

Tomorrow's agricultural nutrient management and fertilisation

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Who is Fertilizers Europe?



EU Fertilizer industry in numbers



Turnover:

10.9 billion euro*



Total investment:

1.3 billion euro*



Total employment:

78,500 people



Production sites:

> 120

* Annual average last 5 years, source: Fertilizers Europe 2017/18 overview

1. Tomorrow's challenges for farmers



What is the situation?

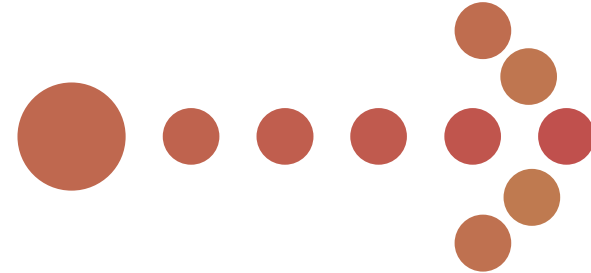
Unusual weather
conditions



Farmer's
profitability
under pressure



Environmental
constraints



Nutrient Management is in the focus

- ✿ CAP reform introduces Farm Sustainability Tool for nutrients
 - In the Cross-compliance/GAEC framework
 - Combined with nutrient reduction targets (N-surplus)
 - Will provide on-farm decision support on nutrient management
 - Objectives: improve water quality, reduce N₂O emissions
- ✿ More details via delegated acts from the EU Commission

Linked to key environmental issues



Water quality



Air quality



Climate change

In this context not everyone sees fertilizers the same way



Food security

I am a little obsessed with fertilizers.

Two out of every five people on Earth today owe their lives to the higher crop outputs that fertilizer has made possible. It helped fuel the Green Revolution, an explosion of agricultural productivity that lifted hundreds of millions of people around the world out of poverty.

- *Bill Gates* -

Environmental concerns



Too much fertilizer on the field, only means more nitrate in the water and less money in your pocket

- *German Federal Ministry of the Environment* -



2. How mineral fertilizers can help

The way forward for our industry

- 🌱 Optimize Nutrient Use Efficiency, product choice
- 🌱 Use all available tools to minimize environmental impacts: Additives, Precision farming, combination with other fertilizing products,...
- 🌱 Maximize knowledge per hectare



Smart farming: N Management tools

- **Direct and accurate Nitrogen fertilisation advice** to the farmer in just a few minutes
- Advice result (kg/ha) / Measurement quality / comparison between measurements and reference zone displayed on personal device
- A mean to reach higher yields and increase protein quality of the wheat harvest



What can growers achieve with smart farming?

- New technological solutions are used to collect all possible data, which are then combined with advisors' experience
- Accurate reports are produced to allow farmers to use the right product, at the right rate in the right place and at the right time
- Preliminary results:
 - Decrease of inputs/ha,
 - Increase of yield (+0.44t/ha) and proteins (+0.5 pt/t)
 - Better detection of agronomic problems

