Discussion of the results of the questionnaire sent out by the European Commission about the socio-economic implications of the placing on the market of GMOs for cultivation

The questionnaire about the socio-economic implications of the placing on the market of GMOs for cultivation was sent to the following stakeholders:

1) Individual farmers involved in different types of farming (conventional and organic),
2) Sectoral agricultural organisations,
3) Agricultural councils,
4) Scientific institutions reporting to the Minister of Agriculture and Rural Development,
5) Scientific research institutions,
6) Environmental organisations,
7) Organisations representing a broad range of opponents of genetically modified organisms,
8) Agricultural advisory bodies.

These groups were asked to contribute their input to our reply in line with their areas of competence and responsibility. The questionnaire was sent to a total of 35 entities, 12 of which replied. Separate comments on the issues raised in the questionnaire were sent to us along with the completed questionnaires. Of the 12 replies, only 1 was from a farmer, 2 came from an inspectorate reporting to the Minister for Agriculture and Rural Development, 5 were from scientists, 3 from members of sectoral associations representing traditional agricultural producers and 1 from an agricultural council representative. None of the environmental organisations or groups opposed to new technologies replied to the issues raised in the questionnaire.

The major problem, which the Ministry of Agriculture and Rural Development considers has had an impact on the quality of the answers submitted, is the lack of provisions regulating the cultivation of genetically modified plants in Poland, as there are bans still in force on the registration of genetically modified varieties and on the trade in fodder plant seed of GMO varieties.

In all cases the respondents underlined the fact that, for the questions under points C-1 and C-2, only ex-ante analyses are possible. The scientists and representatives of sectoral associations provided ex-post analyses in the areas where this was possible, basing their answers on scientific literature and information shared widely among farmers.

They stressed that only one genetically modified product (MON 810 maize) had been authorised for cultivation in the EU. Their answers to the questions concerning production in the field were supported by reports from the literature and by research carried out in the field relating to experience with this maize. The answers provided by the sectoral associations and agricultural councils can be described as the input from representatives of farmers growing traditional crops. There was considerable consensus concerning the impact of GMO cultivation on farmers' revenues (output prices and agricultural yields), farmers' production costs and the quality of the harvest. There is a firm belief among respondents that the cultivation of Bt MON 810 maize is reducing the damage caused to crops by the corn borer almost to zero. According to the data quoted by the respondents, in the areas of Poland where the pest is prevalent, crop losses have reached 40% in recent years. This group of respondents also believes that growing GM maize brings considerably higher yields than growing traditional maize affected by pests. The information received from the agricultural councils shows that farmers are relatively well informed about the potential benefits of growing GM corn. Given that the cultivation of GM corn would give greater yields and that, with no pests, there would be healthier grain and less damage caused by fungi, all of the answers cited the increase in revenues.

The replies to the question on alternative pest or weed control programmes contained information on their relative ineffectiveness and the technical difficulties surrounding chemical treatments for corn, which makes growing non-genetically modified corn less profitable than growing GM corn. If growing GM crops reduces the use of plant protection products, it automatically follows that there will be a reduction in the amount of water and energy used due to the smaller numbers of agrochemical treatments applied.

Since there are no national regulations in place concerning the co-existence of genetically modified and non-genetically modified plants, the farmers did not reply to the questions on the costs of co-existence measures. No information was given on possible conflicts between neighbours arising from the potential introduction of genetically modified crops.

These same respondents gave very similar answers to the question regarding the impact of GMO cultivation on the dependence on the seed industry: they all said that that there was no impact. As a comparison, they pointed out that, when using certified seed, each type of seed involves a cost for the farm irrespective of whether it is a conventional variant or genetically modified one. They see no difference whatsoever between the impact of using

certified seed of conventional plants or that of genetically modified plants. Farmers producing high quality agricultural produce use certified seed placed on the market by seed companies.

