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SIXTH FRAMEWORK
PROGRAMME



**Participatory Science
and Scientific Participation**

**The role of Civil Society Organizations
in decision-making about novel
developments in biotechnologies**

FINAL REPORT

PS x 2 Estonian National Report

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Historical background

In Estonia, GMO debate started in 2001 with Estonian Green Movement (ERL), which is part of Friends of the Earth Europe (FoEE) network. ERL's activities did last for approx. a year and it was financed by FoEE common project. ERL compiled an overview material on how GMOs are made and what are risks of GMOs, and awareness raising street action seminars for teachers were held. After the project was finished, people went on by working with some other topics and the GMO issue disappeared for a while.

GMO topic came again up in 2003 when there was discovered, that contaminated maize had been sown in Estonian fields.

At that time there were three organizations, which began to work on GMOs in Estonia: Tartu Consumer Protection Center, Estonian Fund for Nature and to somewhat extent also Center for ecological Engineering. Several other consumer, environmental and farmer organizations joined the GMO debate. The active work on different issues slowed down because it was virtually impossible to get finances for work, but the work continued, mainly done by environmental organizations, and to a large degree on a voluntary basis, because what finances could be more easily applied for were printed materials and events, but not for the human labor for background work, which is necessary to have good quality in the work.

Consumer protection organizations work remained mainly within labeling questions, but when possible they participate in discussing other questions until today.

In Lithuania the situation was comparable to Estonia, but the pause between 1st and 2nd wave was longer – Lithuanian environmental organization Lietuvos zaliuju judejimas, which also is part of FoEE network, also started their activities on GMO topic in 2001 and worked for approx. a year, then the work was taken over by an other environmental organization (Environmental Center) and the issue practically disappeared because of problems with resources and started again in 2005 in Lietuvos zaliuju judejimas, and the strong alliance of different profile organizations was built.

In addition there was a possibility to make an interview with main organization working on GMOs in Denmark – Greenpeace Denmark. Danish CSOs took GMO problems up in 1996 when first ship with GM cargo arrived to Denmark, Aarhus. They also built a strong alliance, consisting of environmental, farmers and consumer organizations, which backed up the demands of Moratorium 1999 and demands for labeling of animal products fed with GMOs, demands for liability etc. After the new rules came into the force in EU, especially consumer organizations have focused on labeling rules (asking labeling of products derived from animals fed with GMOs), organic farmers mainly work on co-existence rules and the environmental organization Greenpeace takes problems with legislation (illegal GMOs, unsatisfactory risk assessment, illegal confidentiality of risk assessment data, continued use of antibiotica resistance genes and other topics).

To the Lithuanian and Estonian history do belong some specific aspects which can be important for understanding participation and CSOs relations to science.

In the end of 1980ies, when Soviet Union was coming closer to collapse, in both countries strong environmental movement came into being. In Estonia, the factor, which motivated the establishment of movement, was planning of phosphorite mining areas in eastern part of Estonia, and protest movement included students, scientists and many other people.

Environmental movement grew out of anti-phosphorite-mining movement. It means that environmental movement at that time was also political movement against soviet regime, which joined people from many different professional backgrounds.

The background of Lithuania was virtually identical, only in stead of phosphorite other industrially caused environmental problems triggered the movement.

Later the environmental movement became more specialized, and by the end of millennium it reached the stage, where active were either narrowly specialized people who had interest mostly in some specific topics (ornithology, wetlands etc) or if organization worked on sustainable development in general, in a more interdisciplinary way, then it was often hard to find finances enough for every topic and work could become fragmentary. In addition, often organizations which criticized the government were later excluded from getting funding from governmental sources.

