



Doc. 12531

25 February 2011

Genetically modified organisms: a solution for the future?

Report¹

Committee on the Environment, Agriculture and Local and Regional Affairs

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Summary

While, at world level, some non-member countries of the Council of Europe widely authorise genetically modified organisms (GMOs) without imposing restrictions, the European Union member countries base their policy on the precautionary principle with a very strict regulatory framework.

However, the first issue raised by GMOs is that of their impact in economic terms and, above all, on health and the environment.

The Parliamentary Assembly notes that there are still differences between the opponents and supporters of GMOs, although developments can be observed in national legislation and procedures.

As part of its ongoing concern to protect the environment and the right of every citizen to live in a healthy environment, and given scientific uncertainty as to the consequences of the use of GMOs, the Assembly recommends that Council of Europe member and non-member states frame and harmonise policies in the fields of public information, consultation and participation regarding the future of GMOs and establish guidelines for good agricultural practice where the production and use of GMOs are concerned.

It also reiterates the need to ensure that expert studies and appraisals concerning GMO issues are performed completely independently and transparently.

1. 2011 - March Standing Committee



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A. Draft resolution²

1. The use of genetically modified organisms (GMOs) in agriculture continues to be a topic of debate, and all the more so since the issue is not dealt with in the same way from one country to another.
2. The Parliamentary Assembly notes the diversity of approaches and political and legal solutions, ranging from the American approach based on “substantial equivalence” to the European approach which hinges on the precautionary principle.
3. The Assembly also refers to the international standards and treaties such as the Cartagena Protocol on Biosafety, the Codex Alimentarius and the Aarhus Convention, as well as its own [Resolution 1419 \(2005\)](#) on GMOs.
4. The introduction of GMOs may hinder the capacity of species to adapt and may disrupt relations between them, modifying the natural balance of ecosystems.
5. GMOs may also give rise to hazards in health, environmental and economic terms. Consequently, it is important to properly study the impact of the coexistence of different forms of cultivation (GMOs, conventional, agrobiological).
6. However, some experts stress that the development of GMOs and genetically modified plants would help to develop competitive, innovative and sustainable agriculture and protect the environment. They also believe that GMOs could, to a certain degree, help boost the green economy.
7. The Assembly nevertheless notes that there are numerous and serious risks linked to GMOs in the farming and food sector and draws attention to the need to use genetic engineering technology responsibly and appropriately as a means of increasing agricultural productivity in the world.
8. The Assembly is aware that many uncertainties remain as to the consequences of the horizontal transfer, by viruses, of genetic materials from GMO crops.
9. At the same time, it is clear that climate change is increasingly threatening agricultural production owing to rising temperatures, changes in rain cycles and more frequent flooding and drought, and GMOs could, to a certain extent, provide a means of combating famine and the food crisis.
10. Consequently, the Assembly recommends that Council of Europe member and non-member states:
 - 10.1. introduce regulations to define good agricultural practice where the production and use of GMOs are concerned;
 - 10.2. establish documentary traceability, as prescribed in European Directive (EC) No. 1830/2003;
 - 10.3. frame and harmonise policies in the fields of public information, consultation and participation regarding the future of GMOs;
 - 10.4. ban the cultivation of GMOs containing antibiotic-resistance marker genes;
 - 10.5. conduct studies to clarify the impact of the possible transfer of genes from genetically modified crops to human beings;
 - 10.6. seek to systematically protect biodiversity, particularly in protected natural areas;
 - 10.7. take the necessary steps to label products containing GMOs or derived from animals fed with GMOs;
 - 10.8. ensure that all expert studies and appraisals concerning GMO issues are performed completely independently and transparently;
 - 10.9. ensure the effective independence of European and national health evaluation agencies.
11. The Assembly also recommends that the European Union guarantee the right of its member states to decide whether or not to cultivate genetically modified plants and, if such cultivations exist, to establish GMO-free zones.

2. Draft resolution adopted by the committee on 25 February 2011.

B. Explanatory memorandum by Mr Le Grand, rapporteur

1. Introduction

1. Genetically modified organisms (GMOs) are living organisms (microorganisms, plant or animal) whose genetic material has been altered by man on the basis, for example, of a transgenesis operation.
2. GMOs are used in agriculture and for consumption (genetically modified livestock and plants) to improve methods and yield in agriculture.
3. The genetically modified plants (GMPs) most frequently cultivated are soya, maize, cotton and colza. There are two varieties: plants genetically modified to resist a herbicide and those intended to produce an insecticide (Bt).
4. The main countries cultivating GMOs for commercial purposes are the United States, Argentina, Brazil and Canada.
5. The Parliamentary Assembly already held a debate on the issue of GMOs in 2005, on the basis of a detailed report presented by Mr Wodarg on behalf of the Committee on the Environment, Agriculture and Local and Regional Affairs. The present report will not therefore revisit the subject as a whole, but will draw attention to the latest developments.
6. In [Resolution 1419 \(2005\)](#) on genetically modified organisms (GMOs), the Assembly set out a series of principles, namely respect for consumers' and producers' freedom of choice, preservation of sustainable development in agriculture, the precautionary principle, objectivity of scientific debate, and public participation. There is no longer any need to underline the continuing relevance of these principles or the fact that the main concern today should not be confirming them but, rather, ensuring their application Europe-wide.

2. Policies and legislation on GMOs: a diversity of approaches and solutions

2.1. Worldwide

7. There are several international standards and treaties such as the Cartagena Protocol on Biosafety and the World Trade Organization (WTO) agreements on application of sanitary and phytosanitary measures. The Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization (WHO) have also drawn up rules and standards in the framework of the Codex Alimentarius. Also worth mentioning is the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.
8. Some non-member countries of the Council of Europe widely authorise GMOs, do not separate flows of goods and do not stipulate any labelling for products derived directly or indirectly from this technology. However, the situation at world level still varies greatly and there are many countries which do not have access to GMOs or do not wish them to spread on their territory.

2.2. In Europe

9. As a general rule, in the countries belonging to the European Union, policy is founded on the precautionary principle in a quite strictly enforced regulatory framework, so that few authorisations are recorded (see the procedures for evaluating and authorising genetically modified food and feed and deliberate release into the environment of genetically modified organisms (Regulation (EC) No. 1829/2003; Directive 2001/18/EC)).
10. The European Food Safety Authority (EFSA) has a considerable role to perform in the development of GMOs. It provides the European Union with scientific advice and information for communication in the field of the risks relating to the food chain, and includes a scientific group on GMOs.
11. Community law covers, in particular, importing, processing, experimental growing (contained or open field), commercial crops, co-existence of different cultivation methods, traceability and labelling (with regard to the latter two, see Regulation (EC) No. 1830/2003). This community regulatory apparatus is regarded more or less favourably depending which position one adopts on GMOs. For some it is balanced, for others too severe, for yet others deficient or permissive.

12. The role of state authorities in the authorisation procedure and in the possible implementation of the safeguard clause appears paramount.

3. Issues raised by GMOs

13. It is necessary to compare the benefits and the costs for agriculture and society, and to assess the potential hazards.

14. There is also the question of compatibility, of consistency with a number of other goals, in particular food safety, that is to say food which is healthy and in adequate supply to feed the entire population without risk.

15. But it is most important not to disregard the environmental question, especially as regards the effect of pesticides on soils, water, fauna and flora.

16. This also presupposes thorough scrutiny as to acceptance of costs and liability in the event of pollution or contamination by dissemination, whether accidental or not.

17. Inter-state relations and the principle of solidarity with developing countries must also be taken into account.

18. In the context of world recession, the economic implications are paramount, compounded by the impact and the consequences of biotechnologies in this field.

3.1. Health safety

19. The first question that arose upon the discovery of GMOs was: what are the human and animal health hazards? In this context, reference should be made to the scale and the health, social, economic and political impact of a number of crises (bovine spongiform encephalopathy (BSE) and dioxin).