Seed farm companies participating in the survey did not answer any of the questions; they only provided comments, raising various issues of greater or lesser relevance to the questions set out in the questionnaire. In these comments, the seed farm companies provided information on the expanding area of maize crops affected by the corn borer in Poland. They cited information to the effect that, in registered experiments carried out in Poland over the two years 2005-2006, the economic value was studied of five GM maize varieties with the MON 810 transgene that makes maize plants resistant to the corn borer. Where the prevalence of this pest was greater, primarily in the south of the country, significantly higher grain yields were obtained from the GM varieties than from the conventional ones. The average yield increase was between 3.9 and 9.1 dt/ha. On the basis of the results of this research, the seed farm companies claim that farmers in the areas where the core borer is prevalent, primarily southern Poland, would increase their revenues if they grew GM maize varieties with the MON 810 transgene, the only one authorised for use. The seed farm companies believe that, apart from the increase in yield, there would also be more stable harvests over the years and better quality grain. This means that less money would have to be spent on maize crop protection, which, as far as this pest is concerned, can only be carried out on farms with expensive specialist equipment. Permitting the sale of GM varieties would also boost the profitability of seed farm companies operating in Poland selling these types of varieties. The seed farm companies consider that a coherent legal system must be set up to regulate the cultivation of GM plants, the monitoring of the presence of GMOs in seeds of conventional varieties used for both feed and seed purposes, and the registration of GM varieties.

The Sejm is currently (January 2010) debating national provisions intended to regulate co-existence in accordance with European legislation. Representatives of traditional agricultural producers, sectoral organisations and seed farm companies have high hopes for this project. Above all they are hoping that the bans in force on the registration and trade in genetically modified plant seed material will be abolished.

The most replies to the issues raised in the questionnaire were provided by scientists. Their answers are supported by reports from scientific literature and the conclusions from national studies and their own research on the cultivation of MON 810 maize, as well as research on the cultivation of other genetically modified plants (sugar beet). The content of their comments was similar. With regard to the idea of taking social factors into account for the cultivation of genetically modified plants, the main conclusion from their comments is

that scientific opinion is and must remain the basis for determining whether a GMO product is safe for human and animal health and the natural environment. According to the scientific community, scientific research carried out so far throughout the world proves that genetically modified products are safe. The authorisation system in force in the European Union is the most restrictive in the world and guarantees that GMOs authorised and permitted for sale and cultivation are safe. In accordance with European law, the decision to approve new biotechnology products is taken on the basis of the scientific opinions of appropriate scientific bodies – primarily the European Food Safety Authority's GMO Panel. There is no basis whatsoever for extending these criteria. There is no legal definition of what socio-economic criteria are and it is not known what these criteria should refer to, particularly in the context of an assessment of European Union law in this area.

As far as scientists are concerned, socio-economic criteria constitute an imprecise and undefined basis for assessing GM products introduced for cultivation in the European Union. There are no grounds for introducing additional criteria for assessing GM products, especially criteria that would politicise the approval process. Scientists are of the opinion that GM products should be authorised on the basis of scientific data. While the inclusion of an economic criterion to assess the use of genetically modified plants in agricultural production is uncontentious, such an assessment should be carried out by producers who use these technologies and have practical knowledge of this subject, and by experts in agricultural economics. Scientists do not believe that there are grounds for including a social criterion in the assessment of the placing on the market of GMOs for cultivation. No branch of agriculture is subject to an assessment based on social criteria. If we were to introduce social factors into the assessment of agricultural activities, this could lead to a situation where we would have to block all agricultural development.

Traditional producers and scientists consider that growing genetically modified plants has a positive impact on the natural environment because:

- it reduces the number of agrochemical treatments used and thus the use of plant protection products;

- it reduces the amount of energy and liquid fuels used, in turn lowering the amount of CO2 emissions released into the environment;

- it reduces the amount of water used.