Also, the relations between scientists and environmentalists changed a lot during last 15 years. It is described as follows by Lietuvos zaliuju judejimas: *“When I went to my university professor, he asked me: “Are you still environmentalist”? I said no and he answered: “That is good, I do not like radical people”. We are perceived as radicals without people considering really what it means, without having a specific definition for that and many scientists look askance at us. When green movement was established (in 1988-89), then we had many scientists and it helped us a lot that they supported us. We jointly worked on problems which soviet time had left us. Then, less and less scientists remained with us and now they are very few. And actually we are less radical than these days, but probably scientists themselves have changed, their world has changed – maybe carrier opportunities are bigger and they protect their world by distancing themselves from us.”*

Estonian Fund for Nature supplies with its view on history in Estonia: *“In the times of phosphorite war there were many who were concerned about nature and thought in terms of life sciences, after that came new wave of technocrats, molecular biologists and other narrowly specialized actors. Programs at universities have also clearly been focused at supporting reductionist technosciences, not life sciences. In the Soviet system, which was absurd, the foolishness of that approach was more robust and could be seen more clearly, in modern system it is more refined and elegant and it doesn't shows the stupidity of itself that much, even if in fact is working with similarly foolish ideas, but the marketing has improved greatly. In soviet times it was also easier to get the point of the problem because everybody can see mines. The inertia of the system has continued with this direction of techno-fixes and reductionism until now. It's just as if Soviet times “lyssenkisms” were that robust that everybody could see them, and nowadays the same “Lyssenkos” continue their work, but they have got new and more glittery package and we in Estonia are not yet used to seeing through this nice package, we as a society are not yet able to decode it.”*

It can be suggested that in market economy driven Western Europe the transition

from independent science to commercially motivated science has been milder and maybe gave more time for both scientists and environmentalists to get used to changing situation while in Estonia and Lithuania the new opportunities, which opened up for scientists and changed their working conditions and when science grew quite abruptly closer to industry, the environmentalists were not ready for that.

In Estonia, no GMOs have been grown apart from the case of contaminated maize, named above.

It needs to be said, that Estonia is quite technologised society, where soft values are not taken much into account (which can probably partly be because of transition times' difficulties, when people didn't have energy to care about more general problems). On governmental level there has been at the same time emphasized that being small country Estonia needs to work towards development of modern technologies, because it is one of the very few things, which can make Estonia competitive on global market level. And against this background certain groups (as e.g. gene technologists) do emphasize the technological benefits of growing GMOs, which is an undeniably and working argument for many Estonian farmers, as Estonian agriculture is intensive-type agriculture. So, the public debate has been slow to take up, because public has had hard times with their basic problems and if nothing has endangered given days welfare, people often have had no energy to think on other things. However, with last years' growing stability, the interest for issues around GMOs has become bigger.

Debate in Estonia has been initiated by the most active environmental and consumer organisations, states' institutions have mainly tried to keep low profile and not state anything too concrete, trying to look objective but making decisions which are politically clearly pro-GMO.

However, on the level on institutionalized participation the state has fulfilled its' tasks and formally active organisations have been involved in several processes. But as it is discussed in report below, 1) the process has often been only formal and not meaningful and 2) organisations resources has been fragmentary, so CSOs have evaluated participation as not very effective.

1 Goals and objectives of CSOs

This report is based on interviews with 14 organisations, from which 11 are based in Estonia, 2 in Lithuania and 1 in Denmark.

Originally it was planned to make 19 interviews in Estonia, but for 7 organisations it did finally not happen – mostly they refused, saying that they do not work on the issue that actively, that they could contribute with some meaningful information, and 3 organisations never could find time amongst their other tasks to answer the questions. Those organisations, which did answer, were very open and collaborative and agreed to spend their time on interviews and sharing their experience. The interviewed organisations were mainly environmental and farmer organisations, but also Estonian Allergy Federation and political movement Leiel (No to EU movement).

This report discusses interviews of the first round.

The organizations interviewed were:

Allergialiit – **Allergy Federation**; organization working with allergies and related questions

Ökoloogiliste Tehnoloogiate Keskus – **Center for Ecological Engineering** – working with sustainable development and ecological building and farming technologies (**ÖTK**)

Eesti Keskkonnauhenduste Koda – **Estonian Council of Environmental NGOs** – an informal cooperation network of environmental NGOs (**EKO**)

Eesti Talupidajate Keskliit - **Estonian Farmers' Federation** – second biggest farmers federation, uniting mostly small- scale farmers and promoting sustainable development (**ETKL**)

Eesti Mahepõllunduse SA – **Estonian Organic Farming Foundation** – most active organization of promoting and developing organic farming (**EMSA**)

Eestimaa Looduse Fond – Estonian Fund for Nature – working on sustainable ongst other issues on development, risks of genetically modified farming

Pärandkoosluste Kaitse Ühing – **Estonian Seminatural Community Conservation Association** – conservation of seminatural communities (incl. research, expertise etc) , lobbying of agricultural ecology and activities connected to that (**PKÜ**)

Eesti Roheline Liikumine – **Friends of the Earth Estonia** – environmental organisation working with wide range of environment and development issues (**ERL**)

Greenpeace Denmark – environmental organization

Lietuvos Zaliuju Judejimas – **Friends of the Earth Lithuania** – environmental organization

Liikumine Ei Euroopa Liidule – **Movement No to EU, Estonia** – protecting Estonian independency and watchdog of centralization processes (**LEIEL**)

Säästva Eesti Instituut - **Stockholm Environment Institute Tallinn branch** - local, regional and international interests in environmental research and management, promotion of sustainable development, environmental protection, nature conservation, environment-related policy and management analysis. Committed to bridge the gap between science and policy-making. (**SEI**)

Nõmme Tee Selts – environmental and citizen initiative organisation - (**NTS**)

Sorex – environemnatl student organisation

Zvejone – Lithuanian environmental CSO

The main goals and aims of CSOs included

1) hindering the environmental release of GMOs, because GMOs are being seen as a hindrance for main goals of organisations, which mostly included promotion of sustainable/healthy development (in agriculture, economy, environment, consumers free choice/health, social development).

2) the other cluster of aims was connected to transmitting knowledge about positive alternatives as e.g. organic agriculture or local food.

3) One of the aims was blocking the process of approval - because it gives time to push for independent research to study risks of GMOs. The point of slowing down the process is important for CSOs to guarantee that other, sustainable models as organic agriculture, old plant varieties or seed saving practices) would not become extinct because of massive spread of GMOs. Also massive spread of GMOs will become an argument for not getting rid of GMOs in environment even if they will show to have negative impact, because it will demand too many resources.

4) Informing the public was one aim, shared by all CSOs. It has several aspects: „*[Our aim is to] provide objective information about such technological*

developments for society (inform about risks of new technologies, allow people to choose, explain their importance as consumers, show alternative technologies), ensure that community is informed about nearby implementations of such technologies, seek that only qualified personnel are responsible for new technologies research/implementation/legislation and etc.” (Zvejone)

Informing public was very central from CSOs point of view because if CSOs won't inform the public, then public will only hear advertising myths about GMO-s from industry/government.

One of components of informing public was „translating“ scientists arguments into the language which would be accessible to other than narrow specialists or „translating“ them into politically usable arguments.

5) Even if main activities of CSOs did not enclose participation in science as their definite goal, several CSOs said, that they do perceive some of their activities as participation in science, but not as primary goal, and sometimes indirectly, for instance EKO: *We have been trying to offer balance to Estonias general scientific direction and offer alternatives to decision makers“*, while

6) participation in decision making (e.g. about how results from scientific research should be used) was definitely a part of CSOs everyday work.

2 Methods employed

According to their needs and concrete situations, CSOs employ different methods. It depends on their resources, aims and target groups:

Aims included mostly influencing political decisions, influencing application of results of scientific work and by that also influencing science priorities, and methods included

- using media channels to provoke debate in society
- legal work
- cooperation between CSOs
- participation in political processes

As most effective methods were named informing public and using media channels – so, mainly bottom-up initiatives. One of reasons named was that otherwise there would have been no debate at all if CSOs had not initiated it themselves. And when the debate is there, it makes politicians to consider the problems and this in turn provokes scientists to say something, because otherwise politicians and scientists just keep quiet and information about what is going never reaches the public. The cooperation between CSOs was named as one important method, and also legal work. However, with regard to legal work it was said, that it can sometimes give results, but political pressure can limit the effective use of legal tools. The latter was illustrated by Directive 2001/18, where, achieving quite a good legislation has been due to effective participation but as the Directive is not being followed precisely and it is tried to get round of it, then it diminishes effect of achievement and takes away trust in EU systems. It was also named as important to be able to lean on own research, but it was added, that it does not help to change political processes.

