



**Fertiliser Association of India**  
in Focus on

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**Importance of micronutrients in agriculture**  
new publication

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**First Global Safety Summit**  
Manama, Bahrain,  
March 2009

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## Ongoing agricultural transformation in rural Russia

by Svetlana Ivanova

Before the collapse of the Soviet Union, Russian agriculture was characterized by large collective and state farms. These farms co-existed with small household plots. The radical economic transformation that began in the early 1990s aimed at bringing about constructive changes in the national agrarian sector, including land reform, the reorganization of collective and state farms, and the development of autonomous private farms. The prevailing view was that, as a result of privatization, Russian agriculture would be organized into three types: corporate farms, independent peasant farms and household plots. For many reasons, including the inadequacy of structural reforms, independent peasant farms did not really take root. They currently produce less than 6 per cent of Russia's total agricultural output.

The reorganization of collective and state farms had practically been completed at the beginning of 1994, by which time 95 per cent of collective enterprises had been re-registered. This reorganization was the first step towards creating a mixed agrarian economy based on the equality of all types of ownership and land management. Unfortunately, positive results such as greater efficiency and higher output were not achieved. Throughout most of the 1990s, Russian agriculture experienced a dramatic loss of capital, resulting in the deterioration of all the key indicators of agricultural efficiency and productivity. Since the devaluation of the rouble in 1998 however, Russian agriculture (especially crop production) has grown steadily. Important structural and organizational changes



have been made, particularly in the corporate farm segment. New companies and new money have entered agriculture. One of the most dra-

matic changes has been the emergence of large (and, in most cases, externally owned and managed) commercial farming operations, the so-called "agroholdings". The growth of these agroholdings is in contrast to earlier expectations concerning the transformation of Russian agriculture.

Rather than creating a family farming sector, Russia could be re-establishing latifundia owned by corporations that may or may not be involved in food production.

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### sustainability

## Contributing to Brazil's economic and social progress

*Fosfertil is Brazil's largest supplier of phosphate and nitrogen based inputs for fertilizer production. The company believes the private sector can contribute to economic and social progress through ethical business management and firm, practical and effective public commitments to sustainability.*

### Workplace safety

Health and safety are considered in every decision the company takes. Accidents in the workplace have been substantially reduced since the introduction of a Safety Management System in 2002. In 2007, the rate of disabling injuries involving employees of Fosfertil and its partner companies fell by 51 per cent compared with 2006.

Also in 2007, the company's Maritime Terminal and the Patos de Minas Unit



*Fosfertil - Cubatão Industrial Complex*

Photo: C. Arouca

(Minas Gerais) celebrated a thousand days without any disabling injuries.

In its chemical units, Fosfertil provides training for employees, third parties and neighbouring communities, in line with the Responsible Care Programme of the Brazilian Association of Chemical Industries (Abiquim).

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## sustainability

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A "Transport with Maximum Safety" campaign was launched in 2007, with the participation of 80 per cent of the drivers who transport the company's products. The goal for 2008 is 100 per cent participation.

### The environment

To reduce the environmental impact of its activities, Fosfertil has invested in technological solutions and process improvements. All of its units are ISO 14001 (environmental management) certified. Besides mapping environmental impacts, the company has standardized its management systems (e.g. risk identification, action plans, resource allocation, employee training and auditing).



Photo: R. Silva e Silva

Monitoring of the birds

Several environmental awareness initiatives in 2007 produced excellent results. A campaign for rational water use encouraged all units to identify more sustainable practices, with better control of losses and a reuse vision. Launched during Environmental Week, this campaign succeeded in reducing water consumption by 24 million m<sup>3</sup> in that year, equivalent to the annual consumption by a city of 190,000 people. Other activities within the company are aimed at reducing the use - or promoting the reuse - of resources such as electricity.

The Scarlet Ibis Project (Projeto Guará) monitors fauna in regions where the company operates. The purpose of this project is to evaluate effects on ecosystems and contribute to their preservation. The study of birds is emphasized because they are good bio-indicators.

### Clean Development Mechanism (CDM) proposal

In 2007, Fosfertil launched a programme to reduce nitrous oxide (N<sub>2</sub>O) emissions

from one of its nitric acid plants. Subsequently, it signed up to the Clean Development Mechanism created under the Kyoto Protocol. This CDM project, to be implemented in stages, could enable Fosfertil to sell carbon credits on the international market. The company would invest the net amount generated in improving its environmental performance and in social programmes. The project has been approved by Brazil's Interministerial Commission on Global Climate Change and is being submitted for certification to the UN Framework Convention on Climate Change (UNFCCC).

### Environmental education

In Tapira, an Environmental Education Programme primarily aimed at schools in rural areas has been operating since 2003, with support from Fosfertil and the local government. It includes training, lectures and practical actions to help identify sustainable solutions to local problems. In Catalão, Fosfertil is developing a project for the recovery of riparian forests. A booklet with information about the region's environment has been distributed to teachers, students and the community.

### Educating children and teenagers

Fosfertil's Social Responsibility Programme focuses on educating children and teenagers. Partnerships have been established with government bodies and NGOs. Fosfertil partially or totally finances municipal education projects in Catalão, Tapira and Araucária. The Small Apprentice Social Centre in Catalão offers complementary and tech-

Photo: C. Arouca



Fosfertil - Uberaba Industrial Complex

nical education to children and teenagers, directly benefiting 900 pupils with reinforcement classes, meals, preventive health initiatives and professional training in areas including information technology and the arts.

