

BRIEFING NOTE

International Fertilizer Industry Association (IFA)
International Workshop on Fertilizer Best Management
Practice

Brussels 7-9 March 2007

Invited contribution of the European Centre of the International Nitrogen Initiative (INI),
with input from the NitroEurope Integrated Project, the ESF NinE programme and
the EC Service Contract “Integrated measures in agriculture to reduce ammonia emissions”

Mark Sutton

The IFA is the global trade association of the fertilizer industry, including companies and regional fertilizer associations as its members. The IFA and its members realise the importance of the need to manage fertilizer inputs better both to improve efficiency and profitability for farmers and to minimize environmental impacts. They are thus keen to develop a responsible approach to nutrient management, and this also ties in with their hope that voluntary action can to a large extent pre-empt the need for heavy handed regulation.

As a central part of this effort, the IFA are thus promoting the development of Fertilizer Best Management Practice (FBMP), and the present workshop was hosted to share global experience on the progress made, as well as address the pros and cons of voluntary and regulatory approaches. This was a small workshop (45 delegates) with generally high level contributions from regional fertilizer associations, international organizations (FAO, OECD), scientists and other NGO stakeholders.

Most of the workshop consisted of presentations by the delegates sharing their experience and views, which included consultant reports commissioned by the IFA on the development of FBMP. A copy of the programme is included at the end of this memo, and it may be possible for the copies of presentations to be obtained through the NitroEurope IP project office (neu@ceh.ac.uk) or the Workshop organizer Patrick Heffer (pheffer@fertilizer.org). The workshop concluded with parallel working groups (developed world, developing world) addressing what it means to develop FBMP.

Particular appreciation was given in the meeting to the development of stronger links with product stewardship and labelling schemes (e.g. the LEAF labelling system of the UK was referred to several times), with emphasis recognized of the importance of developing assurance schemes to demonstrate that FBMP is followed. Several presentations showed the improvements in the use of fertilizers (focused on N, P and K) that had been made in recent years. These included a substantial reduction in P and K use in Europe, but much less reduction in N use (which is related to the larger losses of N to the environment!) (Paper of Joachim Lammel, YARA). Similarly, other papers (e.g. Achim Dobermann, Univ Nebraska/IRRI) showed how Nitrogen Use Efficiency had improved through a range of developments.

A key outcome of the meeting is the development of a first concept for an “International Framework on Fertilizer Best Management Practice”. This document will provide a set of guiding principles that act as a reference for regional Codes of Good Practice that are tuned to local conditions. The target is much better use of fertilizer (especially nitrogen), reducing environmental impacts, that can also influence regional and national consumer stewardship schemes to adopt a stronger focus on the environmental benefits of FBMP.

I was invited to present on behalf of the European Centre of the INI (conclusions attached). I was asked to reflect on the pros and cons of voluntary vs regulatory approaches, and also addressed the interaction with economic instruments. I welcomed the voluntary FBMP

approach, indicating that industry initiatives have the potential to be much more creative and find more flexible solutions. On the other hand, I highlighted the need to establish (in partnership with governments) clear targets, which also establish the priorities between nitrogen forms and issues. Secondly, I highlighted the need to find better ways to measure the achievement of voluntary approaches so that the benefits can be more easily counted by governments as they seek to achieve commitments of international conventions. This also points to a need to negotiate with governments to encourage them to base international agreements on terms that link as close as possible to the ultimate environmental benefits.

Appendix 1: Strategies for controlling nitrogen emissions from agriculture: Regulatory, voluntary and economic approaches.

Mark Sutton, Jan Willem Erisman and Oene Oenema

Conclusions of draft paper: Currently in Europe, the emphasis on reducing different effects of N_r from agriculture has been on government-led regulatory approaches. The immediate challenge with such approaches is to take a more integrated approach related to the overall cascade of N_r in the environment. In this respect, much more effort is needed in making the linkages between abatement of ammonia and nitrous oxide to the atmosphere, together with nitrate leaching to freshwaters, as well as interactions with particulate matter in the atmosphere and effects on global radiative forcing (including carbon interactions). This in itself is a major challenge. In the first instance, measures that reduce N_r inputs and optimize timing (e.g. balanced N fertilization) are of course attractive. However, because of the leaky nature of the nitrogen cycle, the achievement of major reductions in specific nitrogen pollutants will involve “pollutant swapping” between different forms of nitrogen. Thus it is essential to seek consensus on the prioritization between different adverse effects and pollutant forms by local context.