3. EU Framework



New developments to expect in mid-term

New EU fertilizer Regulation

Circular Economy

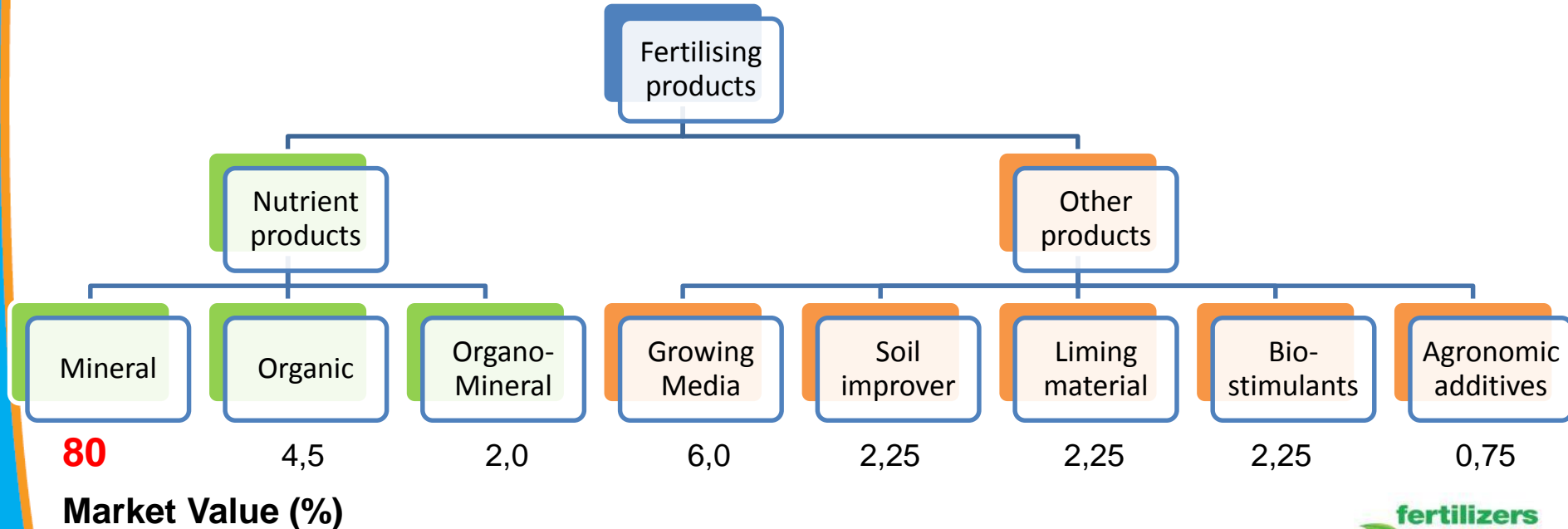


CAP reform




Revision of 2003/2003 Regulation

🌱 Inclusion of all fertilising product in the scope



Circular economy

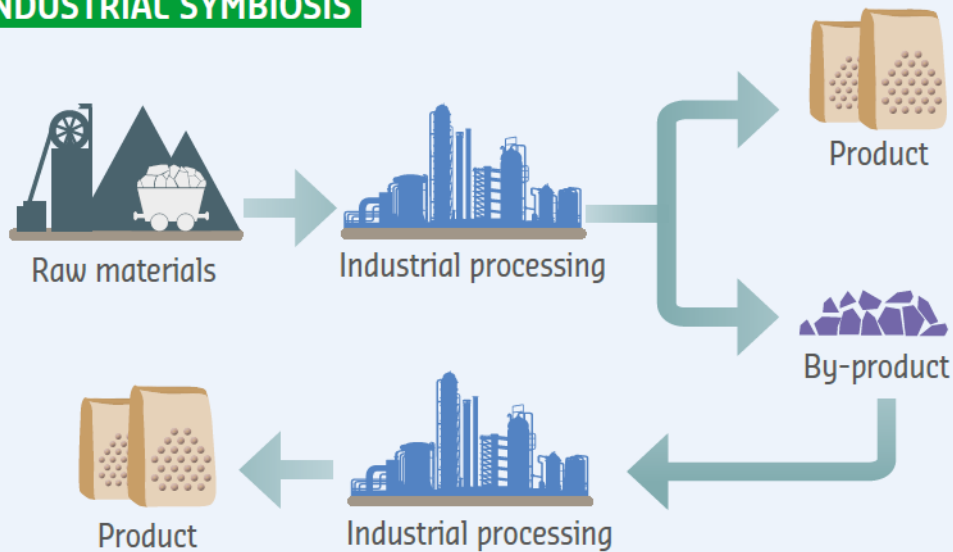
 EU recognised Circular Economy as a key driver for the European Industry

 Since December 2015 → New Circular Economy Package

- Series of actions to stimulate Europe's transition towards CE
- Ambitious targets to be achieved by 2030
- Covers a broad range of issues in the whole industrial value chain from production to consumption, remanufacturing, waste management and secondary raw materials

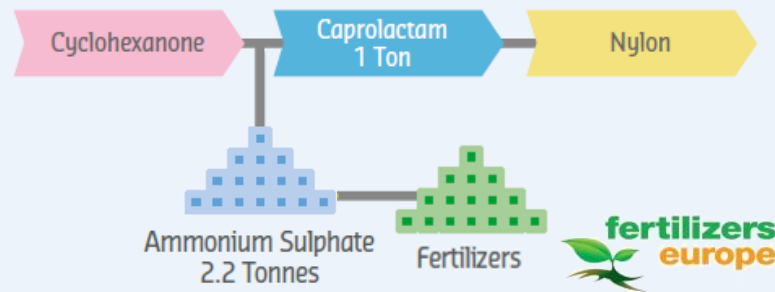
Circular economy is already a reality

INDUSTRIAL SYMBIOSIS



Example:

PRODUCTION OF NYLON



Phosphorus recycling in mineral fertilizers

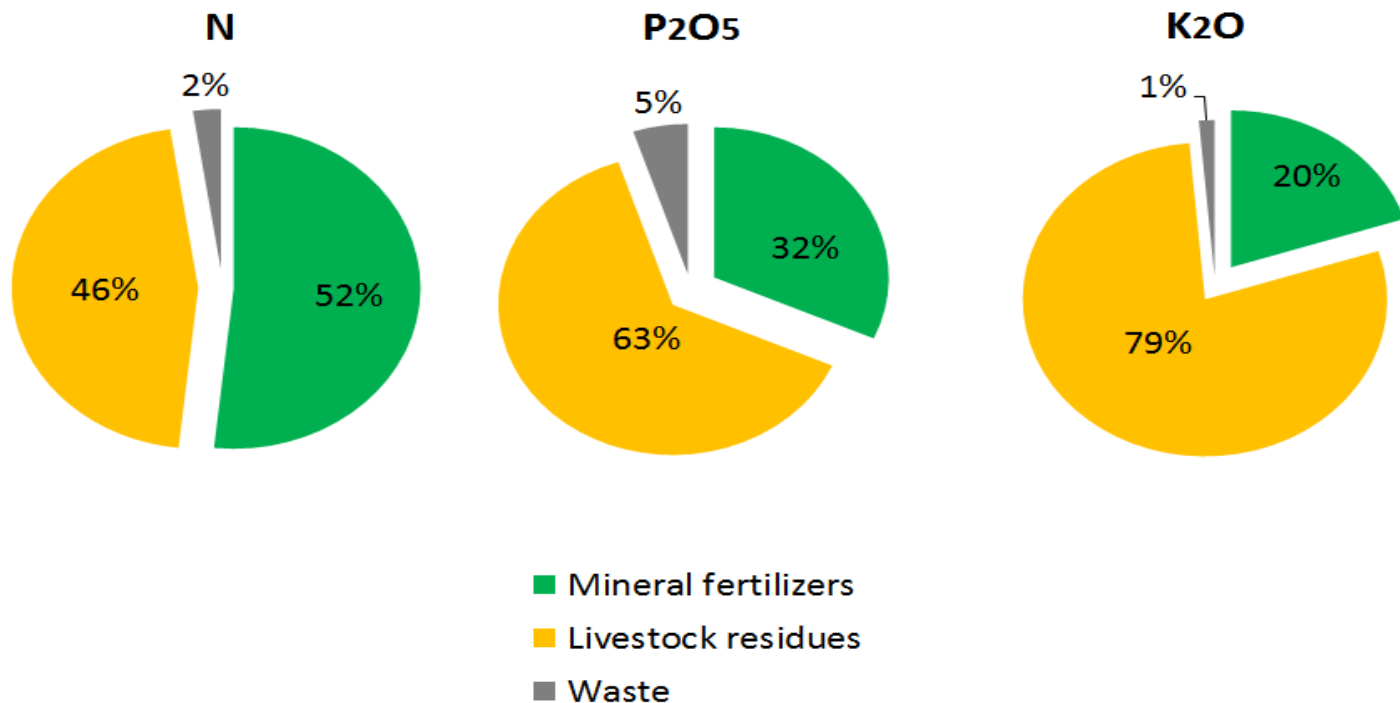
🌱 Recovery of P from

- Struvite
- Ashes from mono-incineration (sewage sludge, meat-and bone meal ashes)

🌱 Production of high solubility mineral fertilizers with known release curve



Potential of recycling should not be overestimated



Source: Ian Richards

NOTE: mineral fertilizers from Fertilizers Europe forecast, livestock manures calculated from animal numbers from Fertilizers Europe forecast and waste sources from Eurostat



