REPLY of LUXEMBOURG

ANNEX 1

QUESTIONNAIRE about the socio-economic implications of the placing on the market of GMOs for cultivation

January 2010

A – Introduction note

Article 31.7 (d) of Directive 2001/18/EC[1] provides that the Commission should send to the European Parliament and the Council a specific report on the operation of the Directive including inter alia an assessment of the socio-economic implications of deliberate releases and placing on the market of GMOs. These implications are defined in Recital (62) of the Directive as the socio-economic advantages and disadvantages of each category of GMOs authorised for placing on the market, which take due account of the interest of farmers and consumers. In its 2004 report, the Commission noted that there was no sufficient experience to make such an assessment (the Directive became fully applicable as of 17 October 2002 and several Member States had not transposed yet so only little experience of its implementation was available).

Moreover Regulation (EC) No 1829/2003, its articles 7 and 19, asks the Commission to submit a draft of the authorisation decision taking into account, together with the opinion of the Authority in charge of the scientific assessment, "other legitimate factors relevant to the matter under consideration".

At its meeting on 4 December 2008, the Environment Council adopted conclusions on GMOs mentioning among other things the appraisal of socio-economic benefits and risks of placing GMOs on the European market for cultivation. In particular the Council conclusions indicated the following:

"The Council:

7. Points out that under Regulation 1829/2003 it is possible, under certain conditions and as part of a case by case examination, for legitimate factors specific to the GMO assessed to be taken into account in the risk management process which follows the risk assessment. The risk assessment takes account of the environment and human and animal health. Points out that under Directive 2001/18/EC, the Commission is to submit a specific report on the implementation of the Directive, including an assessment, inter alia, of socio-economic implications of deliberate releases and placing on the market of GMO.

   Invites the Member States to collect and exchange relevant information on socio-economic implications of the placing on the market of GMOs including socio-economic benefits and risks and agronomic sustainability, by January 2010. INVITES the Commission to submit to the European Parliament and to the Council the report based information provided by the Member States by June 2010 for due consideration and further discussions.

[1] Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC

This possible consideration of socio-economic factors in the authorisation of GMOs for cultivation has also been raised by several Member States in the Environment and Agriculture Councils of the last months[2].

In order to respond to the invitation of the Council conclusions of 4 December 2008 and to the requirements of the legislation, the Commission invites Member States to submit all information they would consider relevant by January 2010 at the very latest.

In order to help Member States in structuring their responses, the Commission drafted a non exhaustive list of areas and stakeholders which could be concerned. In addition, for each of these categories, we have introduced in the annex a list of leading questions which could be used where considered appropriate.

When preparing their contribution Member States are invited to report *ex post* on the socio-economic impact of GMOs that have been approved in the EU and cultivated in their territory. Additionally, Member States are also invited to assess *ex ante* the possible implications of GMOs of currently pending approvals as well as those which are under development according to the best of their knowledge. One possible source of information in that respect is that recent report produced by the Joint Research Centre titled "The global pipeline of new GM crops" (available at http://ipts.jrc.ec.europa.eu**).**
The submissions must be as explicit and informative as possible and supported by evidence and data. When feasible, the socio-economic analysis – be it *ex post* or *ex ante* – should be quantified. In case documents are attached, they should be accompanied by a summary of the relevant part and a specification about the argument or topic that is being defended.

Where stakeholders are consulted at national level (e.g. farmers and consumers), we would appreciate it if their responses would be incorporated in your submission in an aggregated fashion. The list of stakeholders consulted, as well as any other pertinent information, may indeed be attached to the questionnaire.

Please note that the contributions must only deal with "socio-economic implications of the placing on the market of GMOs including socio-economic benefits and risks and agronomic sustainability" for each category of GMOs. These contributions should cover cultivation of GMOs and placing on the market of GM seeds.

If you choose to fill in the annexed questionnaire, please consider that answers should be broken down by the purpose of the genetic modification (herbicide tolerant, insect resistance, etc) if this affects the content of the responses.

DEADLINE FOR CONTRIBUTIONS: January 2010

[2] Environment Council of 2 March 2009, Agriculture Council of 23 March 2009 and Environment Council of 25 June 2009

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C – Areas and stakeholders on which Member States are invited to comment

1 - Economic and social implications: influence on concerned economic operators

Upstream

1.1. Farmers

For each question, answers can be broken down by the range of stakeholders:

- *farmers cultivating GM crop;*
- *and/or conventional crops;*
- *and/or organic crops;*
- *beekeepers;*
- *seed producers producing GM seeds;*
- *seed producers producing conventional seeds;*
- *seed producers producing organic seeds;*

…

1.2. Seed industry

For each question, answers can be broken down by the range of relevant stakeholders, including:

- *plant breeders;*
- *multiplying companies;*
- *seed producing farmers;*
- *seed distributors;*

…

Downstream

Consumers;
Cooperatives and grain handling companies;
Food and feed industry;
Transport companies;
Insurance companies;
Laboratories;
Innovation and research;
Public administration.

