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for Assessment and Management of Sustainable Innovation**

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CASI

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EUROPEAN RESEARCH PRIORITIES BASED ON CITIZEN VISIONS

Report on the CASI expert workshop held in Copenhagen 8.-9.6.2015 (WP 3, Task 3.4)

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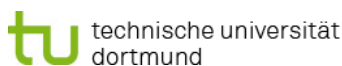
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Contents

List of CASI Project Partners.....	ii
Abstract	1
1. Introduction	2
2. Drafting, elaboration and evaluation process of research priorities	3
3. Analysis of European research priorities	3
4. Discussion and next steps.....	9
References.....	9
Appendix 1 Citizen visions.....	10
Appendix 2: European research priorities for sustainable futures.....	11

Tables

Table 1. Selection of draft research priorities for elaboration.	4
Table 2. Overall rating of 27 elaborated research priorities (n=27, mean 3.54, SD 0.25).....	5
Table 3. Elaborated research priorities receiving highest ratings on novelty (n=27, mean 3.24, SD 0.35).	6
Table 4. Elaborated research priorities receiving highest rating on essentiality (n=27, mean 3.73, SD 0.32).	7
Table 5. Elaborated research priorities receiving highest rating on timeliness (n=27, mean 3.65, SD 0.36).	8

Abstract

The CASI project develops European research priorities on sustainable innovation and the Grand challenge on climate action, environment, resource efficiency and raw materials through a consultation of citizens and experts. This report lists and analyses such research priorities from a European expert workshop which was organised by CASI in Copenhagen in 8.-9.6.2015 and convened 23 European experts in the field. The research priorities were developed in relation to 50 citizen visions on sustainable futures that were previously formulated in citizen workshops in 12 European countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Germany, Italy, Poland, Portugal, Slovenia and the United Kingdom. A selection of 27 research priorities were elaborated and evaluated according to their novelty, essentiality and timeliness. Future work on research priorities will involve citizen feedback and integrate other forms of knowledge created in the CASI project.

1. Introduction

The CASI project develops European research priorities on sustainable innovation and the Grand challenge on climate action, environment, resource efficiency and raw materials. Involving both citizens and experts in the field implements public participation in the process and is designed to ensure that developed research priorities reflect citizen concerns on changes, alarms, suggestions and intentions relating to the future. This report lists and analyses research priorities developed by invited experts in a workshop which convened 23 European experts in Copenhagen in 8.-9.6.2015. This expert workshop was preceded by citizen consultations drafting visions in 12 countries and shall be followed by citizen consultation reviewing research priorities (cf. Rask and Damianova 2009 for a CIVISTI approach). Future work will gather citizen feedback and further develop research priorities by making use of other forms of knowledge created in the CASI project.

The overall aim of the expert workshop was to translate visions from the preceding citizen panel meeting (CPM1) into research priorities and policy recommendations in the field of sustainable innovation, by environmental, innovation and policy experts. Participating experts represented stakeholders, policymakers and scientists, and representatives from the private sector, non-governmental organizations and governmental bodies. The expert workshop formed an important part of the CASI task 3.4. (Citizens and experts meetings) lead by Danish Board of Technology (DBT).

Participating experts were selected according to the following more detailed criteria:

- interdisciplinarity from various scientific fields e.g. technology, health, environment, engineering, marine, society, economy, agriculture
- knowledge of European level RTDI policies
- no strong involvement in politics
- representing various types organisations (private, public, education...)
- coming from EU countries and representing each of the CASI partner countries
- being interested in citizen involvement

In the first stage of selection, CASI partners nominated 6-10 potential candidates and provided background information on the candidates. The University of Helsinki received a total of 81 nominees of which 21 fulfilled CASI perspectives/aims in sustainability, innovation and participation. From these first stage candidates only 8 had an opportunity to participate, leading to additional recruitment using project networks and the same criteria. As a conclusion, 24 experts were selected and 23 of them eventually had an opportunity to participate in the workshop.

To help the participating experts to extract research priorities for sustainable innovation from citizens' visions, a report including a topic analysis and clustering process was conducted by a project task group (Kaarakainen et al. 2015). Each vision was connected to a topic and additional alternative perspectives and dimensions on visions were provided alongside.

The following materials were sent to the participants as a preparation to the expert workshop:

- agenda and introduction to the workshop one week before the workshop
- full list of the citizens visions (the Catalogue of Citizen Visions)
- a content analysis of the visions (Kaarakainen et al. 2015)
- list of participants

The result of the experts meeting included a catalogue of future research priorities on sustainable innovation. This report describes the process of formulating research priorities and provides an analysis of them.

2. Drafting, elaboration and evaluation process of research priorities

The research priorities were developed in relation to 50 citizen visions on sustainable futures which were formulated in earlier CASI citizen workshops in 12 countries: Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, Germany, Italy, Poland, Portugal, Slovenia and the United Kingdom. Experts received in advance a CASI report on the visions, a topic clustering of them and a description of the process (Karakainen et al. 2015).

The invited experts and vision clusters were first arranged to pre-assigned groups in the workshop. Experts were grouped according to their professional background (academic, business, civil society) and expertise (environmental, economic and social sustainability). Visions were grouped according to a topic clustering made by the CASI project partners.

In the first day of the workshop, the visions were discussed and research priorities drafted for each vision in the pre-assigned groups (with one exception of two visions merged to one research priority). Then the experts moved around and commented priorities drafted in other groups. This was followed by a vote on which draft research priorities were to be elaborated on. This process ensured that all experts had an opportunity to work collectively on each of the citizen visions and research priorities and could participate in an informed selection of research priorities that would be elaborated on.

A total of 27 research priorities were selected for elaboration for the second day of the workshop. At this stage, experts could choose on which priorities to work on according to a schedule in which there were 3-5 priorities concurrently worked on. Thereafter, the experts had an opportunity to familiarize themselves with all research priorities and finally evaluate them according to the dimensions of novelty, essentiality and timeliness.

3. Analysis of European research priorities

The upcoming sections of this report analyse the formulated research priorities according to evaluations made by the participating experts. The selection of the 27 research priorities for elaboration is presented first, which is followed by an analysis of the elaborated priorities according to their expert ratings on novelty, essentiality and timeliness. Novelty reflects on how new each priority is considered, essentiality on its importance, and timeliness on urgency.

A total of 27 of the draft research priorities (55%) were selected for elaboration in a two-phase selection process aimed to ensure a wide variety and representativity of citizen visions in the research priorities. In the selection procedure, each expert first received three votes (green) to use freely and then two additional votes (yellow) of which one was to be given to a priority first having received no votes. Table 1 presents the selection of research priorities for elaboration.

	Draft research priorities	Elaborated research priorities	Share of elaborated priorities, %
Local needs and support	2	2	100
Energy and production	6	5	83
Urban life	4	3	75
System resources	8	5	63
Living and spaces	5	3	60
Change for the future	7	4	57
Values and politics	7	3	43
Social development and people	10	2	20
<i>Total</i>	<i>49</i>	<i>27</i>	<i>55</i>

Table 1. Selection of draft research priorities for elaboration.

Technically oriented topics such as *Energy production* and *System resources* were popular amongst experts to turn to research priorities (83% and 63 %, respectively). Turning citizen visions to research priorities appeared less inviting in the fields of *Social development and people* as well as *Values and politics* (20% and 43%, respectively).

There were fewer citizen visions in the fields of *Local needs and support* as well as *Urban life* which appear to position between the technical and social ends of the spectrum and attracted elaboration to research priorities (100% and 83%, respectively). Citizen visions concerning *Living and spaces* as well as *Change for the future* also addressed this part of the spectrum but received less elaboration (60% and 57%, respectively). This selection of research priorities for elaboration merits attention and may be explained by expert competences, relationship between hard vs. soft values or assessment of personal vs. professional contexts, for instance.

The limited selection of citizen visions on social development and people on the one hand and values and politics on the other indicates that there indeed is a need for public participation in the development of European research priorities. This issue is at the heart of the CASI project, which considers the types of actors involved in social and technological innovation and their inherent interests.

The 27 research priorities which were selected for elaboration are presented in Table 2 according to the *overall evaluation on novelty, essentiality and timeliness*. Evaluation of these dimensions was carried out by individual ratings on a scale from 1 to 5 with 5 being the highest rating. The descriptions of both elaborated and drafted research priorities are listed in Appendix 1.

Overall rank	Research priority	Overall rating	Topic
1	Improvement of European electricity transmission to increase renewable energy production	4.11	Energy and production
2	Research on business models and changing institutions related to sustainable energy economy	3.84	Energy and production
3	Sustainable living environment	3.83	Values and politics
=4	Holistic education for a sustainable future	3.81	Change for the future
=4	A new European food culture	3.81	Social development and people
6	Access to natural resources as a human right	3.71	System resources
7	Co-developing green technology	3.68	System resources
=8	Sustainable economics	3.65	Social development and people
=8	Unified ecological grading system	3.65	Change for the future
10	Sustainable transformation of existing traffic infrastructure in cities	3.63	Urban life
11	Supporting people to become producers of renewable energy	3.60	Energy and production
12	Supporting an active civil society for sustainable development	3.59	Values and politics
13	New working models – new economic models	3.57	Values and politics
=14	Sustainable construction of buildings	3.56	Local needs and support
=14	Fair and participatory access to limited resources	3.56	System resources
=16	Understanding and implementing sustainable electronics	3.51	System resources
=16	Innovating agriculture: the sustainability option	3.51	System resources
=16	New spaces for public discourse	3.51	Change for the future
=19	Supporting local/regional agricultural production, distribution and consumption system	3.48	Energy and production
=19	Supporting Eco-preneurship	3.48	Local needs and support
21	Collaboration through shared space	3.46	Change for the future
22	Impact of virtual communities in behaviour change	3.40	Living and spaces
23	Ensuring inclusive and dynamic city centres	3.33	Urban life
24	Enhanced physical activity for better quality of life and energy efficiency	3.24	Living and spaces
25	Exploring the introduction of insect food	3.08	Energy and production
26	More green in cities	3.00	Living and spaces
27	Research on individual urban farming	2.97	Urban life

Table 2. Overall rating of 27 elaborated research priorities (n=27, mean 3.54, SD 0.25).

The elaborated research priorities received rather high overall ratings with a mean of 3.54 of a maximum of 5. The standard deviation of the ratings was low at 0.25, reflecting that the research priorities had been formulated collectively through drafting, commenting, elaborating and selecting. The elaborated research priorities could also combine elements from all formulated research priorities and citizen visions, partly also explaining small differences in ratings.

Differences in ratings could, however, be observed. Five research priorities emerged with particularly high ratings (Improvement of European electricity transmission to increase renewable energy production, Research on business models and changing institutions related to sustainable energy economy, Sustainable living environment, Holistic education for a sustainable future, and A new European food culture). The first two of the related to the topic of *Energy and production* whereas the others to *Values and politics*, *Change for the future*, and *Social development and people*.

Similarly, four research priorities received particularly low ratings (Enhanced physical activity for better quality of life and energy efficiency, Exploring the introduction of insect food, More green in cities, and Research on individual urban farming). Two of these related to the topic of *Living and spaces*, and the others to *Energy and production* and *Urban life*.

Table 3 presents elaborated research priorities receiving highest ratings on *novelty*. The mean of the ratings was slightly lower (3.24) and the standard deviation slightly higher (0.35) than those of the overall ratings. The slightly lower levels of novelty ratings may partly be explained by that the experts were familiar with the research priorities they elaborated on. Additionally, the experts formulated priorities in close connection to the citizen visions they originated from and which all do not appear very novel.

Novelty rank	Research priority	Rating on novelty	Overall rank
1	Improvement of European electricity transmission to increase renewable energy production	3.95	1
2	Holistic education for a sustainable future	3.67	=4
=3	Enhanced physical activity for better quality of life and energy efficiency	3.62	24
=3	Research on business models and changing institutions related to sustainable energy economy	3.62	2
=5	New working models – new economic models	3.48	13
=5	Impact of virtual communities in behaviour change	3.48	22
=7	Exploring the introduction of insect food	3.43	25
=7	A new European food culture	3.43	=4
9	Sustainable living environment	3.38	3
=10	Fair and participatory access to limited resources	3.33	=14
=10	Supporting Eco-preneurship	3.33	=19
=10	Collaboration through shared space	3.33	21
=10	Co-developing green technology	3.33	7

Table 3. Elaborated research priorities receiving highest ratings on novelty (n=27, mean 3.24, SD 0.35).

When evaluating research priorities according to novelty, 6 out of 7 priorities receiving highest overall ratings are included in the Top-10. Accordingly, the overall rating performs as good guidance for novelty as well. At the same time, however, a number of research priorities receiving low overall ratings are evaluated highly in terms of novelty (Enhanced physical activity for better quality of life and energy efficiency, Impact of virtual communities in behaviour change, Exploring the introduction of insect food, Supporting Eco-preneurship, and Collaboration through shared space). When targeting novelty at the expense of the dimensions of essentiality and timeliness, these research priorities should be looked at. Similarly, novelty could be considered differently when considered against European, national and local backgrounds. Novelty may also relate to renewal or redesign of existing research priorities.

Table 4 presents elaborated research priorities receiving highest ratings on *essentiality*. The mean of the ratings was slightly higher (3.73) and the standard deviation slightly higher (0.32) than those of the overall ratings.

Essentiality rank	Research priority	Rating on essentiality	Overall rank
1	Sustainable construction of buildings	4.19	=14
=2	Improvement of European electricity transmission to increase renewable energy production	4.14	1
=2	Sustainable living environment	4.14	3
=4	Sustainable transformation of existing traffic infrastructure in cities	4.05	10
=4	A new European food culture	4.05	=4
6	Research on business models and changing institutions related to sustainable energy economy	4.00	2
7	Supporting local/regional agricultural production, distribution and consumption system	3.95	19
8	Access to natural resources as a human right	3.90	=14
=9	Supporting people to become producers of renewable energy	3.86	11
=9	Co-developing green technology	3.86	7
=9	Unified ecological grading system	3.86	=8

Table 4. Elaborated research priorities receiving highest rating on essentiality (n=27, mean 3.73, SD 0.32).

A total of 6 out of 8 priorities receiving highest overall ratings are included in the Top-10 for the ratings on essentiality. In this respect, the overall ratings reflect also essentiality very well. No research priorities receiving low overall ratings emerge in the top list, but two with medium overall ratings become highlighted (Sustainable construction of buildings, Access to natural resources as a human right).

The distinction between research priorities and policy recommendations was most challenged in the dimension of essentiality. Even for experts, it turned out to be troublesome to draw a line between research priorities and policies relating to them. This is an observation which calls for attention when developing research programmes. The CASI project shall return to this issue in its subsequent project activities.

Table 5 presents elaborated research priorities receiving highest ratings on *timeliness*. The mean of the ratings was slightly higher (3.65) and the standard deviation slightly higher (0.36) than those of the overall ratings.

Timeliness rank	Research priority	Rating on timeliness	Overall rank
1	Improvement of European electricity transmission to increase renewable energy production	4.24	1
2	Sustainable construction of buildings	4.10	=14
3	Sustainable transformation of existing traffic infrastructure in cities	4.05	10
=4	Holistic education for a sustainable future	3.95	=4
=4	A new European food culture	3.95	=4
=4	Sustainable living environment	3.95	3
=7	Sustainable economics	3.90	=8
=7	Access to natural resources as a human right	3.90	6
=7	Research on business models and changing institutions related to sustainable energy economy	3.90	2
=9	Co-developing green technology	3.86	7
=9	Unified ecological grading system	3.86	=8

Table 5. Elaborated research priorities receiving highest rating on timeliness ($n=27$, mean 3.65, SD 0.36).

Again, the research priorities receiving high overall ratings are well represented in the Top-10 of the ratings for timeliness. Only the research priority of Sustainable construction of buildings emerges and that also has a medium high overall rating.

Timeliness turned out to be a challenging dimension for experts. In particular, it was difficult to formulate and evaluate research priorities which should be responded to in the future. It appeared much easier to formulate and assess visions which should receive current attention or should have received attention already some time ago. This observation has relevance for the formulation of research programmes which target future needs and shall be addressed in the CASI project in upcoming activities.

4. Discussion and next steps

This report has described and analysed research priorities relating to sustainable futures that were drafted, elaborated and evaluated by invited experts in a European workshop, which was organised in Copenhagen in 8.-9.6.2015 by the CASI project. A selection of 27 elaborated research priorities were analysed according to their novelty, essentiality and timeliness. The overall ratings of research priorities reflected well also ratings concerning essentiality and timeliness, but ratings on novelty also introduced other priorities. Observations meriting further attention include expert preference for technological rather than social topics, difficulties in the distinction of research priorities from accompanying policy recommendations and the assessment of priorities planned to take place in the future. The CASI project shall address these observations as well as make use of its complementary contributions in other activities such as sustainable innovation case mapping, sustainable innovation survey, policy watch and work on a common framework for assessment and management of sustainable innovation when developing European research priorities on sustainable innovation and the Grand challenge on climate action, environment, resource efficiency and raw materials.

References

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- Rask, Mikko, Zoya Damianova (2009). Citizen Visions - Preliminary Content Report. CIVISTI project. Available at www.civisti.org.