While major progress has been made in Europe using this primarily regulatory approach, there are also clear limitations. In particular, it can create a confrontational relationship with the agri-food chain that hinders the identification of creative options, which would benefit both the industry and the environment. Hence, there is a need for governments to encourage industry to take the initiative in voluntary approaches, particularly those that involve public and farmer participation (such as training activities and food stewardship/labelling schemes). In this respect, it is essential that the fertilizer industry consider the not just the initial consequences of nitrogen inputs, but their whole life cycle including the ultimate implications for emissions following use of animal feeds via manures. In addition, much more attention needs to be given to N_r management in economic approaches, such as agri-environment financing schemes. Here the Rural Development Programmes of the European Union holds the potential for much stronger inclusion of measures to provide environmental benefit through reduction in N_r emissions.

In comparing the benefits of regulatory, voluntary and economic approaches, two key challenges remain. The first is to seek consensus on the environmental targets. What are the agreed levels of emission, concentrations and environmental impact to which society corporately commits? If the specific targets identified by governments are very ambitious, it is important for the industry to know if voluntary and economic approaches identified will be insufficient. The second challenge is to find more creative ways to measure the benefits of the measures to reduce nitrogen emissions. For example, Fertilizer Best Management Practice guidelines may be excellent and also demonstrate improvements in nitrogen use efficiency (NUE), but governments will want to measure what can be achieved in relation to the committed environmental targets (e.g. quantified reductions in emissions, concentrations and adverse impacts). In particular, in order to count the benefits of creative “soft approaches”, the dialogue with governments needs to focus on encouraging international agreements and other

regulatory approaches to apply targets that are measured as close as possible in relation to the ultimate environmental issues.

Appendix 2: Workshop Programme

IFA International Workshop on Fertilizer Best Management Practices (FBMPs)

Tuesday, 6 March

18:00 – 20:00 Registration *Foyer Salon Bleu*

Wednesday, 7 March

08:00 – 18:00 Registration *Foyer Grande Salle Waldorf*

09:00 – 10:00 ■ **Opening Session** *Grande Salle Waldorf*
Session Chair: Luc M. Maene, International Fertilizer Industry Association (IFA),
France

Opening remarks
*Rajiv Sinha, DCM Shriram Co. Ltd., India and Convenor of the IFA Task
Force on Fertilizer Best Management Practices*

Keynote address

Setting the scene (How to measure nutrient use efficiency? How to interpret the results? What are current levels of nutrient use efficiency in farmers' fields? Why are they low? How to simultaneously optimize efficiency and effectiveness? What is a reasonable target?)
Achim Dobermann, University of Nebraska, USA

10:00 – 10:30 Coffee break *Petite Salle Waldorf*

10:30 – 12:30 ■ **Session 1** *Grande Salle Waldorf*
General principles of FBMPs
Session chair: Adolf Krauss, IFA consultant, Germany

Panel discussion

How to bring together concepts/elements that contribute to FBMPs?

Panelists:

- *The goal: Right product, right rate, right time, right place*
Terry Roberts, International Plant Nutrition Institute (IPNI), USA
- *Balanced fertilization*
Limamoulaye Cissé, World Phosphate Institute (IMPHOS), Morocco
- *Site-specific nutrient management*
Roland Buresh, International Rice Research Institute (IRRI), The Philippines
- *Integrated plant nutrient management*
Caroline Drummond, Linking Environment And Framing (LEAF), United Kingdom
- *“Tea-spoon feeding”*
Eran Barak, Haifa Chemicals, Israel
- *FBMPs in the context of product stewardship*
Joachim Lammel, Yara International, Germany

12:30 – 14:00 Lunch *Hall*

14:00 – 15:00 ■ *Session 1 (cont’d)* *Grande Salle Waldorf*

Can we define a global frame within which FBMPs can be adapted to local conditions?

Paul Fixen, IPNI, USA

What level of adaptation to local conditions is realistic in a developing country context?

