographic change and wellbeing
3. Secure, clean and efficient energy
4. Climate action, environment, resource efficiency and raw materials

Challenges

[Society wants] to bring about behaviour change and exploit technological innovation and integrated planning to increase energy sufficiency. [WP2]

Behavioural changes are important, because the citizens' effort can make a difference. By being a pioneer country with long-term solutions, energy consumption must be reduced, which will free resources close to home activities. [WP3 - Denmark]

This challenge is certainly very important. The effects of global warming are evident in our daily lives and the need to reduce energy consumption is more imperative than ever.
The US are using a model for measuring the energy performance of buildings not only of its structural properties, but other factors as well, such as the distance to the nearest school, hospital, pharmacy, supermarket etc. which, in our opinion is a very appropriate measure and it must be researched, how can we apply it in EU as well. Cyprus has an even bigger problem, because its main source of energy is from mazut (unburned fuel oil), which greatly increases the pollution, compared to other energy producing methods. [WP3 - Cyprus]

The current situation is, according to experts:

- Models for spatial energy planners
- Optimization of energy demand by ICT
- Smart city research (→ transportation)
- Pilot research and implementation for social science application into energy (human behaviour and cooperation).

Case studies existing :

- COOL BIZ (Japan dress-code)
- Passive cooling.

And according to citizens :

- Shared cars/transportation
- Self-driving cars
- Drone delivery
- Teleworking

- Traffic optimization (ICT)
- Smart houses (e.g. Nest Us). [WP2]

Reduced consumption is supported by conscious choice of transportation methods (public, bikes, walking), energy efficient design of work processes (distant work, web conferences) and making the new technologies and innovation publicly available. The need for lower energy consumption will initiate changes in town and building planning, while the increased use and storing of renewable energy will bring along the change of attitude of decision makers [WP3 – Hungary]

By change of behavior both physical activity of the individual and possibility for higher quality socialization are increased.
The involvement of citizens in plans that target the reduction of consumption will promote a greater sense of belonging, equality, responsibility and cohesion of the community.
The potential for reduction seems much higher than for energy efficiency.
Given that energy production can hardly be increased at the current rate of growing consumption, we must act through savings and efficiency.
It is important that the individual feels as an active part of the energy conversion process and as responsible of environment protection.
There is an excessive focus on technological innovation, taken as universal panacea.
We have to change conscience and take responsibility, we have to change habits. [WP4]

Scope

Research shouldn't focus only on technology/scientific issues, but there is also great need for "sociological" research, meaning how to "properly educate" people (e.g. school students) in order for them to become more energy-conscious.
Special considerations should be given to update the existing infrastructures to be more energy-efficient. For example, we can implement a suction system (vacuum) inside homes that will be used to transfer garbage from each home to a drop-off point. This will greatly reduce the fuel consumption of garbage transport vehicles.
Primarily we'll need applied research and innovation actions, since there are numerous basic research results that we can base on our actions.
Proper dissemination in every step of implementation will also help expedite the solution. [WP3 – Cyprus]
Government must 'nudge' the people! Illustrating the opportunity for cost saving of reducing over-consumption and encouraging better use of limited time [WP3 - UK]

Research should target integrated structural change that combines technological innovation and behavioural change and goes far beyond increase of energy efficiency.
Examples are:

- Learning zero-energy city based on big data and artificial intelligence
- Reduction of transport (car) of components by 3D print
- Reduce energy consumption in buildings by spatial planning, tele-presence, and smart homes/Internet of things
- Passive cooling
- Spatial planning for energy efficiency. [WP2]

The situation must be dealt with by a systemic approach. [WP3 - Hungary]

Start small, build on existing knowledge with long trial periods. We must support the good ideas with interdisciplinary research. [WP3 - Denmark]
All levels of society should be made aware of the difference between energy consumption needs and demand. The ways and possibilities towards reaching behaviour change.