Appendix 1: Citizen visions

The research priorities developed in the expert workshop are based on citizen visions created in 12 European countries. The names of the visions are presented in the Table A1 below.

More detailed descriptions of the visions can be found at www.casi2020.eu: Kaarakainen, Minna, Petteri Repo, Kaisa Matschoss, Bjørn Bedsted, Mikko Rask, Zoya Damianova (2015). 50 Citizen Visions on Sustainable Futures. CASI project.

Table A1 List of citizen visions according to clustered topic and title

<p>1. Energy and production (6)</p> <p>Distributed small-scale energy generation in mainstream within 30-40 years Energy for humanity and ecosystems preservation Insects – the dish of the future New sustainable energy economy Self-supply with healthy food Sharengy – Sharing renewable energy sources</p>	<p>2. Social development and people (10)</p> <p>Eco2Social Industry in 2050 Facing immigration of nations Food for all Homo Faber Human world Living in community Recognition, rethinking and responsible governance / action Societal reset Society of understanding (empathic) The happy life. Healthy and contending life as the driver of a holistically sustainable development.</p>
<p>3. System resources (8)</p> <p>Cannabis utopia Clean nature for a better quality of life Conflict free distributive justice Development of new technologies and improvements of the existing in harmony with nature and society Distributive justice of essential resources Healthy living Sustainable agriculture Sustainable electronics <i>Outlier topic: companies</i></p>	<p>4. Local needs and support (2)</p> <p>Eco-preneurship – Sustainable business for the future The sustainable construction of buildings</p>
<p>5. Change for the future (8)</p> <p>Assets of the planet on the school curriculum Eco credits Education - a path to spiritual and sustainable future Education=aware citizen=aware society=sustainability EUCRES - EU collaboration for recycle systems New ways for sustainable education Think coloured Vision of quality</p>	<p>6. Values and politics (7)</p> <p>1/2 day labour Active civil society for sustainable development Beauty will save the world Global solidarity based on volunteering, technological development and regulated distribution of resources Society of potential capacities Sustainable living environment, sustainable values Union of the earth – World without the borders</p>
<p>7. Living and spaces (4)</p> <p>From physical activity to electricity More green in the city Network for a world as home Optimal living together in the city and surrounding areas Supporter of body and mind [IPHA – intelligent personal health adviser]</p>	<p>8. Urban life (4)</p> <p>Reducing traffic congestion through the creation of green transport corridors and the protection and development of open and recreational spaces. The city my home / home in the city Urban farm Urban farming</p>

Appendix 2: European research priorities for sustainable futures

Experts participating in the CASI workshop in Copenhagen in 8.-9.6.2015 drafted 49 research priorities of which 27 were selected for elaboration and evaluation.



Appendix 2. Research priorities and policy recommendations to the citizens' visions

1. ENERGY AND PRODUCTION



Supporting people to become producers of renewable energy

Research priority and policy recommendation was driven from:

Distributed small-scale energy generation in mainstream within 30-40 years (1FI)

Description of the research priority and policy recommendation:

Main research priority is how to support people to become producers of renewable energy? Following questions should be considered as well: How do we make citizens actors and which barriers do we currently have, why citizens cannot be actors? Research priority should focus on how to integrate and support smart grids around Europe as well as how to make people aware of the possibilities of smart grid and self-production? Encouraging people to work together with energy production should be considered.

Further research should be made on the possibilities of mechanisms to increase bargaining power of small scale energy producers and how to give them more market power. It is about improving the collective organizing of energy producers (for instance several households with solar panels).

Policy recommendations:

It should be drawn from best practice studies of energy production cooperatives and to make tools to support cooperation and support upscaling.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is not a new priority.

Essentiality: It is very essential to target this issue.

Timing : Very important to do this now.

Additional comments from the experts on the research priority and policy recommendation:

There is already research on how to include people/individuals to the energy systems and different systems of energy cooperation.

There is a need to be aware of data security and control of energy supply.

Self-production is difficult in urban areas with dense population like multi-store housing

We should remember also the professional roles of people

How are the current energy production plants related to the flexible system (path dependency)? Are there new business models opportunities?

Scoring: 6 green votes, 0 yellow votes → selected to the elaboration



How to raise people's awareness and encourage them to support RES and energy saving?

Recommendation was driven from:

Energy for humanity and ecosystems preservation (4PT)

Description of the research priority and policy recommendation:

Research priority is how to reduce energy consumption and How to raise people's awareness and encourage them to support renewable energies and energy saving. Supporting the application of these technologies in different areas should be considered. One priority is how citizens could find cheaper RES technologies? We need research about the substitution of Chinese imports and raw and rare materials.

Policy recommendation:

We should look at fiscal incentives and how they motivate behavioral change.

Evaluation of the recommendation by the experts:

Novelty: Not a new research priority.

Essentiality: It is very essential to target this issue.

Timing : It is very important to do this now.

Additional comments from the experts on the recommendation:

Industry consumes a lot of energy which is important when raising people's awareness and encouraging them.

Energy companies alongside with individuals should be included supporting renewable energy and energy savings.

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



Exploring the introduction of insect food

Recommendation was driven from:

Insects – the dish of the future (2CZ)

Description of the research priority and policy recommendation:

Research priorities should concentrate how to raise an initial awareness in the public the issue of insect food? There should be assessment on environmental impacts of mass production of insects as food compared to meat production and legal issues of insect production and selling of insect food and experiments with insect food? Research on consumption and production of insect food in countries where insects are part of the diet is essential as well. We need a scenario research: a switch from meat to either 1. vegetables or 2. insects, regarding environmental and health impacts.

Policy recommendation:

New health legislation and important legislation needed.

Evaluation of the recommendation by the experts:

Novelty: New in the aspect of replacing traditional food with insects. It contradicts the conventional European idea of what is food.

Essentiality: It is essential in the way that insect food could replace meat with a positive impact in the sustainable balance.

Timing : Now is the time for the first awareness raising. It may take for than 10 years for the idea to be implemented.

Additional comments from the experts on the recommendation:

Single cell protein can be synthesized so this could be another option.

Is insect food ethical acceptable for vegetarians?

Scoring: 1 green votes, 0 yellow votes → selected to the elaboration



Research on business models and changing institutions related to sustainable energy economy

Recommendation was driven from:

New sustainable energy economy (2DE)

Description of the research priority and policy recommendation:

Research priority is to study the change in the roles of market actors and institutions especially in order to connect small scale energy producers. Research topics include the development of a stable energy market system, risk management, security of the grid, energy storage, prosumerism, energy democracy, and data privacy concerns. Similarly, the transition from a centralized into a decentralized market structure merits research.

Policy recommendation:

Make use of overviews and analysis of early experiences in the field when developing policy and legislation.

This research priority relates to climate action and resource efficiency.

Evaluation of the recommendation by the experts:

Novelty: Business model research is more novel compared to the other energy visions that focus more on the technology integration into society.

Essentiality: As the markets are developing rapidly, business models should reflect this and consider new issues.

Timing : Work is commencing, will be highly topical within 5 years.

Additional comments from the experts on the recommendation:

Physics should be brought to this vision.

Scoring: 4 green votes, 0 yellow votes → selected to the elaboration



Supporting local/regional agricultural production, distribution and consumption system

Recommendation was driven from:

Self-supply with healthy food (2SI)

Description of the research priority and policy recommendation:

There should be research on how to encourage communities' local producers and suppliers to support each other as well as how to support the creation of less polluting, local and regional alternative market production, distribution and consumption. As a research priority, there should be studied how to ensure that local production is prioritized and substitute part of the super market supply and how to encourage the local communities to identify their local ethnical, traditional and seasonal products and dishes. How to give tools to create functioning business models, quality and labeling should be studied also.

A specific research suggestion could be to map the existing or emerging cases of community-supported agriculture (CSA), and learn from their experiences: understand what the conditions of emergence and success are. What is the role of public procurement, and how can it become a driver in the process? Does EU legislation hinder the prioritization of local production and supply?

Another specific research suggestion is to map and understand the role of the municipalities, such as in protecting local water resources, and how that links with local agricultural form: How and when do municipalities support the conversion of conventional agriculture into more sustainable agriculture (e.g. organic farming).

Evaluation of the recommendation by the experts:

Novelty: This is not very new.

Essentiality: Particularly for Europe it is essential.

Timing: It is very relevant, to preserve cultural identity.

Additional comments from the experts on the recommendation:

Politicians will to support community-supported agriculture (CSA), such as the building of CSA networks, for example Water Framework Directive, European Fund for Rural Development (EFRD) and national Rural Development Plans (RDP) should include tools for municipalities to encourage local business communities (incl. agriculture) to reduce their water consumption and pollution.

Some few experiences with CSA should be important to draw on.