**4. IMPACTS FOR
THE FUTURE?**

More choices for farmers

More
fertilizing
products
covered than
today

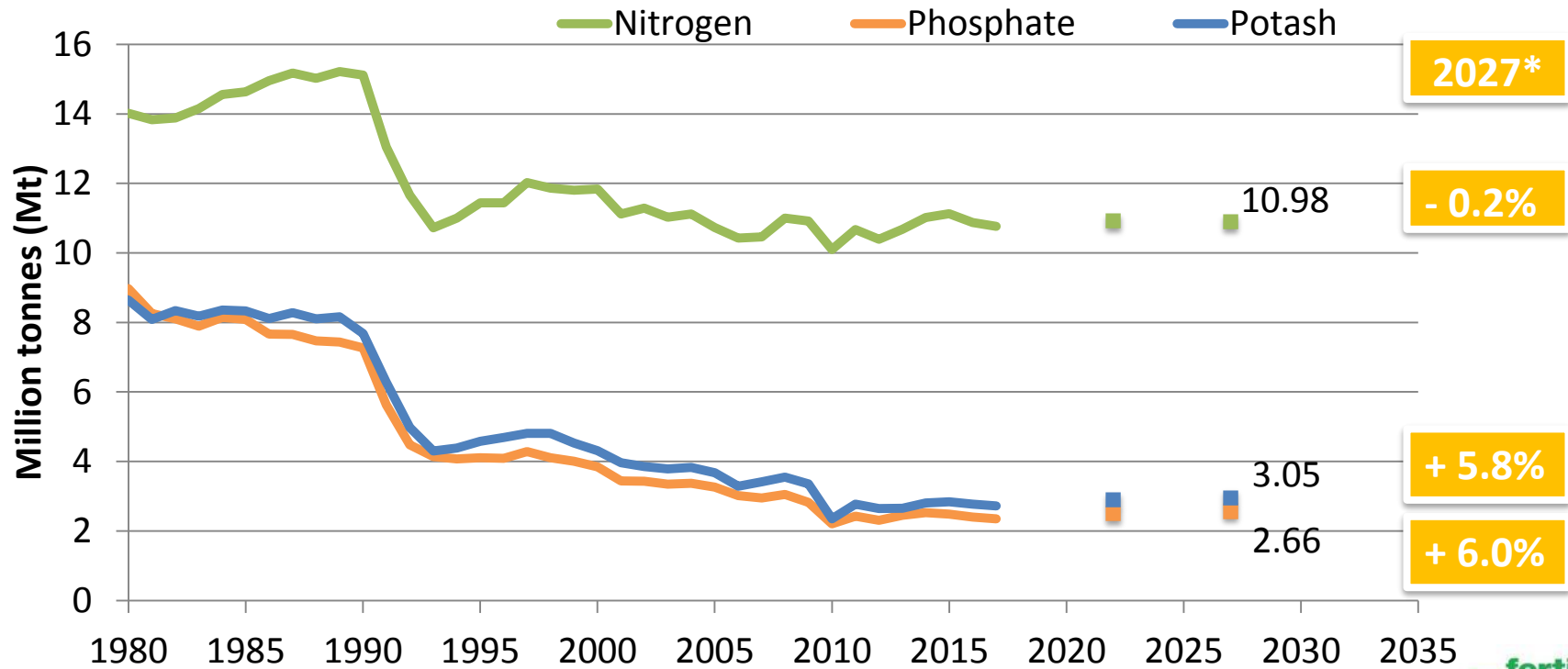


More
combinations
of different
products will
be possible



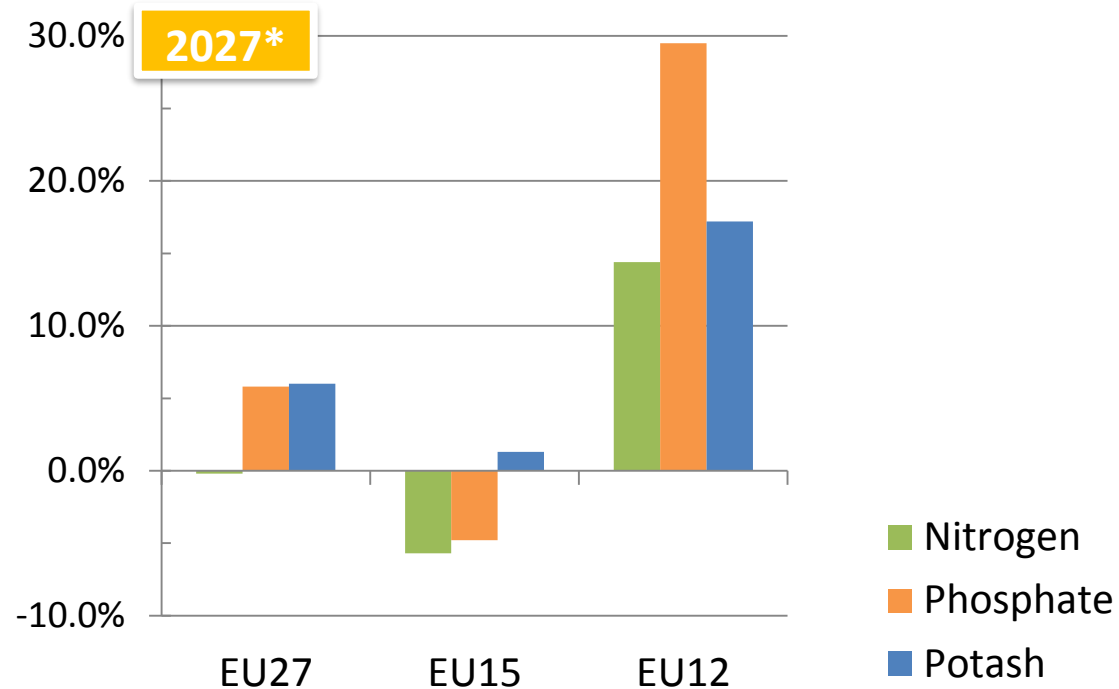
But
agronomical
efficacy
should
remain the
objective

Mineral fertilizers consumption will not decrease



* 10-year forecast in comparison with reference years (average of 2014/15, 2015/16, 2016/17)

Even if trend is different between EU15 and EU12



* 10-year forecast in comparison with reference years (average of 2014/15, 2015/16, 2016/17)



5. CONCLUSIONS

Which future for European mineral fertilizers?



Growing awareness
of farmers



Expectations from
food chain



Policy incentives

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