In the opinion of respondents, Poland's membership of the EU should guarantee the equal treatment of economic operators and compliance with the principles of the common market. The common seed market is hampered by the way in which the system for approving

the sale and cultivation of new genetically modified plant varieties works. Despite the fact that positive scientific opinions have been obtained from EFSA, the JRC and other international and European bodies specialising in assessing GMO safety, the access of European producers to these technologies is blocked for political reasons. On the one hand this leads to a lack of competition compared with other countries in the world (where almost 30 GM plant varieties are registered for cultivation) and, on the other, it causes numerous problems with grain imports from third countries (the so-called 'zero tolerance' policy). When conventional grain containing an admixture of genetically modified grain varieties not registered in the EU is imported into the Community, the zero tolerance policy means that importers incur huge financial losses, as the produce is blocked at the border and has to be returned to the country of export.

The debate on socio-economic factors came at the same time as a discussion on a proposal put forward by 'EuropaBio' for a questionnaire to be completed by farmers and used to collect information on the effects of transgenic plants on the environment. Such a questionnaire could be used in the future in Poland as one component of a general monitoring system. There are two particularly important issues as regards this questionnaire:

- the study of the effects of GM crops on biodiversity (including non-target organisms),

- the monitoring of target organisms for resistance acquisition (in the case of Bt crops).

There is a serious problem with the profile of the questionnaire, which places more focus on agrotechnical parameters than on monitoring changes in biodiversity. Another related problem is the insufficient knowledge of farmers in this area – non-scientific people cannot be expected to have specialist knowledge of taxonomy, for example. It should be noted that any studies in this field often require specialist equipment, facilitating the task of distinguishing and comparing species. Therefore, while the massive volume of crops calls for the involvement of farmers in the assessment process (these are people who know their land and are familiar with regional particularities), we must realise that the results achieved in this way are, to a degree, unreliable. In addition, monitoring requires certain parameters to be compared 'before' and 'after' the introduction of the factor that is likely to cause changes in the environment. There was a proposal that the term 'traditional crops' be used a reference framework for GM crops. In the case of studies into GM crops, however, that term is insufficient, because it is not very precise and it is therefore difficult to take this as an appropriate reference point (as this concept may be interpreted differently).

In a debate concerning socio-economic factors, if we are to present an analysis based on the results of the questionnaire received from the scientific community, seed farm companies and farmers, we should also summarise the opinions of those firmly opposed to GM crops in Poland. None of the organisations that are opposed to this technology took part in the survey. In recent years, the Agriculture and Environment Ministries have received numerous letters protesting against GMOs in general and in particular against the plan to release GM crops into the natural environment and to allow such crops to be grown commercially. Protesters are active in society and the media and are professionals when it comes to organising protest activities. They use the Internet, providing downloadable letters that anyone can print off and send the traditional way by post or direct by e-mail to government institutions. In the spring of 2009, a hunger protest took place against GM crops outside the Ministry of Agriculture and Rural Development. In August 2009, members of Greenpeace occupied the premises of the Ministry of Agriculture to protest against GM maize crops in Poland and to demand an immediate ban on such crops. Recently (August to December 2009), before the start of a debate in the Sejm on the Genetically Modified Organisms bill, the International Coalition to Protect the Polish Countryside organised an initiative called ‘Ask your MPs and Senators questions’, whereby citizens were encouraged to send questions to individual politicians asking them about the actions they had taken to eliminate the threat posed by GMOs and in particular the cultivation of genetically modified plants. In 2009 Greenpeace prepared and disseminated a 'White Paper on GMOs’, which consisted of a collection of documents prepared by each EU country that had introduced a ban on the cultivation of MON 810, a collection of international scientific publications proving the harmfulness of GM products and an analysis highlighting the scope for the introduction by the Polish authorities of an immediate ban on the cultivation of MON 801 maize in Poland.

The main conclusion drawn from all the information gathered from the questionnaires is that it is difficult to define one clear social criterion that could be determined by some measurable factor apart from a study of public opinion and consumer preference. While there is no doubt as to the appropriateness of including an economic criterion to assess whether the use of genetically modified plants in farming is justified, a social criterion is too vague and imprecise a factor, the nature of which is liable to change over time. The main prerequisite for taking a social criterion rationally into account is society’s right to express its wishes.