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Report on S&T priorities from the second meeting of the Finnish citizen panel

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Acknowledgement:

This report records the second CIVISTI Citizen Consultation in Finland. The results have not been modified by the organizers, who also translated the results from Finnish language.

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Preface

The CIVISTI project resulted from the idea that citizen consultations are valuable tools to identify new relevant research topics. By listening to citizen's concerns and expectations for future developments in the fields of science, technology and innovation, policy makers are given the opportunity to match the European research agenda to emerging issues among the public.

The CIVISTI project is financed by the European commission and involves seven different European countries: Austria, Belgium (Flanders), Bulgaria, Denmark, Finland, Hungary and Malta.

During the weekend of May 15-16, 2009, the National Consumer Research Centre of Finland organized the first national citizen panel within the framework of the trans-European CIVISTI project. In each participating country, the citizen panel created their own visions in a structured deliberation process. A total of 23 Finnish citizens volunteered to share their visions and fears with regards to the future.

These visions were be combined with corresponding visions from citizen panels in the six other countries and evaluated by a group of experts and stakeholders from the perspective of the European research programmes. This was done during the expert stakeholder workshop on June 15-16, 2010 in Sofia, Bulgaria. Through an interactive and facilitated deliberation process, the expert panel identified potential new research areas for science and technology. The basis for this were the citizens' visions.

On October 23, 2010, the Finnish citizen panel reassembled to formulate their opinion on the experts recommendations. The goal of this meeting was twofold: a validation of the recommendations based on the Finnish visions and a prioritisation of the recommendations. The reassembled citizen panel considered most expert recommendations desirable, while some critical qualifications were expressed concerning both the faithfulness of the recommendations in relation to the original visions and the effectiveness of the recommendations to support the realization of the original visions.

Resulting from the second CIVISTI citizen consultation panel a *top seven list* of the recommendations was produced. The *top seven list* includes recommendations for technical and social innovations for public transport; decentralized energy production; social innovations for aging societies; European identity-TV; piloting with dense eco-cities in Europe; recycling of complex materials and European integrated policies of sharing work. These and other recommendations and insights by the citizen and expert panels are purported to inspire both the national and EU level policy makers in their planning of future R&D policies.

We would like to thank all the participants, whose work and input has been essential for the success of the CIVISTI project. We are grateful to our staff that helped in organizing the CC2 in Finland. Our thanks are especiaially addressed to the citizens for their enthusiasm and cooperation in this new process.

Introduction

The CC2 in Finland

The second CIVISTI citizen consultation (CC2) in Finland took place at the National Consumer Research Centre Finland, Helsinki, October 23, 2010. All the 23 participants from the previous citizen consultation, held in May 2009, were invited to CC2. 16 citizens responded to our invitation, and all of them also attended the CC2. The number of (eight) men and women was equal in the panel. 12 came from the capital region and four outside the capital region. Four of them were under 30 years old, six were between 30–45, three were between 45–60 and three were over 60 years old. The participating citizen are listed in Table 1.

Table 1. Participants of the Finnish CC2 panel.

Sami Aatela	Risto Kuhalampi
Riitta Argillander	Heli Mustonen
Niklas Bengtsson	Eero Pokela
Jenna Brisk	Essi Rajakangas
Markku Heino	Asko Saarela
Laura Ihalainen	Pär-Erik Sjöström
Irmeli Jokinen	Monika Sola
Satu Kaakinen	Kenneth Westlake

The citizen consultation process was organized by the staff from the National Consumer Research Centre, NCRC (Table 2).

Table 2. The organizing staff from the NCRC.

Mikko Rask	project manager & group facilitator
Mika Saastamoinen	head facilitator
Mari Niva	group facilitator
Päivi Timonen	group facilitator
Eija Niiranen	assistant

Two weeks prior to the meeting an information package was sent to the participating citizens via mail. The information package contained:

- Programme of CC2
- List of participants
- Summary of CC1
- Summary of the expert-stakeholder workshop in Sofia
- Full versions of all 30 recommendations from the expert workshop
- 32 visions (short versions), which inspired all the 30 recommendations.
- A glossary of the definitions of the technical terms.
- the four visions from Finland, which inspired recommendations 21, 22, 23 and 24

The Finnish programme followed basically the common programme of all national CC2 panels. To effectively organize the work, the citizens were divided into three tables (one table of six and two tables of five citizens). The programme of CC2 started at 9:30 and finished at 15:20 (Table 3).

Table 3. The programme of the Finnish CC2.

9.30 – 10.00	Arrival and coffee
10.00 – 10.20	Welcome and introductions -Mikko Rask (NCRC): What has happened since the first meeting? -Mika Saastamoinen (NCRC): What we will do today?
10.20 – 10.45	Introduction -MR: Presentation of the expert-stakeholder –workshop -MS: The objectives of CC2
10.45 – 12.15	Validation group work -Presentation of the four recommendations (R21–R24) and the corresponding national visions -Validation of these recommendations by panel members
12.15 – 12.45	Presentation of validations and discussion
12.45 – 13.30	Lunch
13.30 – 16.00	Prioritization of the 26 recommendations -Presentation of the recommendations -Prioritization of the recommendations Coffee
16.00 – 16.30	Presentation of the results and final words

After the welcoming words by the project manager and the head facilitator, the participants “warmed up” by recalling the vision that they had created in the previous citizen consultation and discussing whether something of relevance to their vision had happened since the last meeting. Then the project manager gave a presentation about the expert-stakeholder workshop, and the head facilitator presented the objectives, work processes and tasks of the CC2-day.

