

INNOVATION - FEEDING THE WORLD

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Planting season photo in South Dakota [Eric Barsness, USDA NRCS / Flickr]

Europe entering the era of 'precision agriculture'

The agricultural sector has stepped into the digital era, in an effort to respond to rising global nutrition needs and tackle the environmental crisis.

The world's growing population has resulted in rising demand for agricultural products. But, at the same time supply capabilities are shrinking due to reduced land availability and climate change.

Analysts claim that an "agri-tech revolution" is needed and precision farming is emerging as an innovation-driven solution.

Precision farming is based on the optimised management of inputs in a field according to actual crop needs. It involves data-based technologies, including satellite positioning systems like GPS, remote sensing and the Internet, to manage crops and reduce the use of fertilizers, pesticides and water.

The introduction of the new technologies helps farmers to manage their farms in a sustainable way taking into account the "slightest detail" of

everyday farming.

Precision farmers are able to make the best use of chemical inputs (pesticides or fertilizers), contributing to soil and groundwater protection while increasing production efficiency. The quality of products is improved and energy consumption reduced significantly.

By using sensors, farmers are able to identify specific areas of the field in need of a particular treatment and to focus the application of chemicals on these specific points only, reducing the amount of chemical used and preserving the environment.

This is in contrast with the traditional practices in which various agricultural activities such as irrigation, fertilizers, insecticides, and herbicides are uniformly applied throughout the field, ignoring any variability.

Researchers estimate the precision farming market already amounted to €2.3 billion euros in 2014 on a global level. They expect it to grow at an annual growth rate of 12% through 2020. The mature US and European markets are considered the most promising.

Commission supports e-farming

In a report published last July, the Joint Research Center of the European Commission confirmed that precision agriculture could play a substantial role

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in meeting the increasing demand for food while ensuring sustainable use of natural resources and the environment.

“On farms, we are entering the era of ‘precision agriculture’ - harnessing the use of technology and data to enable farmers to do their work more smartly, and more efficiently”, European Commissioner for Agriculture and Rural Development, Phil Hogan, told EurActiv in a recent interview.

Under the new Common Agricultural Policy for the period 2014-2020, financial incentives, and support schemes exist under Pillar 2 to promote farmers’ ability to invest in Precision Farming technologies such as, for instance, precision fertilizer spreaders.

The promotion of hi-tech in agriculture is not entirely new. It was already part of the programme of the previous Commission, with initiatives such as the European Innovation Partnership on ‘Agricultural Productivity and Sustainability’ (EIP-AGRI).

Today, the Commission promotes precision farming mostly via its €78 billion Horizon 2020 programme for research.

Meanwhile, a dedicated focus group on Precision Farming was set up in 2014 under EIP-AGRI. Jacob van den Borne, a

precision farmer from The Netherlands, is a member of the focus group. He made an animated video explaining in simple words how precision farming works.

Unaffordable for small farmers

However, precision farming technologies are still expensive and unaffordable to most farmers, especially for the smaller ones.

“For certain technologies, larger farmers were among the early adopters of what have been smarter and more precise versions of farm machinery, while smaller farmers have sometimes been more hesitant (or unable) to make the necessary investments”, said Ulrich Adam, secretary general of the European Agricultural Machinery Industry Association (CEMA).

But some technologies such as Global Satellite Navigation Systems (GNSS) were quickly adopted by farmers of all size. “We have seen that as the technology develops fast and costs come down, market penetration is wide-spread among farmers”, Adam said.

“In the Netherlands, for instance, GNSS is now penetrating well with 65% of the arable farmers using GNSS in their

cultivation”, he underlined. This amounts to a strong uptake growth from 2007 when the figure was 15%.

EU is a fertile ground

Asked what more the EU could do for precision farming in Europe, Ulrich said it should promote further research and technology development as well as facilitate a faster and inclusive uptake in European agriculture.

“The EU should, therefore, try to work on a more coherent and impactful approach towards precision farming, one that ensures greater alignment between the respective policies. For this, the different Directorates-General in the Commission – AGRI, GROW, ENVI, CONNECT, and the JRC – should work more closely together, for instance, as part of a common taskforce.”

Regarding the potential of the EU precision farming sector, he noted that Europe was a very fertile ground as shown by the range of recent innovations coming from the agricultural machinery industry.

“This said, due to their larger field size, the US has often been an easier entry point for certain Precision Farming technologies coming to the market.”

Reformed CAP aims to respond to global food security challenge

According to the European Commission, boosting innovation and research in the agricultural sector is key if EU farmers are to produce more with less, and feed billions.

In an effort to help EU farming adjust to future nutritional needs, the new

Common Agricultural Policy (CAP) for the period 2014-2020 aims at bridging the existing gap between research and farming practice.

“The future agriculture will be (an) agriculture of knowledge,” Phil Hogan, Commissioner for Agriculture and Rural Development, recently stressed in an interview with EurActiv.

Feeding the world

Global population is expected to rise from 7.3 billion today to 9.7 billion in 2050, according to UN projections, meaning food production will have to double to meet nutritional needs.

According to the UN’s Food and Agriculture Organization, about 795

million people are undernourished globally, down 167 million over the last decade, and 216 million less than in 1990-92. The decline is more pronounced in developing regions, despite significant population growth.

For the developing world as a whole, the share of undernourished people in the total population has decreased from 23.3% in 1990-92 to 12.9%.

The report *The State of Food Insecurity in the World* stresses that in many countries that have failed to reach the international hunger targets, natural and human-induced disasters or political instability had resulted in protracted crises with increased vulnerability and

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food insecurity of large parts of the population.

“A stronger and more innovative CAP is crucial to meet future world demand set to rise by 60% by 2050”, Copa-Cogeca, the EU farmer’s organisation, said in an EUFoodChat organised by EurActiv last week.

Misguided

But the International Federation of Organic Agricultural Movements (IFOAM) told EurActiv that the question of feeding the planet was often approached “from the wrong angle”.

“Focusing entirely on intensifying production is misguided and merely props up collective dependency on the very industrial agri-food production and consumption systems that do not meet the needs of people whilst destroying the environment,” said Eric Gall, IFOAM’s EU Policy Manager.

He continued, saying that the organic food and farming and agroecology had a holistic, systemwide approach to food and farming.

“They are uniquely placed to address the complex and interlinked global challenges we currently face, including food insecurity and obesity, climate change, unfair working and trade conditions, soil degradation, loss of biodiversity, poor animal welfare, deforestation and loss of agricultural land, to name but a few.”

Europe 2020 strategy

Looking at the objectives of Europe 2020, as well as responding to the food security challenge, the new CAP focuses on innovation and research in order to make the EU farming “smart and sustainable”.

According to the European Commission, in a constantly changing economic environment, farmers, foresters, food and bio-based industries should be granted new knowledge



A Pakistani greenhouse, where foreign development aid is used to breed disease-resistant plants. [US Agricultural Research Service]

which will make them sustainable over the long term and simultaneously, help them respond to the challenge of food safety, climate change, growth and jobs in rural areas.

“Looking across the 28 member states, a total of €25.3 billion from the EU budget for rural development has been earmarked to actions that have a positive impact on biodiversity and around 20% of all farm land in the EU will be under management contract to improve or preserve biodiversity,” Daniel Rosario, a spokesperson for Agriculture and Rural Development, recently told EurActiv.

With the reformed CAP, new instruments are being developed, such as innovation partnerships.

Supporting new ideas

Innovation is a driving force of the second pillar of the CAP, Rural Development.

The main instrument for this is the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI). Its fundamental aim is to create synergies between Horizon 2020 and Rural Development, and to close the gap between research and practice.

Under EIP-AGRI, local stakeholders

(farmers, researchers, businesses, NGOs) come together and establish the so-called “operational groups” whose main objective is to seek an innovative solution on a common problem in a country or a region.

The work and the knowledge developed by these operational groups are then shared to the whole EIP-AGRI network in order for other stakeholders to be able to benefit too.

In addition, the new CAP provides the “Innovation Support Services”.

Someone who offers Innovation Support Services could discover an innovative idea on a farm, for example, which could then be explored further. Other possible interested stakeholders are contacted and a new project is initiated. Then the consultant will seek funding opportunities for the implementation of the project.

Horizon 2020

Aside from Rural Development, innovation-driven agriculture is also supported by the Horizon 2020 programme.

The EU has earmarked nearly €80 billion under Horizon 2020, the EU’s

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framework programme for Research and Innovation for 2014-2020. €4 billion are allocated to Societal Challenge 2, 'Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy'.

Horizon 2020 for innovation on agriculture involves partners from several EU countries and funds multi-actor projects.

The new Horizon 2020 Work

Programme covering 2016-17 will directly provide €33 million for organic farming, and a further €174 million is dedicated to projects in which organic agriculture should play a role.

Identifying and solving the problems

Part of the EIP-AGRI activities are the Focus Groups, which gather 20 experts (farmers, researchers, business community) aimed at addressing a

particular problem related to agriculture.

The EIP-AGRI Service Point, set up by the Commission in 2013 to support the network, launches calls for six focus groups annually and tries to bring together the relevant experts. The focus group analyses an agriculture-related problem, exchanges knowledge, combines scientific approaches, and at the end, produces a report.

The final report aims at "inspiring" other actors in the farming field to start operational groups, or research projects.

'E-agriculture' could save EU farmers time and money

The introduction of new information and communications technologies in the EU agricultural sector could significantly contribute to its future sustainability, as well as the quality of life for farmers and consumers.

The new Common Agricultural Policy for 2014-2020 prioritises innovation in order to help the sector adapt to the new competitive environment, and promote "greener" policies.

In a recent interview with EurActiv, Phil Hogan, Commissioner for Agriculture and Rural Development, talked about an "Agri-tech revolution" and the use of advanced ICT at all stages in the food chain on the farm, through to processing and retailing.

"Such innovations will improve the quality of crop production, the quality of livestock health, but also, crucially, the quality of life for farmers," he noted.

Irish farmers getting "mobile"

Herdwatch is a cloud-based farming app which allows cattle farmers

manage their beef or dairy herds via a smartphone, tablet or computer.

It started 3 years ago in Ireland, as a small project between the FRS Network, a farmer-owned Irish co-operative, and their IT Manager, Fabien Peyaud, who came up with the initial concept, and conducted most of the research and development since.

FRS started looking for ways to help farmers become more efficient through the use of technology, and discovered that over 90% of cattle farmers did not use any form of computerised herd management system.

The Herdwatch Team ran farmer focus groups, attended agricultural events and discussion groups in order to connect with farmers face to face and determine what they were looking for.

Herdwatch is using innovative mobile technology to enable livestock farmers around Ireland, the EU and the world to spend as little time as possible on farm compliance and paperwork, so they can spend as much time as possible adding value to their business, which feeds billions of people.

Currently, more than 1,300 farmers are using this farming app, and its founders have already started the plans for the expansion of the app in the EU.

"Farmers live the quintessential "nomad" lifestyle, always on the go, and despite the popular urban perception, they are a technologically strong group of people, and it makes perfect sense

for them to adopt mobile technology to improve their lifestyle and make them more efficient," Peyaud told EurActiv.

He continued, stressing that it gave farmers exactly what they were looking for.

"A truly mobile herd management solution, which saves them time, gives them peace of mind and is both easy to use and value for money, at less than €2 a week."

"Compliance and traceability are key for EU consumer confidence, and therefore, it's critical to EU farm businesses trying to access new markets, but it is also an extra administrative burden which Herdwatch helps reduce greatly. Our farmers never have to use pen or paper in order to be compliant," he added.

"Map your meal"

But smart farming apps could also benefit farmers and consumers.

"Map your meal" is an agriculture-related smartphone application which aims at enhancing the public awareness understanding of global interdependence via exploring the global food system.