Economic context

Internal market;

Specific regions and sectors.

2 - Agronomic sustainability

Biodiversity, flora, fauna and landscapes
Renewable or non renewable resources
Climate
Transport / use of energy

3 - Other Implications

ANNEX

Lead questions per area and stakeholder

For each question, answers should be broken down:
- by the purpose of the genetic modification if this affects the content of the responses,
- between ex ante and ex post considerations.

INTRODUCTION

As a follow up of the Council Conclusions of December 2008 on the definition of criteria for socio-economic effects and the evaluation on the basis of these criteria, Luxembourg welcomes the present questionnaire elaborated by the Commission in order to collect information on socio-economic implication of the GMO marketing in the Member States. As other Member States Luxembourg strongly supports the idea that the evaluation of socio-economic criteria should be part of the authorization procedure of GMOs in the EU.
However we would like to remind that there was until now no growing of any GM crop in Luxembourg and that there is very limited experience as well about growing of GMOs in the other Member States. Therefore it seems to us very difficult to response to most of the questions raised by this questionnaire, due to a lack of data.

Luxembourg would also like to remember that there has been recently a Conference in the Netherlands about GMOs, during which a Ministerial Roundtable on socio-economic criteria took place. In this meeting, the Netherlands presented a proposal for socio-economic criteria, which was completed by supplementary suggestions from the delegations participating to this roundtable.

Luxembourg considers the Dutch document on socio-economic criteria as well as the additional issues mentioned by the participants to that discussion as a first step in the right direction. Details however, how to define socio-economic criteria, have to discussed at EU level.

Freedom of choice is essential for farmers and consumers and an important socio-economic criterion. In Luxembourg both have a clear preference for a GMO free food production. Therefore Luxembourg thinks that it is a priority to avoid the adventitious presence of GMOs in other products. This target can be in certain cases achieved by coexistence measures as for instance isolation distances. But in other cases, due to specific crops as for example oil rape seed or to regional landscape a fieldsize, coexistence measures might not be sufficient

to prevent the unintentional spread of GMOs and consequently other regional solutions are needed.

1. - Economic and social implications

Upstream

1.1. Farmers

For each question, answers can be broken down by the range of relevant agricultural stakeholders farmers

- farmers cultivating GM crops;

For the moment there is no growing of GMOs in Luxembourg and there has never been any GM crops in Luxembourg. At present the existing GM varieties do not offer any economic benefit for farmers from Luxembourg. On the contrary, as farmers and consumers in general are strongly opposed to GMOs, those farmers, who would like to cultivate GMOs, might have serious problems, not only with neighbors but also to marked their harvest. Furthermore the risk of outcrossing and the liability for adventitious presence of GMOs in other products represent another major potential problem for farmers growing GMOs.

- and/or conventional crops;

For farmers growing both kind of crops, a complete separation between GM and non GM products seems difficult to achieve.

Purely conventional farmers risk adventitious presence of GMOs in their harvest products and subsequently all kind of problems occurring with damage claim (for instance legal disputes etc.).

- and/or organic crops;

Organic farmers have to face the same problems than conventional farmers and besides risk to lose their markets in case of adventitious presence of GMOs in their organic products.

- beekeepers;

Conventional farmers can be more or less (depending of coexistence measures, kind of crops, field size and shape) protected against the unintentional

spread of GMOs by coexistence measures. These measures however are completely inefficient for preventing beekeepers from any adventitious presence of pollen from GM plants in their products. There is therefore a high risk to find pollen from GMOs in honey. Such a honey would be nearly impossible to marked. Even more than honey producers, beekeepers that produce and market pollen are at present stage without any defence with regard to GM crops. Pollen labeled as a GM product could certainly not be marketed anymore. Beekeepers are economically particularly vulnerable vis-à-vis the dissemination of GMOs.

- *seed producers producing GM seeds;*

Seed producers producing GM seed will not only have to assure seed purity of their harvest as any seed producers, but in addition also have to avoid outcrossing of the GMOs to neighboring fields.