At 10:40 the citizens started the validation of the four recommendations. Each of the three tables had three recommendations and respective visions to compare. That meant that one recommendation was validated by three small groups while three recommendations were validated by two small groups. At first, the head facilitator presented the four recommendations and respective visions. Then he explained the three criteria (faithfulness, effectiveness and desirability) that the citizens were supposed to use in validating the recommendations. Then the three tables started to work with the recommendations, assessing them with the above mentioned criteria.

After lunch, at 13:30, the prioritization process started. First, the head facilitator explained the prioritization and voting process. Then the project manager and the head facilitator presented all the 26 recommendations that were inspired by non-Finnish visions. The short versions of the recommendations were also given to citizen as hand-outs, and they were put visible on the walls, as well. Then the citizens had time to ask questions. After that, the citizens had ten minutes to reflect, ponder and decide how to use her/his seven votes. Then they cast their votes and headed for a coffee break, during which the organizers counted the votes.

At 14:45 the head facilitator presented the results of the prioritization of the Finnish citizen panel. A short discussion followed, where citizens reflected the results. At 15:10 the project manager told what would happen next in the CIVISTI project, and finally thanked the citizens for their active participation in CIVISTI.

The next step

After the CC2 meetings, the results from all the national panels will be put together and prepared for the policy workshop in Brussels in January 2011, which is the last stage before the end of the CIVISTI project. In this workshop the recommendations, which the citizens found most important for their future, will be presented. These results will contribute to the processes of defining FP8. The workshop

will be held in Brussels and is specifically aimed at policy makers in science and technology development in Europe, including the European Parliament (STOA¹ and ITRE²).

¹ STOA stands for Science and Technology Options Assessment and is the Name of the Technology Assessment Unit of the European parliament.

² ITRE stands for Industry, Technology, Research and Energy and is a committee of the European Parliament.

Validation of four recommendations R21, R22, R23 and R24

About the validation process

During the validation task the members of the Finnish citizen panel evaluated the four expert recommendations that were inspired by visions created in the first Finnish citizen consultation panel in May 2009. The validation was done in small groups consisting of three tables (one table of six and two tables of five citizens), and each table had one facilitator from the NCRC. Each table had three recommendations and respective visions to compare.

At first, the head facilitator presented all the four recommendations and respective visions. Then he explained the three criteria (faithfulness, effectiveness and desirability) that the citizens were supposed to use in validating the recommendations. Then the tables started to work with the recommendations, assessing them with the above mentioned criteria. First, the table facilitator provided each citizen a score sheet, and then the citizen gave individually a score on the criterion under consideration. Then the group discussed on the scores and the reasons for the scores. The facilitator recorded the comments on the flipchart and asked the group to determine two or three key arguments concerning this criterion. After that, the group started the process again with the next criterion, until all the three criteria of all three recommendations were covered.

