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THE FUTURE OF FERTILISERS IN EUROPE

EVENT REPORT | NOVEMBER 2018
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In light of the rising global population, the EU fertiliser industry has set a long-term vision by 2030. While fertilisers are essential in boosting plant growth and crop nutrition, there is also an environmental impact that needs to be addressed.

The vision focuses on two aspects: better use of fertilisers through the application of precision farming tools as well as the production of fertilisers.

“In our Vision to 2030, the European fertiliser industry will be at the crossroads between nutrition and energy. Under the right legislative framework, the fertilizer industry could play a vital role in the context of the EU’s ambition to lead sustainable agricultural production and to maintain a strong industrial base while at the same time shifting towards a decarbonised economy,” Jacob Hansen, Director General of Fertilisers Europe told EURACTIV.com.



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Fertiliser industry vows to feed one 'extra Germany' per year

By Sarantis Michalopoulos | EURACTIV.com



While fertilisers are essential in boosting the plant growth and crop nutrition, there is also an environmental impact that needs to be addressed. [Shutterstock]

The EU fertilisers industry published its 2030 vision on Wednesday (21 November), stressing the need to optimise fertiliser use across Europe and improve production in order to adjust to the principles of the circular economy and feed a growing world population.

The 'Feeding Life 2030' report, seen by EURACTIV and due to be presented today, is the result of consultations among several stakeholders in the agri-food sector, ranging from industry representatives and academia to NGOs and farmers.

The objective of the report is to set a long-term vision for the industry by

2030. According to United Nations projections, the current world population of 7.6 billion is expected to reach 8.6 billion in 2030 and 9.8 billion in 2050.

"This represents an annual increase of approximately 80 million people. In other words, we need to find a way to feed an extra Germany every year," the report said, adding this won't be an easy task as expanding cities and new infrastructure eat up prime farmland.

"The world will therefore need to farm more efficiently to produce enough food," the report noted.

While fertilisers are essential in boosting plant growth and crop nutrition, there is also an

environmental impact that needs to be addressed.

Agricultural air pollution comes mainly in the form of ammonia, which enters the air as gases from fertilisation products which are prone to volatilisation.

In total, 94 % of all ammonia emissions in the EU result from agriculture, with livestock excreta representing the lion's share. Greenpeace estimates it at almost 80% of the total, while mineral fertiliser application accounts for approximately 20%.

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APPLYING MORE KNOWLEDGE PER HECTARE

A key aspect of the future of fertilisers in EU agriculture is the digitalisation of the sector, according to the report.

The authors noted that the new generation of farmers would be more knowledgeable and would gradually focus on nutrient use efficiency, meaning “apply the right nutrients to their plants at the optimum time”.

The report stressed that technology-based equipment and precision-farming tools, such as GPS, would be crucial in this direction.

New technologies will help EU farmers identify the actual nutrient needs of plants and, therefore, apply the precise amount of fertilisers. This will result in optimised plant growth as well as lower environmental impact.

CLEAN ENERGY POTENTIAL

The second biggest challenge is the production of fertilisers, which according to the authors, could give the sector a central role in the circular economy and decarbonisation in the near future.

This is the case for the nitrogen fertilisers, an energy-intensive product obtained by the conversion of nitrogen and hydrogen into ammonia, which constitutes the basic building block of all fertilisers.

A big opportunity to create a high quantity of green energy comes right from the ability to store properly the hydrogen used during the process to produce these fertilisers.

Considering this potential of ammonia as a means to store hydrogen, the fertilisers industry should be able to have a positive effect on the environment by decarbonizing the energy supply and making it more

reliant on renewable energy, the report added.

By 2030 ammonia production is expected to receive around 10% of their electricity need from renewable sources, with the possibility to re-use the stored ammonia if needed locally.

EU REGULATORY FRAMEWORK

The industry points out that in order to deliver on its vision, a proper policy framework is needed to support farmers in optimising the use of fertilisers and enable the industry to continue to excel in the production of fertilisers while retaining its competitiveness internationally.

“In our Vision to 2030, the European fertiliser industry will be at the crossroads between nutrition and energy. Under the right legislative framework, the fertilizer industry could play a vital role in the context of the EU’s ambition to lead sustainable agricultural production and to maintain a strong industrial base while at the same time shifting towards a decarbonised economy,” Jacob Hansen, Director General of Fertilisers Europe told EURACTIV.com.

