Forecast of food, farming and fertilizer use in the European Union... 2012-2022
Nitrogen, Phosphorus and Potassium are the three main plant nutrients.

Mineral fertilizers are made from naturally occurring raw materials which have been transformed into a more plant-available form by industrial processing.

- Nitrogen (N), taken from the air, is essential as an important component of proteins.
- Phosphorus (P), extracted from mined ores, is a component of nucleic acids and lipids, and is a key to energy transfer.
- Potassium (K), extracted from mined ores, has an important role in plant metabolism, for photosynthesis, activation of enzymes, osmoregulation, etc.
Contents

Overview for 2022 ................................................................. 5
Forecast changes in regional fertilizer use ...................... 7
The cropping pattern ............................................................ 9
Farming and fertilization outlook in the EU-27 ............... 11
EU policies and economic context .................................. 13
Common Agricultural Policy “Towards 2020” .............. 15
Directly Available Nitrogen ............................................... 17
In the next ten years, use of nitrogen in the EU-27 is expected to increase by around 3.4%.
Overview for 2022

Fertilizer Consumption in the EU-27

In the EU-27 countries over the last three growing seasons, on average fertilizers containing 10.5 million tonnes of nitrogen (N), 2.4 million tonnes of phosphate (P\textsubscript{2}O\textsubscript{5}) and 2.7 million tonnes of potash (K\textsubscript{2}O) have been applied each season to 134 million hectares of farmland (47.7 million farmable hectares are not fertilized, which include 36.3 million hectares of unfertilized grasslands).

By 2021/22, Fertilizers Europe forecasters expect consumption figures to reach 10.8 million tonnes N, 2.6 million tonnes P\textsubscript{2}O\textsubscript{5} and 3.2 million tonnes K\textsubscript{2}O, applied to 134 million hectares of farmland. Considering the foreseen evolution of the cropping areas presented on page 11 and the economic situation on page 13, the expected changes over the next ten years relative to the 2012 reference period (from 2009/2010 to 2011/2012) are:

- A relative increase in N consumption at 3.4%, against 5.5% last year.
- An increase of 9.1% for P\textsubscript{2}O\textsubscript{5}, as opposed to the remarkable increase (19.8%) foreseen last year.
- K\textsubscript{2}O, foreseen to reach a record 30.2% last year, is now forecast to increase by 18.1%.

The changes are once again in relation to a base year which, due to major disruptions to supply and demand for both agricultural outputs and fertilizers, is significantly different from earlier base years.

The apparent changes in consumption do not stand out in the same way if a base year which is affected in a less extreme way is used, as can be seen below. The factors which caused the spikes in price and demand are not expected to persist, but their effect has influenced the current uncharacteristic changes in consumption. It is important therefore to note the actual forecast changes in volume rather than the percentage changes.

Consideration of the Reference Years

For the past ten forecasts, the reference volumes used to calculate the percentage change in demand have been based on the average value of the last three growing seasons (2009/2010 to 2011/2012 for the current exercise). This mitigates the extent to which exceptional years (positive or negative) may impact the calculated evolution.

While the 2012 reference volume for N has decreased by 1.7% compared to the peak 2007 reference, the reference volumes for P\textsubscript{2}O\textsubscript{5} and K\textsubscript{2}O have dropped by 22.5% and 24% respectively. This has resulted in the surprising positive increases in demand calculated this year. However, when using 2007 as the base year, the expected changes become +1.6% for N, -15.4% for P\textsubscript{2}O\textsubscript{5} and -10.2% for K\textsubscript{2}O.

Even if the rapid recovery in fertilizer demand is clearly confirmed, forecast consumption will still be far below the normal levels of the period 2005-2007.
Significant decreases in nitrogen consumption are foreseen in The Netherlands, Denmark and Greece with more moderate decreases in UK and France.
Forecast of Food, Farming and Fertilizer Use in the European Union 2012 - 2022

How the forecast is made

The forecast is an annual exercise that uses the following procedure:

- In spring, a European scenario is established, based on quantitative information (from the FAO-OECD, USDA, FAPRI and the European Commission) and a qualitative analysis made by Fertilizers Europe experts.
- Between May and July the general scenario is adapted to the specificities of each country. National forecasts are then made.
- In July, the national forecasts are then analysed and discussed by all the experts.