The Maria Bittar de Rezende Educational Complex in Tapira centralizes basic education. Approximately 600 pupils are assisted on a daily basis, including some who previously attended more remote schools. Around 250 children and teenagers are provided with reinforcement classes, meals, and leisure and cultural activities at the Tindiquera Children's Houses in Araucária.

In Uberaba, Fosfertil supports educational inclusion and hospital classroom projects. It has contributed to renovating the school building and sponsors the education of local children (64 in 2007). The hospital project provides education for children and teenagers with cancer, leukaemia and other diseases.

Fosfertil also supports a social assistance programme in Cubatão that is helping families move to a new housing project.

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### More information

■ Kyoto Protocol and CDM:

[http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)

<http://ec.europa.eu/environment/climat/kyoto.htm>

■ Search also the IFA web site for «Kyoto» to download IFA conference papers in relation to the Kyoto Protocol:

[www.fertilizer.org/content/advancedsearch](http://www.fertilizer.org/content/advancedsearch)

# IFA climate change activities are heating up

As international discussions on reducing and adapting to climate change intensify, the fertilizer industry is preparing a coordinated response. The IFA Task Force on Climate Change, established in early 2008, has taken a holistic view of climate change throughout the fertilizer life-cycle. This means its work covers fertilizer production, distribution and use, as well as links with other sustainability issues.

The task force's activities are based on a three-step approach: collecting and compiling data and other information; determining what realistic commitments the industry can make; and communicating this information and commitments to relevant decision makers.

The task force is preparing a central reference document on climate change and the fertilizer life-cycle. It presents data, highlights best practices and refers readers to more detailed resources. In parallel, two other reports have been commissioned, one on emissions and energy efficiency in fertilizer production and the other on agricultural emissions related to fertilizer use. To provide a snapshot of carbon and energy balances under varying agro-climatic conditions, the task force is also analyzing a num-

ber of case studies from different parts of the world.

Nearly 50 industry representatives are participating in the task force. Heikki Sirviö of Yara Suomi (Finland) is the task force convenor. Leading the task force teams are Rajiv Sinha of DSCL (India) for agricultural issues; Tore Jenssen of Yara International (Norway) for fertilizer production; Tip O'Neill of IRM Ltd. (USA) for logistics and transport; and Tom Pasztor of PotashCorp (USA) for sustainability. Frank Brentrup of Yara International (Germany) is responsible for the group conducting life-cycle case studies. They are supported by four Heads of Service at the IFA Secretariat, underscoring the priority given to this cross-cutting activity.

Participation in the task force is still open. Member company representatives who would like to become involved should contact Sophie Palmié: [spalmie@fertilizer.org](mailto:spalmie@fertilizer.org)

#### More information

- IFA climate change: [www.fertilizer.org/ifa/Home-Page/SUSTAINABILITY/Climate-change](http://www.fertilizer.org/ifa/Home-Page/SUSTAINABILITY/Climate-change)
- IFA Task Force on Climate Change: [www.fertilizer.org/ifa/HomePage-Member/INITIATIVES/TF-Climate-Change/TFCC-meetings.html](http://www.fertilizer.org/ifa/HomePage-Member/INITIATIVES/TF-Climate-Change/TFCC-meetings.html)



## IFA participates in the UN Climate Change Conference

IFA continues to contribute to a multi-stakeholder coalition that advocates the need to bring agriculture more fully into policy discussions concerning climate change. In this context, IFA cooperated with the International Federation of Agricultural Producers (IFAP), the Global Forum on Agricultural Research (GFAR) and CropLife International to organize a side event at the December 2008 UN Climate Change Conference in Poznan, Poland.

A webcast of the event, "Part of the solution: Why agriculture matters for climate change policy," and the presenters' slides can be viewed at: <http://copportal1.man.poznan.pl/Archive.aspx?EventID=86&Lang=floor>.

## IFA news

### Eastern Europe and Central Asia Initiative web site

Under IFA's Eastern Europe and Central Asia Initiative programme, the Association's Secretariat has developed a Russian language web site targeting those international issues that are most pertinent to the fertilizer industry in this region. We encourage Russian speakers to visit this site for more information at: [www.fertilizer.org/ifa/Home-Page/Pusskoyazychnyj-razdel](http://www.fertilizer.org/ifa/Home-Page/Pusskoyazychnyj-razdel)

### IFADATA online meets with success

IFADATA has been available online since the beginning of September 2008. Historical statistics on fertilizer production, trade and consumption – by country and by product – can be obtained with just a few clicks. To access this new feature of the IFA web site, go to the "Statistics" section of the site and then to "IFADATA". Members have access to the full dataset. Non-members can access detailed consumption statistics and production and trade data for aggregates by nutrient. IFADATA online is currently the IFA web site's most visited specialized page, with an average of 2900 visits per month since it was launched.

If you identify bugs, or if you have questions or comments, contact Olivier Rousseau: [rousseau@fertilizer.org](mailto:rousseau@fertilizer.org)

### Create your own member's password on IFA's web site

Since October 2008, representatives of IFA member companies can request individual user accounts to access the Members Only section. They create and manage their own password, which makes it easier to remember how to access all of the resources reserved for IFA's members. Individual passwords also lay the foundation for possible future services, such as storing preferences and allowing members to customize site information according to their individual requirements.

We encourage members to request their individual user account at: [www.fertilizer.org/userifa/register](http://www.fertilizer.org/userifa/register)

## Ongoing agricultural transformation in rural Russia

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However it is equally likely that agroholdings are part of the transition from the old organizational types to modern operator-owned agriculture.

Agroholdings can be found in the most productive regions, which are functioning successfully even under the current unfavourable conditions. Such farms have managed to adjust rapidly to new economic conditions: their operators have studied the market situation, identified the most profitable channels through which to sell their products, restructured their production according to market requirements and successfully developed the processing of agricultural products – selling them through a network of their own stores, retail markets or trusted wholesale agents at more favourable prices.