- *seed producers producing conventional seeds;*

The production of GM free seed is essential for the Non GM food production chain. The strategic value of the conventional seed production is of outmost importance, as the seed production is the first step of the food production. Conventional seed producers therefore must be very careful and conscious in order to avoid any unintentional presence of GMO. It is very likely that occurrence of GM crops will increase the production costs of conventional seed production. The detailed answer to that question is closely linked to the labeling thresholds for the adventitious presence of GMOs in conventional seed lots, that will be established in the EU.

- *seed producers producing organic seeds;*

Organic seed producers will have to face the same problems than mentioned above for conventional seed growers.

Has GMO cultivation an impact regarding the following topics? If so, which one?

- farmers' revenues (output prices and agricultural yields);

At present GMOs will not increase the farmers revenue in Luxembourg, neither for GM growers, who will have to apply coexistence measures, neither for conventional and organic farmers, who will have to take additional protection measures (controls, analyses, etc..) in order to avoid any presence of

GMO in their products. On the other side the currently marketed GMOs will not increase yields in Luxembourg, but risk to lower the prices for the harvest products of GM crops and of conventional products devaluated by adventitious presence of GMOs.

- farmers' production costs;

Existing GMOs will very probably not lower the production cost in Luxembourgs agriculture, as GM seed will be more expensive than conventional seed.

- labour flexibility;

As there is a lack of data about GMO cultivation, it is difficult to make a concrete statement to this item.

- quality of the harvest (e.g.mycotoxines);

There are studies showing that the quality of the harvest from GM maize varieties resistant to the European Corn Borer is better concerning contamination with mycotoxines.

- cost of alternative pest and/or weed control programmes;

The cost of alternative pest and weed control programs are well known, but what about the cost of GMO growing concerning resistance management and appearance of resistant weeds and pest due to the this technology? There is a lack of data concerning this subject and therefore it is difficult to compare cost of GM and non GM pest and weed control for the moment.

- price discrimination between GM and non-GM harvest;

Non GM harvest products will probably obtain a higher price. Anyhow the separation of the production chains of GM and Non GM harvest will increase the prices for both kind of productions.

- availability of seeds and seed prices;

The growing of GM crops will very likely increase the production cost and consequently the prices of conventional seeds, depending of course of the labeling threshold for adventitious presence of GM seed in conventional seed lots, still to be established by the EU. In deed conventional seed producers will have to take a certain number of measures during seed production in order to avoid any undesired presence of GMOs in their products, influencing directly the seed production costs.

- dependence on the seed industry;

As only a few major global players can afford the cost to develop GMOs, the increasing of GM agricultural crops will at the end lead to the fact, that the seed marked will be dominated by only a few bigger companies. Consequently the dependence of farmers on the seed industry will increase.

- farmers' privilege (as established by Article 14 of Regulation (EC) No 2100/94 on Community plant variety rights) to use farm-saved seeds;

“Farmers privilege” concerns the use of farm saved seed in the framework of the community plant breeders right. However GM varieties do not only fall under the scope of plant variety rights but also under patent rights. This might limit the farmers rights according to the so called “farmers privilege”.

- the use of agriculture inputs: plant protection products, fertilisers, water and energy resources;

The aim of GM crops should be the reduction of agricultural inputs as protection products, fertilizers, water and energy. However at the moment we must admit that GMOs are fare away from having reached this target.

- health of labour (possible changes in the use of plant protection products);

See answer above.

- farming practices, such as coexistence measures and clustering of GMO and/or non-GMO production;

GMO growing will lead to coexistence measures and interfere with farming practices such as rotations.

- cost of coexistence measures;

The costs of coexistence measures must be supported by the GMO growers.

- conflicts between neighbouring farmers or between farmers and other neighbours

Cultivation of GMOs will probably lead to conflicts between GM growers and Non GM growers.

- labour allocation- insurance obligations;

No comment.

- opportunities to sell the harvest due to labelling;

No comment.

- communication or organisation between the farmers;

GMO growing might disturb the existing cooperation between farmers, who share machineries together, as there is a serious problem for Non GMO farmers to use the same machines than GMO growers.

- farmer training;

No comment.

- beekeeping industry.

See comments above, about beekeepers.

1.2. Seed industry

For each question, answers can be broken down by the range of relevant stakeholders, including:

- *plant breeders;*

The development of GMOs will remain in the hand of a few major actors and lead at the end to a concentration process of breeding activities and breeding companies.

- *multiplying companies;*
- *seed producing farmers;*
- *seed distributors;*

The growing of GMOs risk to increase the cost for seed multiplying companies, seed producing farmers and also seed distributors due to segregation measures.

