

## Genome editing

# Improving legislation and starting flagships to better address climate, environmental, food and health challenges

3<sup>rd</sup> Informal meeting, online, 3.11.2020

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*Brussels, 16.2.2021*

**The European Plant Science Organisation (EPSO) invited policy makers to join EPSO members in a 3<sup>rd</sup> informal meeting exchanging views on the current situation of genome editing (GE) in Europe and possible next steps to enable Europe to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.**

Participants were scientists (1 / country) and policy makers (1-4 / country) from governmental bodies. They discussed which steps could they take to bring the discussion forward on the EU legislation and facilitating potential flagships. The meeting was held under Chatham House Rules.

**In the first part of the meeting**, participants discussed the **current legislation - how it could be improved** in the short and in the longer term.

**EPSO activities (R2-7):** There was a run-through by EPSO participants of the legal issue and that of enforcement of the GMO regulations for GE materials, and of the inherent difficulties therein.

**An MEP** presented his personal view that ECJ 2018 makes NBT almost impossible, as it restricts EU breeding to 1980s science. A historic opportunity is being missed. Climate change and the gradual banning of plant protection products make the use of GE a key contributor to green solutions. We need though, to distinguish editing that makes deletions from editing that introduces foreign DNA. German Greens are reconsidering their opposition to GE. There should be an amendment to the 2001/EC so that GE is not included. The Green New Deal as presented by the EC took a weak position on supporting contributions from NBTs. This might change after the EC study will be published. In addition, the EP could issue a legislative report requesting the EC to seriously consider which measures could overcome the current blocking of NBTs in Europe. Similarly, scientists could engage with the EC.

**Feedback from national ministries:** Several member states reported that they responded with submissions to the EC questionnaire and summarized the main messages of their submissions. Many of them are awaiting the result of the study. In several countries, opinions differ between ministries, e.g. environment and agriculture. One member state pointed out that the EC awaits encouragement from member states and that the country is working on developing a political position to this end. Similarly, **another country stated that the government had appointed a committee that will suggest amendments to the biotechnology legislation.** The country also noted that the issue of labelling and detection of NBTs is challenging to resolve within the current legislation. Another member state stated that the EC questionnaire showed that researchers and companies are frustrated, and it was agreed that if spontaneous mutations are safe, then induced ones must be considered equally safe. The legislation is not keeping up. Also, the WTO requirement that identical

items of trade are treated identically creates an enormous challenge for regulation of GE foodstuffs coming into the EU from countries that do not require tracking them. One country highlighted that the Farm to Fork Strategy Council conclusions already include a positive reference to new technologies.

Many of the participating member states have reacted to the French decree and responses have been in line with the response by the EC. However, signals are that there will be no amendments to that decree before November 9th.

Several countries have initiated stakeholder meetings in preparation for post-April 2020 after the EC study will have been published. Some countries are also conducting consumer attitude surveys.

EPSO pointed to the recent article from Leclere et al. in Nature (R8), showing that ambitious conservation efforts (protected nature reserves, restoring degraded land, landscape-level conservation planning) combined with food-system transformations (increasing crop yield, furthering global trade, reducing food waste, promoting healthy diets incl. more plant and less meat products) are central to an effective post-2020 biodiversity strategy and could avoid 2/3 of biodiversity loss as well as adverse outcomes for food affordability.

It was summarized that the primary way forward is to 1) engage with the EC to suggest ways forward improving the legislation in Europe to be able to utilize GE to address climate change, environmental sustainability and Food and Nutritional Security; 2) have more comprehensive communication and narratives that illustrate how GE can contribute benefits to society.

**In the 2<sup>nd</sup> part of the meeting, Flagships towards GE products** were discussed:

EPSO gave a summary of the 2<sup>nd</sup> Informal meeting, held in January 2020. A Flagship means “a good example GE product with clear benefits.” Criteria for putting forward a Flagship are: 1) soon to market; 2) a clear societal benefit (e.g. reduced pesticide use, increased drought tolerance, or reduced decline in insect populations); 3) an existing / emerging multinational collaboration of funders to support its implementation.

