

Summit Sets Stage for Greater Fertilizer Use and Public-Private Partnership in Africa

During the first Africa Fertilizer Summit, held in June, Heads of State and Government of the African Union unanimously endorsed an ambitious programme to increase farmers' access to fertilizers. Although it focuses on crop nutrients, the outcome document (the Abuja Declaration on Fertilizer for an African Green Revolution) also considers enabling factors, such as strengthening farmer organizations, improving infrastructure and combining fertilizer use with other modern agricultural inputs.

Early in the text, this document sends a strong signal by recommending the elimination of duties and taxes on the movement across Africa of fertilizers – a strategic commodity “without borders”. This measure is vital in order to bring down the final

price paid by farmers, especially in land-locked countries, since duties levied at each successive border make fertilizers more expensive.

The Declaration contains 12 resolutions, summarized as follows:

1. A target to raise average fertilizer use throughout Africa to 50 kg per hectare by 2015;
2. Harmonization of policies and regulations to ensure duty- and tax-free movement of fertilizers across regions by mid-2007, as well as a call for immediate elimination of all duties and taxes;
3. A commitment to develop and scale up networks of input dealers and community-based distribution systems by mid-2007;
4. The creation of programmes

to strengthen farmer groups, civil society and the private sector by 2007;

5. Targeted subsidies to help the poorest farmers access fertilizers;
6. Accelerated investment in infrastructure, fiscal incentives and output markets;
7. National financing facilities for input suppliers;
8. A call for the establishment of regional procurement and distribution facilities;
9. A call for greater fertilizer production in Africa, including blending;
10. A recommendation that governments improve farmer access to quality seeds, irrigation, extension services,



Photo: Rockefeller Foundation

Participants at the Ministerial segment of the Africa Fertilizer Summit

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Reversal of Nutrient Depletion Recognized by 2006 World Food Prize

Although they have not been colleagues or collaborators in the usual sense of the words, the combined efforts of the three men awarded the 2006 World Food Prize (the agricultural equivalent of the Nobel Prize) transformed Brazil and the lives of millions of people.

On 19 October, the former Brazilian Minister of Agriculture, Alysson Paolinelli; Edson Lobato, former Technical Director of the Brazilian Agricultural Research Corporation's (EMBRAPA) Cerrado Research Center; and A. Colin McClung, the Washington Rep-

resentative of the IRI Research Institute, will be formally recognized for their part in transforming the vast Cerrado region from infertile tropical high plains into highly productive cropland.

Norman Borlaug, who received the 1970 Nobel Peace Prize for his role as the Father of the Green Revolution, has called the development of the Cerrado “one of the great achievements of agricultural science in the 20th century”.



Photos: World Food Prize

Alysson Paolinelli, Edson Lobato and A. Colin McClung

The contributions of these three men significantly improved economic and social conditions in Brazil and are a model for agricultural development in other tropical and sub-tropical countries.

Details concerning their soil fertility research and policy leadership can be found at www.worldfoodprize.org.



ifa

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market information and soil testing/mapping. The need to exercise due diligence towards the environment is also stressed;

11. A call for an Africa Fertilizer Development Financing Mechanism (USD 20 million was already pledged during the summit);
12. A system for monitoring and evaluating implementation.

The novelty of the Africa Fertilizer Summit was not the emphasis on fertilizers per se, but the identification of fertilizers as a pivotal item around which the necessary framework for development could be built. Fertilizers provide opportunities for some quick wins, as well as the impetus for necessary comprehensive solutions in the longer term. However, public-private partnerships (PPPs) will be vital to make sure that short-term government implementation lays the foundation for a self-sustaining, market-based system.

Providing data and expertise for sound policy and economic decisions

IFA's expertise could help determine priorities and sequencing for the concrete measures set out in the Abuja Declaration. Decisions regarding local fertilizer production, also called for in the final summit document, need to take many factors into account. These include (but are certainly not limited to) the presence of raw materials. Is local production the most cost-effective way to make fertilizers available in Africa? Is the infrastructure in place to get the products to end users?

Because of internal market constraints, most of the fertilizers produced in Africa today are exported to other continents while fertilizer consumption in the domestic market remains sub-optimal. IFA's analyses of the global market provide vital perspectives for the feasibility studies that should precede construction of any new production capacity.

The fertilizer industry's intimate knowledge of fertilizer production also makes it possible to work with governments to map existing transport corridors against sources of fertilizers (ports of entry, factories and raw material deposits) and agricultural production centres, and thus to identify where investments in transport infrastructure would have the most impact in the short term and where more extensive development would be needed to plug major gaps.

The industry's experience in doing business can be harnessed to help governments design interventions to assist poor farmers, while driving the transition to a functioning



Photo: Rockefeller Foundation

Participants at the Africa Fertilizer Summit listening to Nigerian Ag Minister Bello's report during the Heads of State segment.

agricultural market. For example, we have already seen that direct fertilizer distribution by authorities is detrimental to fragile retail networks in rural areas, and that it can undermine the entrepreneurs who are needed to supply farmers with agricultural inputs in subsequent years – when there is no government programme. Efforts to make agricultural inputs available to poor farmers should therefore make use of existing retail networks, rather than setting up a parallel distribution system that is likely to be less efficient.

Removing supply bottlenecks

The lack of credit for farmers and agri-dealer entrepreneurs is a major impediment to wider fertilizer use in Africa. The fertilizer industry and other private sector actors have already participated in innovative programmes to reduce transaction costs related to the purchase of fertilizers, such as guaranteed partial payment to suppliers in case the buyer defaults. These experiences provide useful models for eliminating this impediment to agricultural development on a wider scale.

The private sector also has a key role to play in developing the distribution network to improve the timely delivery of quality fertilizers at affordable prices. Agri-input dealers, fertilizer companies and governments can work together to establish regional procurement and distribution centres. Until sufficient demand is built up in rural areas to justify larger local stocks, these regional centres can provide a good balance between offering a wide range of products, reducing delivery delays and minimizing final costs.