Agroholdings could become centres of scientific and technological progress, showing other farms how to work under market conditions. For example, in the Belgorod oblast (one of the pioneers of new agricultural entrepreneurship) some 72 per cent of the arable land is controlled by investors. More than half the Moscow oblast's corporate farms are controlled by outside investors. Investors have acquired about 15 per cent of the farmland in Tatarstan. The concentration of agroholdings may be even higher in

specific regions. In the Belgorod, Krasnodar, Moscow and Tambov oblasts there are regions where almost all corporate farms are controlled by a single holding company.

Starting in 2007, the government has successfully used incentives to stimulate crop production. It has initiated a national programme on agricultural development that is working towards reviving agricultural production. This programme focuses on animal husbandry, the stimulation of private farm production (to reach up to 30 per cent of agricultural output through subsidies for interest on bank loans), and the establishment of cooperatives, land mortgages and house building for young agricultural specialists. Implementation of the programme is projected to result in a significant increase in the production index for both crop production and animal husbandry. The index for crop production has already exceeded the 1990 index by 7 per cent. By 2012, it should reach 124 per cent compared with 1990. As a result of this programme, a significant increase in mineral fertilizer consumption is forecast, from a current 1.9 million tonnes of nutrients to 6 million tonnes. An additional 2.1 million tonnes of N, 1.2 million tonnes of P<sub>2</sub>O<sub>5</sub> and 0.9 million tonnes of K<sub>2</sub>O would therefore be applied in 2012.

The government has instituted a guaranteed minimum price for cereals such as wheat, barley and rye. If the market price falls below this amount, it will buy excess grain at that price. This year the minimum price for wheat is fixed at USD 208-220 per tonne, depending on its protein content.

Income tax for agricultural producers has been abolished until 1 January 2013, and the VAT they pay has been reduced to 10 per cent (instead of the normal 17 per cent). The government also compensates producers for the interest on loans to buy machinery, fertilizers and seeds and provides direct subsidies to compensate them for the cost of fertilizer.

Through the Federal Antimonop-

oly Services, the government has fixed mineral fertilizer prices for direct supply and for NPK production. Fixed fertilizer prices are significantly lower than market prices. For example, in 2008 the fixed price of KCl was USD 130/tonne for direct supply and USD 150/tonne for NPK producers, while the price at auction was about USD 521/tonne.

Finally, the government will support the agricultural sector in surviving the global financial crisis of 2008-09, providing USD 30 billion in additional subsidies to agricultural producers.

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## IFA Agriculture Committee tackles constraints on fertilizer use in Russia

There is great potential for agricultural expansion in Eastern Europe, particularly in Russia. The Russian government recently implemented policy measures to support domestic agriculture. One of the main constraints on meeting its objectives is low fertilizer use. At the request of the Russian fertilizer industry, the Agriculture Committee recently established a task force to develop a programme for a two-day event on agricultural development in Russia. The programme would address agriculture and fertilizer demand globally and in Russia; agricultural input markets and supply systems; fertilizer best management practices; and policy responses. This event will be held in conjunction with the IFA Production and International Trade Conference, to be held in October 2009 in Moscow.

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focus on

# Fertiliser Association of India

by Satish Chander



**The Fertiliser Association of India (FAI)** was established in 1955 to bring together all those concerned with the production, marketing and use of fertilizers in India. It assists the Indian fertilizer industry in promoting sustainable fertilizer use, thus increasing productivity and operational efficiency in agriculture.

India is the world's second largest fertilizer consumer. Annual turnover in the Indian fertilizer industry in 2007-08 was USD 30 billion. Through a variety of activities, the FAI plays a catalytic role in improving efficiency and productivity in fertilizer production, distribution and use. Its work is supported by technical, marketing and pollution expertise, agricultural sciences, information technology and SSP advisory committees. The FAI serves as a bridge between the fertilizer industry and the government, maintaining close contacts with relevant ministries and agencies. It also has close links with international organizations.

Developmental activities include the collection of data/information related to safety, environment, energy and other areas. Various extension activities highlight the importance of balanced and efficient fertilizer use, soil testing, fertigation and integrated plant nutrient management.

tion with the International Potash Institute (IPI) on "Balanced Fertilization and Integrated Nutrient Management". A number of fertilizer-related studies funded by the UN Food and Agriculture Organization (FAO) are also being undertaken by FAI.

The FAI provides training programmes at several levels, covering all disciplines within the industry. These programmes have attracted participants from other developing countries. In the past, many participants have been sponsored by UN agencies, including FAO and the Fertilizer Industry Advisory Committee of Experts (FIAC), the International Atomic Energy Agency (IAEA), the Fertilizer Advisory, Development and Information Network for Asia and the Pacific (FADINAP), as well as the Commonwealth Secretariat.

With a view to promoting healthy competition and rewarding outstanding work, FAI has instituted several awards. Some of these are given in collaboration with member companies and international organizations.

The FAI brings out the following publications every month: Indian Journal of Fertilisers, Fertiliser Marketing News, FAI Abstract Service, and (in Hindi) Khad Patrika. It also produces annual fertilizer statistics. Other publications are available at: [www.faidelhi.org/content.htm](http://www.faidelhi.org/content.htm)



The FAI is managed by its Director General, who is also an ex-officio board member. He administers the Association within the policy guidelines laid down by the Board of Directors, which represents the interests of constituent member units.

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## More information on Indian initiatives in collaboration with FAI

- The Sulphur Institute:  
[www.sulphurindia.com/](http://www.sulphurindia.com/)
- International Potash Institute:  
[www.ipipotash.org/regional.php?reg=1](http://www.ipipotash.org/regional.php?reg=1)

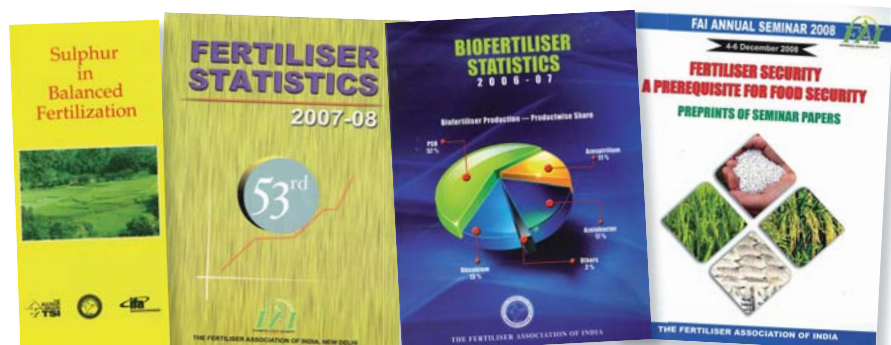
Photo: TSI



TSI-FAI Regional Workshop on Sulphur Fertilization, September 2008

Since 1997, in collaboration with IFA and The Sulphur Institute (TSI), the FAI has been working on a "Sulphur in Balanced Fertilization" project in several Indian states. During the past five years, it has carried out a programme in collabora-

## FAI publications



## IFA news

### Media centre

A media centre has been added to IFA's web site. It contains press releases and press reviews.

[www.fertilizer.org/ifa/Home-Page/MEDIA](http://www.fertilizer.org/ifa/Home-Page/MEDIA)

### Launch of a new issue brief series: Feeding the earth update

The first issue brief "Fertilizer Prices and Fertilizer Markets" has been rewritten for the IFA Enlarged Council Meeting in November 2008 and can be downloaded from the web site:

[www.fertilizer.org/ifa/Home-Page/LIBRARY/Issue-briefs](http://www.fertilizer.org/ifa/Home-Page/LIBRARY/Issue-briefs)

Further issue briefs will follow in the next months.



### SHE Principles – what's new?

In view of the evolving nature of sustainability measures in the industry, the IFA Technical Committee has decided to expand its 11 Safety Principles to include environmental principles. This change reflects the Committee's commitment not only to promote safe and healthy workplaces, but also to emphasize that modern SHE management involves an integrated approach including minimization of a plant's environmental footprint. These newly developed principles will be actively promoted to IFA's membership, in order to facilitate their inclusion in individual plant operating strategies.

To download a copy of the IFA Safety, Health and Environment Principles, visit the web site: [www.fertilizer.org/ifa/Home-Page/SUSTAINABILITY/Safety](http://www.fertilizer.org/ifa/Home-Page/SUSTAINABILITY/Safety)

### Upcoming: news clipping service for IFA members on the IFA web site....

## The secrets of soil



An exhibit called "Dig It! The Secrets of Soil" opened on 19 July at the Smithsonian Institution's National Museum of Natural History in Washington, D.C. Curator Patrick Megonigal, a soil ecologist at the Smithsonian Environmental Research Center, says "We want people to walk away understanding that soils are living, breathing bodies. One of the most important messages for me is that people get beyond thinking of soil as something in their garden, and think of it as the foundation of all the Earth's ecosystems."

While air and water pollution and climate change may be the environmental



Photos: TFI

issues receiving the greatest attention today, "just over the horizon is learning how to make agriculture sustainable," emphasizes David Montgomery, a soil geomorphologist at the University of Wisconsin, "we face some very basic choices over the next 50 years, and one of those is to reinvest in our soils...Soil is one of the basic bits of the foundation of life. Soils are created, destroyed and transformed. They can be used up just like any other resource."

The 5000 square feet interactive exhibit continues through 3 January 2010. It will then tour to other museums in the United States. For more information, see the exhibit site: <http://forces.si.edu/soils> Development of the exhibit was supported by the Nutrients for Life Foundation, [www.nutrientsforlife.org](http://www.nutrientsforlife.org) and the Soil Science Society of America, [www.soils.org](http://www.soils.org)

### IFA publication

## Safety handbook

IFA's Safety Handbook was conceived as a structured framework for developing and maintaining coherent safety management systems in industrial environments. It is intended for frequent reference by all management and line employees. Divided into three sections, it begins with a description of the major guiding principles behind positive safety management. Specific processes for safety management are then outlined, and best practice guidance is provided for day-to-day safety management.

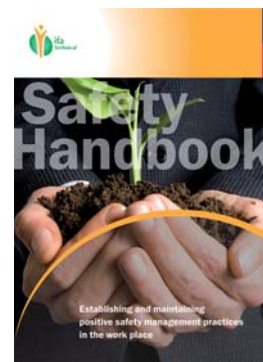
The result of a collaborative effort by the IFA Technical Committee's working group on Safety, Health and Environment (SHE), the Safety Handbook is designed to support the recently developed IFA SHE Principles. Copies are available to IFA member organizations and may be ordered from [publications@](mailto:publications@)

[fertilizer.org](http://www.fertilizer.org) (see also order form page 12). A pdf version can also be downloaded from the "Technical" section of IFA's web site.

IFA is committed to supporting members' efforts to improve safety standards. If you are looking for help with the development of safety training, please contact IFA to find out what types of support are available. PowerPoint training support material will soon be accessible from the "Technical" section of the Association's web site.

