

The CAP towards 2020:

A call for climate friendly and resource efficient agriculture in Europe



The European Commission's CAP reform provides an opportunity to improve the performance of agriculture. The use of best available farming practices will make European agriculture more competitive and sustainable. When incentives for better resource use efficiency are included, the CAP reform can support the EU 2020-strategy of "smart, sustainable and inclusive growth".



Knowledge grows

Agriculture plays a vital role in increasing quantity and quality of food supplies, and delivering public goods. As any production system, the food system needs to address efficiency in the value chain and minimize losses to be competitive and sustainable. Optimal yield levels from crop land can be obtained at the same time as promoting agriculture's delivery of public goods.

The CAP process should be supportive for EU farmers' productivity and competitiveness at the marketplace. Increased productivity is key to limit land use change at the global level. Today, Europe is a net importer of food produce to the scale of more than 30 million hectares being farmed outside Europe to ensure the needs of EU consumers.

CAP needs to address the greenhouse gas emissions and environmental impact from the agricultural sector. Emissions from agricultural soils in the EU have been reduced steadily since 1990, also relative to food production. Improved nutrient management has been key to this development. Modern farming management systems can further advance nutrient use efficiency, with a positive impact on cost efficiency, climate and environmental performance.



Nutrient management means that fertilizer demand is calculated and based on soil analysis, yield expectations, crop quality, weather conditions and nutrient supply from organic sources. Nutrient management also contains guidelines for correct choice of nutrients to apply, application methods, timing and optimal application levels.

European farmers are world leading in terms of nutrient use efficiency, with nitrogen efficiency presently at about 60 percent on average¹. Field trials demonstrate how nutrient use efficiency can be substantially improved – while maintaining or improving yield levels. Achieving more yield per input unit supports both economic and sustainability issues.

Policy suggestion: CAP needs to provide incentives to improve resource use efficiency and good agricultural practices. By promoting a sustainable farm management system which also measures nutrient use efficiency, there are clear benefits for environment, climate, competitiveness and productivity.

¹ NUE = crop N removal / mineral N input * 100
N import with feed is not considered

Nutrient losses and mitigation potential

The use of nutrient management systems greatly improves visibility and accountability of the main nutrient flows on the farm and contribute to optimizing crop output, reducing losses and saving money.

Nutrient management tools must accommodate the diversity in European agriculture. For this reason, resource efficiency targets are best set at country and/or sector level. Building on existing systems, indicators and monitoring tools need to be developed to monitor progress.

CAP must include incentives which support knowledge transfer and introduction of tools and technologies that improve productivity and resource use efficiency.

Energy and Carbon footprint

Both choice of nutrient source and efficient application of fertilizer will impact the energy use and carbon footprint of the crops. European fertilizer manufacturing in general has low emission levels and high energy efficiency, while other sources have approximately the double carbon footprint. CAP must provide support for choosing fertilizers produced with a carbon footprint compliant to the EU BAT.

Example: Improved efficiency in fertilizer application can reduce the GHG emissions per kilo crops by ¼.

Example: Use of mineral fertilizer boost the photosynthesis. 1 energy unit applied as mineral fertilizer, provides 10-15 times as much energy by way of increased biomass production.



Water

Run-off and leaching of nutrients from fields constitute an environmental issue, causing eutrophication. Also, scarcity of water is in future scenarios an increasingly limiting factor of agricultural production, in particular in the southern parts of EU. Increased precision in farming practices will offset both effects.

Example: Yara has developed the P-trap. It reduces phosphorus runoff from fields by improving soil structure with soluble Calcium. Field trials in Finland document a 60% reduction in phosphorous losses.

Example: Fertigation – irrigation combined with water soluble crop nutrients – improve both water and nutrient efficiency.



Tools for precision farming

Technology provides solutions for increased precision. Sensors can help assess the status of crops, providing precise advice. Sensors can help minimizing losses while producing optimal yields.