And/or:

- *GM seeds;*

No comment

- *conventional seeds;*
- *organic seeds;*

Both conventional seeds and organic seed risk to become more expensive due to the cultivation of GMO and the necessary segregation measures to avoid any adventitious presence of GMOs in conventional and organic seed lots.

And/or:

- *industrial / arable crops;*
- *vegetable crops…*

No particular comment

Has GMO cultivation an impact regarding the following topics? If so, which one?

- employment, turn over, profits;
- the production of seeds (easiness/difficulty to find seed producers, easiness/difficulty to find areas to produce these seeds…);
- marketing of seeds;

The cultivation of GMOs will have a negative impact on the conventional seed sector as the production cost and difficulties in general will increase, at least in certain small structured regions.

- the protection of plant breeders rights; - the protection of plant genetic resources.

As GM events are protected by patents, there will be an interference between patent law on biotechnology inventions and the classic plant breeders right system.

GM crops, due to a possible outcrossing of the GM trait, will considerably increase difficulties to protect plant genetic resources.

Does the marketing of GM seeds have an impact on the seed industry and its structure in the EU (size of companies, business concentration, competition policy)? Please specify per sector.
- for plant breeders;

If the growing and breeding of GM crops will continue to increase this will at the end lead to a concentration process in the breeding sector, as only bigger companies can afford the cost to develop GMOs. The consequences will be a loss of diversity in breeding activities. However sustainable agriculture needs a various choice of varieties and species, grown by farmers, and consequently of breeding companies.

- for seed multiplication;
- for seed producers;
- for the availability of conventional and organic seeds;
- creation/suppression of barriers for new suppliers;
- market segmentation.

See all the relevant remarks on that subject made before.

Downstream

1.3. Consumers

Has GMO cultivation any impact regarding the following topics? If so, which one?

- consumer choice (regarding quality and diversity of products);
- the price of the goods;
- consumer information and protection;

A large majority of consumers in Luxembourg are opposed to GM food production.

1.4. Cooperatives and grain handling companies

Has GMO cultivation any impact regarding the following topics? If so, which one?

- work organisation;
- handling and storage;
- transport;
- administrative requirements on business or administrative complexity.

As already stated before, the segregation between GM production chain and the Non GM production chain will increase cost for both.

1.5. Food and feed industry

Has GMO cultivation any impact regarding the following topics? If so, which one?

- range of products on offer;
- employment, turn over, profits;
- work organisation;
- crop handling (drying, storage, transport, processing, etc...);
- administrative requirements on business or administrative complexity;

See answer to the question before.

1.6. Transport companies

Has GMO cultivation any impact regarding carriers (insurance, cleaning, separate lines...)? If so, which one?

Segregation between the GM food production chain and Non GM production chain will increase cost, including costs for transport of agricultural raw materials.

1.7. Insurance companies

Does the GMO cultivation have any impact regarding insurance companies (e.g. in terms of developing new products)? If so, which one?

No comment

1.8. Laboratories

Has GMO cultivation any impact regarding the following topics? If so, which one?

a) In general, the officially validated event-specific methods are fairly robust (although in general only validated for ABI thermocyclers-why does the commission accept his matter of fact?!). However, for screening methods a harmonization of methods is urgently required because labs do rely on these methods to decide if a sample is considered to be GMO-positive or not and for which GM events the lab is going to search for in case of a positive result

b) for some of the newly authorized GMOs, reference material is no longer available from the JRC-IRMM, because the producers now prefer to provide their material to an American company (American Oil Chemists' Society). The problem with the reference material then produced by this company is that α) it is difficult for some state administrations to buy them because AOCS is requiring pre-payment and β) are mostly delivered at concentrations (e.g. mostly 100%GMO) unsuitable for a correct calibration of the quantitative event-specific methods (where a threshold value of 0.9% is supposed to be verified)

Due to the ever-increasing number of GMO authorizations, the number of individual analysis (e.g. Real-Time-PCRs) to perform in order to identify (and quantify) the GM events responsible for positive screening results can be higher than 100 (if ISO requirements are to be met). This is leading to unacceptably high reagents costs and is also very time-consuming. Therefore, multiplex methods able to circumvent these drawbacks are urgently needed.

- time necessary to provide the results;

See above

- prices of the analyses

See above

- time necessary to provide the results;
- prices of the analyses.

Any other impact you would like to mention:

1.9. Innovation and research

Do GMO cultivation and the technology spill over have an impact on the following topics? If so, which one?