### Contact

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## IFA names new communications chief

On 1 October 2008, Morgane Danielou-Dombouya joined the Association's staff



Morgane Danielou-Dombouya

as Head of the Information and Communications Service. In this role, Morgane will be involved in articulating IFA's communications strategy, managing the Association's external relations, and researching policy issues. She

has an international development and communications background. Her last two positions were based in Washington, D.C. working for the World Bank (Africa Region – Agriculture and Rural Development) and for the International Food Policy Research Institute (Communications Division).

She has worked for non-governmental organizations, international organizations and corporations, where she most-

ly focused on rural development, agricultural trade facilitation, smallholder farming and high value crops. She has conducted fieldwork in Latin America and Africa.

A French national, Morgane has lived in Europe, North and South America. Fluent in French, English, Portuguese and Spanish, she holds a Master of Science in Development Studies from the London School of Economics and an MBA from the Sorbonne Graduate Business School.

"Morgane's experience in agriculture and rural development, together with her international exposure, guarantee continuing strong communications efforts by the Secretariat at the service of our members" stated Luc Maene, IFA's Director General.

Morgane replaces Kristen Sukalac, who left IFA after 7 years to become a partner in Prospero Communications ([www.prospero.be](http://www.prospero.be)), a public relations and public policy/advocacy consultancy that specializes in agriculture, food production, health and related chemical issues.

## Melamine and fertilizers

Following recent allegations in the international media about the use of melamine in nitrogen fertilizers, the International Fertilizer Industry Association (IFA) conducted a worldwide survey among its urea producing members to investigate whether there is hard evidence of such possible use in the international fertilizer industry.

IFA's membership survey covered 98% of the world's urea production. 80 companies in 50 countries were contacted in late November 2008. The 30 companies that replied confirmed not having any knowledge about the current use of melamine in commodity fertilizers. The response results equated to 84% of the world production of urea.

IFA ascertains that, to the best of its knowledge, melamine is not currently used voluntarily, legally or commercially in commodity fertilizers nor as a mainstream fertilizer product in any country covered.

IFA believes that much confusion about this issue stems from the fact that urea is a raw material used in the production of melamine and that melamine has been quoted in a few patent submissions. In addition, several companies manufacture both urea and melamine at the same production site.

The allegations made previously in the media were not backed by the extensive survey conducted by IFA nor by any evidence of a widespread use of melamine in fertilizers.

The fertilizer industry is committed to the highest degree of quality in its products and promotes product stewardship.

[www.fertilizer.org/ifa/Home-Page/SUSTAINABILITY/Melamine](http://www.fertilizer.org/ifa/Home-Page/SUSTAINABILITY/Melamine)

## IFA news

### Supporting sustainable development through agriculture

IFA cooperates actively with the UN Commission on Sustainable Development. This year is a particularly important one for the fertilizer industry, as negotiations are focusing on agriculture, rural development, land, drought, desertification and Africa. During the Intergovernmental Preparatory Meeting in New York on 23-27 February, IFA will join forces with the International Agri-Food Network (IAFN) to organize official side events.



One of these will promote an IAFN policy document, Farming First, which is a call for action to promote sustainable development through agriculture. For more information on the meeting, see: [www.un.org/esa/sustdev/csd/policy.htm](http://www.un.org/esa/sustdev/csd/policy.htm)

### Creating a new proactive communications strategy

IFA is in the process of renewing its communications strategy, so that it will be more proactive and will allow the fertilizer industry to tell its own story. A two-day IFA communications workshop in June will bring together communicators from the industry to address communication-related challenges.

Against a rapidly evolving business and policy-making background, the industry is working to adapt to a changing world. Meanwhile, the public is increasingly concerned about environmental degradation, economic disparities and financial turmoil. The Association seeks to translate the industry's vision and mission into products and services that will have an impact on the overall image and reputation of the industry and its members. For more information about the workshop, contact Morgane Danielou: [mdanielou@fertilizer.org](mailto:mdanielou@fertilizer.org)

# The growing recognition of the role of micronutrients in balanced fertilization

Micronutrients are of growing importance in crop and tree nutrition because of:

- increased demand from higher yielding crops and intensive cropping,
- continued expansion of cropping and industrial plantations onto marginal land,
- increased use of high-analysis fertilizers containing low levels of micronutrients,
- decreased use of manures, composts and crop residues in some parts of the world, and
- mining of micronutrient reserves in soils, and nutrient imbalances.

Micronutrient deficiency in crop production is most commonly measured as loss of crop yield. However, for a range of crops, effects of micronutrients on crop quality such as oil, protein or fibre content, absence of defects and storage longevity are important for the value of agricultural products in markets.

Large opportunities exist through the development of Best Management Practices (BMPs) to increase and improve crop production by applying micronutrients. Best Management Practices need to be tailored to local conditions. Micro-



Screening for Zn efficiency in rice: rear plots with Zn, front plots of the same cultivars without Zn (Philippines, R.W. Bell)

nutrients supplied in optimal forms and amounts and with optimal timing and placement, on soils with an inadequate supply, will generate benefits for producers and consumers providing other factors are not limiting.

Principles governing optimal supply, methods of application and timing of application need to be adopted. Added to a sound knowledge of input and outputs of micronutrients in farming systems, negative effects of micronutrients should be negligible or manageable.

By considering the benefits of micronutrients in harvested plant products for

human nutrition and in forages for animal nutrition, the benefits can be further extended to human and animal health beyond those based on yield alone.