Promoting efficient and responsible production and use of crop nutrients

IFA has a long history of fostering technology transfer to developing countries. In addition, the Association publishes materials that assist fertilizer companies to achieve

high levels of efficiency, safety, occupational health and environmental protection. The exchange of knowledge among fertilizer industry peers at IFA meetings also fosters improved performance, as do benchmarking exercises.

Furthermore, IFA's expertise on fertilizer consumption can help governments sharpen the targets they set, in order to track their progress in achieving the objectives defined in Abuja. Simply looking at quantities of fertilizer used is a blunt measure that may be adequate when use remains low. But it quickly becomes problematic when fertilizer is used more widely. At that point, a more nuanced approach will be needed to manage fertilizer use within an integrated context, taking into account all sources of crop nutrients as well as the use of other key agricultural inputs. It will then be important to disaggregate targets, and to start site-specific nutrient management which looks at particular crop needs, all sources of nutrients and the balance among nutrients, including trace elements.

In addition to meeting crop needs, targeted fertilization can also be used by governments to help correct certain human nutrient deficiencies cost-effectively. A good example can be found in Central Anatolia in Turkey, where zinc-fortified fertilizers have improved wheat production and greatly enhanced public health by increasing the grain content of a mineral lacking in local diets.

Over the years, associations and research institutes related to the fertilizer industry have developed materials to help farmers understand how to use crop nutrients to improve their yields in a profitable manner that respects the environment and contributes to human well-being. The fertilizer industry is also ready to cooperate with African governments, farmer groups, non-governmental organizations and others to harness this body of knowledge so as to develop and disseminate site-specific nutrient management practices that are appropriate for the conditions that African farmers face.

The fertilizer industry was represented at the Abuja Summit by seven companies active in Africa, as well as the Arab Fertilizer Association, the International Potash Institute and members of the IFA Secretariat.

The full text of the Abuja Declaration and IFA's response can be found in the news section of the web module on IFA's Year for Africa: www.fertilizer.org/ifa/africa/africa_news.asp. ●

FSSA Promotes Sustainable Fertilizer Use and Food Security FACTS

Gert van der Linde, Director, Fertilizer Society of South Africa



To fulfil its mission of being “an independent and authoritative body on fertilizers and fertilizer related matters”, the Fertilizer Society of South Africa (FSSA) has defined the following key objectives in its strategic plan:



- Facilitate effective liaison and negotiations with government, organized agriculture and other interest groups, which will enhance the interests of its constituent industries;
 - Assimilate, add value to and disseminate fertilizer-related information;
 - Promote a code of conduct in the industry;
 - Promote fertilizer and liming practices, which are agro-economically and environmentally accountable.
- FSSA has three main action plans in place to meet the last objective:
- Arrange/facilitate proper forums where this concept can be discussed and promoted (e.g. technical symposiums, conferences and workshops);
 - Participate in forums arranged by third parties;

- Contribute positively to improved advisory and sales staff training among the Society's members through its Fertilizer Advisors, Certification and Training Scheme (FACTS).

The FSSA and TUT (Tshwane University of Technology, formerly the Pretoria Technicon) jointly administer FACTS, which has as its main objective to give people a basic understanding of fertilizers and agricultural lime (aglime), and to make it possible for them to advise growers and farmers in an economically and environmentally sound manner.

FACTS has also been of great benefit to farmers who attend the course, as it helps them relate to and interact better with the advisors.

FACTS can provide extension officers with additional tools to help them to better exercise their profession.

Since its inception in 1998, more than 500 candidates have enrolled in the course and passed the written exam. The course consists of eight modules:

- basic principles of plant nutrition;
- factors that determine plant growth;
- the origin, production and properties of fertilizers and aglime;
- advice and recommendations regarding fertilizers and aglime;
- application methods for fertilizers and aglime;
- transport, handling and storage of fertilizers;

- mineral fertilizer use and the environment;
- structure of the South African fertilizer and aglime industries.

Once they are enrolled, candidates are supplied with the FSSA's flagship publication, *The Fertilizer Handbook*, along with notes on the eight modules. They may study at home, or enrol in the week-long course at TUT and then write their examinations at various centres in the nine provinces of South Africa. Candidates who pass the exam are provided with a credit-card sized certificate by the FSSA, identifying him/her as an accredited fertilizer advisor.

The training scheme has gained in popularity. This year the FSSA presented the course in Zambia, where the turnout of farmers was beyond expectations. A new module on irrigation and fertigation, specifically designed for Zambia, replaced module eight. The course will be presented again next year at the University of Lusaka.

The FSSA sees this training scheme as an invaluable tool for extension officers, promoting fertilizer use and good farming practices in rural areas of Africa and helping the people of Africa to feed themselves.

More information about the FSSA and the advisors' training scheme is available on the FSSA's web site.

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what's working in Africa

This article is the final installment of IFA's 2006 series to highlight successful projects in Africa and draw lessons from them.

Small Farmers in Kenya Increase Yields up to Five Times with the "Maxi-Maize Production" Planting String

In many parts of Sub-Saharan Africa, one of the main causes of hunger is that small farmers do not use much fertilizer, despite poor soils. Soils are very deficient in phosphorus and nitrogen, and yields are in the range of 0-500 kg/acre. Farm Input Promotions Africa (FIPS-Africa), with the support of USAID, the Rockefeller Foundation and the United Kingdom's Department for International Development (DFID), and in cooperation with private sector seed and fertilizer companies, is successfully introducing fertilizers to thousands of small farmers in a sustainable way.

In western Kenya, fertilizers are very expensive by the time they arrive at the farm gate. In order for fertilizer use to be profitable, it is essential that farmers are shown how to use them correctly, and that crops are managed according to best practice.

According to official recommendations for the high-potential areas of Kenya, maize seeds are best planted in rows 75 cm apart, and 25 cm apart within the row, to optimize production. As fertilizers may be toxic to the germinating seed, the planting fertilizer is best placed about 5 cm below the seed. However, most farmers conventionally place two to five seeds in a hole and, if fertilizers are used, they are placed directly on top of the seed. The result is poor productivity.

To introduce fertilizers to small farmers in Kenya, FIPS-Africa requests cooperating fertilizer and seed companies to package the appropriate fertilizers and maize varieties in small affordable promotion packs. At village gatherings, the farmers are given the opportunity to purchase a small 1 kg pack of a fertilizer for only USD 0.50. At the same time they receive a small free 100g pack of an improved maize variety. To complement this promotion, FIPS-Africa has developed the "Maxi-Maize Production" Planting String to teach farmers how to space seeds and place fertilizer correctly. It consists of a nylon cord 75 cm long, a small card and four bottle tops clamped to the string at 25 cm intervals. It can be rigged up in less than a minute and only costs about US\$ 0.05.

FIPS-Africa has been using the Planting String to teach farmers how to improve the management of their seed and fertilizer in the Kisii and Nyamira districts of Kenya, within the framework of the USAID-funded Kenya Maize Development Programme (KMMP) and in close cooperation with the Ministry of Agriculture. Because farm size is very small in this region, farmers plant maize on very small plots (0.25 to 0.5 acres).

Many thousands of farmers have increased their yields from 90 kg to 500 kg per quarter acre by improving management of the same seed and fertilizer.

Over the past three years, following this very simple methodology, FIPS-Africa has improved the livelihoods of approximately



A small farmer in the Masaba division of the Kisii district, with a FIPS-Africa extension worker, proudly exhibits her improved maize crop and the Planting String.

250,000 Kenyan farmers. It is about to extend its operations to alleviate hunger and poverty to neighbouring countries.

Lessons for Success from the FIPS-Africa Experience

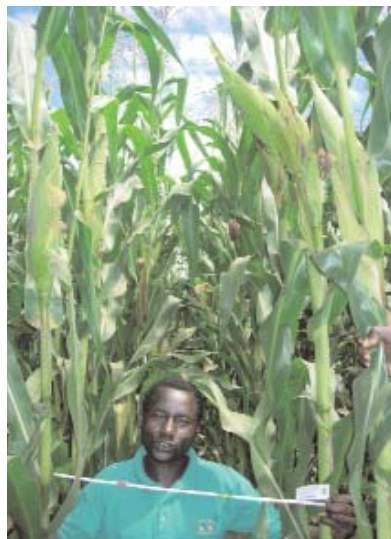
- The principles of best management practices apply everywhere.
- Tools may need to be adapted to locally available materials, such as a piece of string and bottle tops.
- African farmers can afford agricultural inputs that are sold in appropriate amounts for small land holdings.
- Even on small plots of land, multiplying yields by more than five times can greatly contribute to food security and raise farmers' incomes.

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Conventional maize planting practices in the Kisii district have resulted in poor productivity.



A small farmer showing the value of the Planting String on his crop in Nyamira district.

from principle to practice

This article is part of a series that explores how IFA members integrate concepts such as sustainable development into their business strategy and daily activities.

Ravensdown Supports Sustainable Agriculture in New Zealand

Rodney Green, CEO

New Zealand's worldwide image is "clean and green". This is as true of the agricultural products it exports as of its scenery. Because the country's economy is dominated by food exports, its farmers have to remain highly productive while ensuring that their environmental standards are above reproach. New Zealand is distant from mineral sources and so relies on imported soil nutrients. The 26,000 farmer shareholders of Ravensdown Fertiliser Co-operative look to the company to source raw materials and to manufacture, distribute, advise on and apply fertilizers.

Ravensdown supplies approximately half the fertilizer sold in New Zealand. Its comprehensive product range includes urea, DAP, NPK blends, Nitrophoska and superphosphate. Superphosphate makes up over half of the approximately 1.4 million tonnes of the company's fertilizer sales. Phosphate and sulphate requirements are high for New Zealand soils, and superphosphate provides the ideal balance of these key nutrients. It is manufactured at three locations that operate their own sulphuric acid plants. The three plants maintain an ISO 14000 certification, which was instituted within Ravensdown in 1996. The manufacturing sites and the 60 company-owned bulk fertilizer stores operate under ISO 9000.

In addition to its fertilizer range, Ravensdown has broadened into agricultural lime from its own quarry. Lime is used to increase the pH of New Zealand's typically acid soils and is required in approximately equal quantities to fertilizer. Ravensdown sells 500,000 tonnes per year.

Agriculture in New Zealand is dominated by year-round grazing of dairy and beef cat-

tle and sheep. But despite the appeal of the country's stunning landscapes, there are environmental challenges to be met, particularly with respect to surface and groundwater quality.

To ensure that its customers receive the best possible advice, in 2002 Ravensdown removed all intermediaries between them and the company. More than 98 per cent of its fertilizer is now being sold directly to individual farms through customer centres which can take orders 24 hours a day/seven days per week, and which are supported by a sophisticated Customer Relationship Management application and an on-the-ground force of 77 largely degree-qualified agronomists.

Ravensdown places great emphasis on ensuring that its shareholders' farming practices remain sustainable and that its field staff is able to provide suitable environmentally based advice. This process starts with some 50,000 soil and plant tissue tests conducted annually in the company's own laboratory. The data are used in a decision-support nutrient budgeting model, Overseer[®], established by key industry players in partnership with the Ministry of Agriculture and Forestry. The purpose of the model is to recommend the correct nutrient at the correct rate, allowing for soil, climate and non-fertilizer inputs.