Greater emphasis should be placed on synergies in research between scientific domains, producers and consumers, stakeholders and decision makers, individuals and communities.
The cultural causes of overconsumption need to be researched and we should be looking for the possibilities of providing positive examples.
It is of importance to find out what kind information and positive/negative incentives people need. [WP3 - Hungary]

The following actors could be involved in solving the problem:
Universities (humanities/social sciences) (engineers) for interdisciplinary research. Public participation (energy consumption) because the citizens behaviour must change. Contractors because they have the impetus to carry out the good ideas. [WP3 - Denmark]
Mostly technical chambers and the government should be involved in this, but also lawyers, the Department of Planning, and in general every policy making body relevant to this sector.
Public and private sector must work closely, in order to establish relevant educational programs that will be used to train and educate people. [WP3 – Cyprus]
It is essential that the problem solution needs multi-level (national, regional, small community, individual) and multi actor cooperation and harmonisation. Experts of different domains (both theoretical and practical) should be invited to disseminate their knowledge and good practices in the wider community. Decision makers and corporate leaders must take responsibility to support the best practices and innovation in energy efficiency as well as they should make efforts to realise these in society. Media should also take its role as every human being can be accessed through them. As the topic becomes their everyday routine they will be able to change their consumption patterns and behaviour, realizing that change depends upon them. [WP3 - Hungary]

Research should take into account the following concerns:

- Rebound effect (e.g. reduce flight emissions, but people fly more)
- Standards could discourage innovation. [WP2]

- Excessive focus on the individual and few references to the structures. Behavioral change will be effective only if there is a change of system.
- Without punitive motivation it is difficult to achieve behavioral change of the citizen dealing with the problems of everyday life.
- An energy saving will rise the energy prices and distribution. [WP4]

Expected impacts

There are two main objectives of this program. First, the decrease of energy consumption and second, the change of attitude and citizens' mentality regarding energy efficiency. The educational system must be more sophisticated and incorporate energy and environmental classes.
It's not possible for this issue to be solved at once. It needs to be addressed in several steps, which must be identified by the researchers (probably, different steps in each EU country).
In each and every step we must set clear and measurable goals, in order to have a direct comparison of "before" and "after". [WP3 – Cyprus]

Methods to make it easier to change behaviour.
Handbook collecting the methods
The methods must be tested in practice. [WP3 – Denmark]

The goal is to strengthen systemic thinking which enables individual consumption reduction. [WP3 – Hungary]

[Policy option]: The green choices should not be selected, but be the standard. [WP3 – Denmark]

Research Questions

- Identify and assess behaviours that have a structural impact on reducing energy consumption
- How to design tools (awareness tools, information tools, stimulation tools) able to promote relevant behaviour (with structural impact)?
- What planning methods are efficient in reducing energy consumption?
- Which enabling technologies can drastically reduce resources' consumption?
- Which technologies are capable of replacing other energy consuming technologies by providing comparable services (e.g. telepresence replacing transport)? [WP2]
- In what ways are the energy providing systems and behaviour change affected by the economic-social differences of the EU? [WP3 – Hungary]

- Identify and publish the mechanisms through which established interests uphold unsustainable patterns of action (advertising; lobbying; and others)
- How can willingness to change behavior be measured?
- What legislation can enforce a change in behavior ?
- Examine the possibilities in catalytic technologies, in order to drastically reduce energy consumption (eg. a learning energy neutral city based on artificial intelligence). [WP4]

Citizens' visions

[CYP] Vision 5: Environmental Conscience
"Saving energy and resources will cause a reduction of environmental pollution to some extent and thereby improvement of citizens' health."
[NL] Vision 5: Energy
"Education about nature and environment learns people about sustainable energy."
[HUN] Vision 4: Secure and environmentally friendly world
"With the continuous development of our technology we managed to reduce our pollutant emissions to as low levels as possible, and 98% of the energy we use comes from renewable sources." [WP2]