For non-effective methods the participation in political processes was named. CSOs regard participation in political processes as a very important tool, but chiefly because the at least they know what as the state of art in given question and what is being planned.

Political processes were perceived as being non-effective, because participation is often being exercised from the institutions side without being aware of what are the aims of exercising that participation (*It is a question of what we do want to achieve with all this public participation? Is it only to be able to put a logo on decision"consulted with stakeholders" without all this consultation having had any impact anything by one's final decision or is there any other idea behind it (Greenpeace DK)*) - without allocating resources needed for that and without any intention to take CSOs proposals into account: *I think we not only need the openness in terms of access to data, but also openness for that the result is not fixed beforehand. Because if it is – then all this exercise with finding data, making research and so on is not much worth. (Greenpeace DK).*

3 Factors hindering participation

Even though projects original idea was to collect examples of successful participation, the interviews showed that there are very few examples which are perceived by CSOs as being successful. However, some processes were named, which did not account for being successful but as having had the effect of preventing happening of something, which would have the worst scenarios from CSOs point of view, so, with some admissions, the process was evaluated as somewhat positive.

But mainly during the interviews came up the many facts about **limitations and restrictions**.

1. One of main limiting factors, that was named, was that different committees are being made just for being able to just tick it later off as put by Lietuvos zaliuju judejimas: *"Ministries have answers beforehand: if public does not want GMOs, then it needs to be taught, so they will understand, that GMOs are nothing to be afraid of"*. The same idea, that the statements made by CSOs are just noted down, but they do not have any real impact, is echoed by Greenpeace DK as follows: *"We are trapped in the same problem, in which every person in society who tries to engage in GMO issue, is feeling trapped in: when you just express your attitude towards GMOs – no, thanks, I just like the food I use to have – this approach is thrown aside: no, we need to educate people not to have this attitude any more, we need to explain, that GMOs are not dangerous. After 90ies [the debate] has become just more and more elitist and in DK, the group, which still can talk about GMOs becomes more and more narrow because the non-technical point of view, which is as valid as scientific point of view, is not any more currency in application assessment. So we have jumped into the scientific arguments and argue with for instance EFSA and the next thing is that EFSA delivers just once more a whitewash of itself and says no, we didn't make anything wrong – without any scientific explanation on all deviations, just stating a coincidence. We try to bring legal considerations on the table, but it does not help either. So, you can speak populist language, or scientific language, or legal language but there are not really*

any signs that any of those things you say is going to stop the applications and one finds hard to feel that he or she is listened to. So, it is more like the authorities are trying to tell you what is right more than they are listening to what you have got to say. They are not really open to change the point of view. Actually, what has been established is an approval legislation where if you put an application in on one side, you get approval out on other side. And then you just need to get through some dodgy stages as for instance you need to have a public hearing where public can grouse and grumble – but this does not anyhow affect the fact, that on the other side the application will get out of the machine.”

2) As CSOs repeatedly noted, that feedback from instances is very poor. CSOs often do not get any meaningful answer to why the proposals have not being taken into account or they just do not get any answers at all. It was named as being a problem on both national level and EU level: *“If you ask some particular material form EU level instance, then you get he answer (yes- we can give it, or no, we cannot). But if you make a proposal, the deep silence follows” (Greenpeace DK)*

3) important restricting factor that was named was industry pressure/lobby, which puts political will and development of science under pressure and where public and business is in different weight (mass) categories with regard to financial and human resources.

It was named as a restriction, that experts and decision makers, but also scientists are not independent, and that development in science has become so fragmentary because the proportion of project-based activities has become bigger and because of industry financing science, that public finds it hard to understand, in which direction science does move and who makes it move.

4) The problem of public having resources different from industry or government was very central for many CSOs. CSOs claimed that in governmental instances it is often not understood, that CSOs do not have big resources and they can not come with comments and answers as quickly as e.g. neighbouring ministries or industry can, because resources are different. The problem of finances, which are often very hard to find, also makes the work fragmentary.

The problem of resources, however, is not only within CSOs, but also governmental institutions, where participation is not given budget enough and therefore can not be exercised properly:

“The problem is also, that both CSOs and ministries need to have enough resources. Because if the government or ministry do not have enough resources to make a proper draft regulation on co-existence, and then our work will also remain ineffective. They don’t even have enough resources to answer our written proposals or try to understand and examine thoroughly our proposals. We can do a big work and it will end just nowhere. (EKO)

5) A huge restriction named was monotony of members of different committees/round tables/working groups, where selection of members seems to be *“composed already before the work starts so that the result will be the “right” one” (EMSA)*. CSOs consider that in many commissions the result of discussion is pre-determined if too many members are users and beneficiaries of given technology.

6) One of limitations noted was also, that the public does not get any personal relation to information, does not understand, how science affects their life – and that also diminishes the interest for discussing the things and participating. It is partly caused by science not communicating what it is doing, its' plans and strategies: ***It is important to inform about what is happening in science, but this is mainly being done formally. There are many projects and much research by universities, but public usually knows nothing about it. Science is made as routine work and general public never really gets this information. But then public can not really participate. Often much of research is being made inside a ten-men-club – they make it themselves, they discuss it inside their own circle, they present results in their narrow scientific conferences and that's all (ÖTK)*** and partly because science is ignorant and isolated from society.

CSOs do not have seats in scientific committees and not many directly unrelated persons (third persons) are involved in working on strategies, and when they are involved, scientists do not count it for being something helpful: ***Scientific world is not interested in public participation, for them it is just an annoying extra task and that scientific world does not really give any value to this participation, it gives no bonus points to scientists“ (PKÜ)***

7) transparency in decision-making and data release was also a concern for CSOs. CSOs often felt, that they are in information gap in both decision making and in scientific development: ***Information is being released or blocked according to business interests or strategic plans.“ (ETKL)***

8) it shall be noted, that in Estonian case it was stressed, that the state is not used to ask public, what public thinks of something, that ***„they are stupid, so why ask“ (PKÜ)***,

and the state also has not managed to work out some participation rules and schemes: ***“The state is not used to ask to participate. In Estonia there is not any law which would say how to involve public in for instance preparing the legal background for something” (EKO)***

and

9) that science and decision makers do not take into account emotional arguments or arguments based on social values, not even precautionary principle is being taken into account.

3 CSO definition of participation in science

In Estonian the word participation is covered by two words: one is ***“kaasamine”*** (meaning process where the stakeholders are invited to say something) and ***“osalemine”*** (where the active part is the participant himself who comes and says what he means without being asked to). Generally, in this project, Estonian context the use of term “participation” (and answers given to questions of participation) could be divided in four groups which I have decided to name ***Invited Participation in Decision Making (IPDM)***, (*kaasamine otsustusprotsessidesse*), ***Pro-Active Participation in Decision Making (APDM)*** (*osalemine otsustusprotsessides*), ***Invited***

Participation in Development of Science (IPDS) (kaasamine teaduse arengusse) ja Pro-Active Participation in Development of Science (APDS) (osalemine teaduse arengus). With regard to GMOs the participation work of Estonian CSOs remains mainly in the area of decision making (both IPDM and APDM), but indirectly some organizations felt that they make a contribution to APDS as well, not as primary aim, but in a more indirect way, as mentioned above. Several organizations felt their activities as belonging to APDS too, but not in GMO issues, but in neighboring issues, as organic farming or other aspects of environment protection. Greenpeace DK could be seen as also more involved occasionally in APDS doing own research and communicating it out, unfortunately stumbling over the pre-determined negative attitude:

“Our role has often been to take researchers arguments and translate them into being politically useful, but we really use a combination of methods – information of public, political work, contact with researchers; we also make a bit of our own research, but as we are an activist organization which has clear position on GMOs it is better if an independent researcher or body (e.g. UN) publishes a report than if Greenpeace publishes a report, because it then is more effective. It has unfortunately been our experience – very unreasonably, because our research is actually well done – that it is being seen as less reliable than research from an independent body.”