- investment in plant research, number of patents held by European organisations (public or private bodies);
- investment in research in minor crops;
- employment in the R&D centres in the EU;
- use of non-GM modern breeding techniques (e.g. identification of molecular markers);
- access to genetic resources;
- access to new knowledge (molecular markers, use of new varieties in breeding programmes, etc.).

There are no data available from Luxembourg concerning these topics.

1.10. Public administration

Has GMO cultivation any impact regarding the actions of the national public administrations and the necessary budget (national and local level) for example policing and enforcement costs.

In case of GMO cultivation the relevant public administration will have to control if all the legal requirements (isolation distances etc..) are fulfilled by the GMO growers. This will lead to a cost increase for the public administration.

Economic context

1.11. Internal market

Does the placing on the market of GMO seeds have an impact on the functioning of the EU internal market on seeds? If so, which one?

No data available

Does it have an impact on the internal markets for services (if so which impact and which services), for agriculture products and on workers' mobility? If so, which one?

No data available

Does GMO cultivation have an impact on monopolies? If so, which ones (emergence/disappearance)?

Yes, the cultivation of GMO will lead to less diversity concerning the varieties and species used by farmers, as show examples outside of the EU, where for instance for soybean, we can note a concentration on only a few GMO varieties .

Does it provoke cross-border investment flows (including relocation of economic activity)?

No data available on this topic.

1.12. Specific regions and sectors

Answers can be broken down on the purpose of the level (national, regional, local) and according to region.

Has GMO cultivation any regional and local impact in those regions regarding the following topics. If so, which one?

- agriculture incomes;
- farms' size;
- the farm production practices (e.g. increase or decrease of monoculture);
- the reputation regarding other commercial activities of the region/localities.

A certain number of local municipalities have declared themselves as GMO free zones.

2. - Agronomic sustainability

2.1 Agricultural inputs

Does the cultivation of EU approved GMOs for cultivation have an impact regarding the use of pesticides against target insect pests (i.e. corn borer)?

There is no cultivation of GMOs in Luxembourg, consequently there are no data available from Luxembourg concerning this particular point. However there are several studies all round the world showing that the use of pesticides is increasing with the growing of GM crops.

Does the placing on the market of GMOs have an impact, and if so which ones, regarding the use of pesticides or/and on the patterns of use of chemical herbicides?

See answer above.

2.2. Biodiversity, flora, fauna and landscapes (other impacts than the ones considered in the environmental risk assessment carried out under Directive 2001/18 and Regulation (EC) No 1829/2003)

Does the cultivation of EU approved GMOs have an impact regarding the number of non agriculture species/varieties?

Does GMO cultivation have an impact on agriculture diversity (number of plant varieties available, agriculture species, etc?)

There are no concrete data available from Luxembourg, concerning this point, as there is no growing of GMOs in Luxembourg. But examples from outside the EU show that the growing of GM Crops will lead to a concentration process on only a few varieties and that the number of varieties and species is decreasing. This loss of agricultural diversity will probably also negatively influence biodiversity in general.

Does GMO cultivation have an impact, and if so which one, regarding:
- protected or endangered species;
- their habitats;
- ecologically sensitive areas;

Does GMO cultivation have an impact, and if so which one, regarding:
- migration routes;
- ecological corridors;
- buffer zones.

As mentioned above the growing of GMO will probably have a negative impact on the biodiversity in general and consequently also on endangered species, migration routes, ecological corridors and buffer zones.

Does GMO cultivation have an impact, and if so which one, regarding:
- biodiversity;
- flora;
- fauna;
- landscapes.

See also answers to the questions above. Plus several studies showed that OGM can have a negative effect on non target organisms.

2.3. Renewable or non-renewable resources

Does the placing on the market of GMOs have an impact, if so which ones, regarding the use of renewable resources (water, soil…)?

Does the placing on the market of GMOs have an impact, if so which ones, regarding the use of non-renewable resources?

As mentioned before, this should be the aim of the utilization of GMOs in agriculture. Unfortunately until now with current GM crops, there is no positive impact concerning the use of renewable neither of non-renewable resources.

2.4. Climate

Does GMO cultivation have an impact regarding our ability to mitigate (other than by possibly reducing CO2 emissions from fuel combustion – see next section) and adapt to climate change? If so, which ones?

See also the answer to the question before.

2.5. Transport / use of energy

Does the cultivation of EU approved GMOs have an impact regarding energy and fuel needs/consumption? If so, which ones?

See also the answer above.

Does the cultivation of EU approved GMOs have an impact regarding the demand for transport in general terms? If so, which ones?

Due to segregation measures in order to separate the GM food production chain from the Non GM food production chain, transport of agricultural raw materials will increase.

3 - Other Implications