

Comments of Assofertilizzanti - Federchimica

Assofertilizzanti is one of Federchimica's (National Association of the Chemical Industry) 17 Associations that safeguards and represents all the productive divisions of the fertilizers sector.

In order to pursue this aim, it gathers the main operators of the plant food sector, with a whole yearly turnover of about 1 billion euro, equal to more than the 90% of the entire national market.

At current time 55 companies join Assofertilizzanti, they are structured in the following commodity sectors:

- Group of Mineral fertilizers (nitrogenous, phosphates and potassium, compounds, based on secondary elements or on microelements), this group includes producers and formulators/importers;
- Group of organic-mineral and organic fertilizers, amendments and conditioners ;
- Group of specialized fertilizers.

Assofertilizzanti elaborates the technical, legal and regulatory guidelines related to production and use of fertilizers and promotes such lines towards public decision makers, entrepreneurial organizations, the world of communication and the scientific community.

1. Given the global scope of the CoCoFe, do you think the objectives are appropriate? If not, how would you add to them or modify them?

Objectives proposed by the FAO

- maintaining or increasing global food production;
- maximizing the efficient use of plant nutrients to enhance sustainable agriculture;
- minimizing the environmental impacts from the use of fertilizers including pollution by loss of nutrients via runoff, leaching, greenhouse gas emissions and other mechanisms;
- minimizing environmental and human health impacts from pollutants such as heavy metals in fertilizers;
- maintaining and increasing food safety.

The objectives proposed by the FAO should be modified accordingly:

1. **Increasing global food production**

Reasoning: it is broadly agreed that food production will have to increase significantly to ensure food security worldwide. From that perspective maintaining current food production would not be sufficient.

2. **Maximizing efficient and effective use of all plant nutrients to enhance sustainable agriculture**

Reasoning: the effectiveness in increasing crop yields is key to reach sustainable agriculture worldwide.

3. **Preventing misuse of fertilizers in order to minimize use-related environmental impacts (such as pollution by loss of nutrients via runoff, leaching, greenhouse gas emissions, ammonia emissions), while acknowledging the environmental benefits also provided by the use of fertilizers**

Reasoning: Fertilizers are instrumental in contributing to food security worldwide. Thanks to the use of fertilizers, agriculture production becomes more efficient, thus giving more space for forests to grow.

4. **Minimizing the presence of pollutants (such as heavy metals and organic contaminants) in order not to pose risk on human health and the environment**

Reasoning: Any objective focusing on non-nutritive elements in fertilizers must not only look at heavy metals but also at organic contaminants and pathogens. In Europe, new nutrient raw materials are increasing, which make it necessary to also limit the presence of organic contaminants and pathogens such as:

- E.coli;
- Salmonella;
- Aflatoxins;
- Deoxynivalenol (DON).

5. Maintaining and increasing food safety

No comment

Second document to be developed later by the FAO

The aim of the CoCoFe is to assist member countries design policies and regulatory frameworks for the sustainable use of fertilizers. The focus is more on discouraging fertilizer overuse whereas a second document, to be developed later, will address scenarios **with low or no fertilizer use** under the topic of integrated soil fertility management.

Assofertilizzanti-Federchimica strongly discourages the FAO from developing “a second document, [which would] address scenarios **with low or no fertilizer use** under the topic of integrated soil fertility management”. Such a move would go against the scientific fact that fertilizers are essential to renew the nutrient level on the soil and to satisfy the natural need of the crops grown by farmers, in order to achieve good yields and high quality crops. Scientific findings comparing fertilized with unfertilized land also indicate that no or low fertilizer use would not be the right way forward for the following reasons:

- Efficient food production: yields are impossible to maintain if the exported nutrients are not replaced, and it would lead to soil depletion;
- Carbon storage in soils: It has been demonstrated that carbon levels actually decline mostly in farming practices where no fertilizers are used. The fact is that in farming without fertilizer; the yields are lower, resulting also in fewer crop residues that are raw materials for humus formation. The fertilizers limits this decline;
- Resource use: organic and mineral fertilizers are complementary products. Farmers use both in order to achieve the nutritional needs of their crops.

2. How should be the CoCoFe be structured to have the maximum positive impact?

The CoCoFe should include broad recommendations and general principles on what should be considered when designing strategies to manage fertilizers sustainably, which would then have to be adapted by regional agencies and national authorities to the local farming conditions. It should provide guidance at the regulatory level to outline the roles and responsibilities of the multiple stakeholders involved in the entire value chain.