CSOs had following **comments on participation in science and decision making:**

“The biggest problem we have is communication with scientists. There are very few scientists who are willing to get involved in constructive collaboration. We have many questions but few scientists who agree to work with us on finding answers to these questions. Usually, the scientists who are already specialized that much, are in opposition.” (Lietuvos Zaliuju Judejimas)

Many NGOs expressed the view, that scientists are not really keen on cooperation:

“Once we tried to engage a scientific advisor, but experienced molecular biologists refused even to think about it, because for them it would have meant that working with “anti-GMO-activists” they will spoil their career if other molecular biologists will know about it.” (ELF)

As mentioned already, CSOs often perceive science as being quite isolated from society and working rather together with industry.

The interviewed CSOs did generally express two views on participation in science – some CSOs meant that CSOs shall be engaged in questions of development in science, some CSOs meant, that their task should rather be connected to questions around application of scientific results.

CSOs who have a view on how science should develop, thought that some important questions to discuss/change do refer to following topics:

a. allocation of money for scientific research: priorities on how to use the money should be laid down according to public interest. For instance, if public supports conception of organic farming and not agricultural biotechnology, then public money should go to development of research in organic farming and not agricultural biotechnology. It is important that state should have a balancing role and direct money towards those areas, which are priority of public but not supported by industry.

b. The participation could be organized through i.e. ministries, universities, organizations – the particular institution was not felt to be that important, but it was stressed, that it should be made in as early stage as possible, to avoid a confrontation later:

”In Lithuania, GM trees are being constructed and they are advertised as universal panacea against climate change, never minding to mention, that there are many [unsolved] problems already now with GM trees. When we point out problems, those tree-makers say, that our questions are too preliminary, trees are not yet there, they are not ready with constructing them. But in two years they will ask permit [for growing] [...] If you do not involve public from the beginning, later it becomes an argument per se that some money has already been spent [on developing particular GMO]” (Lietuvos žaliųjų judėjimas)

As a result of participation, in collaboration of public and different institutions, there public science agenda should come into the being in the state.

c. On the level of scientific projects it was said, that people, not directly belonging to the projects and representing public, should be present there: ***“In projects, there are often advisory committees, but they consist of people, who are directly gaining something from it. But there should be people, who are not directly connected to project, who are not results-sensitive and who represent more general interest.”***

(ÖTK)

Some CSOs found that fundamental science should be free, but application of science should be controlled and it is very important to involve public in the stage of whether the results should be used or not.

Additionally, it was said, that public should get the idea, that science is not the thing in itself, but there are also results, and this result can affect all people. The scientific results should be discussed thoroughly between the public/state/scientists. Even if it can seem difficult because of huge specialization in science, but ***”Every topic has its’ meta-level, which is not that technical but more general – and at that level everybody should be able to say what he means” (EMSA)***. One of critical points, which was made by CSOs was actually, that the debate often is being made very technical and it is actually being used to silence public: ***”If you want to have public participation then you must listen to people, who say, they don’t want to have it. In stead of that the debate is made so technical, that one can not participate in it anymore – and by this you just close smashing the door in the face of those people who want to say something but so not have technical language for that - people who say maize in stead of NK603 and environmental release directive in stead of 2001/18.” (Greenpeace DK)***

CSOs who did not see their role in influencing development of science, found that CSOs task is to balance ”pure science” with values and opinions in society and decision makers should take both into account, but this is not the case in real life yet.