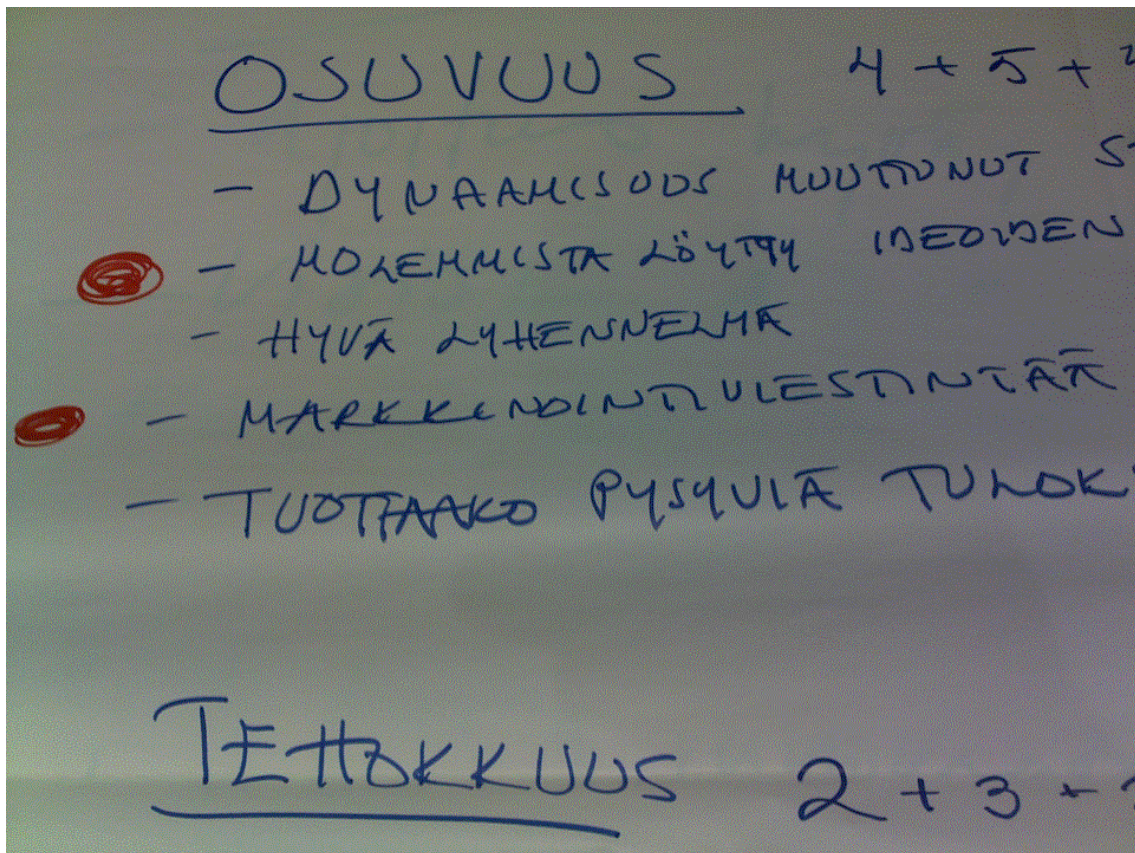


Figure 1 A shot of flip chart from the Finnish validation process

The pair of recommendations and visions that were discussed were (the full versions of both recommendations and visions are given in Appendix 1):

- Recommendation 21. Policies towards immigrants and refugees appreciation
- Corresponding vision: 40. Strengthening of language and culture

- Recommendation 22. Foster the use of biorefineries
- Corresponding vision: 44. The worst environmental threats have been beaten

- Recommendation 23. Project for Finnish best practices to be disseminated and used in other countries
- Corresponding vision: 45. Finland as a pioneer of innovations

- Recommendation 24. Go and re-appropriate countryside!
- Corresponding vision: 49. Go countryside!

The results of the validation process are reported in the following sub-sections.

Recommendation 21: Policies towards immigrants and refugees appreciation.

Short version of the recommendation

Policies towards immigrants and refugees should become less threat-focused. A new immigrant positive approach to educative, cultural, immigration and media policies is needed for changing the mental framework of citizens as well as bureaucracy towards the appreciation of immigrants.

Related short vision 40 to the recommendation (Strengthening of language and culture)

The immigrants and refugees come to Europe from all continents because of ageing of original population and decreasing birth rates of Europe. They need to be assimilated into the culture through language as well as the “mainstream” population must adjust to the immigrants with respect and support for their difference at the same time preserving own culture.

Validation by the Finnish citizen panel

Faithfulness (average score 3,1):

	<i>Bull’s eye</i>	<i>Reflects strongly</i>	<i>Partly yes, partly no</i>	<i>Reflects weakly</i>	<i>Does not reflect at all</i>
Number of votes	0	2	8	1	0

The citizens considered the recommendation to be too abstract and too bureaucratic. Unlike the original vision, the recommendation overly emphasizes threats related to the immigration phenomenon. The recommendation does not take into account all the dimensions of the vision. On the other hand, the originally positive tone of the vision is reflected in the recommendation.

Effectiveness (average score 2,5):

	<i>Most important instrument</i>	<i>One of the important instruments</i>	<i>May or may not be important</i>	<i>Does not contribute to make the vision come true</i>	<i>Contra-productive</i>
Number of votes	0	0	5	6	0

The recommendation was not considered very effective. The recommendation painted a too negative image of the immigration process: as a too slow process to be actively governed by political interventions. The recommendation did not contain any concrete tools to realize the vision.

Desirability (average score 3,7):

	<i>Highly desirable</i>	<i>Partly desirable</i>	<i>Neutral</i>	<i>Partly undesirable</i>	<i>Undesirable</i>
Number of votes	4	2	3	2	0

The recommendation was regarded quite desirable. Something must be done, because immigration increases in any case, and the recommendation indicates appropriate ways to go. On the other hand, the recommendation remains at a very general level and resembles typical political jargon.

Recommendation 22: Foster the use of biorefineries.

Short version of the recommendation

Implement a research program on biorefineries³ that are able to produce natural based, biodegradable chemicals that can replace fossil-based chemicals, both on the European and national level, with focus on the interplay between local and international biorefineries.

Related short vision 44 to the recommendation (The worst environmental threats have been beaten)

The environment remains habitable and healthy for humans and other forms of life. This can be realized through bringing global warming under control, new transportation solutions, decreasing use of toxic substances, development of technologies and overall more sustainable development.

Validation by the Finnish citizen panel

Faithfulness (average score 3,4)

	<i>Bull's eye</i>	<i>Reflects strongly</i>	<i>Partly yes, partly no</i>	<i>Reflects weakly</i>	<i>Does not reflect at all</i>
Number of votes	0	8	6	2	0

Recommendation was assessed rather faithful to the original vision. Still the citizens were quite critical in their comments. The recommendation was considered to describe only a part of the vision. It was considered to be a good starting point, but its means are based on the present, not on the future. It was also condemned for forgetting general public education and awareness raising of citizens and corporations, and therefore considered unable to affect their actions or behaviour. The recommendation was also blamed for losing the original vision's emphasis on individual responsibility, and limiting only to promotion of use of biorefineries.

Effectiveness (average score 3,4)

	<i>Most important instrument</i>	<i>One of the important instruments</i>	<i>May or may not be important</i>	<i>Does not contribute to make the vision come true</i>	<i>Contra-productive</i>
Number of votes	0	9	5	2	0

The recommendation was assessed quite effective. It was acknowledged that it allows to take into account local contexts, and that it is pragmatic, concrete and feasible. On the other hand, the recommendation was criticized for being not sufficient and missing important dimensions and covering only a part of the vision. It was thought that the recommendation should be richer and more ambitious.

