

EFFECTIVE LAST-MILE DELIVERY OF CROP NUTRITION KNOWLEDGE

What is “last-mile delivery”?

To improve the economic, social and environmental performance of agriculture (that is, to make it more sustainable), one of the greatest challenges is to make inputs, new techniques and technologies, and related knowledge available to improve farming practices.

If agricultural productivity, farming profitability, and food and nutrition security are to be enhanced while agriculture’s environmental footprint is reduced, eliminating constraints on the last-mile delivery of customized services to farmers will require the full attention of all stakeholders involved in the agri-food chain.

Without effective last-mile delivery, small-scale farmers in developing countries are unlikely to bridge the yield gap and escape the poverty trap.

Effective last-mile delivery includes:

- Providing access to inputs and technologies;
- Providing services that facilitate access to inputs and technologies, including credit;
- Providing services (e.g. advice and market information) that optimize the use of inputs and technologies;
- Providing an active bi-directional link between research and farmers.

Except in Sub-Saharan Africa where the physical delivery of inputs and access to credit are major constraints, the main challenge for both the public and private sectors in many developing countries (where public extension systems often lack the necessary human and financial resources) remains knowledge transfer. New approaches to supplement public extension and deliver the right information in the right format and at the right time are essential. Since nutrient management is highly knowledge-intensive, the fertilizer industry should lead efforts, in partnership with relevant stakeholders, to improve farmers’ access to fertilizer best management practices (FBMPs).



Why is there a need for effective last-mile delivery of crop nutrition knowledge?

Farmers in developing countries generally have small landholdings and a low level of education. Due to the absence of better techniques, technologies, inputs and affordable credit, productivity is often low. Hunger, malnutrition and poverty are, therefore, persistent. To help alleviate this situation, farmers must, among other requirements, be empowered with access to the right information and practices to improve their productivity and profitability in a sustainable manner.

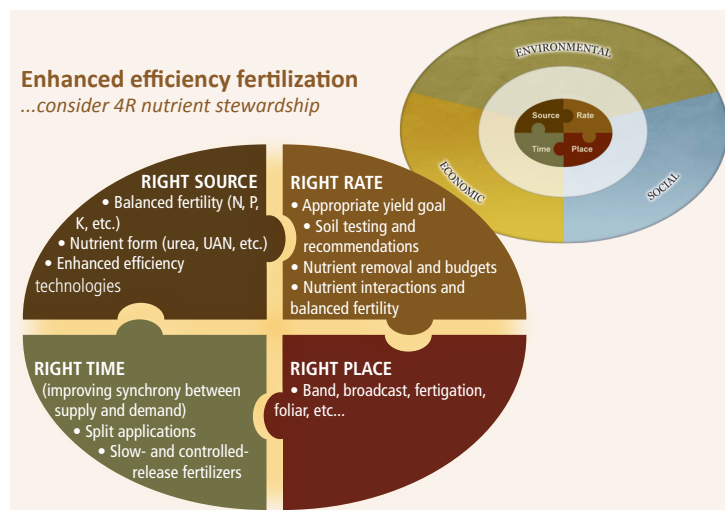
Fertilizers are a key yield-enhancing factor. However, the misuse of fertilizers may result in economic losses and negative environmental impacts. Encouraging the adoption of FBMPs through effective delivery systems is the best option to maximize the benefits and minimize the negative impacts associated with fertilizer use. Moreover, promoting FBMPs that meet the expectations of the different stakeholders helps the industry gain public confidence in its ability to manage nutrients responsibly.

What are we delivering?

The principle of fertilizer best management practices (FBMPs) is simple: use of the right nutrient source(s) at the right rate, at the right time and in the right place (the 4Rs). The simplicity of this principle means that it can be adapted, taking into account site- and cropping system-specific conditions as well as farmers' access to technology. FBMPs are practices developed through scientific research – and verified in farmers' fields – in order to maximize economic, social and environmental benefits.

FBMPs are aimed at managing the flow of nutrients while producing affordable and nutritious food sustainably. Using FBMPs, farmers implement (under site- and cropping system-specific conditions) the concepts and elements of balanced fertilization, site-specific nutrient management (SSNM) and integrated plant nutrient management (IPNM). On a broader scale, FBMPs are components of product stewardship and integrated farming.

For more information on FBMPs, visit www.fbmp.info



How can last-mile knowledge of crop nutrition be delivered effectively?

Agriculture is a knowledge-intensive activity. Farmers need access to timely information and new technologies through training, extension services, reliable local networks of professional agro-dealers, and modern information and communications technologies.

What could be done differently to improve delivery performance?



Source: D. Bergvinson, "Assessment of Last-Mile Delivery Situation in Developing Countries: Vision and Strategy to Improve Delivery Performance." IFA International Workshop on Effective Last-Mile Delivery, 10-12 February 2010, New Delhi, India.

Some success factors are well established and should be taken into account in any knowledge transfer programme:

- Engagement with farmers requires dialogue rather than one-way communication. The interactive mode is best.
- Location-specific technology/recommendations are essential, including cropping system-specific fertilizer recommendations. Customization is vital if farmers are to find the information provided relevant.
- Peer farmer behaviour remains a major driver for change in the absence of demonstrated improvement in performance through extension systems.

- