

## **CEMA contribution to the public consultation on sustainable phosphorus use**

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### **Introduction**

CEMA, the European association representing the agricultural machinery industry, is pleased to contribute to the public consultation on sustainable phosphorus use. Modern agricultural machinery offers a range of technology solutions that can play a major role in achieving a more sustainable use of phosphorus in European agriculture while also providing a number of additional benefits to farmers and the environment. In this document, CEMA presents its answers to key questions that were asked in the consultation document published by the European Commission.

In particular, CEMA calls on the European Commission:

1. To devise appropriate mechanisms under the Common Agricultural Policy (CAP) that will support the uptake of innovative machinery techniques which have a positive effect on sustainable phosphorus use.
2. To support further research into the design and development of advanced agricultural machinery systems that help to achieve more sustainable phosphorus usage under Horizon 2020.
3. To promote knowledge and understanding of the use of precision farming techniques in Europe through the setting up of a dedicated Focus Group on Precision Farming under the European Innovation Partnership (EIP) on “agricultural productivity and sustainability”.

## 1. Which technologies have the greatest overall potential to improve the sustainable use of phosphorus? What are the costs and benefits?

Advanced agricultural machinery provides a broad range of precision farming solutions that can help to reduce the amount of phosphorus used in agricultural operations and to promote its sustainable use. Advanced agricultural machinery technologies that have a positive impact on phosphorus consumption include:

- **Highly innovative precision spraying systems** that can, with the help of GPS, identify which parts of the field are already sprayed and which are not. New techniques make it possible that when a nozzle would go over a part which is already been sprayed it would stop spraying until parts of the field will be reached where no fertilizer has been used yet. This reduces the waste of fertilizer and at the same time avoids much of the soil contamination and eutrophication.
- The same effects result from using **modern fertilizer spreaders**. Due to technical innovations in combination with GPS a much better distribution of fertilizer is possible. Overlap can be minimized and field boundaries recognized which results in a minimum of spillage. The use of border spreading equipment on spreaders will make sure that a minimum of fertilizer is spilled. It also prevents fertilizer from being spread in the water next to the field, ditches, etc.
- **Farm management systems** can help farmers to obtain detailed information on the soil quality and crop yields at different places of the field. This information is highly useful when deciding on where and how much fertilizer to apply for the next harvest. By adjusting fertilizer needs exactly to the different parts of the field, over- (or under-) utilisation of fertilizer is diminished and crop quality and yields can be increased as a result.
- Another way to reduce the phosphorus use is to **inject manure instead of just spraying** it on the land. Agricultural machinery manufacturers developed modern equipment which farmers can use to inject the organic manure directly into the soil. As a result, less fertilizer is necessary. A positive side-effect is the significant reduction in ammonia emissions, which can have adverse effects on air quality in Europe.
- **By making use of no-tilling or conservation tilling techniques** with modern equipment the biggest part of the crop residues are left on the field. This decreases run-off and consequently less fertilizer can damage the water. However, it needs to be taken into account that no-tillage also has certain disadvantages (e.g. increased use of pesticides) and may not be suitable in all situations.

These new technologies can help to significantly reduce the consumption of fertilizer and therefore phosphorus from organic as well as from mineral sources. Especially considering the finite nature of the latter, advanced machinery can provide important benefits. Additional benefits include improving crop quality and yields as well as helping to preserve the quality

of soil, air and water. The agricultural machinery industry continues to work to improve these systems as they benefit both the farmer and the environment.

Notwithstanding the substantial benefits and savings that can be achieved with advanced fertilizing machinery, small farms in Europe may find it difficult to invest in such systems. At the same time, it may not be possible for small farms to obtain such precision fertilising services from agricultural contractors which sometimes do not offer precision fertilising services (yet may support these farmers with other advanced agricultural operational services such as precision spraying or precision harvesting).