20. However, some consider that GMOs could provide a solution to the problems of malnutrition and under-nourishment thanks to the gains in productivity or to enhanced nutritive properties. For instance, Golden Rice was invented as an enriched foodstuff for use in regions with a vitamin A deficiency. According to its inventors, it could offer a response to the suffering of half a million people who go blind every year and the one to two million people who die every year because of vitamin A deficiency.

3.2. Environmental effects of GMOs

21. The environmental effects of GMOs warrant special attention, particularly as regards the effects of use of chemical inputs, fertilisers or pesticides and the implications for the preservation of biodiversity (destruction of insects and non-targeted animals, monocultures, large-area crops and deforestation, accidental contamination and also the appearance of potentially invasive resistant species).

22. It is therefore necessary for the impact of the coexistence of different forms of cultivation (GMOs, conventional, agrobiological) to be studied in greater depth.

23. Those in favour of developing GMOs and GMPs in Europe claim that such development forms part of the ongoing process of genetically improving plants by exploiting the transgenesis yielded by recent biological discoveries, such as the universality of the genetic code. Development would give access to new genotypes, within the framework of tight and specific regulations. GMPs would be of interest above all in helping to make agriculture competitive, innovative and sustainable, protecting the environment, improving diets in southern countries and, finally, boosting the green economy.

24. GMOs could open up new avenues in medicine. Growth hormones might be produced by transgenesis, for example, whereas up to now only extracts from the pituitary glands of deceased people have been used for that purpose.

25. The supporters of GMOs, who fear that Europe might be left isolated from a development which some countries, like the United States or Argentina, are already fully exploiting, believe that "GMO versus environment" is an erroneous logic that should be discarded. They consider the moratoria on GMOs unjustified.

26. They cite President Obama, who said: "It is about letting scientists ... do their jobs ..., and listening to what they tell us, even when it's inconvenient, especially when it's inconvenient. It is about ensuring that scientific data is never distorted or concealed to serve a political agenda and that we make scientific decisions based on facts, not ideology." They want European farmers to be able to choose whether or not to grow GMOs and want the precautionary principle to be applied, while at the same time encouraging transparent and safe innovation.

4. GMOs as a possible response to food needs

27. The increase in world population and climate change have become two major constraints on agricultural production. According to estimates, the world's population is likely to number over 9 billion in 2050, which presupposes, in the calculations of the FAO, a 70% increase in world food production.

28. At the same time, it has been observed that climate change is threatening agricultural production owing to rising temperatures, changes in rain cycles and more frequent flooding and drought, especially in the areas whose climate already makes them subject to natural disasters.

29. A number of organisations and research teams have sought to identify the technological changes needed in agriculture to meet the food needs of the world population. Their conclusions generally point to the importance of pursuing biotechnology research into the development of genetically modified crops, harnessing it with traditional genetic cross-breeding techniques, exploiting the potential of aquaculture and extending farmlands where extreme environmental conditions prevail (high saline levels, drought, etc.).

30. Some researchers have also suggested developing plants which could use nitrogen in the environment and reduce water pollution and greenhouse gas emissions. Accordingly, GMOs could be developed in environments subject to extreme conditions or disrupted by climate change. An FAO study suggests that agriculture is not only a victim of climate change but also itself a contributor to global greenhouse gas emissions.

5. Current issues regarding GMOs – legal aspects

31. The differences still remain very marked between opponents and supporters of GMOs, despite the attempts to find and apply a halfway solution.

32. Development in certain member states' national legislation and procedures is observed nonetheless.

33. The European Union has toughened the enforcement of the European Union legal framework on GMOs (Environment Council decision of December 2008, evaluation process initiated by the Directorate General for Health and Consumer Affairs (DG SANCO) in October 2009, report delivered in the summer of 2009).

34. On 2 March 2010, fresh authorisations were also granted by the European Commission, namely the authorisation to grow the Amflora potato developed by BASF and the authorisations to import three genetically modified maize varieties of the Monsanto Company; the procedures initiated for renewing authorisation of certain GMOs (Mon810 maize) were pending.