Desirability (average score 4,6)

³ The technology behind a biorefinery is similar to that of an oil/petroleum refinery, but it produces fuel, chemicals, or heat from biomass, e.g. wood or sugar cane. It decreases the volume of waste and makes agriculture and industry sustainable. It also contributes to the replacement of fossil fuel and energy, which are limited/finite.

	<i>Highly desirable</i>	<i>Partly desirable</i>	<i>Neutral</i>	<i>Partly undesirable</i>	<i>Undesirable</i>
Number of votes	12	3	0	1	0

The recommendation was deemed very desirable. It was thought to focus on an extremely important issue and provide a necessary step to solve the waste problem, even if in the future there might be also another solutions to the problem. The recommendation was also acknowledged for its adaptability and flexibility. It was seen as a good starting point, and since it does not exclude other options, it can be developed alongside with other solutions.

Recommendation 23: Project for Finnish best practices to be disseminated and used in other countries.

Short version of the recommendation

Finland's success in innovation should be presented by Finnish science and technology policy makers, while other EU countries comment on it, identify its weak points, suggest complementary and/or alternative solutions.

Related short vision 40 to the recommendation (Finland as a pioneer of innovations)

With investments to better education creating innovations can be consolidated. The benefits of innovations are distributed equally between industrial and developing countries. Inventions are advanced in workshops that involve both educated and unschooled people.

Validation by the Finnish citizen panel

Faithfulness (average score 3,4)

	<i>Bull's eye</i>	<i>Reflects strongly</i>	<i>Partly yes, partly no</i>	<i>Reflects weakly</i>	<i>Does not reflect at all</i>
Number of votes	1	4	4	2	0

The recommendation was assessed rather faithful to the original vision. It was acknowledged for including the elements of interactivity and change of ideas from the original vision. The citizens welcomed the notion of systematic research on innovation strategies as a good idea. On the other hand, the citizens were disappointed about the neglect of fairness and developing countries perspectives that were salient in the original vision but reduced to EU competition policies issues in the recommendation. They also complained that the recommendation is mainly marketing information and does not adequately bring out concrete means or instruments for implementation.

Effectiveness (average score 2,9)

	<i>Most important instrument</i>	<i>One of the important instruments</i>	<i>May or may not be important</i>	<i>Does not contribute to make the vision come true</i>	<i>Contra-productive</i>
Number of votes	0	3	4	4	0

The recommendation's effectiveness was deemed average. It was thought to have a sound basis, because Finland is innovative and can act as an example. It was seen that to come true, the recommendation would require stability and credibility from the Finnish innovation policy. The recommendation was criticized for totally neglecting the perspective of developing countries.

Desirability (average score 3,8)

	<i>Highly desirable</i>	<i>Partly desirable</i>	<i>Neutral</i>	<i>Partly undesirable</i>	<i>Undesirable</i>
Number of votes	2	6	2	1	0

The recommendation was assessed quite desirable, because it was seen that the exchange of ideas would create new practices and the facilitation of innovation policies would advance the common good in the whole EU. An EU status (not national) has to be looked for. The recommendation was criticized for reflecting only a part of the vision and lacking concreteness.

Recommendation 24: Go and re-appropriate countryside!

Short version of the recommendation

Foresight studies⁴ should be conducted to develop new visions of the future for establishing attractive, contemporary life in the countryside. Foresight studies should cover mobility, cultural and political life, employment and balancing between production and recreation in the countryside.

Related short vision 40 to the recommendation (Go countryside!)

The value of living in countryside is “re-understood” and it is made possible for everyone through e.g. public transportation. Living in countryside lessens introversion and spiritual individualization, improves security, health and children’s growth environment and raises the value of community and family.

Validation by the Finnish citizen panel

Faithfulness (average score 4,0)

	<i>Bull's eye</i>	<i>Reflects strongly</i>	<i>Partly yes, partly no</i>	<i>Reflects weakly</i>	<i>Does not reflect at all</i>
Number of votes	2	6	2	0	0

Recommendation 24 was assessed as the most faithful of the four recommendations. The citizens praised the recommendation for succeeding in catching the vision. They saw that the idea of the vision was there, but some concreteness is still missing. The recommendation was also criticized for inadequate goals.

Effectiveness (average score 3,4)

	<i>Most important instrument</i>	<i>One of the important instruments</i>	<i>May or may not be important</i>	<i>Does not contribute to make the vision come true</i>	<i>Contra-productive</i>
Number of votes	0	7	0	3	0

Recommendation 24 was also assessed quite effective. It was seen as a good starting point for an important development, and thanked for its concrete ideas and suggestions for research and development actions and projects. It was also acknowledged for its versatility, but criticized for lacking concreteness.

Desirability (average score 3,8)

	<i>Highly desirable</i>	<i>Partly desirable</i>	<i>Neutral</i>	<i>Partly undesirable</i>	<i>Undesirable</i>
Number of votes	3	4	2	0	1

⁴ A foresight analysis is a method to try to describe what might happen in the future by lowering the level of uncertainty. Past and present trends have to be foresight-analysed and not only the big trends, but the seeds of change, the weak signals as well.

Recommendation 24 was deemed also quite desirable, as it was seen essential for whole Europe. Simultaneously, it was reminded that good urban living must be developed, too, and that unnecessary juxtaposition between countryside and cities must be avoided.

Prioritization

About the prioritization process

The prioritization of the 26 recommendations that were not inspired by visions originating from the Finnish panel was organized as follows. After a presentation of recommendations R1–R20 and R25–R30, the citizens had the opportunity to read the recommendations either in a document or in an exhibition on pin boards. After this, each participant received seven points to select the most important and desired recommendation. Everybody placed their dots on seven (or less) recommendations at the same time according to their own opinion. Altogether, 106 votes were cast (and 6 votes were not used). The results from the Finnish citizen panel’s prioritization are seen in Table 5, in the next section.

The results of the prioritization

The results of the voting is presented in Table 5. The *top seven* recommendations are highlighted in green colour. The recommendations are listed in the priority ranking order based on the overall number of votes given to each recommendation.

Table 4. The results from the prioritization by the Finnish citizen panel

Rank	Recommendations	Points
1.	Promote technical and social innovations that can enhance people’s access to and use of public transportation (no 18)	8
2.	Foresight and research to explore sustainable options of decentralized energy production systems and the resolution of energy related conflicts (no 5)	7
2.	Social innovations for aging societies are needed (no 17)	7
4.	European TV – unity in diversity. A permanent lab for experimentation on building and expressing identity (IdenTVLab) (no 3)	6
4.	Optimization of urban space: towards dense European eco-cities (no 9)	6
4.	Research to overcome the tension between the use of highly complex materials in products and their recyclability (no 11)	6
4.	European Integrated Policies of Sharing Work (no 25)	6
8.	Plug and play communication: development of standards for smart gadgets (no 4)	5
8.	A ‘Platform of the future of work’ at a local, regional and global level should be considered within upcoming calls of the SSH program (no 6)	5
8.	Increase direct democracy through e-voting (no 12)	5
8.	Select or develop plants and techniques for areas with extreme climate conditions (no 20)	5
8.	Develop effective urban infrastructures supporting a multigenerational lifestyle (no 26)	5
13.	Innovative participatory structures (no 16)	4
13.	Worldwide collaboration on space technology (no 28)	4
13.	Project to explore global governance (no 29)	4
16.	Humanistic research to explore what dignity during the dying process means to contemporary Europeans (no 1)	3
16.	Tools for disabled people (no 2)	3

16.	Enhance the ethical reflection on science based organic and “bionic” production (no 8)	3
16.	Develop Sofia into an eco-model for European capitals (no 14)	3
16.	Encourage alumni work in corporate governance (no 27)	3
16.	Stimulate research on human-machine interfaces (no 30)	3
22.	Agreements with farmers organizations on avoiding antibiotics and hormones (no 15)	2
23.	Stimulate research to expand/augment the human sensory capabilities (no 7)	1
23.	From CAP to European Agricultural policy: back to a gardening tradition (no 10)	1
23.	Recognition policy (no 13)	1
26.	Develop avatars that are able to act as a remote physical representation of myself (no 19)	0

Observations from the final plenary discussion and an evaluation survey

At the end of the prioritization process a plenary discussion was organized to commonly reflect the results of the prioritization process as well as the CIVISTI process more generally.

The choice of public transportation as the most important recommendation in Finland, where public transportation system is relatively well developed, was first wondered by the project manager, but as one panelist put it, in areas outside the capital region the public transportation system is actually totally dependent on private transportation means. Overall, the list produced during the CIVISTI project was considered relevant, and to cover issues and problems that the citizens find important.

Many of the recommendations were considered highly desirable, even though they were also criticized for being too abstract, focusing often too narrowly on the broad problematics related to the issues. Quite interestingly, many of the recommendation were often found poorly formulated risking that the good intention of the recommendations could indeed face resistance among the receivers of the CIVISTI outputs.

On the basis of the discussion some characteristics of a good recommendation (for EU level research policy) can be suggested. Such recommendations should be concrete enough, not too focused on local or national level issues, well-formulated, based on ordinary language, and relating to familiar issues and problems.

On the way toward a more citizen based planning of European research programmes, the CIVISTI project was considered a good starting point by the participants. According to a participant evaluation survey that was conducted at the end of the day, 15 out of 16 citizens (one being hesitant) were of the opinion that they would like to see more citizen panels like CIVISTI being organized to support the planning of public research programmes. The high level satisfaction by the participating citizens toward the CIVISTI process was a very positive conclusion for the CIVISTI citizen consultation processes in Finland.

Appendix 1. Finnish visions and related recommendations

R21. Policies towards immigrants and refugees appreciation.

Description of the recommendation

European immigrant and refugee policies are currently too threat-focused. Adopting a more comprehensive view of the role of migration processes would help European citizens to understand immigration as an enrichment, instead of a threat. Coordination of educational, cultural, migration, and media policies is needed in order to change the mental framework of citizens and bureaucracy towards appreciation of immigrants (as human beings) and a better understanding of migration processes (also covering people emigrating from Europe). A trans-European research program into the historical and current role of migration processes in the building of European societies could provide a new understanding of the migration question. The value of multilingual cultures and the potential of more human migration policies at the European level should be better recognized.

Evaluation of the recommendations by the experts

• Novelty

To consider immigration as a positive political process is totally new (e.g. Schengen rules etc. are merely measures to control)

• Importance

Supporting multiculturalism is necessary for the high level of cohesion in Europe.

• Timing

This is a slow and historical process, which should start now, however, in order to have an impact in the years to come.

Vision the recommendation was derived from

Vision 40: Strengthening of language and culture.

V40. Strengthening of language and culture

Short description

The vision is meant for all Europeans and it relates to a positive strengthening of linguistic and cultural identity.