The partners of the project, Future Worlds Center (Cyprus), Sudwind (Austria), C.E.G.A (Bulgaria), Fair Trade Hellas (Greece), and CDEC (UK) are

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planning to launch the EU-funded application in April. Currently it is in the research phase.

With this smartphone application, farmers and consumers will “scan” the products to see their “fairness” and “how much green” they are.

They will be aware of selected products’ journey, tracing each step of the way, from production to selling, as well as the product’s socioeconomic and environmental impact on farmers, work and local communities (Fairness and Greenness indicator).

“Consuming in a responsible way regarding fairness and greenness is a citizen’s act like our vote is. Our food choices really matter in our interconnected world”, Kelly Garifalli, a researcher for the Map Your Meal app, told EurActiv.

Consumers will also have the

opportunity to be informed about a possible usage of GMOs and pesticides in the ingredients and in the production process, the extent to which the ingredients used are fairly traded, and the distance of transportation for each product.

The database of the application currently under development will be gradually enriched with more and more products.

“We are planning a public launch of the smartphone app with street actions in city centers, in front of supermarkets, in April,” Garifalli added.

The role of EU digital policy

Dr Adam Ulrich, Secretary General of the European Agricultural Machinery (CEMA), told EurActiv that the EU Digital Policy should play an important role in accompanying and supporting the truly

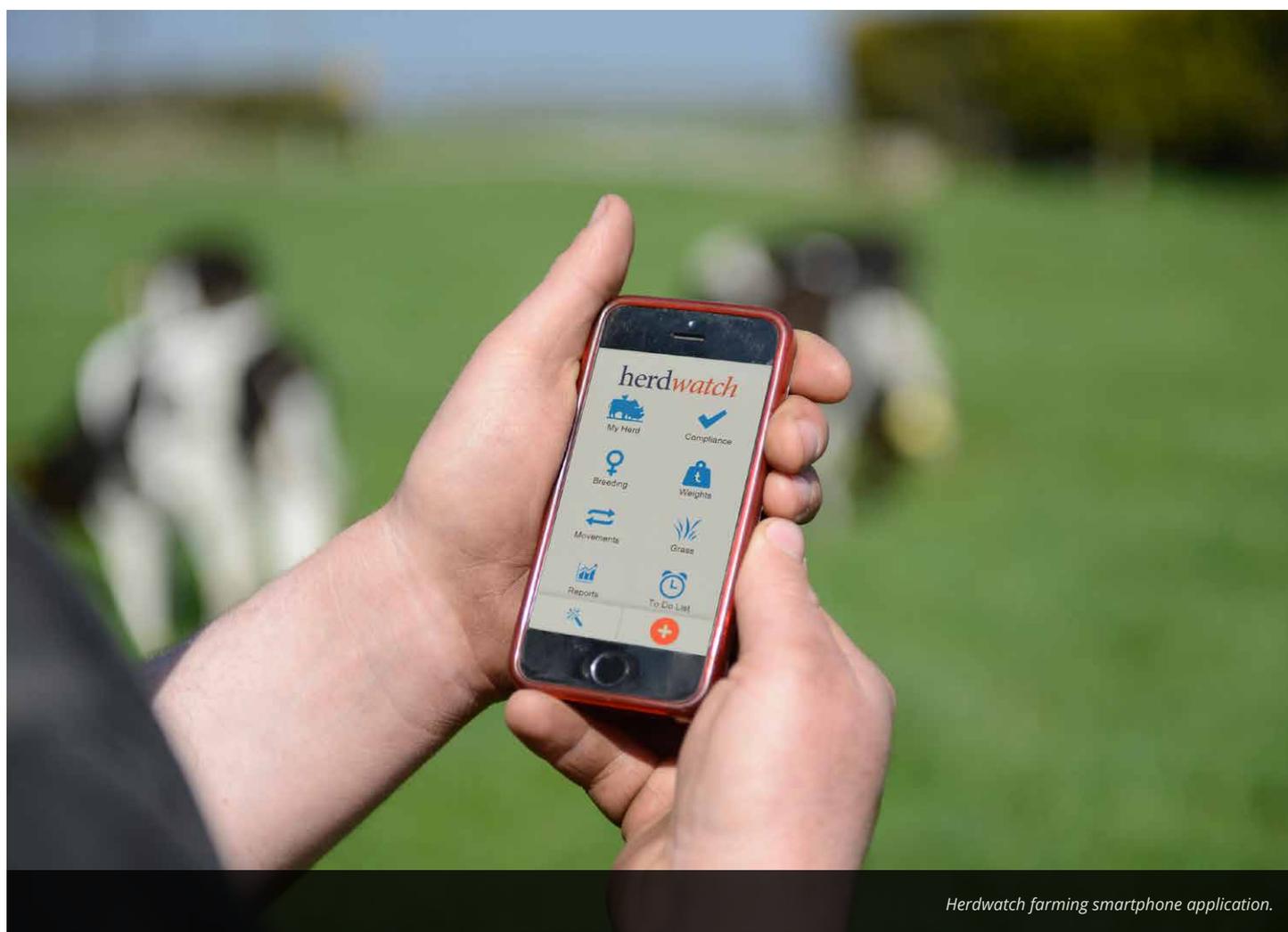
transformative path that lies ahead.