Is delivery and some kind of pre-handling of goods (egg, veggie, butcher) included? Could be "crowdsourced"?

Scoring: 3 green votes, 0 yellow votes → selected to the elaboration



Improvement of European electricity transmission to increase renewable energy production?

Recommendation was driven from:

Sharengy – Sharing renewable energy sources (4SI)

Description of the research priority and policy recommendation:

Research about how to improve the interconnectedness of the European countries. Study on the implications of meshed networks to energy security in national countries. Research on future directions on energy system developments, technologies, storage and barriers. Research on how to include citizens into the decision making in order identify the issues of acceptance for new infrastructure projects.

Policy recommendation:

Recommendation is to provide funding for the building of electricity distribution and transmission networks.

Evaluation of the recommendation by the experts:

Novelty: This is very novel.

Essentiality: It is very important

Timing : Timing is now.

Additional comments from the experts on the recommendation:

Scoring: 4 green votes, 0 yellow votes → selected to the elaboration



2. SOCIAL DEVELOPMENT AND PEOPLE



History & transformations of medical models

Research priority and policy recommendation was driven from:

Eco² Social industry in 2050 (3PT)

Description of the research priority and policy recommendation:

As a research priority, there should be research into how different countries developed different models of the welfare state and working life as well as labor markets.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is not now-how, but the context changed since as part of Horizon2020 1980 – 90 welfare state research common.

Essentiality: For the cohesion of society, it is key.

Timing : It's about time! Very timely.

Additional comments from the experts on the research priority and policy recommendation:

Inspiration for EU on the welfare model for Europe: comparative and supranational.

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



Researching migrant diversity. Research of the diversity of immigrants' lives

Research priority and policy recommendation was driven from:

Facing immigration of nations (5SI)

Description of the research priority and policy recommendation:

Research priority should be how immigrants can be more active in society and who the touch points are and how they may enable a more active inclusion. e.g. ways to overcome legal to the law and sometimes treat people differently to give all equal opportunities.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is not real efficiency oriented, but emphasizes potentials of immigrants.

Essentiality: This is important – considering social tensions over the immigrant issue.

Timing : Timing is good.

Additional comments from the experts on the research priority and policy recommendation:

There are existing research and we need ideas new policies.

Scoring: 0 green votes, 2 yellow votes → not selected to the elaboration



A new European food culture

Research priority and policy recommendation was driven from:

Food for all (3UK)

Description of the research priority and policy recommendation:

The research priority is to find ways to persuade people eat more sustainably. This would require critical research into food cultures and food habits, and their place in the entire food value chain as well as a look at the consequences of the current habits. Measurements of ecological impacts should be developed. Attention should be paid also to economic (healthy food, for instance) and social sustainability (possibility for everyone to eat in healthy ways). Food cultures should be better adapted to climate concerns and seasonality.

Policy recommendation:

Food culture is a very cross-sectoral topic so economic, social and environmental dimensions of sustainability should be considered when developing and implementing policies relating to it (locally based production, stress on health issues, and carbon footprints, respectively).

This research priority relates to climate action, environment and resource efficiency.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: A new topic in a European wide perspective.

Essentiality: It is important, because food is part of the resource chain – from food production through supply chains to consumers.

Timing : It should already have happened 10-15 years ago.

Additional comments from the experts on the recommendation:

We should think about limits and finding ways to help the market correct its course.

How to enable culture change – when/how did it become attractive to change eating habits?

Scoring: 1 green votes, 0 yellow votes → selected to the elaboration



Prototyping new world

Recommendation was driven from the vision:

Homo Faber (3IT)

Description of the research priority and policy recommendation:

Research into the prototyping of new worlds. Applied research programme – trying out the ideas in a real life setting.

Evaluation of the recommendation by the experts:

Novelty: This kind of research already exists.

Essentiality: It appears less important.

Timing: We need new models and life styles.

Additional comments from the experts on the recommendation:

Potential case: Understand the impact of 3D production on local production.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Human world

Research priority and policy recommendation was driven from:

Human world (3PL)

Description of the research priority and policy recommendation:

Research on green significance as an example of utopia and how others could feel attached to it.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is not new.

Essentiality:

Timing :

Additional comments from the experts on the research priority and policy recommendation:

What answers should the research focus for and does it replace something?

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Living in community

Research priority and policy recommendation was driven from:

Living in community (2PT)

Description of the research priority and policy recommendation:

Comparative research on barriers to the free and equal access to education, health services, justice and opportunities.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is not really new.

Essentiality: It is an important topic.

Timing : Timing is now.

Additional comments from the experts on the research priority and policy recommendation:

Access to these things is a precondition for success and high performance levels.
To monitor and evaluate assuming that it should be like this equal.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Sustainable economics

Research priority and policy recommendation was driven from:

Recognition, rethinking and responsible governance / action (4DE)

Description of the research priority and policy recommendation:

Research on how and whether alternative economic models deliver better knowledge than conventional ones concerning sustainable innovation or climate action, that is, models that take the externalities properly into account. The key challenge is to develop economic knowledge and models that build on the principles of sustainable development. Taking the need for sustainable innovation as starting point, the knowledge gap concerns the theory development and modelling that will examine and discuss why the conventional economic thinking fails, and most importantly what must be added or changed to enable more sustainable innovation.

Policy recommendation:

As a means to this, the policy recommendation is to build a European network or a think tank for sustainable economics – as an alternative expertise.

Comments:

Research the connections between finance and the economy.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is new.

Essentiality: It is very important.

Timing: It is very timely to do it now.

Additional comments from the experts on the recommendation:

Listen to alternatives to the mainstream economic at theoretical level, but also, look at alternative projects, that is, not only hard core economic research, but also projects that are based on current experimenting in social life such as those based on sharing economy, community economy. It is important to learn from both successes and failures already out there.

Europe as a frontrunner in sustainable economy (cf. China put 'circular economy' in its latest five years' plan).

Scoring: 5 green votes, 3 yellow votes → selected to the elaboration



Societal reset

Research priority and policy recommendation was driven from:
Societal reset (4CZ)

Description of the research priority and policy recommendation:
Research into community dialogue.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is not new.

Essentiality: Scoring essentiality 4 out of 10.

Timing :

Additional comments from the experts on the research priority and policy recommendation:

How to turn the elements that cause the moral crisis into supports of a positive development?
How to enable citizen participation in public life or re-created new loyalty

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Society of understanding

Research priority and policy recommendation was driven from:

Society of understanding (1PL)

Description of the research priority and policy recommendation:

Comparative study on open civil society as a resource, barriers and strengths.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is sort of new.

Essentiality: This is building blocks of social life.

Timing : Timing is now.

Additional comments from the experts on the research priority and policy recommendation:

Research should focus on something like multiculturalism and education as a key to reducing fear/lack of understanding.

There should be study in which practices can bring people with different backgrounds together and also think of new places for public participation.

Methods to improve empathy should be considered as well as virtual world and connection/impact on civil society.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Happy life

Research priority and policy recommendation was driven from:

Happy life. Healthy and contending life as the driver of a holistically sustainable development (5AT)

Description of the research priority and policy recommendation:

Research should be concentrated to what an economics of the common could good look like.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is not new, but needed in updated version.

Essentiality: It is very important.

Timing : Timing is now.

Additional comments from the experts on the research priority and policy recommendation:

Challenge will be how the mainstream economics look beyond GDP.

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



3. SYSTEM RESOURCES



Assessment of cannabis potential

Research priority and policy recommendation was driven from:

Cannabis utopia (3CZ)

Description of the research priority and policy recommendation:

Research priority could be to take cannabis seriously in scientific terms and explore environmental, social and economic potentials. More specifically, we suggest assessing its potential in comparative terms, for example farming techniques and other alternatives.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Novel in interdisciplinary is novel.

Essentiality: It is relatively low.

Timing: It has low timing priority.

Additional comments from the experts on the research priority and policy recommendation:

Research should focus in medical use and assessing medical benefits.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Clean nature for a better quality of life

Research priority and policy recommendation was driven from:

Clean nature for a better quality of life (1BG)

Description of the research priority and policy recommendation:

Research should focus to further exploration of the economic and environmental benefits of sustainable products and services.

Policy recommendation:

A policy concerning biodiversity and eco system services and further support of alternative energy sources should be created.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Evaluating eco systems in an interdisciplinary way is novel.

Essentiality: This is crucial and highly important.

Timing : It is urgent.

Additional comments from the experts on the research priority and policy recommendation:

It is important to assess existing business models and impacts on health.

There is already ongoing work, environmental impact assessments (LCA) that are not that novel.

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



Fair and participatory access to limited resources

Research priority and policy recommendation was driven from:

Conflict free distributive justice (3DE)

Description of the research priority and policy recommendation:

Research priorities:

Research should focus the excuses for different actors for not acting on the problems of limited resources. Participatory scenario building (done by different kinds of stakeholders: local people, scientists, politicians, NGOs, CSOs) should be done: the consequences for different countries and different people in a world with limited resources. Include all mayor intended and unintended consequences. There should do a concept analysis: different arguments and definitions of fairness. We need more information about who are the gatekeepers of change and drivers with veto-powers.

Policy recommendations:

A Policy concerning global transparency in terms of resources (one example: how much oil do we have?) Increase understanding of what will happen in different countries in the future due to problems with limited resources. There should be a bottom-up approach where global issues are handled on the local level (cities, rural areas). A policy should fight against companies stealing/explain resources in an illegal and/or unfair way.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: The focus of the participatory scenario building on fairness and the fair distribution (ethical level) of limited resources is novel.

Essentiality: It is critical on the global level, but also on the local level, where there needs to be actions, too.

Timing: This is urgent.

Additional comments from the experts on the research priority and policy recommendation:

Cities and economies are very important are very interlined and depended on each other.

Scoring: 2 green votes, 0 yellow votes → selected to the elaboration



Co-developing green technology

Research priority and policy recommendation was driven from:

Development of new technologies and improvements of the existing harmony with nature and society (3SI)

Description of the research priority and policy recommendation:

The research priority is to assess and develop green technologies (including social innovations) and the involvement of users and stakeholders in the design of products (co-creation). Such market development would pay attention to open innovation communities at local level and stages of innovation process involving users. Looking at how public procurement can support the co-innovation process involving users. Looking at how public procurement can support to co-development of green technology is called for. The impacts costs and implement barriers of public policies supporting green technologies (including eco-labelling) should be looked at.

Policy recommendations:

Disseminate information to consumers to make better choices for instance better eco-labelling than today) and provide fiscal support (preferential tax treatment) to green technologies.

This research priority relates to sustainable innovation and assessment of green technologies and involving users/stakeholders in design of products (co-creation).

Evaluation of the research priority and policy recommendation by the experts:

Novelty: The development of the market for green technologies needs stronger involvement from users and stakeholders than today.

Essentiality: The co-development of green technologies needs stronger involvement from users and stakeholders than today.

Timing: There are initiatives taking users into account, but serious steps should be taken in the direction of co-development green technologies and policy instruments.

Additional comments from the experts on the research priority and policy recommendation:

Remember ecological consumption is a priority only to a small percentage of people.

Need new ecological mindset as the outset for new technologies beyond mystery of nature.

Scoring: 1 green votes, 1 yellow votes → selected to the elaboration



Access to natural resources as a human right

Research priority and policy recommendation was driven from:

Distributive justice of essential resources (2AT)

Description of the research priority and policy recommendation:

What is the role of human rights in the distribution of natural resources: Can the access to natural resources be considered a common good? Or should access to natural resources be a human right? Would that support a more even and fair distribution of resources, both within and among countries.

More specifically, what is needed is both a legal and a structural analysis of the global distribution of world-wide limited resources with specific attention to the role of human rights. What is the needed legal framework to support, monitor and evaluate current practices? And what is the impact of privatisation on the possibility of equal access and exploitation to natural resources? What are the dominant power structures and economic frameworks?

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is fairly novel (3 out of 5).

Essentiality: This is medium or high by essentiality (4 out of 5).

Timing : Timing is high (4 out of 5).

Additional comments from the experts on the research priority and policy recommendation:

These issues should be taken into consideration when developing the sustainable development goals.

Philosophical and normative analysis is needed as well as discussion of income and inequality. Also, role of the companies' should be discussed and look at role/abuse of companies exploiting resources and its impacts on human rights.

Scoring: 0 green votes, 2 yellow votes → not selected to the elaboration



Improving health communication

Research priority and policy recommendation was driven from:

Healthy living (1PT)

Description of the research priority and policy recommendation:

Research priority is to improve innovative communication and engagement programs for disadvantaged people.

Policy recommendation:

Healthy professionals', education programs and healthy communication are the key factors of healthy living.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is moderate innovative (3 out of 5).

Essentiality: This is quite essential (4 out of 5).

Timing : This is quite important at the moment (4 out of 5).

Additional comments from the experts on the research priority and policy recommendation:

We should start with needs, not by categories and assess impact of initiatives and projects. Focus has been on patient empowerment and health literacy.

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



Innovating agriculture: the sustainability option

Research priority and policy recommendation was driven from:
Sustainable agriculture (4AT)

Description of the research priority and policy recommendation:

Research priorities are to comparative study of experiences with public regulation for increase organic food production and consumption, for example in the EU-countries with 'current' high-levels of organic farming as models) Austria, Sweden, Slovenia, Denmark, Germany). Study should focus on experiences with changes in diets in households and catering towards less consumption of animal products in connection to use of organic food. Research should be done of green jobs and how to create new employment opportunities in the sector. Also, the subsidies that are reforming the CAP (keep the same level of subsidies for farmers who convert to organic farming) should be studied as well as how to increase the share of organic farms in the EU.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is not a new idea, but it needs to be developed.

Essentiality: It is essential to support increased production and consumption of organic food as a strategy for improvement of farmer's economy and protecting environment and ecosystems.

Timing : It is important NOW as organic farming is reduced in some EU-countries.

Additional comments from the experts on the research priority and policy recommendation:

Need long-term sustainability (ecology) as final aim for agricultural production.

There are very different approaches to sustainability agriculture. Conventional agriculture promotes integrated agriculture, but organic agriculture is a really sustainable alternative.

Scoring: 2 green votes, 1 yellow votes → selected to the elaboration



Understanding and implementing sustainable electronics

Research priority and policy recommendation was driven from:

Sustainable electronics (1DK)

Description of the research priority and policy recommendation:

Research priority is the application of the concept of circular economy to the electronics industry, for instance leasing as a new consumption model and developing supply chain monitoring systems in order to assess the social and environmental impact of production. Research should focus on new models for the application of circular economy and the different value chains in electronics production.

Policy recommendation:

There should be supporting schemes for companies which can develop circular economy models and new business models of taking products back for recycling. One of the questions is that what is the role of the public sector and should there be lobbying on the political level (e.g. the European Commission has canceled its proposal on circular economy).

Evaluation of the research priority and policy recommendation by the experts:

Novelty: In many countries and industries this concept is very novel (5 out of 5).

Essentiality: This is very essential (5 out of 5).

Timing : This is moderately urgent (4 out of 5).

Additional comments from the experts on the research priority and policy recommendation:

Service design: Developing sustainable design with users. Will inform citizens/stakeholders and make products that citizens/stakeholders can actually use
Development of new product strategies based on upgrading of products, product leasing etc. is necessary to suggest a more circular economy within electronics and other products as well.

Scoring: 5 green votes, 0 yellow votes → selected to the elaboration



4. LOCAL NEEDS AND SUPPORT



Supporting the eco-preneurship

Research priority and policy recommendation was driven from:

Eco-preneurship – sustainable business for the future (2UK)

Description of the research priority and policy recommendation:

Eco-preneurship is an important research priority as it relates to transformation and hybrid new forms of enterprises in local economies. The research priority includes issues such as identification of required skill sets and specialization in eco-preneurship, developing business infrastructure such as citizen ownership and crowdfunding as well as mapping financial, social and human capital in eco-preneurship. The research priority relates to sustainable innovation and development.

Policy recommendation: Support cooperation between eco-startups and bigger companies to help upscaling, making sure that negotiation is on equal terms.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Very novel creating a competitive advantage to eco-preneurship.

Essentiality: To make business sector more eco-oriented in a new way.

Timing: The business climate is currently good for sustainable start-ups.

Additional comments from the experts on the research priority and policy recommendation:

There are outcomes to consider such as economic impact, “too much” of free time and the question on how to use that time. It is also recommended to conduct research on business models, how to develop eco-preneurs into SME’s, “consumer cleantech” and services to business.

It is further suggested that psychics of electricity should be embedded in this vision.

In addition, there should be support community based eco-entrepreneurship as alternative to individual entrepreneurship and support social-economic as well as not profit ideas of organisations as well.

Scoring: 5 green votes, 1 yellow votes → selected to the elaboration



Sustainable construction of buildings

Research priority and policy recommendation was driven from:

The sustainable construction of buildings (3DK)

Description of the research priority and policy recommendation:

The goal is to be able to build and retrofit even more in ways that are carbon-neutral. To this end research should be done to identify materials that last longer, or that are made of recyclable materials.

There is a need for continued development of new technologies and new materials. However, even more, there is a need for business models, incentives, and understanding of what can ensure large-scale changes in the building sector, faster than currently.

Research should be directed at how can public procurement be a driver in this process, what kind of new innovative service designs can spur further dissemination and how to minimize all environmental costs – whether transport of materials or the materials themselves, that is, taking into account the recycling of buildings after the life span of buildings.

Research should also study the role of standardisation and interchangeability, as a means to ensuring easy upgrade of retrofit level.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: 3/5

Essentiality: 5/5

Timing: 4/5

Additional comments from the experts on the research priority and policy recommendation:

Political will is needed to support the implementation of the latest technology to have the most sustainable building and to take into account the recycling of buildings after their life span. In addition, it is suggested to focus on energy consumption of buildings and development of common facilities in buildings.

Scoring: 0 green votes, 2 yellow votes → selected to the elaboration



5. CHANGE FOR THE FUTURE



Assets of the planet on the school curriculum

Research priority and policy recommendation was driven from:

Global education in sustainable development (2DK)

Description of the research priority and policy recommendation:

To study how issues in climate action, environment, resource efficiency and raw materials could be embedded in education systems globally.

Policy recommendation: to utilize existing international organizations such as WHO and ILO to introduce education in sustainable development worldwide. For example, UNESCO currently has an action plan in operation for improving sustainable development and this could be expanded to include other international organizations to deliver education in sustainable development. This initiative must take diversity of culture and provision of education into account.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It's novel to go global with this

Essentiality: Essential to secure a sustainable future

Timing: Urgent to implement

Additional comments from the experts on the research priority and policy recommendation:

The research efforts should also focus on how to take into account the local cultural etc. aspects in education. Two way dialogue is also needed: who is in charge of the program (shared responsibility). The focus should be on industrialised countries, since they contribute work.

It is reminded that problems are global, but solutions local and “life long learning” will have a big role in the future.

Research could be done in investigating the role of the media along education and policy level responsible for education/school programs should be involved in the research.

It is however reminded that it is difficult to get education related to sustainable development integrated in schools and higher education due to focus on traditional subjects, like “math”.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Unified ecological grading system

Research priority and policy recommendation was driven from:

Eco credits (1UK)

Description of the research priority and policy recommendation:

To identify a simple and fair unified systematic framework for assessing the impact of products, buildings or services for consumers, providers or government to increase their introduction with environmental friendliness and to reduce environmental impact.

Policy recommendation: support the on-going harmonization process and provide tools to enhance it.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: How is this different from EU's current environmental footprint/-label scheme for products and companies? The unified framework is new, as the current approaches are not sufficient in that they are either too detailed or general

Essentiality: Essential to have measurement

Timing: Urgent to implement

Additional comments from the experts on the research priority and policy recommendation:

Research should be done on how business controversies will delay the development of a broadly applicable grading system, or the detailed development of specific guidelines and criteria. Research, on how to find better criteria that take into account several aspects (like not only focusing on energy classes A+++) also to avoid the rebound effect. Research should be directed to re-evaluation of the whole criteria that is currently used, how to support the on-going harmonization process and to provide tools to enhance the harmonisation process taking into account both ecological and social parameters..

It is recommended to study the common ground on different labelling systems taking into account sustainability (like the carbon footprint) in order to understand the highly complex interdependencies. This will give possibilities to capture enough information to avoid e.g. green washing.

Research should be conducted that studies both the ecological and social implications of unified ecological grading systems (influence on purchase choices) and offers support for a more visible regulation frame like FDA for approving products and take into table the NON-EU countries.

It is reminded that business controversies will delay the development of broadly applicable grading system, or the detailed development of specific guidelines and criteria.

Scoring: 3 green votes, 1 yellow votes → selected to the elaboration



Holistic Education for a Sustainable Future

Research priority and policy recommendation was driven from:

Education - a path to spiritual and sustainable future (3BG) and Education=aware citizen=aware society=sustainability (4PL)

Description of the research priority and policy recommendation:

Research priority is to identify and elaborate the skill set that is needed for “eco-citizenship”. Eco-citizenship as a concept comprises sustainable lifestyles and consumption, participation in public discourse and decision making on environmental issues, reflexive understanding of one’s own role and responsibilities as citizen and taking initiative (eco-entrepreneurship, activism, civil society activities). Research should be directed at exploring the differences between types of educational systems in whether and how they promote eco-citizenship and which characteristics of educational systems are relevant in this regard (private/public, cooperative/competitive, inclusive/exclusive). Research is needed on how can educational systems adapt to a more holistic mindset and how is educational systems perceived and valued in different countries.

Policy recommendation: the EU should promote eco-citizenship as part of the curriculum in schools and as a part of adult education. Eco-citizenship should be promoted as a part of education on European level.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Yes, compared to existing school system.

Essentiality: Very essential.

Timeliness:

Additional comments from the experts on the research priority and policy recommendation:

Eco-citizenship definition is the participation in public discourse on environmental issues and the ability to make reflexive consumption and life style choices.

It is reminded to avoid jargon in research policy: a research priority should be understandable for citizens and be based on informing citizens to engaging them.

Scoring: 1green votes, 0 yellow votes → selected to the elaboration



Collaboration through shared space

Research priority and policy recommendation was driven from:

EUCRES - EU collaboration for recycle systems (4DK)

Description of the research priority and policy recommendation:

To research market-oriented platforms to enable recycling markets to function more efficiently in business collaboration by involving different stakeholders and actors and being aware of their offers. The approach will make the information about reusing and recycling products, components and industrial byproducts available over the Internet to facilitate business trading and collaborating. The platform should also be usable for end users. Development of a more advanced value creation models and material flows for components and industrial byproducts is also called for.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is a new market-driven approach to enable the business collaboration, creating a new European market.

Essentiality: Solutions to minimize waste are called for – this approach provides a market based solution at component and industrial by-product levels.

Timeliness: There are alternative marketplaces evolving, so it is timely to start developing one now for these particular aims.

Additional comments from the experts on the research priority and policy recommendation:

It is recommended to start in each country in order to avoid transportation of materials. Support circular economy is an answer.

It is reminded that something like this already exists, like in Finland e.g. mpankki.

Research should look if there are already examples/case studies.

Important would be to pay attention how this platform would avoid the export of hazardous waste to poorer regions

Scoring: 1 green votes, 0 yellow votes → selected to the elaboration



Community-based lifelong learning

Research priority and policy recommendation was driven from:

New ways for sustainable education (1DE)

Description of the research priority and policy recommendation:

Research the possibility of community-based and community-supported modular lifelong learning. This could involve waged internships in companies and integration within e.g. the University of the third age to be accessible to citizens of all ages.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: A comprehensive and certificated system of education outside educational institutions throughout life is new.

Essentiality: Desirable for an integrated and well-educated citizens.

Timeliness: It should be implemented as soon as possible.

Additional comments from the experts on the research priority and policy recommendation:

It is recommended to create a system that offers an overview of the effect and cost of education. Support open university and offer civil society courses. It is reminded that we already have a system like that.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



New Spaces for Public Discourse

Research priority and policy recommendation was driven from:

Think coloured (1IT)

Description of the research priority and policy recommendation:

Research should be directed at what are the experiences so far with public spaces in history and other cultures and how can real or virtual communities actual contribute to public discourse. In addition, it is recommended to research new ways to increase public engagement by creating new, commerce-free real or virtual citizen spaces for public discourse open to the whole community and how to mobilize citizens to become involved, recognition different social milieus and groups.

Policy recommendation: create new institutions as an interface between the political system and civil society.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Fairly novel

Essentiality: It is important because people have less and less interest in being involved in political processes on EU or national level.

Timeliness: It is urgent.

Additional comments from the experts on the research priority and policy recommendation:

Emphasis should be put on the “physical” locations rather than on virtual ones. Virtual spaces will not stimulate cities but rather they will cause isolation.

The influence of social pressure should be explored on the platforms, where everybody sees and confronts, hears, reads what is produced. These could also be physical spaces, community-centers, commons, urban and nature.

Research should be conducted on initiatives that already exist and evaluate their impact on decision-making.

Scoring: 4 green votes, 0 yellow votes → selected to the elaboration



Research on the perception of quality and the connection to sustainable consumption choices

Research priority and policy recommendation was driven from:

Vision of quality (3FI)

Description of the research priority and policy recommendation:

Comparative research should be done on the perception of quality of different social groups (socio-economic differences) and in different cultural settings. Study on how relevant is the perception of "quality" for consumption choices.

A research could be targeting consumption preferences based on the perception of "quality", are they more sustainable than for instance consumption preferences based on price and are economically disadvantaged social groups bound to make "unsustainable" consumption choices because they depend on low price products.

Research on the economic (and cultural) restraints on the production of high quality products, such as are the best possible technological solutions offered to the customer.

Research should be done on related issues such as "planned obsolescence".

Research should focus on institutional settings, which allow customers to make informed consumption choices based on a preference for high quality, sustainable products and on how quality can be assessed (e.g. certificates) and communicated to customer.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Quality preferences have been studied in the context of market research by individual firms. The focus on the connection between quality preferences and sustainability is however new.

Essentiality: It is relevant to explore perceptions of quality of different social groups and whether/how these preferences are connected to sustainable consumption choices.

Timeliness: Not as urgent as other recommendations.

Additional comments from the experts on the research priority and policy recommendation:

Research should be done on how to put more emphasis and stimulus on local producers to eliminate "low quality" inputs and the relationship of price and value.

The market should be deconstructed based on the value involved and co-created (not necessarily shown). Research should be conducted on how does quality relate to other values?

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



6. VALUES AND POLITICS



New working models – new economics

Research priority and policy recommendation was driven from:

½ day labour (1AT)

Description of the research priority and policy recommendation:

The research priority focuses on new economic models of value creation as well as formal and informal economies. One could look at existing companies or cases with reduced working time and look at the social, economic and environmental impacts and their transferability. Interaction between regulation, labour market, social infrastructure and the public sector should be examined. Similarly, it should be explored who would be interested in ½ day labour. Development of alternative economic models and their dynamics and underlying discourses is required.

Policy recommendation: see better sharing of work as a means to bring people into the labour market (immigrants, elderly, youngsters etc.).

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is very novel, but challenging due the dominating discourses.

Essentiality: It is essential, for instance when you look at the European economic crisis, and the increasing social inequality in Southern Europe.

Timing: It will need time to develop, but is very urgent. Better start today.

Additional comments from the experts on the research priority and policy recommendation:

Some experts reminded that the idea actually is not novel, but still very essential.

It was suggested to not have a ½ day labour, but a “slight” reduction of working time, which would lead to less unemployment.

Study the impact of labour time on pensions and for social security in old age. Focus research also on immigrants, young people and the economy as a whole.

Scoring: 7 green votes, 2 yellow votes → selected to the elaboration



Supporting an active civil society for sustainable development

Research priority and policy recommendation was driven from:

Active civil society for sustainable development (4BG)

Description of the research priority and policy recommendation:

Study the involvement of citizens and societal stakeholder in decision making based on co-creation principle. It is suggested to conduct research on schools and higher education institutions as centres for community development (both at the local as well as national level). These can both be open doors for civil society to approach, but can also themselves approach the most excluded groups and offer cooperation about social challenges. Study experiences with democratic aspects of new forms of governance.

Policy recommendations: assure financial means for civil society organisations to be active and seek to involve to most excluded groups of society and not rely on the big organisations

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It is specifically novel in the political system.

The research is already going on – we know what to do, but the political structures are not supporting it yet.

Essentiality: It is very essential, for instance because civil society needs to have more trust in the democratic procedures. Essential to change e.g. the educational system and to create civil responsibility and control.

Timing : It is a long process maybe.

Additional comments from the experts on the research priority and policy recommendation:

It is recommended to build on the experience and activities, programmes or strategies of Education for Sustainable Development (UNESCO programme). Additional focus for research and policy should be the development of success assessment indicators and how to reward if they are reached.

Educational institutions and community initiatives should produce local value. Study the public discourse for citizens' engagement and the role of media to support active citizenship

Scoring: 9 green votes, 0 yellow votes → selected to the elaboration



City aesthetics

Research priority and policy recommendation was driven from:

Beauty will save the world (2IT)

Description of the research priority and policy recommendation:

Research priority should be the development of new approaches to visualization and model use in dialogues about urban development. The researchers should work with designs and make green products more attractive.

Because beauty is relative, we should explore how to create a public space or way having public discussion about aesthetics (when building new).

Policy recommendation: people should be asked and heard – not only about limited aspects.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Yes.

Essentiality:

Timing :

Additional comments from the experts on the research priority and policy recommendation:

It is reminded that the approach is not novel as aesthetics already play an important role in cities. Research should be directed at how can parts of cities and locations be designed in a consisted way despite the fragmented private ownership.

The research should be focused on the cost of “beauty” and whether beauty is available for low income areas as well.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Global solidarity

Research priority and policy recommendation was driven from:

Global solidarity based on volunteering, technological development and regulated distribution of resources (2BG)

Description of the research priority and policy recommendation:

Research should focus on environmental and social impacts of global value chains: analysis of practices and new forms of dialogue between businesses and civil society organizations.

Policy recommendations: coherence between economic support for businesses and development aid and avoid export subsidies hampering development aid.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: It would be novel to develop real dialogues about shared values between businesses and civil society.

Essentiality: It is very essential to develop more solidarity based export subsidies.

Timing : It is very important now, not least in relation to Africa and EU export subsidies and competing local industry.

Additional comments from the experts on the research priority and policy recommendation:

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



The potential of local community centers

Research priority and policy recommendation was driven from:

Society of potential capacities (3AT)

Description of the research priority and policy recommendation:

Research priority is to focus on experiences with libraries as local community centres.

Policy recommendations: introduce an INTERREG programme for local community centres, which can develop local community activities and local jobs.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Its novel to develop the commons approach to social development – contradiction to the present entrepreneurship approach. It can support new initiatives among social movements.

Essentiality: It is essential, not least in socially deprived areas (high unemployment etc)

Timing : There is an urgent need, not least due the high unemployment in Southern Europe and in marginalized areas in Northern Europe.

Additional comments from the experts on the research priority and policy recommendation:

Include ERDF programs that are cross-borders and trans-national

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



Sustainable living environment

Recommendation was driven from:

Sustainable living environment, sustainable values (4FI)

Description of the research priority and policy recommendation:

Research priority is to focus on considering the dynamics of environmental regulation. We need new ground rules or principles focusing on what are we aiming for. Define the aims of dynamic environmental regulation.

Policy recommendation: create a more intelligent mix of policy instruments that could support sustainable development (economic instruments combined with innovation instruments) etc. Remove harmful legal barriers at the same time supporting new environmental initiatives (for instance green public procurement).

Evaluation of the recommendation by the experts:

Novelty: Yes. We need more research and assessment in this.

Essentiality: Yes, it is essential with sustainable transition.

Timing : It is possible to begin the process now.

Additional comments from the experts on the recommendation:

Research should examine on the role of the state and how to best support sustainable transport, housing, energy production and waste treatment. Standards are set very high sectorally, but how to harmonise all standards and compare differences in adoption in Member States.

Research should target how to make the processes interdisciplinary and how to bring all into one table. In addition, it should be examined on how to implement trans-sectoral visions. It should be studied what are the conditions that are influencing the way legislation is implemented in different countries and organise a comparative study of best practices. An important question is to study how to change people's way of living and what is the role of values in realising a sustainable way of life. How do you create a trend to influence the majority of people to adopt a completely new way of life? Local self-sufficiency should be taken into account as well.

The role of communities should be studied in the transfer into sustainable living environment. Conduct research on differences between possibilities and challenges in rural and in urban areas. and take into account the studied geographical area as there are different recommendations in different areas.

Scoring: 0 green votes, 3 yellow votes → selected to the elaboration



Assessing the relevance and feasibility of the world without borders

Research priority and policy recommendation was driven from:

Union of the earth – world without the borders (2PL)

Description of the research priority and policy recommendation:

Research should focus on how to bring utopia to local level and study citizens to identify what they really like to include or have form this vision.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Coming from the 70's...

Essentiality: Not essential, other more important priorities, more fair immigration for instance than remaining borders.

Timing: Later if ever.

Additional comments from the experts on the research priority and policy recommendation:

There are other priorities on researching immigration issues that are more urgent.

Scoring: 0 green votes, 0 yellow votes → not selected to the elaboration



7. LIVING AND SPACES



Enhanced physical activity for better quality and energy efficiency

Research priority and policy recommendation was driven from:

From physical activity to electricity (1CZ)

Description of the research priority and policy recommendation:

Research should concentrate on how to exploit the kinetic and thermal energy of people, how to capture it, transform the energy, store it and distribute it. Technologies to do this already exist (such as charging of mobile phones from bodies' movement), but they are currently more like gadgets, focused on single person use. What is needed is a better understanding of business models, political will to support it, both single person and crowd sources of energy, dissemination strategies and cultural uptake of the technologies.

As an example: Gym's where people work out and produce a lot of energy. That energy should be captured – and the gym could claim, and actually be, self-sufficient in terms of energy production and consumption.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Indeed a new research priority.

Essentiality: Important for both more sustainable energy production and health improvement.

Timing: Not that urgent, and yet timely.

Additional comments from the experts on the research priority and policy recommendation:

Study the political will to support this, e.g. support eco-entrepreneurs, who wants to develop this.

Policy recommendations: incentives for these practices (regulation and funding), integrate physical activity and resources efficiency in urban planning and policies. It is recommended to look at economic outcomes as well in addition to "health" as focus and outcome.