Nutrient budget modelling is complemented by the Code of Practice for Fertilizer Use, first introduced by the New Zealand fertilizer industry association Fert Research in 1998. All of Ravensdown's field staff are trained and examined on the use of the Code of Practice and of Overseer[®] at an intensive Massey University course which the fertilizer industry encouraged the university to develop. An advanced course has just been introduced, and 25 per cent of Ravensdown's field staff are participating in it.

Good products and advice may not be sufficient if soil application methods are substandard. Over the past three years, Ravensdown has actively invested in fertilizer-spreading technologies. Through its involvement in six ground-spreading ventures, and the purchase of a large high-tech-



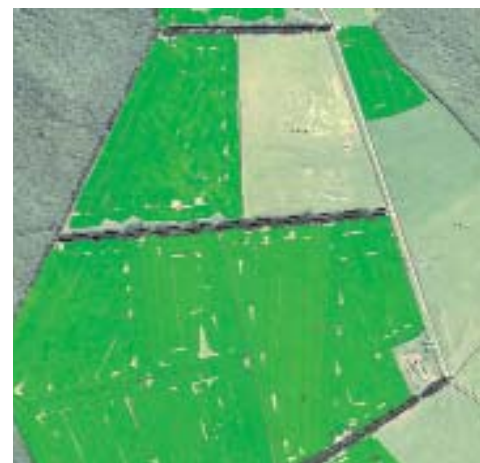
Livestock dominate New Zealand agriculture, so fertilizers are mostly applied to pastures.

nology aerial-spreading business in 2004, precision spreading is being provided, with proof of placement using integrated GPS and GIS technology. The fertilizer can be shown to have been applied evenly and in a way that is consistent with best environmental practice, avoiding water bodies.

Rates of nitrogen fertilizer input are rather low in New Zealand. The main source of nitrate leaching to groundwater is cattle urine patches. The most significant breakthrough in addressing nitrate leaching and emissions of nitrous oxide (a greenhouse gas) from dairy farms is eco-n. Benefiting from pioneering work by Lincoln University and Ravensdown on nitrification inhibitors, this inhibitor is applied to grazed pasture at specific times of the year. Eco-n slows the rate of nitrate production in soil, and subsequent nitrous oxide releases, by slowing the activity in the soil of the Nitrosomonas bacterium that converts ammonium to nitrate (and to nitrous oxide). This results in more

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Spreading map





Field officer Gordon McCormick (right) and shareholder Paul Taylor (left)

plant-available ammonium being retained in the soil, and in less nitrate or nitrous oxide production.

Ongoing research shows that eco-n can reduce nitrate leaching from dairy farm urine patches by around 60 per cent when applied in May and August. Better nitrogen cycling increases pasture production, providing both an economic and environmental justification to adopt eco-n. Annual pasture production increases of 10-15 per cent are typical. Research throughout New

Zealand continues to demonstrate consistent benefits across a wide range of soil types and climatic conditions. Eco-n can also reduce nitrous oxide emissions (which represent a third of New Zealand's total agricultural GHG emissions) by around 75 per cent.

By combining the benefits of good product sourcing and manufacture, nutrient management plans, traceable fertilizer spreading practices (aerial- and ground-spreading) and the use of eco-n to mitigate environmental losses, Ravensdown is confident that it is providing its co-operative members with the basis to be competitive exporters of quality food products for decades to come.

Since 2002, Ravensdown has produced an annual environmental report so that its environmental progress can be followed. More information about the company, including this report, is available on its public web site.

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Photos: Ravensdown Ltd

highlights

New IFA Initiatives Enhance Fertilizer Market Intelligence

The snapshots of the global fertilizer market provided by IFA statistics should reflect continual improvement in coming years, industry leaders reported at the 74th IFA Annual Conference in South Africa in June.

With regard to statistics on the supply and international trade of fertilizers, as well as production capacity reports, the Production and International Trade Committee has been expanding the products covered and reducing regional weaknesses in data collection. Other enhancements include the publication of certain reports on a product tonne basis, making some statistics available in downloadable spreadsheets and improving the timeliness of data collection, so that the compilation and distribution process can be shortened.

The quality of fertilizer market data has also been refined. The Production and International Trade Committee has reviewed its methodologies for forecasting the supply/demand balances of nitrogen products, as well as the models used for sulphur balances. The Committee has improved its knowledge of non-fertilizer uses of several nutrients, which helps to sharpen the accuracy of fertilizer statistics.

IFA's Agriculture Committee has started training the contributors to its fertilizer demand forecasts. Lessons learned from the inaugural session, held in March, will be used to revise the programme, which will then be deployed in multiple regions.

Understanding the issues that could impact how fertilizers are used is vital for accurate demand forecasting. Therefore, the Agriculture Committee has put in place a Task Force on Bioenergy to study the outlook for bioenergy development in leading countries, and to evaluate its likely impact on fertilizer demand.

New releases of fertilizer market info

- Medium-Term Outlook for Global Fertilizer Demand, Supply and Trade: 2006-2010 (Summary Report)

Reserved for members of IFA

- Global Fertilizers and Raw Materials Supply and Supply/Demand Balances: 2006-2010
- Medium-Term Outlook for World Agriculture and Fertilizer Demand: 2005/06-2010/11
- Annual statistics 2005 cd-rom: ammonia, ammonium nitrate/calcium ammonium nitrate, ammonium sulphate, urea, phosphate rock, potash (expressed in product tonnes, available only by e-mail) and sulphur and sulphuric acid (preliminary)
- Summary of the 2005 Outlook for Global Feed Phosphates Supply
- Survey of capacities 2006 (summary reports): ammonia, UAN (first issue) and urea
- Quarterly statistics 1Q 2006: ammonia, urea, phosphate rock, processed phosphates and sulphur




highlights

Fertilizer Industry Safety Survey Indicates Conflicting Trends

Participants in IFA's Safety Benchmarking for data year 2004 reported an excellent level of safety, with a lost time injury rate (LTIR) of 5.00 for employees. Despite differences between industry sectors, it may be useful to place this score in the context of the LTIR in similar sectors: in 1999, for example, the oil and gas sector scored 5.0 while the overall chemical industry LTIR was 12.0.

