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Fertilizers and EST, as a Contribution to SCP

presented by

Arab Hoballah
UNEP/DTIE, France



About the IFA Technical Committee

The IFA Technical Committee encourages the development and adoption of technology improvements that can lead to greater production efficiencies and reduced emissions, as well as better health and safety standards throughout the fertilizer industry. Our mission is to actively promote the sustainable development of efficient and responsible production, storage and transportation of all plant nutrients. The Technical Committee accomplishes these objectives through a variety of channels, including:

- Technical and policy-oriented information materials. The committee regularly conducts surveys and produces reports on key industry metrics, including the IFA Energy Efficiency and CO₂ Emissions Report, the IFA Safety Report, and the IFA Emissions Report. This work enables member companies to assess their operations over time, make comparisons with similar facilities on an established level of performance, determine the need for technology improvements and identify good industrial and management practices.
- Regular exchange of information on technology developments and industrial practices. A key role of the IFA Technical Committee is to encourage ongoing technical innovation in the fertilizer industry through the development, compilation and exchange of technical information between members, researchers, engineers, equipment suppliers and other industry associations. To this end, the committee organizes a Technical Symposium every other year to examine progress in the production technology of fertilizers. Each Symposium traditionally features the presentation of 30-40 new technical papers from member companies worldwide, providing members with information on the latest technological developments. In the intervening years, the committee holds a variety of meetings to assess current industrial practices and standards, with an eye toward identifying key developments of interest to members.
- Technical and educational workshops and special events. The IFA Technical Committee provides workshops designed for engineers working in the fertilizer industry, particularly those who have recently assumed new responsibilities, and for new engineers to increase their technical knowledge. These workshops (e.g. concentrating on nitrogen and/or phosphate fertilizer production) are designed to improve the participants' skills and broaden their vision and understanding of the entire industry, including technology, economics, energy use, safety and environmental stewardship. Workshops also provide engineers with an opportunity to exchange ideas, solve specific problems and improve plant operations and profitability.
- Education and advocacy. The IFA Technical Committee recognizes that customers, markets and regulatory environments are best served by clear and concise information on the fertilizer industry and its practices and products. Because the knowledge and expertise found within the fertilizer industry is the best source for this information, the Technical Committee endeavours to educate policymakers, standardization bodies, customers and the public on industry achievements, technological advances, voluntary initiatives and best practices. The committee also encourages universities and development centres to conduct research on fertilizer product development and production processes.

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Contact details:

United Nations Environmental Programme (UNEP)
Division of Technology, Industrial and Economics (DTIE)
Tour Mirabeau 39-43, Quai André Citroën, 75739 Paris Cedex 15, France
Tel: +33 1 44 37 14 39 - Fax: +33 1 44 37 14 74
arab.hoballah@unep.fr

All papers and presentations prepared for the IFA Technical Symposium in Vilnius
will be compiled on a cd-rom to be released in June 2006.

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Abstract

The production and use of fertilizers are essential for food production and by extension poverty alleviation and basic survival. Efficient and sustainable production and responsible use of fertilizers can maximise the contribution of these products to poverty alleviation and sustainable development, by minimising economic costs, resource depletion and environmental impacts. Our goals should include efficient, safe and sustainable production of fertilizers (with appropriate benchmarks to monitor progress) and efficient and sustainable use of fertilizers including good management practices, sound mix of fertilizers based on requirement, innovation and appropriate use of technologies.

In terms of production of fertilizers, the industry has made some important efforts particularly in safety benchmarking and use of indicators for performance standards. The proactive approach of the IFA through setting performance targets is essential to making the industry a leader in sustainability. The lessons learnt from this can be useful for other industry sectors in their efforts to establish more sustainable enterprises.

The UNEP-Woods Hole Research Centre Nitrogen Policy Workshop held in Paris last month, highlighted a number of areas where work is needed in relation to both the benefits and negative impacts of reactive nitrogen in our environment. Such areas include assessment of the effects of surpluses or shortages of reactive nitrogen, techniques for management of reactive nitrogen, research, monitoring and policy oriented work, as well as capacity building activities for both the public and private sectors. We are very happy that the IFA is actively working with UNEP in defining the critical issues – we hope to extend this collaboration to the design of appropriate responses.

In 2002, UNEP convened a group of industry associations, business initiatives and organizations representing various sectors and facilitated the development by them of reports on their contribution to sustainable development. IFA responded positively and in the IFA report “Industry as a partner for sustainable development” to the UNCED, five key areas were identified for work by the industry: Improved products; removal of impurities and identification of new uses for waste products; capacity building of fertilizer value chain to enable proper use of fertilizers; capacity building of farmers; and stakeholder relationship development. The IFA report card of the industry that has been prepared for CSD 14, to take place next week, shows that some progress has been achieved but still a lot more needs to be done. Particular improvements were made in safety in the industry, understanding energy consumption in ammonia production, improved monitoring of key emissions and promotion of good management practices. It is important to expand on such improvements to cover all aspects of the industry. Until now, these reports and related Cards were prepared by concerned respective sector industry or association; however, after analysing the various reports and progress achieved, there are few issues that needs to be addressed by most of the industries in order to further advance towards sustainability. These concern: setting measurable performance targets, looking for alternative to business as usual cases, developing partnerships, addressing specific developing countries concerns, giving due consideration to the SMEs, contributing to consumers awareness. UNEP will be looking in the near future for ways and means for better cooperating with the industry sectors for making progress in these issues.