”Already this approach, this starting point, that science is the basis for decision making, is wrong, because we should step out of science world and also study, what is public interest and wishes of public. [...] CSOs give “pure science” balance by communicating society’s value side and decision makers should take it into

account.” (EKO) CSOs mean, that science can get too cocksure and public can point this out.

The same thought is reflected by Lietuvos Zaliuju Judejimas: *“Ministries often try to emphasize „objectivity“ of their decisions and measures. In environment protection, you can not be objective – because to protect something is already subjective by nature and based on certain values. And wit so-called „objective“ information it is often tried to eliminate values and make decision just technical.*

With regard to participation in decision making processes, CSOs found, that the public should be given a real possibility of participate in GMO application process *”presently it is being made on EU level, which lay peoples’ opinions do not reach and they do not even know, that they have possbility to say something” (EKO). It was also criticized, that ”public is invited to participate when whole apparate is already being activated (Greenpeace DK)”*

4 CSOs recommendations

In the interviewes CSOs made some recommendations for how to move on with eleminating some of the factors, that hinder **participation in decision making**:

1) CSOs also found that the better schemes for should be developed, e.g. *”there should be some rules in legislation, saying, that when making development plans and strategies, some particular procedures should be followed – i.e. to conduct public discussion” (SEI). CSOs estimate, that if development of civil society is wanted, then the decision making should become more transparent.” And if the decision making process in the state becomes more transparent then civil society groups will have more interest and motivation to participate, beacuse otherwise you always run headfirst into the wall. CSOs need to see, that processes can also be changed in reality, not only in theory. ” (EMSA)*

The state should define, what is the aim of asking CSOs to participate, and not save money on participation that badly – ministries should have ressources to work with participation (time, duty to do so), morem oney should be planned for participation in ministerial budgets. It is also needed, that state improves the professional competence in its’ institutions: *”It should be that work is done by competent people, not people belonging to the „right“ political party“ (Allergialiit)*

2) It was felt as being crucial to get meaningful feedback from authorities, because answers are often just formal: *“Authorities should explain logic and structure behind their decisions” (ERL)*

3) As one of big obstacles from CSOs point of view was lack of resources in CSOs due to lack of finances and because it can be a problem, that governmental funds do finance only politically „correct“ issues, then some basic financing schemes are needed for CSOs capacity building, which could give CSOs possibility to work and make themselves heard in a public room. However, it is important that these schemes would be transparent, so it will not lead to „greenwashing“ and would really articulate

the public will. One of possibilities in Estonia could be that tax payers could decide for some part of their taxes, that it should go to a certain CSO.

With regard to **participation in science** CSOs communicated, that

1) science should be more independent from private interests and private money. With regard to priorities and financing, it was said, that authorities should investigate, what is public interest and then direct from this interest, not from industry's interest. And for that the public agenda is needed, because if you do not have it, then it is easy for industry to tilt the development. For that, there should be available a public room for public debate (and, as already mentioned above and stressed in following quote, CSOs should have resources to be able to use this public room):

„Now there is also a problem, that industry says to the government: we already put some money in that particular field, if you also will put some money, the prospects will be better. And if the state does not have any agenda, according to which it should act, then it says – well, how interesting, of course we will. If there is no opinion, then it is very easy to tip the opinion to whatever side. But here we can also see situations, where society does have an opinion but it does not automatically create an agenda and then the state should channel this opinion and actively work on creating this agenda. And if you have had a debate, then you can say, that citizens have expressed an informed opinion, and if no debate has taken place and you just talk on the basis of opinion polls, then it is easy to say, that it is populism and public doesn't understand it anyway what it wants, and then it is easy to argue against and not to listen to what people do say. And debate can not come into being if there is just a monologue of just one opinion from the state's side. If debate is to come, then you need presentations and estimations from different science fields and different groups of society and this debates should be available for reading afterwards (eg in the Internet) so who is interested can try to form his or hers own opinion on basis of the different opinions. And ministries should of course have workers who have time and possibilities to actively work on this issues, because otherwise it will end up being nobodys responsibility to take care for public participation.“ (ELF)

2) But already informing public about what is happening in science should be better, become less formal. Science should move closer to society and communicate itself, but also take in the comments coming from society and consider them.