The future supply of micronutrients to agriculture and horticulture needs to recognize the increasing public scrutiny of food safety and environmental quality. Proactive industry programmes are needed to ensure that the skills and knowledge of all individuals involved in the supply and distribution of micronutrients (and other nutrients) promote environmental stewardship, occupational health and safety, food safety and agricultural productivity. Industry schemes should aim to provide training and accreditation for these stakeholders in the fertilizer and soil amendment industry.

## More information on micronutrients

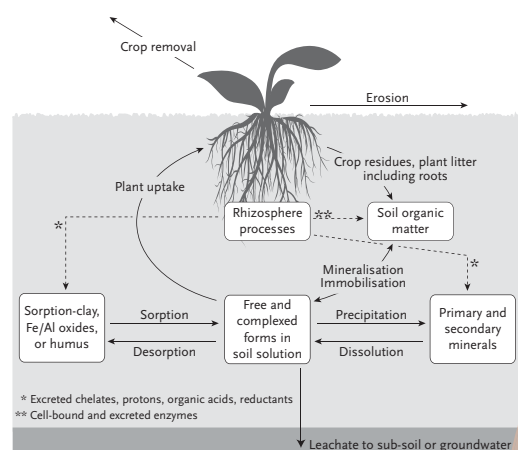
- Harvest Zinc Fertilizer Project: [www.harvestzinc.org/](http://www.harvestzinc.org/)
- IFA Agriculture Conference proceedings with topics on micronutrients: [www.fertilizer.org/ifa/Home-Page/LIBRARY/Conference-proceedings/Agriculture-Conferences](http://www.fertilizer.org/ifa/Home-Page/LIBRARY/Conference-proceedings/Agriculture-Conferences)

# Micronutrients for sustainable food, feed, fibre and bioenergy production

R.W. Bell and B. Dell. IFA, Paris, France, December 2008. 175 pp.

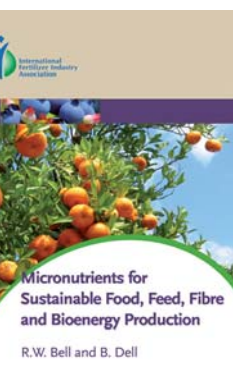
- consider the micronutrient fertilizer types that are currently available and how best to use them,
- assess the current market and prospects for micronutrient fertilizers, and
- discuss the policy, regulatory and quality control framework needed to maximize the benefits obtained from their use.

The book is written for practitioners and stakeholders in the fertilizer industry and for policy makers whose decisions may impact on the use of micronutrients in agriculture, horticulture and forestry. The publication was officially announced by Bernard Dell at the 2008 IFA Crossroads Asia-Pacific conference in Melbourne. Copies are available on request (see



Biochemical cycling scheme for micronutrients in the soil-plant system for aerobic soils

order form page 12). The electronic version is available online from the Library section: [www.fertilizer.org/Home-Page/LIBRARY/Publications.html/Micronutrients-for-Sustainable-Food-Feed-Fibre-and-Bioenergy-Production.html](http://www.fertilizer.org/Home-Page/LIBRARY/Publications.html/Micronutrients-for-Sustainable-Food-Feed-Fibre-and-Bioenergy-Production.html)



In December 2008, IFA released a new publication on micronutrients, co-authored by Richard Bell and Bernard Dell, two well-known micronutrient scientists from Murdoch University in Australia.

The objectives of the book are to:

- explain the growing importance of micronutrients in balanced fertilization,

## IFA events

## Good participation in Melbourne despite market slowdown

Photo: IFA/P. Heffer



Mark Howden and Julian Segal with Luc Maene

The 2008 IFA Crossroads Asia-Pacific conference, held from 16 to 18 December in Melbourne, Australia, was attended by 235 delegates from 32 countries, representing 135 companies and organizations.

In his keynote address, Mark Howden (CSIRO, Australia) talked about climate change and how agriculture in the Asia-Pacific region will adapt to it.

The main topics covered by the conference were the fertilizer market in Australia, Bangladesh, China and Malaysia; outlook for the potash market; micro-nutrient fertilizer use; product stewardship; nutrient use efficiency; and successful public-private partnerships in Asia.

The panel session addressed fertilizer subsidy schemes in China, India, Indonesia and Pakistan. Thirty-nine delegates participated in the Kim Gai Soh Memorial Golf Tournament, which was won by Charlie Engelbogen of BASF Australia.

The 2009 IFA Crossroads Asia-Pacific conference will take place from 8 to 10 December 2009 in Kota Kinabalu, Malaysia. Bookmark your 2009 agenda!

All the papers presented in Melbourne are available online (in the section Library Conference proceedings). A cd-rom of the proceedings can also be ordered by IFA members (see order form page 12).



## A rollercoaster year for the fertilizer industry

For fertilizer industry CEOs attending the 34<sup>th</sup> IFA Enlarged Council Meeting from 18 to 20 November 2008 in Ho Chi Minh City, Vietnam, it was clear that 2008 would be a year to remember. The food crisis, closely followed by the financial crisis, was on everybody's mind. IFA's global fertilizer outlook reports highlighted the potential for a rebound of commodity prices in 2009. With the first accounts of lower fertilizer use in late December 2008 and early January 2009, IFA's predictions were soon borne out. Farmers have been postponing fertilizer orders in the light of a further decline in fertilizer prices. They are reluctant (and often unable) to invest in inputs since there is uncertainty about the prices they will obtain for their harvest as well as about their access to credit. The fertilizer industry is concerned about the impact of such trends on food security worldwide.

In addition, the current financial and credit situation has already had a significant impact on the supply side with a large number of producers curtailing production, waiting for a recovery of demand and firmer imports. A few producers have been reconsidering whether to proceed with new prospects, while ongoing projects have faced commissioning delays. Trade prospects in 2009 are soft, outside sustained import demand prospects in South Asia. However, the combination of forecast demand and the unavailability of additional capacity may lead to new volatility during the year.