35. France and Germany have already applied the safeguard clause concerning Monsanto 810, and there has been liability litigation in the United States in a case of contamination, which resulted in the award of heavy damages.

36. On 29 June 2010, European Union agriculture ministers failed to reach agreement by qualified majority on authorising or banning the sale within the European Union of genetically modified maize. On 28 July, the European Commission authorised for ten years the sale of six maize varieties and renewed the authorisation for Monsanto Mon810, for both food and feed purposes. Renewal was granted for Bt11 maize developed by Syngenta, alongside authorisation for five new GM maize varieties (Bt11xGA21 by Syngenta, 1507x59122 by Dow Agrosciences/Pioneer and three others by Monsanto (59122x1507xNK603, Mon88017xMon810 and Mon89034xNk603)).

37. Human food and animal feed containing GM maize are now therefore authorised for sale throughout the European Union for the next ten years. Only growing them is banned. They supplement the three GM soya varieties, six GM cotton varieties, three GM rape varieties, 17 GM maize varieties and the GM sugar beet already authorised for sale in Europe.

38. This decision should lead to the still wider circulation of transgene products throughout the European Union.

6. The European Food Safety Authority (EFSA)

39. GMO opponents have raised questions about the existence of serious conflicts of interest within the European Food Safety Authority (EFSA), which is responsible for issuing scientific advice on GMOs.

40. In 2009, Suzy Renckens, Head of the GMO Unit at the EFSA, joined Syngenta before the expiry of the two-year period required for avoiding conflicts of interest.

41. On 29 September 2010, it was revealed that Diana Banati, who has chaired the EFSA Management Board since 2008, was also a member of the board of the International Life Sciences Institute (ILSI), an association comprising 400 agric-food players (including Monsanto, Syngenta, DuPont, Nestlé and Kraft Foods).

42. In this context, it is all the more important that practical measures to ensure the impartiality of European expertise concerning GMOs are taken as a matter of urgency so that environmental assessment in this area is properly strengthened.

7. Developing a pan-European policy on the use of GMOs for agricultural and commercial purposes

43. The issue of GMOs directly affects human rights, the right to health, the right to a healthy, sustainable environment, property rights, freedom of enterprise and the right to information.

44. The Council of Europe, by virtue of its geographical outreach and the scale of agricultural production and marketing in its member states, and especially as a forum of Europe-wide democratic debate, can perform a significant role in the debate about the development of GMOs.

45. The Parliamentary Assembly has long sought to advance environmental protection. In this context, it would be expedient for the Assembly to urge member and non-member states to frame and harmonise policies in the fields of public information, consultation and participation regarding the future of GMOs.

46. Given the scientific uncertainty surrounding the consequences of the horizontal transfer, by viruses, of genetic materials from genetically modified crops (including the antibiotic-resistance marker genes present in most GMOs), further large-scale scientific studies should be conducted to clarify the impact of the possible transfer of genes from genetically modified crops to other organisms, including human beings, or bacteria living in them, and to identify means of preventing such transfers.

47. Given that there are serious doubts about the possibility of ensuring the coexistence of GM and non-GM crops on fields within the same area and that the protection of biodiversity, especially in protected areas, against the horizontal transfer of genes from GM crops should be ensured as a matter of utmost priority, the Assembly should recommend that member states adopt the regulations necessary to guarantee the right of states to decide freely whether or not to cultivate GM plants and, if they so wish, to establish GMO-free zones.

48. In addition, regulations on a total ban in Europe on the cultivation of GMOs which contain antibiotic-resistance marker genes should be drawn up and implemented. Other precautionary measures should be developed and complied with to the letter, for instance the clear labelling of products containing GMOs (or derived from animals fed with GMOs), the exact labelling of seed, liability regulations and, above all, the definition of agricultural best practice regarding the production and use of GMOs.

49. The Assembly should also call on states to ensure that all expert studies and appraisals concerning GMO issues are performed completely independently and transparently.