When the market and economic situations require it, the forecasters carry out a last update of the current situation during August, before integration and publication.

For all EU-27 countries, the forecast is an upward crop-based procedure where fertilizer consumption is evaluated by assessing the evolution of the cropping area and the nutrient application rates for each crop. However, two different methodologies are used to achieve this crop-based procedure:

- In 24 countries (EU-15, Bulgaria, Estonia, Hungary, Slovenia, Czech Republic, Lithuania, Poland, Romania and Slovakia), representing 99.4% of the EU-27 agricultural area and total EU-27 fertilizer consumption, the forecast is an expert-based approach constructed from the national forecasts generated by Fertilizer Europe’s members.
- In two countries (Cyprus, Latvia), evaluation of the production and crop area is based on the economic model used by the European Commission. Application rates used for N, P and K nutrients on each crop are based on an agronomic model developed by a small group of forecasters.

One country (Malta) is not covered.

Fertilizer nutrients are expressed in the report as follows: nitrogen (N) as the pure element, phosphorus (P) as the phosphate equivalent (P₂O₅, phosphorus pentoxide), and potassium (K) as the potash equivalent (K₂O, potassium oxide).

Forecast changes in regional fertilizer use

The evolutions in N consumption by country are similar to last year. After the positive trends observed over the past few years, significant decreases are now foreseen in The Netherlands, Denmark and Greece, with more moderate decreases in the UK and France. On the other hand, a slight “recovery” is expected in Ireland, with an even steeper “recovery” in Spain, Italy and Portugal.

Most EU-12 countries showed a positive trend in high nitrogen consumption but the evolution was slower than in last year’s forecast. The evolution foreseen for average EU-12 nitrogen consumption dropped from 18% last year to 13% in the current reporting period.

For P₂O₅ and K₂O, significant growth is reported in Austria, Spain, Portugal, and Sweden, contributing to the remarkable recovery forecast in the EU-27 over the next 10 years.
The EU-27 grain sector (including oilseeds) accounts for 60% of total nutrient consumption, of which 25% is for wheat.
The EU-27 agricultural area is marked by a large diversity. The current situation is illustrated in the graphs opposite.

In the EU-15, the fertilized area accounts for 73% of the total agricultural area. The non-fertilized area consists of idle-land, set-aside and non-fertilized grassland. The fertilized area encompasses 61% arable crops (of which 37% are cereals, 7% oilseeds and 11% fodders), 10% permanent crops (vineyard, orchards, forest) and 28% grassland.

In the EU-12, the fertilized area accounts for 75% of the total agricultural area. The non-fertilized area consists of idle-land and non-fertilized grassland (some non-fertilized grassland is not taken into account in the statistics). The fertilized area encompasses 86% arable crops (of which 56% are for cereals, 13% oilseeds and 9% fodders), 3% permanent crops (vineyard, orchards, forest) and 11% grassland.

**AGGREGATED FIGURES FOR THE EU-27**

The fertilized area equals 134 million hectares, of which arable crops account for 68%, (cereals 42%, oilseeds 9%, fodders 10%), permanent crops 8% and grassland 23%.

The cropping areas combined with the application rates give the following results in terms of fertilizer consumption: grain sector (including oilseeds) accounts for 60% of total nutrient consumption, of which 25% is for wheat. Grassland and fodders account for 23%.
Over the next ten years, we anticipate that nutrient consumption (N+P+K) will increase by 8% for cereals.
Over the next 10 years, the new Common Agricultural Policy (CAP) is expected to be more market orientated. Associated with the global scenario, where increasing tensions in food supplies are foreseen, this is expected to maintain a sustained demand for crop production, despite increasing pressure on environmental protection.

The expected cropping pattern over the next 10 years will see a stabilization of the cereals area, with a decrease of 0.6% (a 1.8% decrease was forecast last year), of which a 4% decrease is foreseen in the EU-12 countries but a 1% increase in the EU-15. The increase in oilseed rape is now foreseen at 6.5% compared to the 5.9% increase anticipated last year. Sugar beet acreage is forecast to increase by 5.5% in the EU-27 over the next 10 years, resulting in a remarkable 10% increase in fertilizer consumption associated with this crop.