- The conference press release is available at: [www.fertilizer.org/ifa/Home-Page/MEDIA/Press-releases](http://www.fertilizer.org/ifa/Home-Page/MEDIA/Press-releases)
- All conference papers can be downloaded in the members area: [www.fertilizer.org/ifa/Home-Page/LIBRARY/Conference-proceedings/Enlarged-Council-Meetings/2008-IFA-Council](http://www.fertilizer.org/ifa/Home-Page/LIBRARY/Conference-proceedings/Enlarged-Council-Meetings/2008-IFA-Council)
- A cd-rom is also available on request for IFA members (see order form page 12).

## IFA Africa Forum to meet twice in 2009

The IFA Africa Forum will meet twice in 2009: in February in Cairo, Egypt, just before the Arab Fertilizer Association's (AFA) annual event; and in June in Durban, South Africa, back-to-back with the annual meeting of the Fertilizer Society of South Africa (FSSA). Among other opportunities provided by the Cairo meeting, it will be an occasion to meet with representatives of the Bill and Melinda Gates Foundation and to discuss activities of common interest and possible synergies.

The Secretariat also participates in meetings of the African Development Bank (AfDB) concerning the establishment of an African fertilizer procurement mechanism, within the framework of the African Fertilizer Financing Mechanism (AFFM). The main objective of this activity is to improve fertilizer availability and affordability in identified "agricultural development corridors".

For more information, contact Patrick Heffer: [pheffer@fertilizer.org](mailto:pheffer@fertilizer.org).

# First ever IFA Global Safety Summit

## Manama, Bahrain, 14 -18 March 2009



IFA's first Global Safety Summit will take place from 14 to 18 March in Manama, Bahrain. Delegates from international fertilizer companies will participate, along with leading experts on production safety. The Summit will be hosted by Gulf Petrochemical Industries Company (GPIC), one of IFA's flagship members regarding safety.

Safety, health and security are corporate priorities for many fertilizer companies. "It is not only important from a moral perspective to guarantee the well-being of workers, but it is also profitable from an operational point of view," emphasizes Luc Maene, Director General of IFA.

The Summit's aim is to establish a "safety first" mindset in fertilizer production and to share best practices. The latest management techniques and technology solutions leading to safe, secure production environments will be showcased by operators from Asia, Europe, the Middle East and North America.

During the three-day programme, company leaders, CEOs and safety experts will address topics such as the role of safety leadership, continual safety improvement, safety management systems, behaviour-based safety and accident investigation techniques. Discussions will help solidify the fertilizer industry's commitment to safety.

"This inaugural summit will highlight the importance of safety leadership from the CEO level to the shop floor. In this respect, the Arab Gulf Region is strongly committed to be the leader and driver in our industry," says Abdulrahman Jawahery, Chairman of the IFA Technical Committee and General Manager of GPIC. On this occasion, GPIC will organize a site visit to its award-winning ammonia-urea-methanol production facility.



### PRESENTATIONS AND INITIATIVES FEATURED

- Case studies illustrating innovative safety enhancement by leading fertilizer producers from around the world;
- The latest developments in process safety improvements by key technology suppliers;
- Insights into industry best practices and lessons learned by representatives of the world's top safety organizations;
- Networking and social events - including a visit to Bahrain's award-winning Formula One race track (limited availability: first come, first served);
- The recipient of the IFA Green Leaf Trophy for Excellence in SHE as well as the two runners-up will be recognized during the Inauguration on Sunday, 15 March;
- Paper editions of the IFA Safety Handbook will be made available for the first time to members during the event.



In order to review the programme and ensure your participation: visit the IFA web site for quick and easy online registration at: [www.fertilizer.org](http://www.fertilizer.org) or contact Ben Muirheid: [bmuirheid@fertilizer.org](mailto:bmuirheid@fertilizer.org)

# Want to improve your on-stream time ?

Investing in your production staff can help you increase your bottom line

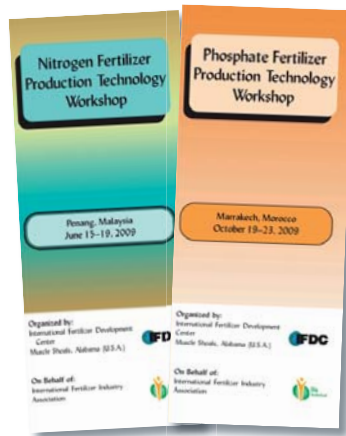
## IFA/IFDC Nitrogen and Phosphate Fertilizer Production Workshops

During a plant shutdown, a modern ammonia producer could lose around half a million US dollars per day at current average production levels. One way companies can increase on-stream time is to improve production engineers' knowledge and skill sets.

Every other year, IFA and IFDC organize technical training workshops for engineers in the fertilizer industry.

The workshops are designed to improve skills and will cover issues such as technology, economics, energy use, safety and environmental stewardship.

The knowledge gained will help identify specific problems, improve operations and enhance profitability. The workshops



also provide an opportunity to exchange ideas and disseminate information through group discussions and interactive case studies.

Topics to be addressed by industry experts will include:

- a global overview and outlook of the fertilizer industry;
- fertilizer production;
- fertilizer chemical and physical specifications and product quality;
- energy, environmental, and safety issues;
- packaging, transportation, and handling.

The workshops will be held this year in Malaysia and Morocco, respectively.