“Digital technologies are set to transform the world of agriculture in the years ahead and will fundamentally reshape the agri-food value chain in Europe and beyond,” he said.

He stressed that a smart regulatory framework was needed which would help to unlock the full potential of the digital economy in European agriculture and rural areas.

“This [framework] will empower relevant actors to master and manage the upcoming digital transition in a sustainable and inclusive way.”

According to Ulrich, a dedicated Commission taskforce should be put in place to formulate a coherent EU policy strategy to promote the digital transformation in European agriculture and rural areas and improve broadband infrastructure in rural Europe for rapidly growing data flows.



Herdwatch farming smartphone application.

Commission: Organic farming 'not enough' to address food security

Organic farming has a role to play in the new Common Agricultural Policy, but it cannot address the perplexing issue of food security, an EU spokesperson said.

Meanwhile, the innovation-driven GM industry feels marginalised, facing impossible hurdles in the EU.

Global population is expected to rise from 7.3 billion today to 9.7 billion in 2050, according to UN projections, meaning food production will have to double to meet nutritional needs.

In an effort to rise to this challenge, the new CAP for the period 2014-2020 is focused on innovation as well as environmental protection.

And organic farming will have a key role to play. It is recognised as an innovative and sustainable approach that produces high-quality food, whilst contributing to the environment, animal welfare and rural development.

But it won't be enough to meet the challenge, according to the European Commission.

"Organic farming could certainly not address on its own the vast and perplexing issue of future food security," said the EU spokesperson.

"The organic market, initially a niche market which grew bigger over the last decade gaining consumers' confidence, managed to multiply by four its market share. Organics have undoubtedly a role to play in addressing food security, as a system which produces food that respects natural life cycles and the environment," the EU source added.



Corn crops [Jason Riedy/Flickr]

CAP and innovation

In budget terms, the new CAP is more focused on innovation and environmental protection than the previous one. Innovation spending from the EU and national budgets for the period to 2020 will represent about 6% of the rural development budget which is about 1/5 of the overall CAP budget.

In addition, the new Horizon 2020 Work Programme covering 2016-17 will directly provide €33 million for organic farming and a further €174 million is dedicated to projects in which organic agriculture should play a role.

On the other hand, there is little research funding for GMOs, due to the huge public opposition in Europe. In Italy, GMO research has not been allowed for over 10 years, according to the Public Research and Regulation Initiative (PRRI), a worldwide initiative of public sector scientists active in modern biotechnology research.

Over half of the EU member states have recently opted out of growing genetically modified (GM) crops on their land, which means that two-thirds of Europe's arable land will remain GM free.