Scoring: 2 green votes, 0 yellow votes → selected to the elaboration



More green in cities

Research priority and policy recommendation was driven from:

More green in the city (2BE)

Description of the research priority and policy recommendation:

Although much research already exists, there is a need to build on research on best cases and effects for urban liveability and living conditions by making greener cities. This should be provided to policy makers. Further research should focus on making comprehensive planning instruments to include green areas building on analysis of best cases or practices, which are important for cities.

Policy recommendations: regulation of city planning: introduce specific amount of green in cities. Support or organize local initiatives to help citizens plant trees and "green" their places. Use green spaces for community building and civic actions. Convert traffic infrastructure to green areas. Optimise existing spaces in cities (example: The PLUREL project, www.plurel.net). Include citizens in decision making.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Already old -> Awareness about the benefits of more green.

Essentiality: It is! Impact on health, wellbeing.

Timing: It should have been done already.

Additional comments from the experts on the research priority and policy recommendation:

There is a need for political will and greener cities should be seen as a priority for politicians. Public procurement is one tool to reach this aim. Important is also to look at legal barriers. There are many benefits to be recognised such as greening can prevent heat islands and that it increases biodiversity. Greening is already in place in many cities

Scoring: 1 green votes, 0 yellow votes → selected to the elaboration



Impact of virtual communities in behaviour change

Recommendation was driven from:

Network for a world as a home (4IT)

Description of the research priority and policy recommendation:

Research should look at impact effects of virtual communities in mobilizing citizens and changing behaviours based on case studies of existing networks as well as identify policy recommendations based on research outcomes.

Policy recommendation: deliver funding for demonstrations.

Evaluation of the recommendation by the experts:

Novelty: Rather new.

Essentiality: Yes, as way to engage citizens.

Timing: Can be done now.

Additional comments from the experts on the recommendation:

Research should be done on who are the leaders, what are the dynamics of virtual communities, upscaling and how to support them and how to spread them to other countries. Are the communities linked to some initiatives? Does the size of the virtual community matter? How to measure the behavioural change?

Pilot projects could be organised to study the impact of the networks on advancing sustainability or resource intensity and to study the typology of these networks, and what describes these networks e.g. are the communities organised vertically or horizontally. What is the most beneficial way of organisation: should it be formalised or remain as a bottom up approach.

A comparative study on existing and emerging networks in Europe should be organised, especially on networks that are “nudging” people towards sustainability. This could deliver insight on which kinds of virtual communities could be promoted in order to create a sustainable world?

The long-term effects of virtual communities should be studied including what are the conditions of creating a lasting, long-term (sustainable in terms of time) communities and study the virtual communities also in global perspective.

Study the evolution of one initiative to another and what are the best practices in the communities and how to transfer the best practices.

Research should be directed to aid finding the appropriate community. Study the influence of online and offline networks and their interaction and the value of physical interaction in addition to virtual network. How to reach groups that are not online and not involved in the virtual communities. How does digital literacy influence the success of these networks? How to nudge a network?

Scoring: 2 green votes, 0 yellow votes → selected to the elaboration



Building bridges towards better urban living.

Research priority and policy recommendation was driven from:

Optimal living together in the city and surrounding areas (1BE)

Description of the research priority and policy recommendation:

Harmonization of indicators and methodologies to assess the impacts of such initiatives. What is needed for reaching optimal living? More research should target the change of mindsets and political will.

Evaluation of the research priority and policy recommendation by the experts:

Novelty: Not new, been here for long time.

Essentiality: Essential to look at the bigger picture and ensure happy living of people.

Timing : It has already started in some places.

Additional comments from the experts on the research priority and policy recommendation:

Not novel, aesthetics already play an important role in cities.

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



Business models and ethical considerations of IPHA (intelligent personal health advisor)

Research priority and policy recommendation was driven from:

Supporter of body and mind (IPHA – intelligent personal health adviser) (1SI)

Description of the research priority and policy recommendation:

Research is needed on business models related to the virtual services, ethical issues, data protection of medical records or health status.

Policy recommendations: create legal framework that ensures that people have access to these kind of services (internet connection, technology available, etc...)

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is not new anymore, there exists lot of apps etc.

Essentiality: Good if leads to better health & empowerment, critical issues related to data protection.

Timing : Has already started.

Additional comments from the experts on the research priority and policy recommendation:

Scoring: 0 green votes, 1 yellow votes → notselected to the elaboration



8. URBAN LIFE



Sustainable transformation of existing traffic infrastructures in cities

Recommendation was driven from:

Reducing traffic congestion through the creation of green transport corridors and the protection and development of open and recreational space (4UK), related to the visions: More green in the city (2BE) and the Clean nature for better quality of life (1BG)

Description of the research priority and policy recommendation:

Research priorities should include a comparative study of local cases in city planning related to traffic. Question is how does a city accomplish to make these changes and does the ideas for a transformation of traffic infrastructure already exist, but how can it be implemented? Research should taking note that how do we deal with different interests in the planning? We should explore positive impacts on the environment. A question is not just of traffic mode, we should also make space for pedestrians and safe green corridors and recreation areas. How have conflicts of interests been solved elsewhere in processes to enable these changes?

Policy recommendation:

Focus on functionality so that an area becomes more valuable. Areas should have new functions when are changed – for instance change from one traffic function to another. Maintain the transport function. Change politician legislation in the practice in city planning elsewhere.

Evaluation of the recommendation by the experts:

Novelty: The upscaling effect is new.

Essentiality: It is very essential.

Timing: Almost already too late.

Additional comments from the experts on the recommendation:

Solutions already exist, depends on political will.

Scoring: 1 green votes, 2 yellow votes → selected to the elaboration



Ensuring inclusive and dynamic city centres

Research priority and policy recommendation was driven from:

The city my home/ home in the city (3BE)

Description of the research priority and policy recommendation:

Research on how to combine the “all-inclusive-villages” and the city centres? How to find and improve the attractiveness of city centres (avoid ghost town centres)? Research on which space is related to which functionality? How to bring back the economic activity into the city centres? Research on how to revert the escape of services based on research about peoples movement (where income is created and where it is spent).

Research with focus on assessing impact of inclusive city centres on energy consumption. Maybe looking to Denmark as a model.

Policy recommendation:

Providing affordable housing, mixed housing (mixed sizes and prices), providing services in city centres (education, public services, health, shops etc.).

Legislation to ensure affordable lives for all in city centres – will also reduce commuting.

Looking at feasibility of converting business premises to affordable housing (legal barriers)

Evaluation of the research priority and policy recommendation by the experts:

Novelty: This is not novel.

Essentiality: It depends on the country.

Timing: Now.

Additional comments from the experts on the research priority and policy recommendation:

The main question is how to create places where people can live, work and play (sticky places)?

There should study on citizen’s quality of life/well-being as well as mixed purposes for staying – some of the offices into apartments/hotels?

Scoring: 3 green votes, 0 yellow votes → selected to the elaboration



Research on business models related to urban farming

Recommendation was driven from:

Urban farm (4BE), related to the Urban farming (2FI).

Description of the research priority and policy recommendation:

There is a research gap concerning urban farming. What is the role and potentials of urban gardening: How and when does it emerge? And how does it strengthen education and social action that change peoples' behaviour (e.g. consumption patterns, diet, choice of education, life styles, understanding of food production, awareness of climate change and the need for climate adaptation). Are there any risks associated with urban gardening?

More specifically, the research could examine how this emergent phenomenon could grow in scale. Another specific question concerns how ownership influences the possibilities of realizing individual urban farming. Moreover, more research on technical possibilities, social management and organisation of urban farming, that is, among others the impact on the neighborhood.

Evaluation of the recommendation by the experts:

Novelty: This is not new.

Essentiality: It would be nice to have.

Timing: This is not very urgent.

Additional comments from the experts on the recommendation:

This is a risk, if urban farming is just an elitist's thing, or even "green wash".

Are the expectations for urban farming for example self-supply or learning to know agricultural processes?

Urban farm has social value. More than anything urban farming is interesting as social experimental zones of alternative ways to organize ourselves.

Scoring: 0 green votes, 1 yellow votes → not selected to the elaboration



Research on individual urban farming

Recommendation was driven from:

Urban farming (2FI), related to the Urban farm (4BE).

Description of the research priority and policy recommendation:

Research on how ownership influences on the possibilities of realizing individual urban farming. Research on technical possibilities of urban farming. Research on the impact on the neighbourhood. Feasibility assessments.

Evaluation of the recommendation by the experts:

Novelty: This is not new.

Essentiality: It would be nice to have.

Timing: Timing is not now.

Additional comments from the experts on the recommendation:

Scoring: 1 green votes, 0 yellow votes → selected to the elaboration

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