The score for IFA's members in 2004 was down from the 2003 high point of 6.98, approaching the better 2001/02 score of 4.35-4.38. However, the inability to achieve a significant and consistent level of participation has made it difficult to determine how representative these results are of the global industry. Participation in the survey, which is voluntary, has fallen off since IFA began collecting data in 2001. IFA is exploring ways in which to address the lack of participation by some companies, so that we will have a firmer base for discussing our sector's safety performance with external stakeholders in future.

This year's survey also included questions related to IFA's Principles of Safety in Fertilizer Production (See the January 2003 issue of *Fertilizers & Agriculture* for the full list). Many companies reported incorporating these principles into larger, more comprehensive policies for safety, health and the environment (SHE). In some cases, the principles form elements of a company's ISO certification, whereas other IFA members have integrated the principles into safety procedure manuals and training workshops. The principles are now common elements of SHE management systems and, as such, comprise elements of the company's annual reporting in this area. One executive summarized the situation, "The IFA Safety Principles are the pillars on which our safety policy and programmes stand". ●

The Technical Committee meeting will be held in March 2007 in Ho Chi Minh City, Vietnam

IFA Conference Papers Available on Cd-rom

2005 IFA Conference Papers Cd-rom

IFA, Paris, France. Cd-rom, May 2006.

This cd-rom comprises papers presented at conferences organized by IFA in 2005 and papers presented by the IFA Secretariat at other events.

The relevant IFA events were:

- 73rd Annual Conference, Kuala Lumpur, Malaysia
- Technical Committee Meeting and Visit, Alexandria, Egypt
- International Workshop on Enhanced-Efficiency Fertilizers, Frankfurt, Germany
- Production and International Trade Meeting, São Paulo, Brazil
- 31st Enlarged Council Meeting, Sevilla, Spain
- Regional Conference for Asia and the Pacific, Singapore



2006 Annual Conference Cd-rom, Cape Town, South Africa

IFA, Paris, France. Cd-rom, September 2006.

The conference papers cd-roms are reserved for IFA members.

To order copies of these two cd-roms, see order form page 12.



Former Central Bank President to Open Enlarged Council Meeting

Javier González Fraga, former President of the Argentine Central Bank, will address participants at the Opening Session of the 32nd IFA Enlarged Council Meeting in Buenos Aires on 5 December. Drawing on his experience as an economist and cattle rancher, he will discuss medium-term prospects for Argentina's economy.

The CEOs and other senior executives at the Buenos Aires meeting will also hear Emilio Satorre, Head of the Cereal Crops Unit of the Plant Production Department, University of Buenos Aires, explain how computerized models of wheat production have increased fertilizer use while reducing unwanted impacts.

The rest of the meeting will be dedicated to Association business and to the fertilizer market outlook for the coming year. IFA's Regional Vice Presidents will talk about developments in their respective territories. The Secretariat will report on global supply, trade and demand.

Registration is open on the IFA web site until 27 October 2006. ●

Search Opens for Developing Country Crop Nutrition Laureate

Crop or soil scientists based in developing countries are eligible for the 2007 IFA International Crop Nutrition Award, which recognizes

research that has led to significant advances in efficient and balanced fertilization practices. Candidates must be nominated by an IFA member and cannot submit an application directly to the IFA Secretariat. Full details concerning the award can be found at www.fertilizer.org/ifa/aw_info.asp



Information resources

**Plant Nutrition for Food Security
A Guide for Integrated Nutrient
Management**

FAO Fertilizer and Plant Nutrition Bulletin 16, Rome, Italy, 2006. 348 pp. This bulletin covers key aspects of plant nutrition with special reference to integrated nutrient management for crop production.



Contact

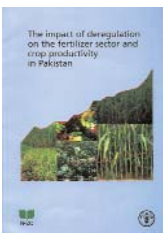
FAO Sales and Marketing Group, Rome, Italy
Fax: +39 06 57053360
publications-sales@fao.org
www.fao.org/landandwater/default.stm

Fertilizer Review 2005-06

NFDC, Islamabad, Pakistan, July 2006. 134 pp.

**The Impact of Deregulation on
the Fertilizer Sector and Crop
Productivity in Pakistan**

NFDC, FAO, Rome, Italy 2006. 91 pp.



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**Ammonia Production Cost Survey
For the Year Ended December 31, 2004**

TFI, IFDC, USA, March 2006. 16 pp.

The report contains production cost data for anhydrous ammonia for the North American industry.



**Fertilizer Financial Facts
For the Year Ended December 31, 2004**

TFI, IFDC, USA, March 2006. 29 pp.

The report contains income, expenses and assets data of the North American fertilizer industry.

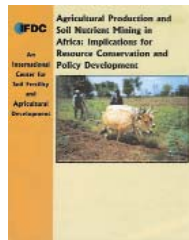


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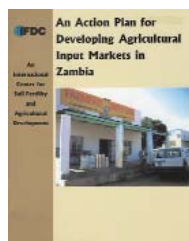
**Agricultural Production and Soil
Nutrient Mining in Africa:
Implications for Resource
Conservation
and Policy
Development**

IFDC, Technical Bulletin T-72, Muscle Shoals, AL, USA, May 2006. 75 pp.



**An Action Plan for Developing
Agricultural Input Markets in
Zambia**

IFDC, Paper Series P-36, Muscle Shoals, AL, USA, December 2005. 32 pp.



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**Safety Testing of Ammonium
Nitrate Products**

R.J.A. Kersten, E.I.V. van den Hengel, A.C. van der Steen. The International Fertiliser Society, Proceedings No. 580, London, UK, April 2006. 12 pp.