What is the vision?

Immigrants will come to Europe from all the continents, they are needed due to the ageing of the original population and decreasing birth rates. The immigrants/refugees have to be assimilated into the culture through language. Correspondingly, the mainstream population has to be “adjusted” to the immigrants, with respect and support for their difference. Preserving and respecting cultural identity is an equally important question to both the mainstream population and the immigrants. The language assimilation has to be realized in a consistent and equal manner between the countries and the regions. The need for cultural assimilation is just as strong, but its contents should depend on the regional culture. The challenge here is posed by human nature, with its built-in tendencies towards prejudice and xenophobia.

What are the benefits associated with it? For whom?

Strengthening of identity has to aim for people respecting themselves and others, so that there is less prejudice, better sense of security, less ill-feeling and a stronger role of community. The goal is a permanent state of peace. Language and mastering it are the key to communication, education, work,

equality, people defending their own rights and democracy. In the long-term, meaningful linguistic and cultural assimilation create economic benefits to the society and enrich the lives of the mainstream population as well. The mainstream population will have a more positive attitude towards the immigrants who speak its language than towards those who use, for example, English as an intermediate language.

What are the negative repercussions of this future? For whom?

There is a danger that first-generation immigrants will remain only on the level of plain language and will not learn to use richer forms of language and expression. Social relationships within the immigrant families may become distorted as the children end up teaching their parents, but this vision should help us past that. In the short term, genuine assimilation is expensive, its benefits become visible in the long term.

What is necessary for this future (knowledge, policies, resources, skills)?

Strengthening the position of plain language (not only dyslectics and other special needs groups need plain language, immigrants do as well). Learning the language should not however remain only on the level of plain language, learning plain language should be a stepping stone to integration to society. Digital television should be developed so that viewers can select subtitling in a language of their choice. The practice of dubbing TV programs should be given up in all EU countries: programs should be subtitled so that all citizens could learn to listen to foreign languages and read faster. The use of intelligent pens that read text aloud will increase in the future and facilitate communication. Other innovations yet to be conceived will also assist communication between people of different languages in the future. Portable computers will become smaller, providing better opportunities to use www. pages in education and communication. People can, for example, use speech synthesizers on websites in everyday situations: a handheld computer can help to place an order at a restaurant. Web studies and learning are one alternative to traditional language and cultural courses. Information on cultural questions should be provided in a more profound and diverse form through different media. Here attention needs to be paid to the different target groups, such as young people, ageing people, etc. Support should be given to translating literature from small languages to the main languages and vice versa. Common standards for assimilation must be set at EU level, and mutually agreed upon in a European Parliament plenary session.

R22. Foster the use of biorefineries.

Description of the recommendation

Use biorefineries⁵ to produce natural-based, biodegradable chemicals and to replace fossil-based chemicals.

Evaluation of the recommendations by the experts

• Novelty

Biorefineries are not new. The concepts are being developed at a very first step.

• Importance

This recommendation is of a very high importance since fossil resources are running out. And use of renewable resources may reduce the degree of global warming.

• Timing

Biorefineries are being given attention in FP7⁶ and in the U.S. research programs. They have to be strongly integrated in the FP8 and in European national research programs too.

Additional comments from the experts on the recommendation

Shortage of fossil resources is not only a question of energy resources, but also a shortage of raw materials for producing chemicals such as food nutrients, packaging materials, tyres for bicycles and cars, various medicines, etc. We need renewable materials to replace the fossil raw materials. We also should develop the technology for producing the necessary materials in a sustainable and biodegradable form. The technology is called biorefinery. It has to be implemented as a research program on the European and national levels. In order to reduce transportation of biowaste, biorefineries could be in various sizes. So, small biorefineries doing the first refining of biowaste could be put in place locally, where the waste is produced and the basic chemicals could then be transported to processing plants where they are further developed into the needed goods (for example tyres or packaging materials). Local biorefineries can produce bioenergy⁷, which can be stored and used locally to reduce the need for external energy sources in agriculture or processing plants and act as a buffer⁸ when other renewable energy sources, such as wind or solar energy, are short.

Vision the recommendation was derived from

Vision 44: The worst environmental threats have been beaten.

V44. The worst environmental threats have been beaten

Short description

Global warming is brought under control. Sustainable development. New transportation solutions. Decreased use of toxic substances. Development of technologies with less burden on the environment.

What is the vision?

Greenhouse gases have decreased. Recycling has increased and the level of reusing waste has improved. Instead of toxic substances, more natural methods are used. If toxic substances have to be

⁵ The technology behind a biorefinery is similar to that of an oil/petroleum refinery, but it produces fuel, chemicals, or heat from biomass, e.g. wood or sugar cane. It decreases the volume of waste and makes agriculture and industry sustainable. It also contributes to the replacement of fossil fuel and energy, which are limited/finite.

⁶ The Framework programmes (FP) are the European Union's most important funding programme/instrument to support research and technological development, with the aim of increasing growth, competitiveness, and employment in Europe. All research-related actions of the EU are incorporated in the FPs. There are different topics and fields in an FP and both research groups or individual researchers can apply for funding from the budget of an FP. FP7 is designed for the period of 2007 to 2013, while FP8 will cover the following period.

⁷ Energy derived from biofuel or biologically degradable materials, such as plants or waste. It makes the use of energy sustainable.

⁸ The produced energy is stored in the system and used only when other energy sources, e.g. wind or sunshine are short. It ensures energy safety for households or for the industry and decreases energy consumption.

used, they must be biodegradable. New solutions are conceived for transportation (new means of transport, new solutions to replace fuel, etc.)

What are the benefits associated with it? For whom?

The environment remains habitable for both humans and other forms of life. There is less disease and people are healthier. Funds are saved in health care. Increased wellbeing.

What are the negative repercussions of this future? For whom?

Citizens will have to make sacrifices. Compromises may have to be made in the standard of living (restricting consumption hysteria). Developing new technologies is expensive. It is difficult for developing countries to commit to these goals, because they have a great number of other problems to solve.

What is necessary for this future (knowledge, policies, resources, skills)?

Raising public awareness and affecting attitudes so that people begin to understand the importance of these issues and change their behavior. Selective fees are assigned to steer companies towards environmentally sounder solutions. It takes both will and commitment from society, businesses and private citizens to translate good ideas and goals into practical measures.

R23. Project for Finnish best practices to be disseminated and used in other countries

Description of the recommendation

Finnish science and technology policy-makers should present their policy methodology, while other EU countries comment on it, identify its weak points, and suggest complementary and/or alternative solutions.

Evaluation of the recommendations by the experts

• Novelty

The novelty of the recommendation is that it turns attention to focusing on partial analogies with the Finnish practice as best practice.

• Importance

Economic and social systems increasingly depend on research and development. Therefore, learning from pioneering practices is a basic precondition to keep pace with the EU's science-based competitors.

It enhances dissemination while at the same time it ensures European added value.

This type of interactive dialogue would stimulate new innovative ideas among decision-makers developing a country's innovation policy.

• Timing

Immediately (relevant for FP8⁹)

Additional comments from the experts on the recommendation

Finland's success in innovation should be communicated and commented upon by other EU member states, as possible best practice example. A series of exchanges of ideas will improve the flexibility of policymaking. Since technology always changes over time, this requires continuous changes in policy approaches and policy-making institutions, as well as in innovative companies and organizations. Therefore the communication of Finnish best practices should be followed by some feedback from decision makers of other EU member states, who are concerned about the innovation policy of their countries. This may uncover emerging deficiencies in Finnish policy. The exchange of ideas will contribute to the formation of new ideas and to the emergence of other best practice cases.

Vision the recommendation was derived from

Vision 45: Finland as a pioneer of innovations.

V45. Finland as a pioneer of innovations

Short description

Finland is in the world vanguard of creating new innovations. Finland is globally trusted as a top expert. The development of innovations has been enhanced by supporting education in the fields of technology, medicine and (to some extent) environmental research. The benefits produced by the new innovations are distributed between the developing and the industrial countries equally. New skills are developed continuously. Inventions are advanced in an innovation workshop that supports creative problem solving among both people with and without education.

What is the vision?

Finland has become a developer of innovations in the future. Finland is globally trusted as a top expert. The development of innovations has been enhanced by supporting education in the fields of

⁹ The Framework programmes (FP) are the European Union's most important funding programme/instrument to support research and technological development, with the aim of increasing growth, competitiveness, and employment in Europe. All research-related actions of the EU are incorporated in the FPs. There are different topics and fields in an FP and both research groups or individual researchers can apply for funding from the budget of an FP. FP7 is designed for the period of 2007 to 2013, while FP8 will cover the following period.

technology, medicine and (to some extent) environmental research. The benefits produced by the new innovations are distributed between the developing and the industrial countries equally. New skills are developed continuously. Inventions are advanced in an innovation workshop that supports creative problem solving among both people with and without education.

What are the benefits associated with it? For whom?

Finland benefits from its focus on innovation. It raises Finland's profile and reputation internationally and profits the country's economy. The goal is to equally distribute the benefits between the developing and the industrial countries. The innovation workshop helps to develop high-quality and internationally known products. The workshop's brand is known all over the world.

What are the negative repercussions of this future? For whom?

The rich countries may be quick to reject the innovations of the poorer countries and thus hinder development. The rich countries will soak up the economic resources of the poorer countries if, for example, paper factories are set up in China. The gap between educated and uneducated people and nations will grow. The developing countries have relied and continue to rely too much on someone else creating innovations for them elsewhere. This is because an excessive amount of resources is sucked out of them and not enough is given back; this has long historical roots in the colonial mindset.

What is necessary for this future (knowledge, policies, resources, skills)?

Policies are needed for the funding of innovations especially in the fields of technology and medicine and partly also in the environmental field. The funding is used to support better education in the future, particularly in the developing countries. Inventions are furthered at the innovation workshop which supports creative problem solving among both educated and uneducated people. The innovation workshop is a market-based inventions factory. It is an international corporation, comparable to Nokia, which specializes in inventions. Initially it is financed from state funding, like the business parks maintained by the Economic and Employment Development Centers in Finland. The inventors are bid against each other and the ones offering lowest cost are selected. The factory centers its operations on inventions and patenting them. The resources should be distributed as equally as possible. The innovation workshop would operate on a nonprofit basis in developing countries. On the basis of the generated ideas, the workshop would set up factories in developing countries; when they start to show profit, they will be placed under state ownership. If resources are transferred to developing countries, the transfers should be managed from the industrial countries in the establishing phase. As the operations start to thrive, a situation is gradually born where the developing countries can manage on their own. New skills are constantly needed in the future to avoid innovation deadlocks.

R24. Go and re-appropriate the countryside!