Germany, Austria, Bulgaria, Croatia, Cyprus, Denmark, France, Italy, Hungary, Greece, Latvia, Lithuania, the Netherlands, Poland, Belgium, Luxembourg, Malta and Slovenia rejected the GM crops while in Britain, only England will cultivate GM crops.

In addition, the European Parliament's environmental committee

rejected last week (13 October) a Commission-led compromise which allows member states to decide for themselves whether or not to import Genetically Modified Organisms for use in food and animal feed.

Organic farming challenges

Marco Schlüter, director of the Federation of Organic Agricultural Movements (IFOAM EU), told EurActiv that although the amount of land farmed organically was increasing, around 95% of agriculture in Europe is conventional.

"This means that organic farmers are often surrounded by farmers using inputs forbidden in organic and, despite measures taken to prevent contamination such as buffer zones, there is a risk," he noted.

"IFOAM EU advocates for the polluter pays principle - those using the pesticides and synthetic fertilizers should pay for the effect they have on their neighbours, (drinking) water quality, and biodiversity, just to name a few," he said.

Another challenge for organic farmers, according to Schlüter, is that the demand for organic products is increasing at such a fast rate that it could widen further the gap between production and consumption, increasing imports from outside Europe and potentially creating a shortage in the market.

"For this reason it is important for governments to help their farmers

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benefit from consumer demand and transition to organic," he stressed.

Commenting on the "innovation push" of the new CAP, Eric Gall, IFOAM EU policy manager, told EurActiv that it should be better used to incentivise more farmers to increase their sustainability for example by converting to organic farming or taking up agroecological practices.

"The lack of prioritisation for organic across a host of policy measures in rural development programmes often acts as a major limiting factor for stimulating organic innovation in the agri-food sector," he said, adding that there were a number of options to prioritise innovative approaches in areas such as farm advice and knowledge transfer, infrastructural investments and supply chain development.

Monsanto: We are "politically isolated"

Meanwhile, the innovation-driven GM crop industry feels it's unwanted. Brandon Mitchener, Public Affairs Lead for Monsanto Europe, says that the GMO industry is "politically isolated" in Europe.

"The EU has chosen to fund NGOs that demonise GMOs, even though the EU's own best scientists say they are perfectly safe. Years of such political hypocrisy have marginalised GM seeds in Europe to the point that most companies have given up trying to sell them here," he said.

Referring to the main challenges of GMOs, he noted that in the EU, the industry faces "nearly impossible hurdles, starting with a regulatory review system that is highly political and costs more than €100 million per biotech trait—with no guarantee of market success".

"No one has asked for permission to cultivate a new biotech trait in Europe in more than 10 years," he underlined.

Asked where Monsanto failed in convincing half of the EU countries which opted out of growing GMs, Mitchener blamed the Greens and some NGOs.

"Monsanto and other companies did everything they could have to try to educate people about GMOs. The European debacle isn't the companies' fault. It is the result of nearly 30 years of scaremongering by Greens and certain NGOs, and (a) lack of science-based decision-making."

Similarly, Beat Späth, Director of Agricultural Biotechnology at EuropaBio, blamed EU politicians for being followers of "public opinion".

He said that the EU heavily promoted untested organic farming while allowing national bans on cultivating GM crops that "have undergone strict safety assessments confirming they are (at least) as safe as conventional crops".

"The 'licence to ban' the cultivation of safe and approved GMO crops is a very negative precedent of 'politics over science'. In this sense, many politicians seem to have abdicated from their role as leaders in favour of becoming

followers of 'public opinion' voiced by scaremongers," he told EurActiv.

He continued, saying that trillions of GM meals had been eaten over 19 years and that in 2014 alone, 18 million farmers planted biotech crops on 13% of the world's arable land.

"Meanwhile, half of Europe chooses to turn the continent into a museum of agriculture without even asking its farmers," he said.

Asked by EurActiv the precise amount of EU money earmarked for research on GMOs the European Commission DG Health and Food Safety referred us to the DG Research, Science and Innovation and the latter, referred EurActiv back to DG Health.

TTIP and farming

Asked if the TTIP agreement could boost Monsanto's position in the EU market, Mitchener said "not immediately".

"Monsanto's business in Europe is entirely focused on traditional seeds, which face no discrimination. TTIP will not affect that."

On the other hand, Eric Gall told EurActiv that IFOAM EU had concerns over EU-US trade pact. "IFOAM EU has concerns about TTIP because free trade agreements are risky for farmers and the food sector," he said. "Even more so in times of crisis, and it could lead to a lowering of standards for food, for example, by forcing the EU to open its market to GMOs."

New plant breeding techniques: Innovation breakthrough or GMOs in disguise?

'New plant breeding techniques' focus on developing new seed traits within a given species through genetic engineering. A troubling question for policymakers is whether these techniques should fall under GMO legislation.

In 2007, the European Commission was asked by national authorities to answer an unusual question. As scientific and technical developments

in biotechnology developed, regulators wondered whether so-called new plant breeding techniques such as "reverse breeding" or "synthetic genomics" should fall under the scope of EU GMO rules.

As it often does in such cases, the Commission responded by setting up a working group of experts. Almost ten years on, a decision is finally in sight,

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with a legal opinion due by the end of the year.

"The European Commission is carrying out a legal analysis of a group of new plant breeding techniques, in order to evaluate whether they fall under the scope of Directive 2001/18/EC on the deliberate release into the environment of genetically modified organisms and Directive 2009/41/EC on the contained use of genetically modified micro-organisms," an EU source confirmed to EurActiv.

The techniques under consideration come with barbarous names: "oligonucleotide-directed mutagenesis", "zinc finger nuclei" and other similar nuclei technologies, "cisgenesis", "intragensis", "grafting", "agro-infiltration", "RNA-dependent DNA methylation" and "reverse breeding".

On the regulatory side, the Commission's work involved the elaboration of a specific expert report between 2009 and 2012. Guidance was also received from the The European Food Safety Authority (EFSA) in Parma, which has issued two opinions - on cisgenesis/intragensis and Zinc Finger Nuclease 3 - in terms of the risks they might pose for human health or the environment.

A formal Commission decision - an "interpretation document" in EU jargon - has now been announced for the end of 2015. And the consequences could be huge for the companies developing the new techniques.

"Biotechnology companies and plant breeders are particularly concerned about the legislative uncertainty of the GMO classification of new plant breeding techniques," notes a 2011 report by the European Commission's in-house scientific body, the Joint Research Centre.

"Regulatory costs for plants classified as GMOs are much higher than those for the registration of non-GMO plants, and public acceptance is lower," the report states.



Aware of the political implications of the upcoming legal opinion, some policymakers are already trying to downplay the significance of the document.

"It's not an issue of political nature. On the contrary, it's strictly legal," a European Parliament source told EurActiv.

'Crucial' for plant breeding sector

New plant breeding techniques are seen as a promising new field for the agri-food sector. The Commission's JRC report says they are even "necessary to meet the challenges of global changes such as population growth and climate change".

On the industry side, the matter is clear: New plant breeding techniques should not be assimilated to GMOs.

Garlich Von Essen, the Secretary General of the European Seed Association (ESA), told EurActiv that the vast majority of new plant breeding techniques did not lead to genetically modified plants and should therefore not be considered as such.

"ESA shares and fully supports the findings of the experts working group made up of representatives of member states authorities," he said, adding that most of the techniques in question were just very targeted and more precise

mutagenesis techniques which are "applied within the plant species".

Crucially, Von Essen stressed, "no foreign DNA is present in the resulting plants". Plants obtained by these new techniques might also have developed naturally by chance mutations, he said, or through an application of classical mutagenesis.

"A distinction of plants obtained by either a new breeding technique or a classical mutagenesis is, therefore impossible, a fact also underlined by the experts report. Consequently, mutagenesis generally is exempted from GM legislation, not only in the EU but worldwide. This exemption should also cover the new gene-editing techniques," he noted.