The recent Norwegian consumer survey (R9) was summarized. The template questionnaire is available to be adapted for other national consumer surveys on GE in Europe. Consumers were most supportive of GE approaches addressing climate change, environmental and food security (crop yield) and nutritional quality, developed and implemented by local (national / European) scientists, breeders, farmers and retailers. A high trust in scientists and authorities was expressed. The most negative aspect of GEs was the perceived risk. Traits affecting cosmetic features (e.g. fruit colour) or livestock yield were least desired. Global companies were least supported. The Swedish GTE board is currently building a survey of its own, similar to the Norwegian one. The Norwegian survey required about 1 person-year of effort and about 20 k€ funding including the early-stage focus group work used to frame the questions.

Example projects/ project proposals presented were:

- CHIC project (R10), as an example of a potential flagship. The project focuses on root chicory, which produces inulin as well as medicinal terpenes.
- Sweden has a starch potato GE project, which has advanced to the stage of field trials.
- SmartPea project idea, where GE is being used to get rid of anti-nutritional polysaccharides. The project could exploit both GE and TILLING (mutagenesis) approaches, which could be compared for efficiency and outcome.
- Further potential flagships in the Nordic countries were mentioned for both field crops (e.g. faba bean, barley, potato) and forest tree species (poplar, spruce).

Farm/Agriculture of the future: A “systems view” approach to future farming was highlighted, which would integrate GE-improved crops with agronomic and other approaches. It is important to see GE in the role of “and-and” to reach more sustainable, environmentally beneficial agriculture, not an

“either-or” approach. There is a similar approach promoted in the Netherlands, the “farm of the future”, which includes waste stream optimization, production systems, “AgroEcology 2.0, and hi-tech. A description is available on-line <https://farmofthefuture.nl/en/> (R11).

A video by David Attenborough suggesting intensifying agriculture in areas most suitable to spare land for biodiversity provides a different perspective to the issue and could be viewed individually (R12).

Discussion about funding initiatives revealed that in many cases GE can be a component of research proposals, but there seemed to be a lack of GE-focused funding calls, whereas other calls are dedicated to particular approaches, such as organic farming. This will be discussed at the next meeting to ensure equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

## **Conclusions and actions**

Participants agreed to continue the open dialogue between the science and policy participants from this meeting. Ministry participants kindly offered to contact ministry colleagues from countries not participating in the meeting yet, but interested in the issue, to contact EPSO expressing their interest to join the next such informal meeting.

The 4<sup>th</sup> meeting will be held mid May 2021 and will focus on the EC study on NGTs, expected to be published end April 2021, and on which suggestions could be made to improve the legislation. It will further discuss encouraging flagship projects towards genome edited products with consumer benefits for the European market and ensuring equal opportunities for all approaches to contribute to and to be combined to better address climate change, achieve food and nutritional security, and establish a sustainable agriculture in Europe and world-wide.

EPSO offers to collaborate with policy makers to develop appropriate future-ready regulations that enable the European public sector, small- and medium-sized companies and farmers to contribute more comprehensively to food and nutritional security and to use all available tools to reduce the environmental impact of agriculture. Notwithstanding the technical options retained, EPSO supports a science-based revision of the present European legislation establishing a more proportionate product-based risk assessment. EPSO is also willing to contribute to the societal debate on genome editing and to communicate in a fact-based and yet accessible manner about innovative plant science and its societal role.

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## **About EPSO**

EPSO, the European Plant Science Organisation, is an independent academic organisation that represents more than 200 research institutes, departments and universities from 32 countries, mainly from Europe, and 2.600 individuals Personal Members, representing over 26 000 people working in plant science. EPSO’s mission is to improve the impact and visibility of plant science in Europe, to provide authoritative source of independent information on plant science including science advice to policy, and to promote training of plant scientists to meet the 21st century challenges in breeding, agriculture, horticulture, forestry, plant ecology and sectors related to plant science. <https://epsoweb.org> | EU Transparency Register Number 38511867304-09

## Annex      References

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12. Land sparing or land sharing by David Attenborough <https://www.youtube.com/watch?v=-x60Bx10vEY>

Please refer to the Annex II and III o the [2<sup>nd</sup> meeting report](#) for

- Regulations and obligations for **conventional** breeding and variety testing
- Regulations and obligations for **GMO** breeding and testing in the EU.