Example: Yara N-Sensor™ is mounted on top of the tractor, and it scans and analyzes the crops' need for nitrogen supply, adjusting nitrogen fertilizer rates on-the-go. By applying the right amount at the right place at the right time, adjusting for in-field variations, more yields per unit fertilizer is achieved - at a higher quality.



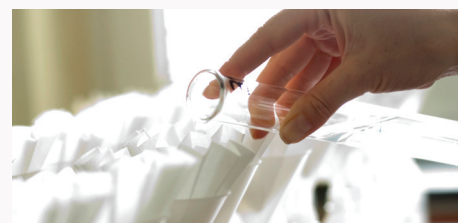
Crop nutrition

Advancing farming towards better performance must include increased knowledge of each crop and its complete need for balanced supply of nutrients. Optimal fertilization is a function of crop, soil type and condition, climate and rainfall patterns. The right amounts must be applied, at the right time. Through soil analysis, crop-specific advice and a range of other methods, the farmer needs less fertilizer per kilo produce.

Example: N, P and K plus micro- and secondary nutrients are important to the crop growth, quality and yields, as well as for the maintenance of soil fertility.



Example: Yara's Megalab is an Internet based, global system offering interpretation and nutrient recommendations service from chemical analysis of crop and soil samples.





Knowledge grows

For further information please contact:
Yara International ASA
Bygdøy allé 2,
N-0202, Oslo,
Norway
www.yara.com

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Yara delivers solutions for sustainable agriculture and the environment. Our fertilizers and crop nutrition programs help produce the food required for the growing world population. Our industrial products and solutions reduce emissions, improve air quality and support safe and efficient operations. Founded in Norway in 1905, Yara has a worldwide presence with sales to 150 countries. Safety is always our top priority.

Key facts

- Established as Norsk Hydro - the world's first producer of mineral nitrogen fertilizers - in 1905
- Demerged as Yara International ASA since 2004
- President and CEO: Jørgen Ole Haslestad
- Headquartered in **Oslo, Norway**
- Listed on the Oslo Stock Exchange
- More than **7500** employees in 2011
- Operations and offices in more than **50** countries
- Sales to about **150** countries

Key figures

Revenues 2011: 80,352 millions NOK

Fertilizer sales: 19.4 million tons

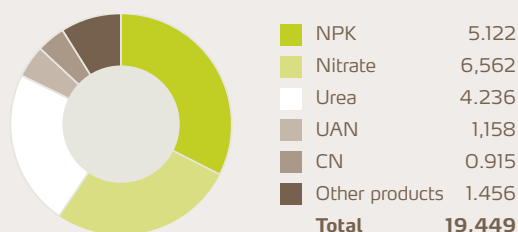
Industrial sales*: 4.6 million tons

*excluding industrial gases

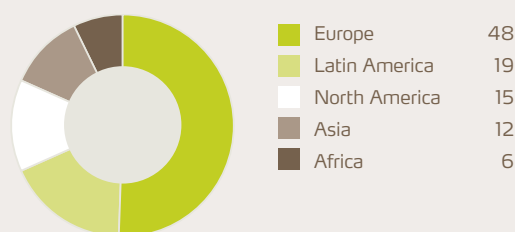
Over 200 terminals and warehouses with total storage capacity of 5.7 million tonnes

FERTILIZER SALES

By product (thousand tonnes)



By region (%)



Crop Nutrition

Yara offers the most comprehensive range of fertilizers in the industry. Our portfolio - which ranges from single nutrient fertilizers to complex compounds and micronutrients - has a program to meet the specific needs of all crops. We also supply the knowledge and tools needed to optimize soil application, fertigation and foliar application.

Industrial Solutions

Our industrial portfolio contains a wide range of chemicals and gases. Together with integrated services, we optimize industrial processes and help cut toxic emissions. Among them are NOx abatement solutions for industrial plants, heavy duty vehicles and vessels. We are also a leading supplier of urea, ammonia, nitric acid and CO₂ as well as of technical nitrates for the civil explosives and mining industries.