As a result, small farms may sometimes find themselves in a situation where they cannot adequately access these new techniques. As such, there appears to be a need for public funding mechanisms to allow small farms in Europe to access precision farming technologies. Additionally, knowledge about precision fertilising technologies among small farms may sometimes be limited. Hence it is important to provide adequate information and training to small farms to make it possible for them to make informed decisions. In line with this situation and the European Commission's aim to promote greater productivity and sustainability in agriculture, **CEMA calls on the Commission to devise appropriate mechanisms under the Common Agricultural Policy (CAP) that will support the uptake of innovative machinery techniques that have a positive effect on sustainable phosphorus use and promote further research into these techniques under Horizon 2020.**

## 2. What should the EU promote in terms of further research and innovation into sustainable use of phosphorus?

CEMA would like agricultural machinery to be considered in further research and innovation programs for sustainable use of phosphorus. In the Horizon 2020 program there are three main objectives including industrial leadership and societal challenges like sustainable agriculture. The innovative agricultural machinery technologies to reduce phosphorus consumption fit both objectives and are therefore perfectly suited for being included in future calls under Horizon 2020. **By including research on advanced agricultural machinery in Horizon 2020 it will be possible to design and develop even better systems and products to achieve more sustainable phosphorus usage.**

Furthermore, the EU can promote the uptake of innovative agricultural techniques like GPS and modern fertilizer spreaders. One way to do this is by stimulating these techniques through the Common Agricultural Policy budget and especially through the mandatory

greening activities of farmers. If farmers or Member States can use part of their 'greening' budget for purchasing new technologies this will lead to more sustainable agriculture and more profitable farms.

The higher uptake has many positive consequences on the new technologies. With more users, manufacturers will gain more experience in these products. This experience can be used to improve the existing products even further and thus improve the sustainability of agricultural processes. Furthermore, higher quantities of sold machinery will make modern machinery more affordable which, in turn, will lead to an increase in the usage of the systems. In combination with a supportive European policy framework, these developments will help to promote knowledge and usage of precision farming techniques.

### 3. How could the European Innovation Partnership on “agricultural productivity and sustainability” help to take forward the sustainable use of phosphorus?

The two headline targets of the European Innovation Partnership (EIP) on agriculture are to promote productivity and efficiency in agriculture and to have a more sustainable agriculture in Europe. Precision farming techniques like the ones described above have the potential to significantly contribute to both headline targets. **CEMA believes that use of precision farming techniques should be promoted through the help of the setting up of a dedicated Focus Group on Precision Farming under the EIP.** Furthermore, resources should be made available to support research on the technologies; from research on the development of new techniques to optimizing the usage of the machinery.

### 4. What could be done to ensure better management and increased processing of manure in areas of over-supply and to encourage greater use of processed manure outside these areas?

The transport of certain types of manure is very costly. Currently, there are techniques available to dry or separate fractions from manure and slurry. This will reduce the volume of the manure and slurry and will make transport easier and less costly. Another effect can be that it will be easier to apply the right amount of fertilizer at the right place when the nutrient concentration is homogeneous. Promoting these techniques can result in lower and better use of manure in the areas where there is over-supply and make it easier and cheaper to transport manure to areas outside.

## Conclusions

CEMA welcomes the opportunity to contribute to the public consultation on sustainable phosphorus use. The European agricultural machinery industry has worked hard, and continues to work hard, to develop innovative technologies that result in more sustainable and productive agriculture. Many of these technologies are state-of-the-art and confirm the leading position of our sector in this field. To improve the sustainable phosphorus use in Europe these technologies can be a major part of the solution. By stimulating the uptake and use of these precision farming techniques and by making adequate resources available for further research on this topic, advanced agricultural machinery will be able to play an even more significant role in achieving more sustainable phosphorus use in Europe in the future.

For this reason, CEMA calls on the European Commission:

1. To devise appropriate mechanisms under the Common Agricultural Policy (CAP) that will support the uptake of innovative machinery techniques which have a positive effect on sustainable phosphorus use.
2. To support further research into the design and development of advanced agricultural machinery systems that help to achieve more sustainable phosphorus usage under Horizon 2020.
3. To promote knowledge and understanding of the use of precision farming techniques in Europe through the setting up of a dedicated Focus Group on Precision Farming under the European Innovation Partnership (EIP) on “agricultural productivity and sustainability”.

## About CEMA – European Agricultural Machinery

CEMA is the association representing the European agricultural machinery industry. With 10 national member associations, the CEMA network represents both large multinational companies as well as the numerous European SMEs active in this sector.

CEMA represents more than 4,500 manufacturers, generating an aggregated annual turnover of more than EUR 28 billion. 135,000 people are directly employed in the sector, with a further 125,000 people working in distribution and maintenance.