**Ammonium
Nitrate Handling Operations.
Guidance for Safe
Practice**

K.D. Shah and H. van Balken. The International Fertiliser Society, Proceedings No. 581, London, UK, April 2006. 15 pp.



**Integrated
Nutrient Management on Farm:
Three Case Studies**

H. Wahlstedt, L. Törner A. Guy and P. Huxtable. The International Fertiliser Society, Proceedings No. 579, London, UK, April 2006. 56 pp.

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**OECD-FAO Agricultural Outlook
2006-2015**

OECD, Paris, France, June 2006. 190 pp. ISBN 9264024611.

Available in English and French.

This annual report analyses world commodity market trends and medium-term prospects



for the main agricultural products. It shows how these markets are influenced by economic developments and government policies and highlights some of the risks and uncertainties that may influence market outcomes. In addition to OECD countries, the market projections in the report cover a large number of other countries and regions including the agricultural giants of India, China, Brazil and Russia as well as Argentina, South Africa and several least developed countries.

Contact

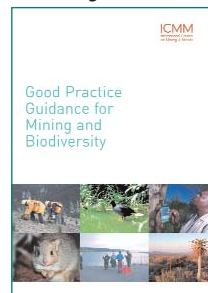
www.agr-outlook.org
A summary version is also available in pdf.

**Good Practice Guidance for
Mining and Biodiversity**

ICMM, IUCN, 2006. 142 pp.

The guide has been produced as part of an extensive dialogue between the International Council on Mining and Metals (ICMM) and the World Conservation Union (IUCN) which has been set up to explore different aspects of biodiversity conservation in the mining and metals sector.

The guide provides an informative reference source on biodiversity which can be used by mining companies at all stages of their operations, from initial exploration to mine closure planning and implementation. It comprises four sections: a background to biodiversity and its relevance to mining companies; the management and integration of biodiversity into day to day operations; typical tools and processes needed for assessment.



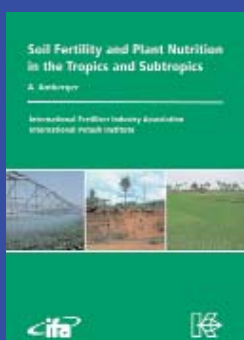
Contact

The guide is available at ICMM:
www.icmm.com/library_pub_detail.php?rcd=195
info@icmm.com

Coming soon

Soil Fertility and Plant Nutrition in the Tropics and Subtropics

by A. Amberger



96 pp. IFA/IPI, Paris, France, Horgen, Switzerland, October 2006.

Published jointly by the International Potash Institute and the International Fertilizer Industry Association,

this book discusses the possibilities and constraints in food production on the many different soil types found in tropical and subtropical countries.

By indicating ways in which crop nutrition and hence crop production can be increased on these soils in developing countries, the author shows ways to ensure food security and improve livelihoods.

Professor Dr. A. Amberger has had extensive experience in the tropics and subtropics, coordinating and organizing agricultural research programmes and serving as a consultant to international organizations. The topics discussed in this book are a synthesis of Professor Amberger's considerable experience and testimony to his many years of collaborative scientific work. The text is based largely on his lectures to students at the Technical University of Munich.

To order a copy, see order form page 12.

Want to know more about potassium ? www.ipipotash.org



The International Potash Institute (IPI) has recently revamped its web site. The face-lifted site contains additional databases of 'Publications' and 'Papers and Speeches'. These databases are searchable by title, country, category and also language, reflecting the vast information IPI has in English as well as in Arabic, French, Polish, Russian, Spanish, and others. Databases with additional content will be added in the near future.

The site contains a new feature called the 'K Centre' which collates data horizontally from the various sections of the web. The K Centres currently 'on air' are:

- 'K & the environment'

- 'K & stress and plant disease'
- 'K & food quality'.

These existing centres, and those to come, allow the reader to focus on specific topics of interest.

RSS feed technology will be implemented soon to provide immediate access to the site updates.

The web site is designed to meet the demands of those interested in plant nutrition and in K nutrition in particular.

An e-newsletter has also been launched.

For more information, contact:

Hillel Magen, Director

ipi@ipipotash.org

Mineral Fertilizer Specifications web page

www.fao.org/landandwater/agll/minfertspecs.stm



Mineral fertilizers are manufactured in bulk in an industrial process.

Although production technology shows considerable improvements over time, the basic process itself shows little variability throughout the world. Mineral fertilizers are internationally traded with specifications that are industry standard. Fertilizer specifications, however, can vary from country to country, against which commercial products are judged for quality.

For purchasing fertilizers from international and/or national markets, specifications have to be indicated. The Mineral Fertilizer Specifications web page attempts to provide a brief overview of "industry standard" fertilizer specifications for the 15 most traded fertilizer products.

What's new on EFMA's web site ?

www.efma.org

Guidance for the Compatibility of Fertilizer Blending Materials

EFMA, Brussels, Belgium, June 2006. 12 pp.

Guidance for UN Classification of Ammonium Nitrate Based Substances

EFMA, Brussels, Belgium, June 2006. 24 pp.

The two publications can be downloaded on the EFMA's web site.



Further information on product stewardship for fertilizers, guidance for fertilizer handling, transport and storage, and on best available techniques can be downloaded from the publications section of EFMA's web site.

Items are included on these pages as a matter of information.

Inclusion does not constitute an endorsement by IFA.



word: Association

The Coming Agricultural Revolution

In the not too distant past, agriculture was considered an old-fashioned, quaint profession. Young people with ambition left the countryside to study and to adopt more challenging professions.



*Luc M. Maene
IFA Director General*

Agronomy programmes had difficulty attracting students. In the developed countries, policy-makers had a general feeling that we had learned everything we really needed to know about farming. The priority was on deploying existing technologies and protecting the competitiveness of any given country's agricultural products on world markets.