John Ryan, International Center for Agricultural Research in the Dry Areas (ICARDA), Syria

15:00 – 16:00 ■ *Session 2* *Grande Salle Waldorf*

Strategy for the adoption of FBMPs

Session chair: Rajiv Sinha

The need for a sociological approach

Florencia Palis, IRRI, The Philippines

Opinion by a farmer’s representative

Ramesh Jain, National Institute of Agriculture, India

16:00 – 16:30 Coffee break *Petite Salle Waldorf*

16:30 – 18:30 ■ *Session 2 (cont’d)* *Grande Salle Waldorf*

Panel discussion

How to change the behaviour of farmers in developing countries for wider adoption of FBMPs?

Panelists:

- Kukiatt Soitong, Department of Extension, Thailand
- B.B. Singh, Tata Chemicals, India
- *Preliminary synthesis of farmers' attitude and preferences towards nutrient application in China and India*
Hillel Magen, International Potash Institute (IPI), Switzerland

Panel discussion

Opinion of partners in the agri-food chain: How can we best work together?

Panelists:

- Keith Jones, CropLife International, Belgium
- Axel Loehken, Sustainable Agriculture Initiative (SAI) Platform, Belgium

19:45 Bus departure from the Sofitel Brussels Astoria Hotel

20:00 Dinner Reception at the Metropole Hotel

Thursday, 8 March

09:00 – 10:30 ■ **Session 3** *Grande Salle Waldorf*

Voluntary initiatives vs. regulations

Session chair: Achim Dobermann

Regulating nutrient use and farming practices

Nils-Axel Braathen, Organisation for Economic Co-operation and Development (OECD), France

Voluntary initiatives: National/regional case studies

- *North America*
Roger Larson, Canadian Fertilizer Institute (CFI), Canada
- *South America*
Ricardo Melgar, Instituto Nacional de Tecnología Agropecuaria (INTA), Argentina

10:30 – 11:00 Coffee break *Petite Salle Waldorf*

11:00 – 12:30 ■ **Session 3 (cont'd)** *Grande Salle Waldorf*

Voluntary initiatives: National/regional case studies (cont'd)

- *West Europe*
Philippe Eveillard, Union des Industries de la Fertilisation (UNIFA), France
- *Oceania*
Hilton Furness, FertResearch, New Zealand
- *China*
Fusuo Zhang, China Agriculture University, China

12:30 – 14:00 Lunch *Hall*

14:00 – 16:00 ■ *Session 3 (cont'd)* *Grande Salle Waldorf*

Session chair: Hilton Furness

Voluntary initiatives: National/regional case studies (cont'd)

- *India*
R.K. Tewatia, The Fertiliser Association of India (FAI), India
- *Pakistan*
Nisar Ahmad, National Fertilizer Development Centre (NFDC), Pakistan
- *South-east Asia*
Roland Buresh
- *Indonesia*
Haeruddin Taslim, Indonesian Fertilizer Institute (LPI), Indonesia

16:00 – 16:30 Coffee break *Petite Salle Waldorf*

16:30 – 18:00 ■ *Session 3 (cont'd)* *Grande Salle Waldorf*

Global assessment of the situation of FBMPs

Adolf Krauss

Panel discussion

Voluntary initiatives vs. regulations: What are the pros and cons of both options? What is the most appropriate mix?

Panelists:

- Jan Poulisse, Food and Agriculture Organization of the United Nations (FAO), Italy
- Mark Sutton, European Centre of the International Nitrogen Initiative (INI), United Kingdom
- Ramesh Jain, National Institute of Agriculture, India.

Friday, 9 March

■ *Session 4*

The way forward

Session chair: Rajiv Sinha

- 08:30 – 10:30 Discussion in two parallel working groups:
- **Definition of the overall future strategy of the fertilizer industry on FBMPs**
 - **Priority areas for action**
- Working group 1 *Grande Salle Waldorf*
Moderator: Paul Fixen
- Working group 2 *Carlton*
Moderator: Hillel Magen
- 10:30 – 11:00 Coffee break *Petite Salle Waldorf*
- 11:00 – 12:30 **Reports by the two working group moderators**
Paul Fixen and Hillel Magen *Grande Salle Waldorf*

General discussion

Closing remarks

Rajiv Sinha