To promote participation in science, participation should be rewarded amongst scientists, should become more prestigious, because *“today involving society does not give any additional bonus points, the only thing that counts [in science] is the number of published articles” (PKÜ)*, communication of applied science should be improved and after communicating it should be listened to public reaction. And as finding common language between different stakeholders groups is always difficult, then it should be tried to improve communication through promotion of common language: *” It is as if there are three groups – scientists, stakeholders and politicians – and every group speaks its' own language and do not understand each other. In that kind of processes (eg projects) it maybe could help to find a person who is good to communicate and has an insight in all those three areas (science, public interest and politics) and who can bring those three different languages together.” (PKÜ)*

In addition to that, CSOs expressed their regret, that research which is carried out by CSOs is not really accepted in scientific circles, a negative pre-determination and scepticism is common.

3) And in interaction between scientists and state ***"ministries should also involve scientists who are of different point of view [in context of mainstream science] – today they are marginalised and not invited to any committees or discussions"*** (Lietuvos žaliųjų judėjimas).

4) CSOs expressed opinion of need for openness from scientists and government. The interviewed CSOs called scientists and officials/authorities not to be pre-determined and discount questions and concerns of public as „stupid“. People do have right to ask for answers and feel doubtful when they do not get them: ***„The simple practice shows, that reorganizing nature is not a right thing to do. [...] But if thing being changed is something, which is in so close contact with human, which is most important component to be alive, then the strong fear arises and therefor we need answers – both answers to the questions wich arise in scientists' head, and answers to questions arising in ordinary peoples heads, also the smallest and and most stupid questions need to be answered – and not in the way, as it is done now: that until now we hace not had any negative impacts - because the truth is, that we haven't studied enough."*** (Allergialiit)

The debate and confrontation around GMOs could be helpful to make an notion, that public wants and needs to be heard and taken into account:

"The most important thing is to learn from all this process with GMOs – that if you have some clear signals from population that they do not want to have something – then it is there you must listen. It does not help that people say no to GMOs and then you put it on the market and ask after that what you think of them. Those 80% who said "no" are having feeling of being quite stabbed in the back and let down and won't answer any more – that is a theater for public and not public participation." (Greenpeace DK)

Furthermore, scientists and decision makers need to be open - and not only around giving information to public , but also with regard to outcomes should not be pre-determined and take civil society as an equal partner:

For me, the question of participation was defined some years ago by the Minister of home affairs, Ain Seppik. Minsitry was trying to decide how to support local rural NGOs and how to share the money and then he said at a governmental press conference something like this: actually, NGOs – but they are mostly hoodlums and directly connected to criminals ... and that's what is a problem and what we should get over with: the style of governing the state. It is just so common that before ending up in government people all are very nice but when they reach a certain level, then they just close the answers: you just do not listen to what somebody says, you are the one who always knows best. I do not think about any conspracy theories here now, but the state is governed like a industrial plant. Probably we do need a initiating mechanism which would change the culture [of governing the state]. (EMSA)

Finally, it was said about GMO issue and work of EFSA (European Food Safety Authority), that it is important to separate off risk administration and risk management. With regard to EFSA it was said, that it is crucial to change work of EFSA so industrial lobby could not affect it. One of the proposed models was the new financing scheme:

„And second thing is, that if we look at how in Europe things are financed, eg how EFSA works, then it should be only elementary, that financing of the risk assessments should come from biotech firms but they should not do it themselves. They should give money for that and then there are independent researchers in labs who work on this and analyse should be ordered by EFSA and not biotechnology firms, but for the money they give. There should be created a fund, where every firm gives a certain amount of money and some financial award is given every year to the best labs – in this case there would be an indirect impact on development of science – the science would develop more neutrally and would not be that dependent on industry and then industry would not be able to put such a big pressure on science. Right now it is industry, who works in its own interest, but risk assessments should be moved to a place, where the public interest institution would be work with them.“ (ELF)