For more information, please visit the IFA web site:

[www.fertilizer.org/ifa/Home-Page/EVENTS/IFA-events.html](http://www.fertilizer.org/ifa/Home-Page/EVENTS/IFA-events.html)

## IFA events



### IFA Global Safety Summit

14-18 March  
Manama, Bahrain  
[Registration deadline on 9 February](#)

### IFA Crossroads Asia-Pacific

8 -10 December  
Kota Kinabalu, Malaysia  
[Registration opens in July](#)

### Events organized in association with IFDC

#### IFA/IFDC Nitrogen Fertilizer Production Technology Workshop

15-19 June  
Penang, Malaysia

#### IFA/IFDC Phosphate Fertilizer Production Technology Workshop

19-23 October  
Marrakech, Morocco  
[Information and registration: hrd@ifdc.org](mailto:hrd@ifdc.org)



### 77th IFA Annual Conference\*

25-27 May  
Shanghai, China  
[Registration deadline on 20 April](#)  
Held on the occasion of the IFA Annual General Meeting during which the Association's officers

convene, IFA's main event attracts on average 1300 participants representing over 300 member companies from 75 countries. It has become a major meeting platform for the global fertilizer industry and is on the agenda of its chief executives and senior management representatives.

### IFA Moscow 2009\*

*Fertilizers and Agriculture Conference*

October  
Moscow, Russia  
[Registration opens mid-June](#)

### 35th IFA Enlarged Council Meeting\*

17-19 November  
Amman, Jordan  
[Registration opens in July](#)

### More conference information

To access general and registration information on these events click on "Events" on IFA's web site:

[www.fertilizer.org/ifa/Home-Page/EVENTS](http://www.fertilizer.org/ifa/Home-Page/EVENTS)  
A pocket-sized events brochure can also be downloaded.



\*Restricted to IFA member companies

# Publications

## New proceedings from The International Fertiliser Society (IFS)



### Ammonium Nitrate Fertilizers: Analysis and Appraisal of Classification Categories

H. Kiiski. IFS, Proceedings no.627, October 2008, York, UK. 56 pp.

### Ammonium Nitrate Production, Storage and Distribution: Accidents and Investigations

K.D. Shah. IFS, Proceedings no.629, October 2008, York, UK. 32 pp.

### Resource or Waste: the Reality of Nutrient Recycling to Land

A.E. Johnston. IFS, Proceedings no.630, December 2008, York, UK. 32 pp.

### Compost: Production, Use and Impact on Carbon and Nitrogen Cycles

M.P. Bernal. IFS, Proceedings no.631, December 2008, York, UK. 36 pp.

### 'Reach' Regulations: Impact on the European Fertilizer Industry

J. Ebenhöch. IFS, Proceedings no.626, October 2008, York, UK. 20 pp.

#### Contact

IFS, York, UK  
 Fax: +441904 492700  
 secretary@fertiliser-society.org  
 More proceedings are available at:  
[www.fertiliser-society.org/Content/Publications.asp](http://www.fertiliser-society.org/Content/Publications.asp)

### The Effects of a Revision of the Emissions Trading Directive for the Period Starting in 2013 on the European Nitrogen Industry

Pellervo Economic Research Institute (PTT), Report 208, Helsinki, Finland, 2008. 50 pp.

#### Contact

PTT, Helsinki, Finland  
 Fax: +358 9 3488 8500  
 econ.res@ptt.fi



### CO<sub>2</sub> Capture and Storage A Key Carbon Abatement Option

International Energy Agency, IAE, Paris, France, 2008. 261 pp.

Price: 100 euros

Oil, coal and natural gas will remain dominant sources of energy over the next decades. However the increase of associated carbon dioxide (CO<sub>2</sub>) emissions is a major concern. This study focuses on the reduction of CO<sub>2</sub> emissions and analyzes the status and future prospects of CCS.

#### Contact

IEA, Paris, France  
 Fax: +33 1 40 57 67 75  
 books@iea.org

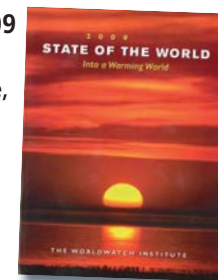


### State of the World 2009 Into a Warming World

The Worldwatch Institute, Washington, D.C., USA, 2009. 262 pp.

#### Contact

Fax: +1 301 567 9553  
[www.worldwatch.org](http://www.worldwatch.org)



## Request form – Fertilizers & Agriculture – February 2009

Please tick the boxes below and return to IFA by fax: +33 1 53 93 05 45 / 47 or send an e-mail to: [publications@fertilizer.org](mailto:publications@fertilizer.org)

Note: most IFA materials are available via the web site at: [www.fertilizer.org](http://www.fertilizer.org)

- Micronutrients for Sustainable Food, Feed, Fibre and Bioenergy Production
- IFA Safety Handbook *restricted to IFA members*
- IFA Crossroads Asia-Pacific Conference Proceedings, Melbourne, cd-rom
- IFA Council Meeting Proceedings, Vietnam, cd-rom *restricted to IFA members*

Name .....

Company/Organization .....

Address .....

.....

Tel ..... Fax .....

E-mail ..... Web .....

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Fertilizers & Agriculture is a quarterly newsletter published by IFA covering issues in relation to fertilizers and sustainable agriculture.

#### Mailing list

Subscription to Fertilizers & Agriculture is free of charge. To receive a hard copy, send full address details to be added to the mailing list. Additional copies may be supplied to organizations to circulate on behalf of IFA.

To consult the current and past issues of Fertilizers & Agriculture: [www.fertilizer.org/ifa/Home-Page/LIBRARY/Newsletters](http://www.fertilizer.org/ifa/Home-Page/LIBRARY/Newsletters)

#### Contributions

We invite your contributions of letters, documents, articles, photographs, etc.

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