The industry says the European fertiliser producers operate in a competitive global market, therefore ensuring a level playing field on energy and carbon cost as well as fair trade must be the first priority.

Considering that the EU is currently looking at optimal ways to decarbonise the economy, the fertilizer industry insists that ammonia should be regarded as a cost-effective way to store and transport hydrogen in energy systems with a high penetration of renewables.

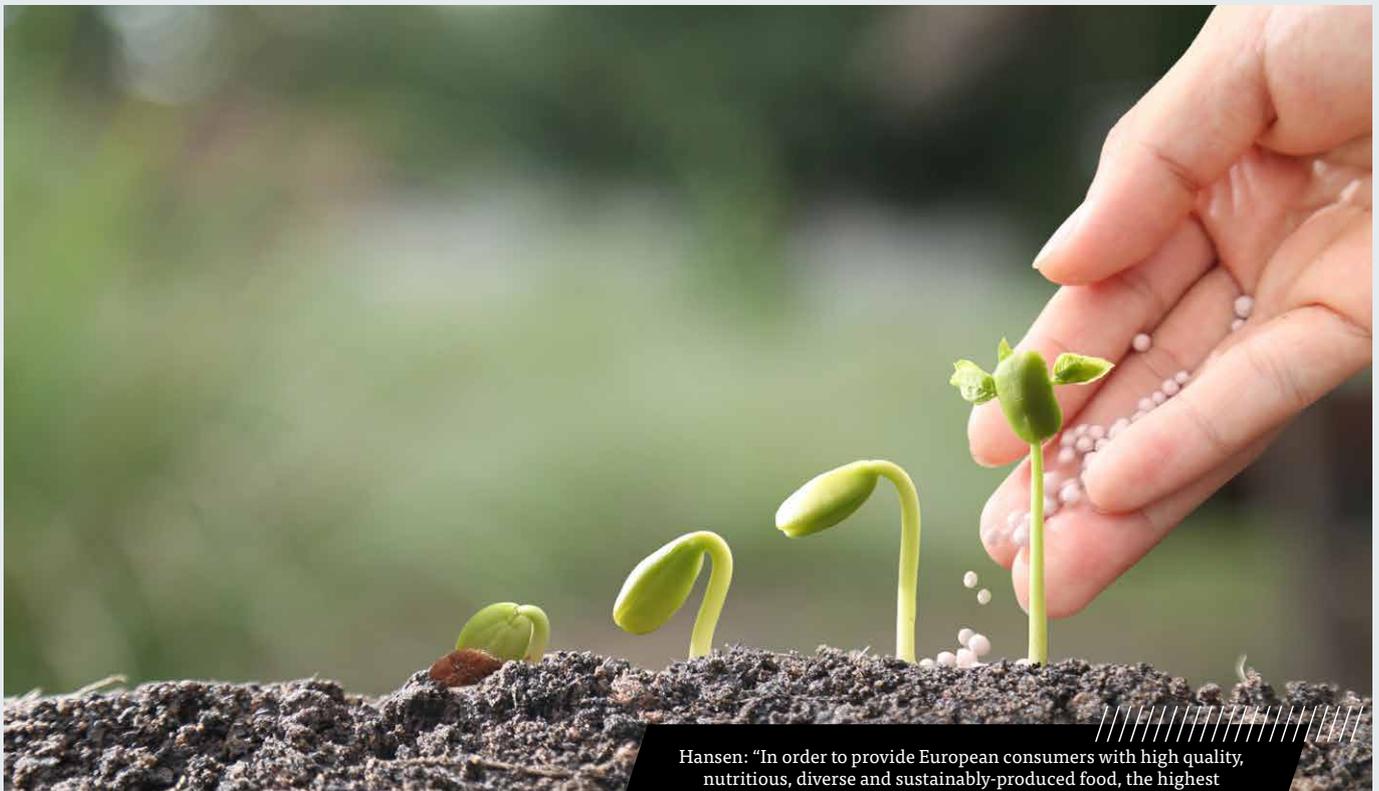
**Gerardo Fortuna contributed to this article*

PROMOTED CONTENT / OPINION

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EU fertiliser industry at the crossroads between nutrition and energy

By Jacob Hansen | Fertilizers Europe



Hansen: "In order to provide European consumers with high quality, nutritious, diverse and sustainably-produced food, the highest quality plant nutrients are required." [Shutterstock]

We live in fascinating times where technology is evolving at an ever-increasing pace, spurring major shifts in many industries. This is also the case for the fertiliser sector, writes Jacob Hansen.

Jacob Hansen is the director general of Fertilisers Europe.

Fertilisers Europe's Vision aims at answering the question of how to supply enough nutrients for plants to feed a growing global population in a more energy and environmentally efficient way while helping the EU tackle other challenges such as meeting growing demand for cleaner energy and better use of resources.

Looking into the future of agriculture in general and the

fertiliser industry in particular, we see the challenges of a productive and sustainable future food production, and we see the challenges involved in Europe's ambition to decarbonise the economy and promote the circular economy.

The European mineral fertiliser industry will be at the crossroads

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where these two challenges meet.

Our vision “Feeding Life 2030” highlights how the fertiliser sector can contribute to addressing these challenges.

FEEDING LIFE 2030

Meeting future food needs remains a challenge.

Today, fertilisers help feed almost 50% of the global population, yet some 10% of the global population remains undernourished. Meanwhile, the UN estimates that the world’s population will continue to grow, reaching 8.6 billion by 2030 (up from 7.6 billion today). In other words, we need to find a way to feed an extra Germany every year.

In Europe, while the undernourishment is not a major concern, a more sustainable production of food certainly is. In order to provide European consumers with high quality, nutritious, diverse and sustainably-produced food, the highest quality plant nutrients are required.

The principal question is, therefore, how can we supply enough nutrients for plants to feed a growing global population in a more energy and environmentally efficient way?

‘Applying more knowledge per hectare’ should be the mantra for the future of farming in Europe. Better fertiliser products precisely targeted to the specific crop combined with new tools and real-time data open a new range of possibilities.

The application of knowledge is likely to improve the quality of yields and provide farmers with a decent return on investments. It will also have a very positive effect on the environment, as better and more targeted fertilisation will increase the growth of plants and thereby diminish losses to the environment.

The Vision also foresees that

professional farmers and growers will become even more knowledgeable and demanding in terms of nutrient input by 2030. Farmers in 2030 are expected to focus increasingly on nutrient use efficiency, in order to produce sustainably and profitably by optimising overall application thus increasing yields.

To do this, farmers will rely more profoundly on professional advice, planning and new tools as well as technology that will allow them to apply fertilizer where it is required when it is required and in the exact amount that is needed.

DECARBONISATION - AMMONIA AS A MISSING LINK

Europe has the ambition to lead the global battle against climate change.

As the EU progresses towards decarbonising its energy supply and relying more on renewable energy, such as wind and solar power and the production of hydrogen, the question of hydrogen storage becomes more pressing.

In our vision, the nitrogen fertiliser industry, as a producer of ammonia, offers the key to unlocking clean energy potential by acting as a carbon-free energy carrier. It is the missing link in making decarbonisation a reality.

Fertiliser industry will also continue to play an important role in incentivising the industrial symbiosis in Europe and promoting the principles of circular economy and resource efficiency.

FROM VISION TO REALITY

The report offers a forward-looking and ambitious Vision of the future of fertiliser industry in Europe. It is aimed at initiating a discussion with stakeholders on the future role of mineral fertiliser industry in Europe. It demonstrates the industry’s

commitment to developing in line with Europe’s ambitions as well as outlines the need for a relevant policy framework which will allow turning this vision into a reality.

European mineral fertiliser producers operate in a global market. Ensuring a level playing field on fertiliser, energy and carbon cost must be the first priority.

As the European Commission is moving ahead with its plans to decarbonise EU economy, it is essential that policies put forward include cost-effective solutions. This applies for example to the potential role ammonia could play in decarbonisation efforts, through support for research and pilot projects as well as the implementation of necessary standards for energy infrastructure and transportation.

While the fertiliser industry is already recycling a wide range of by-products and uses surplus energy and raw materials that derive from other production processes, the full potential of the circular economy and industrial symbiosis is far from being reached.

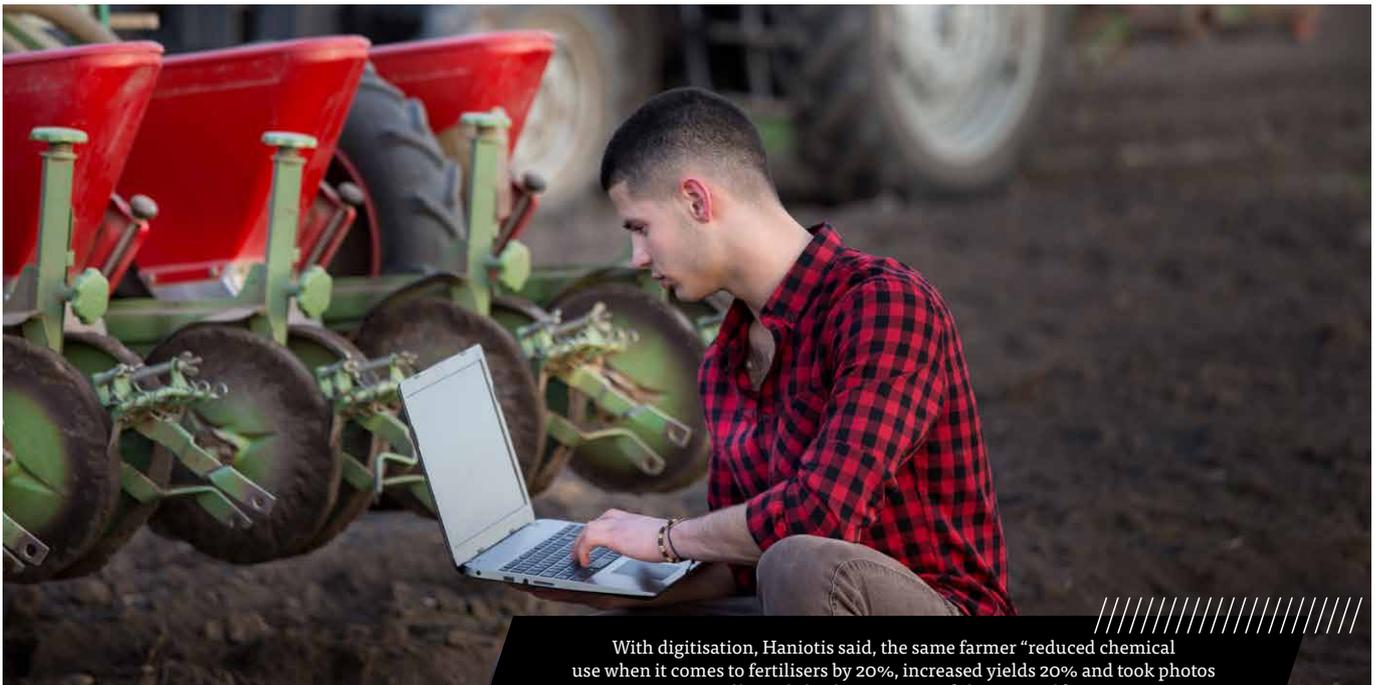
New policies and R&D&I programmes should incentivise further progress in promoting circular thinking to ensure further optimisation of resource use, closing material loops and as a result, minimise environmental impacts.

To conclude, the Vision of the evolution of the mineral fertiliser industry illustrated in this report is very ambitious. It requires commitment from both industry leaders and policy-makers, allowing the European mineral fertiliser industry to evolve in line with the EU’s ambitions, thus helping address several societal challenges while retaining industry’s economic viability globally.

Stakeholders say digitisation key to optimise fertilisers' use

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By Sarantis Michalopoulos | EURACTIV.com



With digitisation, Haniotis said, the same farmer "reduced chemical use when it comes to fertilisers by 20%, increased yields 20% and took photos of happily birds coming in". [Shutterstock]

The digitisation of Europe's agricultural sector will play a crucial role in optimising the use of fertilisers in order to help feed a rising population and simultaneously to decrease their negative environmental footprint.

Jérôme Bandry, secretary-general of the European association for the agricultural machinery industry, told EURACTIV.com that new technologies could offer a unique opportunity to better manage fertilisers to feed the world.

"With more people to feed and more pressure on the process of growing food the answer is more

mechanisation and digitisation," he said.

"We truly believe we have an opportunity in precision farming techniques if we have trust in the way the data is used and overcome some technical hurdles."

In an effort to push towards a decarbonised economy and address rising nutrition needs, the EU fertilisers industry published its 2030 vision on 21 November.

The industry's vision is based on the optimisation of the fertiliser use and production.

Regarding the fertilisers' application, the industry focuses on the enhancement of soil knowledge,

with the help of new technologies such as GPS as well as targeted advice.

Industry understands that with the gradual digitisation of the EU farming sector, farmers will be able to measure the soil nutrient content and apply fertilisers only when and where needed.

This will result in better plant growth as well as a positive environmental impact.

Tasos Haniotis, a senior official at the European Commission's agriculture directorate, said the best definition of precision farming he has ever heard came from a farmer in

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Greece:

“Up to now, when we jumped on the tractor the work started, now when we jump on the tractor the work has ended.”

Haniotis explained that EU agriculture develops based on knowledge and finds a way to bring together economy and the environment.

With digitisation, Haniotis said, the same farmer “reduced chemical use when it comes to fertilisers by 20%, increased yields 20% and took photos of happily birds coming in”.

Franc Bogovič, an EU lawmaker from the European People’s Party (EPP) who has pushed for the “smart villages” project, said knowledge to reduce the use of fertilisers would primarily benefit the environment.

“Precision farming tools and smart villages will make it easier to achieve traceability of fertilisers,” he told EURACTIV, adding that particularly the smart villages concept will help more efficiently spread knowledge at a local level and trace agricultural inputs.

“The continuation of intensive farming in the next 20 years is simply not possible,” he emphasised.

The European Commission’s proposals for the post-2020 Common Agricultural Policy (CAP) provide a mandatory nutrient management tool for farmers aiming to improve water quality, reduce ammonia and nitrous oxide levels.

The OECD says this is a “win-win” situation, as it will result in a more economically efficient management of inputs and in cutting emissions.

The EU fertilisers’ report highlights the role of new generations in the farming sector, especially when it comes to the use of new technologies.

Jannes Maes, president of the EU young farmers’ association (CEJA), said young farmers stand ready to provide their knowledge but also get

further educated.

“The biggest challenge is the regulatory pressure which creates uncertainty for the next decade. Without technology, the vision for knowledge in smart application of fertilisers won’t be implemented,” he warned.

Environmental organisations, such as WWF, welcome the industry’s ambition for more precise nutrition. However, they warn that this could be only applicable to large farms and not smallholders.

Moreover, WWF’s Andrea Kohl said that the fertiliser industry needs to change its business model and focus on greater sustainability and agroecological practices.

AMMONIA AND CIRCULAR ECONOMY

The report also highlighted the role of fertiliser industry in the circular economy and the importance of ammonia in decarbonisation.

Klaus-Dieter Borchardt, director of DG energy, noted that the EU aims at decarbonisation in 2050 (40% in 2030, 60% in 2040, 80 to 95% in 2050) through energy efficiency, renewables, the development of low carbon energy carriers as well as ETS.

He said that by 2050 we need to move towards a much higher sector integration. “The fertiliser industry can decarbonise by using green electricity, carbon-free hydrogen and application of Carbon capture and storage (CCS) technologies.”

Ammonia, which constitutes the basic building block of all fertilisers, is a very energy-intensive product obtained by the reaction of nitrogen from air and hydrogen.

A big opportunity to decarbonise the industry and society is to create a high quantity of green energy from renewables such as wind and solar. However, as renewables do not provide constant input, the use of green energy is directly linked to the ability to store

it properly.

One way to store energy is to convert it into hydrogen and thus move towards the so-called hydrogen economy, where hydrogen is used as an energy vector.

Since ammonia has a high energy content and is easy to transport, it has a huge potential to store hydrogen, i.e. clean energy.

Considering this potential of ammonia as a means to store hydrogen and thus energy, the fertiliser industry should be able to have a positive effect on the environment by helping to decarbonise energy supply and making it more reliant on renewables, the report added.

Antti Peltomäki, deputy director-general of DG GROW, told EURACTIV that ammonia together with hydrogen could play a leading role in decarbonising our energy system.

“In order to decarbonise our industry we need carbon-free electricity. Either directly or in the form of hydrogen or carbon capture, use and storage,” he said.

“What Fertilisers Europe presented today in terms of food and energy are in line with our priorities for the future of food.

“With precision practices, farmers can use nutrients in the best possible way. We need food from our soil without spilling our soil,” he emphasised.

For professor Ad van Wijk, the fertiliser industry has to work together through joint ventures to have a value chain of producing electricity hydrogen and ammonia and ship it.

“That’s the way to bring down the cost. Otherwise, we have all these intermediate sales and everybody has to make a profit,” he added.



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