We believe that cooperation could be further strengthened, through exchange of information as well as joint (demonstration) projects, between the IFA and UNEP. Some possible areas for joint work could include inter alia:

Sustainable fertilizer production – UNEP has promoted the incorporation of Cleaner Production techniques in general industrial production. IFA works towards improving the fertilizer industry. A joint effort of IFA and UNEP in promoting cleaner production in the industry through the various organs of the association would have an overall positive impact on improving operation and bringing performance on environmental protection to higher levels particularly with companies where there is room for such improvements (with lower production efficiencies). The UNEP/UNIDO National Cleaner Production Centres can be a valuable asset to work with the industry in supporting the introduction of Cleaner Production in the production process. The UNEP Greenhouse Gas Emission Reduction from Industry in Asia and the Pacific (GERIAP) project has worked with fertilizer companies and has produced a number of energy efficiency case studies. This project aimed at developing and promoting the use of Cleaner Production approach to improve energy efficiency in industry in Asia, thereby also reducing greenhouse gas emissions and improving the profitability of the companies. GERIAP carried out some 50 in-plant pilot projects, including some fertilizer producers in Bangladesh, China and Vietnam. The project was able to demonstrate significant reductions in greenhouse gas emissions (average 10.000 tonnes/plant/year), while also improving the economic performance (savings of more than US\$ 100.00 per year) and the environment inside and outside the plants. In general terms, GERIAP has proven that CP is a most useful tool that can help industry to contribute their part to combating climate change. Such efforts can be expanded with IFA's support.

Use of Fertilizers – The efficient application of fertilizers will lead to greater productivity and also to reduction of environmental problems related to nitrification of watercourses. This requires promotion of integrated soil fertility management so as to more effectively use various sources of nutrients, and reduce problems associated with excesses of reactive nitrogen in some parts of the environment. UNEP would welcome continued cooperation of the IFA on issues related to reactive nitrogen including support on policy making and capacity building in developing countries. There are possibilities of synergies between the work of the IFA and UNEP as well as other agencies working in the development field. We can use the opportunity of the Africa Fertilizer Summit, to be held in Nigeria in June 2006 to explore possible areas of cooperation in that region.

Desertification – Desertification is a growing problem with deserts at present occupying 34% of land. Poverty, unsustainable land management and climate change are turning more drylands into deserts, and desertification in turn exacerbates poverty. UNEP great concern about this issue is expressed in this year's focus on "Deserts and Desertification" with related World Environment Day to be held on 5th June in Algeria this year. Fertilizers can be a critical tool for people in deserts and drylands confronting the low nutrient levels in these soils, making an important contribution to enhancing food security and agricultural sustainability. This is particularly the case in some parts of sub-Saharan Africa and South Asia, where the lack of nutrients has contributed to desertification. In this International Year of Deserts and Desertification there is need to find ways of addressing this problem through work on the use of fertilizers, partnering with development cooperation agencies and raising awareness on reducing desertification. In doing so, however, we must also ensure that we avoid any overuse of fertilizers which has led to soil acidification in some dryland areas.

Among other important tools to which UNEP gives high priority, the application of the Life Cycle Approach in both the production and use of fertilizers is essential for the sustainable development of the industry as well as agriculture and by extension the strengthening of food security and poverty alleviation. Promotion of its use offers opportunities for collaboration. Moreover, UNEP/DTIE is actually looking for further developing its programme of work and capacity in the field of sustainable food and agriculture, which will obviously encompass fertilizer use, safety and health.

In order to be able to handle this important issue with more efficiency, we jointly need to further improve governance of this sector by strengthening stakeholders' consultations, associating public, private and civil society partners as well as producers/industry, retailers/market and consumers/users. This would result in more responsibility from all partners, transparency and reporting, a win-win approach for all.

Finally, we welcome IFA's decision to have a Vice President for Sustainable Development and we hope to work with this person to identify areas of cooperation. In the past, UNEP and IFA have partnered on a number of projects of mutual interest producing at least seven publications. We look forward to building on this experience and developing activities that can make a substantial contribution to the sustainable development of this sector.

Publications on Fertilizers:

1. Mineral Fertilizer Production and the Environment: Technical Report Nr. 26, UNEP & UNIDO in collaboration with IFA, 1996.
2. Mineral Fertilizer Production and the Environment, Part 1: The Fertilizer Industry's Manufacturing Processes and Environmental Issues, UNEP & UNIDO in collaboration with IFA, 1998.
3. Mineral Fertilizer Production and the Environment, Part 2: Environmental Management Systems, UNEP & UNIDO, in collaboration with IFA, 1998.
4. Mineral Fertilizer Use and the Environment. IFA in association with UNEP, 1998.
5. The Fertilizer Industry, World Food Supplies and the Environment. IFA & UNEP, 2000.
6. Environmental Aspects of Phosphate and Potash Mining, UNEP & IFA, 2001.