The CoCoFe could be structured along the following chapters:

- 1) Optimization of fertilizer use in order to increase food production globally**, since the CoCoFe should recognize the instrumental contribution of fertilization to global food security and global nutrition.
- 2) Maximizing efficient and effective use of plant nutrients to enhance sustainable agriculture**, knowing that the reasons of the limited effectiveness/efficiency in the use of fertilizers can vary from situation to situation. However some general causes could be identified in a specific chapter: limited awareness of the cost-benefit of a better nutrient planning, great number of information required for detailed planning at field level, lack of technical assistance to farmers. It should also be taken into account that all plant nutrients have an influence on the yield level. E.g., a *sustainable* level of nitrogen fertilization could become *unsustainable* if another nutrient is missing and thus limiting the yield.
- 3) Prevention of the improper use of fertilizers in order to minimize use-related environmental impacts, with a strong focus on existing scientific findings**. For example, several trials have shown that if nitrogen application is done in quantities that correspond to the nitrogen requirements of the crop, then leaching is not greater than from unfertilized landⁱ.
- 4) Focus on options and approaches, which have the most rapid environmental impact – while yields and quality are maintained**. Future sustainability in agriculture can only be ensured if there are broad incentives towards the continuous development of principles for a smarter, more efficient and effective use of production tools in farming with greater precision. This can be achieved by striving for a full utilization of nutrients, but also of energy and water, together with appropriate conservation of the soil and environment.

The CoCoFe guiding principles should be:

- Understandable,
- Form the basis for guidelines, who will have to be transformed into concrete schemes in order to be implemented at local level;
- Supported by an Advisory Committee, composed of representatives of the scientific and academic community, leading scientists on crop nutrition worldwide, farmers' organizations, NGOs and industry representatives;
- Emphasizing the use of scientific evidence to define efficacy of inputs in providing plant available nutrients, and the efficacy of nutrient application practices in terms of the full set of their impacts on the three pillars of sustainability (people, planet, profit).

3. Who would be the best audience for the CoCoFe to meet our objectives and how could we broaden and diversify this audience to increase its influence?

The CoCoFe should be both developed and disseminated thanks to a multi-actor approach i.e. the cooperation of different stakeholders. It should also build upon existing expertise of leading scientists on crop nutrition worldwide, farmers' organizations and industry representatives (National and European associations). The best audience should be government at the policy level, fertilizer industry, NGOs, the academic community and training centers for farmers at the technical level.

The key aspect is of course the communication with farmers and growers, which is beneficial from the initial development of the CoCoFe right through to its implementation. Another major role could be played by extension services. Listening to farmers' needs is necessary for an optimal promotion and development of new solutions and tools. It would also be up to agricultural advisors throughout the different regions of the globe to disseminate the CoCoFe by developing demonstration projects or operational groups towards the target public, the farmers, and, in particular to make the CoCoFe available in the region's language/tailored on the specific conditions of the own region.

4. What should the scope of the CoCoFe be? Which nutrient input sources should be included; only synthetic fertilizers, or also manure, biosolids, compost, etc.? Should other products such as bio-stimulants, nitrification inhibitors, urease inhibitors, etc., be included as well?

All nutrients input sources have to be included if their efficiency is supported by scientific evidence. For this reason all plant nutrients should be considered, in order to have a broad and holistic approach of crop nutrition. Biostimulants, nitrification inhibitors and urease inhibitors should also be included as well as the responsible and judicious use of fertilizers can only be promoted by taking into account all options and products, which are available to farmers.

5. Will the CoCoFe assist in promoting responsible and judicious use of fertilizers? Why or why not? What other suggestions do you have to help the CoCoFe meet our objectives?

➤ Promoting responsible and judicious use of fertilizers

The CoCoFe could be successful in promoting responsible and judicious use of fertilizers only if its audience, its scope and its aim are clearly defined, agreed and well supported by the target groups. It could only bring added-value to existing knowledge and practices by being based on rigorous scientific findings, and by being adaptable (in a second step) to regional and local conditions.

Bibliography

ⁱ Kirchmann, Bergström, Kätterer and Andersson, Dreams of Organic Farming – Facts and Myths, 2016