Description of the recommendation

In our contemporary life, the countryside can provide an important place for different experiences, practical education and distant work. However, people continue moving away from to countryside to urban areas and there is not enough awareness about the food production challenges of the future. Therefore, measures have to be created to make the countryside more attractive, especially for younger people, and to provide an infrastructure that also takes into account the needs of elderly people.

Foresight projects could be established to develop a new vision of the future for countryside planning, generating new views on the role of the countryside in contemporary life. Research could contribute to find the economic and cultural strengths of the countryside, which can bring people into active productive, industrial, and business- or service-oriented activities. Special research questions are related to the following themes:

- transportation systems for individual mobility
- cultural and political life in the countryside
- new employment opportunities
- maintaining the balance between production-oriented and recreational values

Environmental aspects of developing agricultural production should encompass possibilities for closed circuits¹⁰, balanced management of natural resources at the local level, the use of fertilizers, energy management, and small local production units, such as biorefineries¹¹. There are also important recreational / leisure time-related aspects connected with the generation of ideas about what might attract younger people to the countryside.

Evaluation of the recommendations by the experts

• Novelty

There are already programs that support living in the countryside, thereby contributing to its economic survival, but the existing programs mainly focus on the local level, while such programs will also be needed at the national and European levels.

• Importance

Supporting living in the countryside is essential for all European citizens. It is essential to ensure that growing populations can be fed.

• Timing

FP8¹² will provide a good context for including this kind of measures and foresight activities.

Vision the recommendation was derived from

Vision 49: Go countryside!

V49. Go countryside!

Short description

¹⁰ A closed cycle means that the system is self-sustainable and reuses all or most of the things it produces. In agriculture it refers to the procedure whereby garbage (plants and animal slurry) is reused in farming, to decrease or eliminate the amount of waste produced, the energy consumption, and the use of pesticides.

¹¹ The technology behind a biorefinery is similar to that of an oil/petroleum refinery, but it produces fuel, chemicals, or heat from biomass, e.g. wood or sugar cane. It decreases the volume of waste and makes agriculture and industry sustainable. It also contributes to the replacement of fossil fuel and energy, which are limited/finite.

¹² The Framework programmes (FP) are the European Union's most important funding programme/instrument to support research and technological development, with the aim of increasing growth, competitiveness, and employment in Europe. All research-related actions of the EU are incorporated in the FPs. There are different topics and fields in an FP and both research groups or individual researchers can apply for funding from the budget of an FP. FP7 is designed for the period of 2007 to 2013, while FP8 will cover the following period.

Living in urban communities becomes harder by the year. Introversion and spiritual individualization must be brought to an end. The change is achieved by carrying out measures that enable a return to the countryside. People can live and lead their lives in the countryside aside from agriculture etc. Living in the country supports people's physical, psychological and social wellbeing. The day after tomorrow is too late.

What is the vision?

Leading a meaningful life doesn't mean that people have to live in the city. The countryside offers more natural and healthier opportunities for a good life. People have already begun to regard living in the country as a tempting alternative. They just haven't in the past decades been given a chance to do so. Achieving things or succeeding in life do not require living in the city. The time spent traveling to work is not increased, only the distance and means of transportation are different (own car <-> public transportation). With controlled guidance and support measures, the change can be quite easy to realize. The prevailing negative media image of the countryside should be turned around.

What are the benefits associated with it? For whom?

Children: The house and yard, forests, space etc. provide a safe environment for growing up, playing, etc. The countryside allows for creativity to be born and evolve. Plants, birds and even the changing seasons enrich a child's life. Learning is based on more than school. Young people: Learning to act and think independently and to solve problems, stronger responsibility both for one's own family and the close community. Friendships are closer and deeper. The dangers of running around are fewer. Growing up to real adulthood takes place in a healthy manner. Adults: A family-centered lifestyle is better realized in the country than in the city, meaning more time spent together with the family, and hence, also a sense of

security about raising children (e.g. trip to the forest pond, cf. hanging around the block). Families have more possibilities to engage in hobbies together in the countryside. Commuting outside rush hour times serves as a useful transition to "home time" or as a possibility to orient oneself to work. Returning home to the peaceful countryside, by the latest, sweeps the thoughts away from working life and work doesn't get to rule over life.

For elderly people living in the country offers a possibility to live with their offspring, supporting and passing on their life experience to the younger generations, while at the same time receiving support and assistance with the challenges that come along with ageing. With the new technologies, the countryside provides excellent opportunities for creative distance work. There is access to all information from the countryside. A rural cultural environment has its own special features and potentials. The hallmark of Finnish culture – the countryside – is preserved! General wellbeing is increased and people's quality of life is improved. Country living, instead of hysterical running around from hobby to hobby. Communalities.

What are the negative repercussions of this future? For whom?

Uncontrolled change: in the transition phase municipal investments are unevenly distributed.

What is necessary for this future (knowledge, policies, resources, skills)?

Mass media should stop putting down the countryside in the context of politics. Living in the country should be made attractive, applying both legislative and support measures. A special "rural living commissariat" should be established in the EU – Finland to pilot the project! Successfully implemented, the good models and practices that are born can be utilized in other countries. There is an urgent need for these measures! A deserted countryside does not attract people and the direction in which attitudes have lately turned makes the situation even harder. In recent years the last touch to the countryside has been lost. Services should be developed into so-called "services on wheels", c.f. library van. For example, traveling nurse, school, etc.