Stabilization of the grain area is compensated by a sustained increase in yield (8% compared to 10% last year). This will lead to an increase in nutrient consumption (N+P+K) of approximately 8% for cereals and to a similar evolution for oilseeds, with an expected increase of 11% (a slower pace compared to the 17% increase foreseen last year).

Total nutrient consumption will increase by 1% for fodder crops as the impact of the expected abolition of milk quotas encourages the trend towards greater productivity. At the same time, the decrease in nutrient consumption for grassland is now foreseen at around 4%.
CAP “Towards 2020” and development of bioenergy are significant drivers for fertilizer consumption over the next 10 years.
Overview

**FOOD TENSIONS AND ECONOMIC CRISIS**

The revised CAP “Towards 2020” proposals and the anticipated impact of the 2008 climate and energy package will be the main internal drivers of fertilizer consumption within the EU over the next 10 years. However, tensions in the energy and food sectors and their related impact on food and fertilizer prices have been key factors in inducing the significant drop in fertilizer consumption between 2008 and 2010. Consumption is now slowly recovering but still has an important impact on EU agriculture.

As far as CAP “Towards 2020” is concerned, despite the announced balance between increased environmental protection and a clear orientation towards more productive and competitive EU agriculture, a negative impact on fertilizer consumption can now be expected. The expected impact will be analysed in greater depth during the next forecasting exercise, when the final position of the EU institutions is clearer.

In these times of financial crisis, Europe, now more than ever, must ensure that its natural resources are used as wisely as possible. The future availability of arable land and water is at stake and will determine whether EU agricultural output will be able to contribute to global food security. The question thus remains: How can we feed the world of the future in spite of these limitations? The answer, clearly, is through greater productivity in EU agriculture which, in parallel, utilizes its inputs in a more targeted way and recycles more.

Demand for food is expected to increase as the world population continues to grow and growth in biofuels will place additional demands on the agricultural system.

Increasing productivity is key to meet the world’s growing food needs. But this increase in productivity needs to be backed up by coherent and complementary policies aimed at sustainable innovation in the European agriculture.

**BIOENERGY AND BIOFUELS**

The growth of biofuels in EU is hindered by internal and external factors. Indirect land use change and the environmental emissions which derive from it have made the European Commission reconsider its position on the sustainability criteria for biofuels (most likely by introducing a “correcting factor”). This has caused turmoil in EU biofuel production.

A high-level meeting of 27 Commissioners, in May 2012, showed highly diverging opinions on the issue. Under a potential compromise being developed following the meeting, the EU executive might propose increasing, from 30 to 60%, the proportion of emission savings from biofuels compared to conventional fuels. Furthermore, a separate sub-target could be added to the Renewable Energy Directive, which could require part of the target to be met by advanced biofuels produced from agricultural waste rather than crops.

The growth in biofuel consumption in the EU will also depend on external factors such as the increase in oil prices and worldwide biofuel availability. The issue of resource availability could arise much earlier than expected and dictate the pace at which 2nd generation biofuels will grow. It is expected that first generation biofuels will continue to dominate at least until 2017.

The release of an impact assessment meant to guide the Commission’s decision on future legislation was initially scheduled for June 2011, only to be delayed until January and then summer 2012. At the time of producing this publication, the European Commission has still not released its impact assessment.
CAP “Towards 2020”: more competitiveness and environmental protection.
Fertilizers Europe’s position

**BACKGROUND**
Through successive reforms, the Common Agricultural Policy has increased European agriculture’s market orientation while providing income support to farmers, improved the integration of environmental requirements, and reinforced support for rural development as an integrated policy for the development of rural areas across the EU. The same reform process has raised demands for a better distribution of support among and within Member States, as well as calls for a better targeting of measures aiming at addressing environmental challenges and increased market volatility.

**CAP “TOWARDS 2020”: THE FORESEEN CHANGES**
According to the European Commission’s proposals, it is expected that the CAP will maintain its two-pillar structure, with the budget for each pillar maintained in nominal terms at its 2013 level and with a clear focus on delivering results on the key EU environmental priorities. Under the first pillar, future direct payments will consist of a “basic payment scheme” (60%) with a large share (30%) of the remaining farm support possibly coming from a “greening premium” which aims to ensure better environmental protection.

There is no clear picture yet within the European Council but an important contribution has come from the “Stockholm Group”. Instead of requiring farmers to fulfill three EU-wide environmental requirements to receive their full payment, these Member States propose that individual states be given the flexibility to pick three ‘greening’ options from an extensive EU-wide list.

Additionally, the economic crisis in the Eurozone has caused some national governments to push for a reduction in the CAP budget.

The European Parliament, which for the first time participates in the co-decision on agriculture policy reform due to the Lisbon treaty, appears to favour a ‘menu’ of environmental measures. As far as the budget debate is concerned, it has also made clear from the start that, without an agreement on the budget, MEPs could not pass judgement on the European Commission’s proposals.

**OUR OPINION**
Fertilizers Europe recognizes the relevance of better integration of environmental protection within the CAP reform. But it is still concerned by not seeing clear support for greater agricultural productivity to increase EU self-reliance in its food supply and its contribution to global food security.

Climate change and biodiversity are two areas that will also benefit from the greater productivity of European land already under cultivation and the avoidance of “land grabbing” elsewhere. Moreover, the increase in EU agricultural productivity will serve the growing demand for renewable energy resources such as bioenergy, decreasing EU dependency on imported energy.

In this respect, Fertilizers Europe supports the invigoration of the Farm Advisory System (FAS). Such measures can help bring “science to the field”, contributing to more productive EU agriculture and better environmental protection, and the advance towards sustainable intensification.

It is also worth pointing out that Fertilizers Europe believes in the holistic concept of integrated farming as a guideline for the sustainable development of European agriculture that reconciles increasing productivity with environmental protection.
DAN fertilizers provide the most efficient source of nitrogen for crop nutrition in Europe.
Mineral fertilizers have an essential role to play in meeting the twin challenges of feeding an increasing world population and limiting climate change. At the vanguard of agriculture’s green revolution, they are estimated to contribute today to more than half of the world’s food production and protein supply.

Fertilizers Europe believes that the focus of European agricultural policy should be on improving the performance of the agricultural sector in terms of its productivity and efficiency. This will enable European farmers to increase Europe’s self-sufficiency and its contribution to global food needs, as well as lead to more sustainable agricultural production. The sustainable intensification of European agriculture through the efficient use of mineral fertilizers can help the sector respond to main EU policy goals.

The DAN family of nitrogen fertilizers, based on nitrate and ammonium, combine the benefits of the two simplest forms of reactive nitrogen that are directly available to plants. DAN fertilizers offer farmers and agronomists a precise and reliable means of increasing food and energy production in an environmentally acceptable way.

A separate Fertilizers Europe brochure ‘Towards Smart Agriculture’ sets out the main aspects of the agronomic and environmental impact of different types of nitrogen fertilizer currently in use in Europe and the advantages of DAN nitrate-based fertilizers such as ammonium nitrate (AN), calcium ammonium nitrate (CAN) and ammonium nitrosulphate.

Use of the right form of nitrogen fertilizer is of great importance as different products have different environmental impacts,” Daniella.

Combining good agricultural practice with DAN fertilizers enhances nitrogen-use efficiency and minimizes environmental losses,” Danny.

“DAN fertilizers will put enough food on my table. Even when I am grown up,” Dani.

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The mission of the European fertilizer industry is to respond to the needs of agriculture and society by providing, in accordance with the principles of Product Stewardship, a reliable and competitive supply of high-quality mineral fertilizers.

The industry encourages, moreover, the adoption of Good Agricultural Practices in the use of plant nutrients, thus stimulating farmers and growers to produce high-quality crops in an economically and environmentally sound manner.

The mission of Fertilizers Europe is to identify, promote and manage the common interests of its members by:

- promoting the role of mineral fertilizers in European agriculture and horticulture;
- anticipating and preparing for upcoming issues that may affect the industry;
- being the industry's spokesperson and sounding board;
- providing its members with a wide range of statistical information and studies.
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