According to Von Essen, it is difficult to judge what approach the Commission's health directorate (DG SANTE) will ultimately take. But he expressed hope that it will follow the experts. "Not least as these techniques are of critical importance for the European plant breeding sector for the coming decades," he said.

According to Von Essen, new breeding techniques hold potential across all species. They are also affordable for the vast majority of smaller and medium-sized breeding

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companies but could soon become too costly to develop if they were to fall under the scope of GMO legislation.

“Should SANTE out them in one box with GMOs, they will become unaffordable to use for most companies,” Von Essen said.

Democratic debate

On the other side of the argument are the usual suspects represented by the Greens and their leading anti-GMO figure, French MEP José Bové.

To Bové, new plant breeding techniques are just another attempt at selling GMOs to Europeans via the back door. “We oppose all these biotechnology techniques because making plant varieties resistant to herbicides is dangerous and harmful to health and the environment in the short, medium and long term,” Bové told EurActiv.

Bové, who is a member of the Agriculture and Rural Development Committee of the European Parliament, said that in France and other European countries, herbicide-resistant sunflower and rape varieties were starting to be used without ever having been properly tested.

“The fact that they are not considered as GMOs has allowed the agro-chemical seed companies to avoid the otherwise long and uncertain certification process: they appear to have learned their lesson from the GMO debate,” he noted.

Bové added that the executive’s ultimate decision was as much political as it was legal or technical. The decision process itself is subject to criticism, he said, because it is happening within an exclusive group of scientific experts.

“By limiting the debate strictly to the technical aspects (a debate in which the Commission’s only engagement appears to be the announcement of a legal opinion in the coming weeks), attention is being deflected from the problem in order to avoid a truly democratic debate

on the development of these techniques and their consequences for health and the environment, and thus spare the seed companies a repeat of the difficulty they experienced over GMOs.”

Patents

As with GMOs, the scientific debate on new plant breeding techniques is complicated by economic considerations, where patents play a central role.

By 2011, a total of 84 patents related to new breeding techniques were identified, most of which were filed during the last decade, the JRC report notes. The majority of patent applications came from the USA (65%), followed by EU-based applicants (26%). A vast majority (70%), came from private companies.

The 1998 Biotech Directive grants protection of intellectual property rights over biotechnological inventions, and clarifies which inventions are patentable or not, on ethical grounds.

But policymakers in the European Parliament are usually suspicious of anything to do with patents over lifeforms. The debate last surfaced in 2013, when Parliament passed a biopiracy law, requiring industry to compensate indigenous people if it makes commercial use of their local knowledge, such as plant-based medicines. MEPs have also consistently stressed the importance of the “precautionary principle” when applying novel techniques for food production, underlining a high degree of suspicion within the Assembly.

Scientists call for regulatory reform

Meanwhile, the scientific community has called for a thorough review of EU legislation in order to avoid confusing GMOs with new plant breeding techniques.

“One immediate consideration for

EU regulators is to confirm that when plants do not contain foreign DNA, they do not fall within the scope of GMO legislation,” said a report by the European Academies Science Advisory Council (EASAC), published in 2013.

Anne Glover, the EU’s former chief scientific advisor at the time, agreed, saying Europe should not miss the opportunities offered by emerging plant breeding technologies.

“We shouldn’t make the mistake of regulating them to death as we have done with GM,” she told EurActiv.

EurActiv contacted MEPs from other political groups in the European Parliament for comment, but did not receive any replies at the time of this article’s publication.

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Contact us

Davide Patteri

paexecutive@euractiv.com
tel. +32(0)2 788 36 74

Natalie Sarkic-Todd

natalie.sarkic-todd@euractiv.com
tel. +32(0)2 788 36 63

Other relevant contacts:

Frédéric Simon

frederic.simon@euractiv.com
tel. +32(0)2 788 36 78

Sarantis Michalopoulos

sarantis.michalopoulos@euractiv.com
tel. +32 483577015