Although many urban dwellers still hold such notions about agriculture, the picture is slowly changing. In future, agriculture is likely to be viewed as a domain for highly qualified experts – much as it now takes someone with computer skills to repair a car, which was until recently a completely mechanical task.

The first factor changing this perception is the growing understanding that natural systems are much more complicated than previously imagined. As far as making food widely available at affordable prices goes, 20th century agriculture has been an undisputed success. However, as the scale of agriculture has increased to keep pace with population growth, so have the side effects. At a low level, unwanted impacts can be absorbed with little disturbance to other systems, but as their prevalence increases so does the likelihood of upsetting other equilibria.

The second factor, which I believe will radically change how people see agriculture in the future, is the growing list of demands being made on the sector. The table below shows only the principal forces that are driving the agricultural production of food, feed, fibre and bioenergy upwards. It is a daunting wish list. Because arable land is limited and our societies are increasingly urban, this output will have to be achieved by a steady or declining workforce occupying a stable or shrinking area. Further constraints arise from societal concerns about preserving landscapes, ecosystem services (such as the filtering and cleansing effect of wetlands) and cultural values linked to rural lifestyles.

Technology and management techniques are the only capital inputs that can be enhanced to achieve the sustainable intensification that is necessary. This will require, in turn, highly skilled researchers and practitioners. And there will be far-reaching consequences for the fertilizer industry, the

implications of which are beyond our current understanding. Intensification is likely to increase fertilizer demand, and we can expect greater emphasis on micronutrients as soil pools are depleted by high-yielding varieties and biofortified crops. How will genetic modification or other aspects of biotechnology influence which nutrients crops require, and in what quantities? The same question could be posed with regard to changes in cropping patterns linked to new tasks such as energy production.

IFA and its members will need to adjust their decision-making to this new context. We will need to sort through large quantities of information and adapt to changing circumstances frequently. The share of the maize crop in the United States used for ethanol production is expected to be 34 per cent higher this year than in 2005. The pace of change is dizzying. The Association is undergoing a strategic review to help it better prepare for this new future. Time will tell how well we did. ●

<p>Food</p> <ul style="list-style-type: none"> • Feeding a growing population • Ensuring minimal caloric intake • Growing preferences for meat • Diversifying diets to ensure balanced nutrition 	<p>Feed</p> <ul style="list-style-type: none"> • More people require more livestock • Meat consumption per person is rising
<p>Fibre and Other Components</p> <ul style="list-style-type: none"> • Clothing a growing population • Fibres for construction, medicine and other non-clothing purposes • Production of chemicals and other industrial inputs • Crop-grown pharmaceuticals 	<p>Bioenergy</p> <ul style="list-style-type: none"> • Concerns over the longevity of fossil fuel reserves • Security and dependence issues • Increasing energy demands per person • Reducing pollution from current fuels

Growing Markets, Nurturing Success



IFA's successful Asian conference will be relaunched in Chiangmai, Thailand, from 13 to 16 November as the IFA Crossroads Asia-Pacific. The supply and trade elements of the first edition will be given particular emphasis, as the annual Production and International Trade Conference sessions have been integrated into this year's Crossroads event. Organized under the theme "Growing Markets, Nurturing Success", the conference programme pays special

attention to dynamic markets. It includes sessions on sulphur supply, potash and phosphate markets and the implications of emerging regulations for nitrogen markets.

The conference offers an excellent opportunity to interact with senior executives from major fertilizer producing and trading companies active in the region. Close to 300 executives, representing more than 100 fertilizer companies, attended last year's conference.

Details about registration, which closes on 9 October, can be found on the IFA web site.



Calendar

While every attempt is made to provide accurate information, IFA cannot guarantee the details for non-IFA events. Contact the organizers for confirmation.

IFA - 2006

13 - 16 November

IFA Crossroads Asia-Pacific 2006 "Growing Markets, Nurturing Success" incorporating the 2006 IFA Production and International Trade Conference programme

Chiangmai, Thailand

Registration closes on 9 October 2006

5 - 7 December

32nd IFA Enlarged Council Meeting #

Buenos Aires, Argentina

Registration closes on 27 October 2006

IFA - 2007

21 - 23 May

75th IFA Annual Conference Istanbul, Turkey #

Registration opens in January 2007

24 - 26 May

Zinc Crops 2007 - Improving Crop Production and Human Health Istanbul, Turkey

Regular updates on Zinc Crops will be posted on the web at www.zncrops2007.info

Restricted to IFA members

Non-IFA - 2006

19 October

IFS – Technical Meeting London, UK

Fax: +44 1904 492 700 secretary@fertiliser-society.org

www.fertiliser-society.org

22 - 25 October

BSC – Sulphur 2006 International Conference & Exhibition

Vienna, Austria

Fax: +44 20 7903 2444 conferences@crugroup.com

www.britishtsulphurevents.com

25 - 27 October

FMB – 20th European Fertilizer Conference & Exhibition

Marbella, Spain

Fax: +44 20 8979 7866 fmb@fmb-group.co.uk www.fmb-group.co.uk

30 - 31 October

International Symposium on Balanced Fertilization: Impact on Crop Production and Fertilizer Use Islamabad, Pakistan

Fax: +92 51 9259128 imphos@casanet.net.ma www.imphos.org

5 - 9 November

IPI-JUST-NCARTT – 2nd Training Course on Fertigation for the WANA Region Irbid, Jordan

Fax: +962 2 7095069 mrusan@just.edu.jo www.ipipotash.org

www.ipipotash.org/events/2nd+IPI+JUST+NCARTT+Training+course+on+fertigation+for+the+WANA+region.html

6 - 10 November

IFDC* – NPK Production Alternatives Bangkok, Thailand

6 - 11 November

AFA – Antidumping - Antitrust Laws-WTO Damascus, Syria

Fax: +20 2 4172347 info@afa.com.eg www.afa.com.eg

9 - 11 November

Recherphos – The Second International Conference on the Valorization of Phosphates and Phosphorous Compounds

