15.06.2018 – 15.07.2018

Online consultation for review and comments on the zero-draft International Code of Conduct for the Use and Management of Fertilizers.

Comments below provided by Dr. Tom Bruulsema, International Plant Nutrition Institute.

Question
Is an International Code of Conduct for the Use and Management of Fertilizers beneficial and useful? To whom, and why? A Code agreed upon by all major stakeholders in agriculture would be very much beneficial and useful. It would be useful to the fertilizer industry as a guide to areas of improvement. It would be useful to governments as a means of establishing clear guidelines for international trade in sustainably produced agricultural products and commodities. It would be useful to consumers in assuring clear messaging regarding the safety and quality of agricultural products and the sustainability of the systems with which they are produced. It would be useful to agricultural industry to help them identify evidence-based approaches to sustainable crop nutrition practices.
Does this Fertilizer Code of Conduct address all aspects necessary to ensure the responsible use of fertilizers, optimizing benefits while minimizing risks? The zero draft of the Code is comprehensive in covering necessary aspects, but is far too long and full of redundancies to make it useful to the stakeholders involved in responsible use.
Are there any topics or subject matter missing from this Fertilizer Code of Conduct? If so, what are they? The current version of the Code, to its credit, addresses the many stakeholders involved in the use and management of fertilizers, and its impacts, both positive and negative. What is missing is a sense of the crucial importance of fertilizers to humanity. Fully half of human nutritional needs depend on nitrogen fertilizer (Erisman et al., 2008). Fertilizer use supports the huge increase in global agricultural productivity that has avoided the large-scale clearing of land that would have resulted in far greater impacts on the environment in general and greenhouse gas emissions in particular (Burney et al., 2010). Fertilizer nitrogen used at rates economically optimal for farmer profit also contributes to the maintenance and improvement of soil organic matter, a key component of soil health (Poffenbarger et al., 2017). Efforts to improve responsible fertilizer management with farmers and food supply chains can successfully improve sustainability (Cui et al., 2018; Thomson et al., 2017). A greater sense of the urgency of responsible management would be appropriate, given its integral role in meeting many of the relevant Sustainability Development Goals. Also, the preamble should recognize the contributions of fertilizer to agricultural production of fiber and fuel in addition to that of food. Burney et al. 2010. Greenhouse gas mitigation by agricultural intensification. Proc. Nat. Acad. Science. www.pnas.org/cgi/doi/10.1073/pnas.0914216107

Cui et al. 2018. Pursuing sustainable productivity with millions of smallholder farmers. Nature doi:10.1038/nature25785

Erisman et al., 2008. How a century of ammonia synthesis changed the world. Nature Geoscience 1:636-639.

Poffenbarger et al. 2017. Maximum soil organic carbon storage in Midwest U.S. cropping systems when crops are optimally nitrogen-fertilized. PLoS ONE 12(3): e0172293. doi:10.1371/journal.pone.0172293

Thomson et al. 2017. Science in the Supply Chain: Collaboration Opportunities for Advancing Sustainable Agriculture in the United States. Agric. Environ. Lett. 2:170015 doi:10.2134/ael2017.05.0015

Are there redundancies or unnecessary items or subjects within this Code of Conduct? If so, what are they?

1. In many instances, responsibilities for different stakeholders are spelled out in similar but unnecessarily different language. For instance, it is unclear why the fertilizer industry is called on in 3.7.2 to "Promote the application of fertilizers at the proper time and amount, as well as use of the most appropriate fertilizer source and placement in accordance with global principles of plant nutrient management such as ISFM and 4R Nutrient Stewardship" while governments, research institutes, and universities are referred only to ISFM for global principles in all of section 3.6. Should the same principles not apply to all stakeholders involved in supporting responsible use?

2. The structure and length of the document make it difficult for the user to identify the applicable principles. There are separate sections on topics of fertilizer use, nutrient reuse and recycling, compositions, access and labelling, extension and outreach, and monitoring, but often within each of these sections, each of these same topics are again addressed in separate points. This results in a high level of redundancy. There is considerable opportunity to reduce the length of the document, which would improve its accessibility and clarity to users.

3. Another example of redundancy can be seen in points 1.3.1 to 1.3.7. There is considerable redundancy among these seven points. Unifying them into a smaller number of more discrete points prevents future abuse of the Code in the way of those who seek to emphasize one of these points over and above the others.

4. There appears to be a preamble to the "preamble and introduction." It currently introduces considerable confusion where it states "This document is an International Code of Conduct for the Use and Management of Fertilizers. It has been prepared to support and implement the Voluntary Guidelines on Sustainable Soil Management…" The scope of soil management differs from that of fertilizer management or nutrient management. The whole of the text on the first page could be eliminated without any loss to the document.

Redundancies impose severe limitations on the usability and applicability of the Code. Addressing the issues identified, and reviewing all sections of the document for further redundancies, would likely require much more time than has been allocated. I suggest the process be revised to include a thoughtful rewrite to address redundancies and produce a more

concise document that could then be subject to a broader and deeper stakeholder consultation process. The target length of the more concise stakeholder consultation document should be ten pages or less, as compared to the current 40 pages.

Do you have any other suggestions or comments not covered in the above questions? If so, please elaborate.

1. This document is beyond too long.
2. A glossary of terms has been attempted, but falls short of completeness and there evidently has been no scientific consensus on developing the terms. There could be quite a bit of debate around each term as it is currently defined. For example, the definition of soil health, referenced to FAO, differs substantially from that of the US Department of Agriculture.
3. The code itself is a mixture of "shoulds" and explanations, but explanations are in the same bullet level as the "shoulds," making it unclear what constitutes the code and what constitutes explanations.
4. Points are spelled out in varying levels of detail. For example, point 3.5.3 makes very specific statements about soil and plant analysis, and could much more appropriately be shortened down to “Ensure support for evidence-based assessment of soil capacity to supply nutrients, and plant nutritional status.” The code should not direct all countries to use the same approach. There are many ways to assess soil fertility and plant nutrition, but the science needs support.
5. If general principles can be identified, they will cut across government, fertilizer industry, retailer, salesperson, farmer, and consumer boundaries.