

Preface

The International Fertilizer Industry Association (IFA) represents the global fertilizer industry, with 475 members in 85 countries on all continents. In addition to producing demand forecasts and addressing issues facing fertilizer demand, the Agriculture Committee of IFA promotes the efficient and responsible use of fertilizers.

In relation to this latter objective, the IFA Agriculture Conference – held from 27 February to 2 March 2006 in Kunming, China – was dedicated to the “Optimization of Resource Use Efficiency for Sustainable Intensification of Agriculture”. It gathered some 240 delegates from 22 countries, including policy makers, scientists and representatives of the fertilizer industry and many partner organizations, thus paving the way for a fruitful multidisciplinary debate, enhanced links, new alliances and the identification of innovative solutions to accelerate progress towards greater agricultural efficiency.

China was selected to host this event because of its central role as the consumer of more than one-fourth of world fertilizer demand. In the light of rapidly raising demand for agricultural products, in particular from livestock, China’s agriculture must be further intensified. This puts great pressure on its natural resources. In order to combine the double objective of increasing crop productivity to satisfy demand and limiting the environmental footprint, it is imperative to improve the efficiency with which natural resources – including plant nutrients – are used in agricultural systems. Fertilizer is key to the success of Chinese agriculture, but use efficiency is currently low there; For instance, in farmers’ fields, less than 40% of the nitrogen fertilizer is taken up by crops in the year of application, compared to 80% or more observed in some experimental plots. The good news is that there is significant room to improve, but the challenge is daunting, given the number of farmers whose practices must change.

At the global level, the same pressure on agricultural systems exists, under the impulsion of rapid income growth leading to higher demand for meat, fish, fruits, vegetables, sugar and vegetable oils, and rapid development of biofuel production. The agri-food chain will be asked to produce more biomass on a limited cultivated area, while preserving soils, water and the air. At the same time, more than 800 million people still suffer from hunger, and more than two billion from malnutrition due to micronutrient and vitamin deficiencies. To achieve the ambitious food security and sustainable agriculture objectives set out by the *World Food Summit* and the *World Food Summit: five years later, the Millennium Summit* and the *World Summit on Sustainable Development*, policymakers, scientists, farmers and industry all need to join forces.

The Kunming Conference started with a one-day workshop to better understand the importance of micronutrients and the role of micronutrient fertilizers to achieve food and nutrition security, followed by two days of discussions on how to increase agricultural production without depleting the Earth’s natural resources: soil, water and nutrients. Solutions fall in the domains of both policy and technology. However, to be successful, such responses must be attractive to farmers. Effectively conveying key messages to rural populations and providing appropriate incentives are as challenging as developing new tools, new infrastructures or new policy instruments. This is particularly true in countries like China that have a very large number of small-scale farmers, who are not always keen to adopting new practices.

This special issue contains selected papers that were presented during the Kunming Conference. All the other papers can be freely downloaded from that IFA website at www.fertilizer.org/ifa/news/2006_06.asp.

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