Marrakech, Morocco

Fax: +212 22 24 64 41 contact@recherphos.com

www.recherphos.com/covaphos2.htm

9 - 11 November

FAO – Global Forum on Agricultural Research (GFAR) Delhi, India

Fax: +39 0657053898 gfar2006@fao.org www.egfar.org/gfar2006

23 November

EFMA – Integrated Farm Management: Sustaining Fertile Soils and Productive Agriculture Brussels, Belgium

Fax: +32 2 6753961 chp@efma.be www.efma.org

7 - 8 December

CPFIA – China Phosphate Fertilizer & Compound Fertilizer Trade Fair (CPCFF) Harbin, China

Fax: +86 1082032466 fair@china-npk.com www.china-npk.com

Non-IFA - 2007

24 - 26 January

FMB – 2nd Americas Fertilizer Conference & Exhibition

Cancun, Mexico

Fax: +44 20 8979 4573 fmb@fmb-group.co.uk www.fmb-group.co.uk

6 - 8 February

AFA – 13th International Annual Conference & Exhibition

Sharm El-Sheikh, Egypt

Fax: +20 2 4173721 info@afa.com.eg www.afa.com.eg

25 - 28 February

BSC – Nitrogen + Syngas Manama, Bahrain

Fax: +44 20 7903 2432 conferences@crugroup.com

www.britishtsulphurevents.com

28 February - 2 March

FMB – 4th Asia Fertilizer Conference & Exhibition

Bangkok, Thailand

Fax: +44 20 8979 7866 fmb@fmb-group.co.uk www.fmb-group.co.uk

11 - 14 March

Dahlia Greidinger Symposium on Advanced Technologies for Monitoring Nutrient and Water Availability to Plants

Haifa, Israel

Fax: +972-4-8224246 rsconf@yahoo.com gwri-ic.technion.ac.il

*IFDC – An International Center for Soil Fertility and Agricultural Development
Fax: +1 256 381 7408 hrd@ifdc.org www.ifdc.org

To view a more exhaustive list of conferences click on "Conferences and Events" on IFA's web site.



Do you know ?

- Zinc deficiency is the fifth leading risk factor for disease in the developing world.
- Providing micronutrients (including zinc) to human populations is one of the four solutions for the world problems identified in the Copenhagen consensus by a worldwide panel of distinguished economists including Nobel Prize Winners. (www.copenhagenconsensus.com)
- Nearly half of the cereal grown globally is in areas with potentially Zn-deficient soils.
- Often the areas with Zn-deficient soils are also the regions where zinc deficiency in humans is most widespread.
- One-third of the world population is at risk of zinc deficiency, ranging from four to 73 per cent in different countries.

In order to exchange up-to-date scientific information on the importance of zinc, IFA and the International Zinc Association (IZA), in cooperation with the Sabanci University of Istanbul and HarvestPlus, are organizing an international scientific conference to review the latest knowledge and best agricultural practices in addressing zinc deficiency and its impact on global crop production and human health.

Zinc Crops 2007 will take place from 24 to 26 May 2007 in Istanbul. It will be followed by an

optional field trip to Cappadocia on 27 and 28 May.

The programme of Zinc Crops 2007 has been designed for agronomists, soil scientists, fertilizer companies, research institutions, government agencies and all those involved in optimizing crop yields and crop composition. This event has been scheduled back-to-back with the 2007 IFA Annual Conference in order to facilitate participation of delegates from the fertilizer industry.

Zinc Crops 2007 has been organized into five sessions devoted to:

- Human Nutrition
- Soil and Crop Management
- Zinc Fertilizers and Crop Nutrition
- Plant Physiology
- Genetics and Molecular Biology

Further details on Zinc Crops 2007 and registration will be available soon on the conference web site at www.ZnCrops.2007.info

Finally, should you wish to make oral or poster presentations at Zinc Crops 2007, you are invited to submit an abstract. Instructions for authors in the form of a template are available from the conference web site. Please note that the deadline to submit abstracts is 15 November 2006. ●

International Fertilizer Industry Association (IFA)

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ifa@fertilizer.org
www.fertilizer.org

IFA comprises around 450 member companies in more than 80 countries and includes manufacturers of fertilizers, raw material suppliers, regional and national associations, research institutes, traders and engineering companies.

IFA collects, compiles and disseminates information on the production and consumption of fertilizers and acts as a forum for its members and others to meet and address technical, agronomic, supply and environmental issues.

IFA also sponsors research related to the efficient use of plant nutrients in agriculture, and liaises closely with relevant international organizations, such as the World Bank, FAO, UNEP and other UN agencies.

IFA President

Sihai Wu
President, SACF, China

IFA Director General

L.M. Maena

Mailing list

Subscription to F&A is free of charge. Send full address details to be added to the mailing list. Additional copies may be supplied to organizations to circulate on behalf of IFA.

Letters

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

-Editor-in-chief: Kristen E. Sukalac
-Managing editor and layout: Claudine Aholou-Pütz
-Design: Dora Maltz

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IFA Request Form [fertilizers agriculture](http://www.fertilizer.org) October 2006

Please tick the box below and return to IFA by fax: +33 1 53 93 05 45 / 47

or send an e-mail to publications@fertilizer.org

Note: most IFA materials are available via the web site at www.fertilizer.org

- Soil Fertility and Plant Nutrition in the Tropics and Subtropics. A. Amberger. IFA/IPI
- 2007 IFA International Crop Nutrition Award. Leaflet
- 2005 IFA Conferences Cd-rom. *Restricted to IFA members*
- IFA Annual Conference, Cape Town, South Africa. Cd-rom. *Restricted to IFA members*

Name

Company/Organization

Address

E-mail Web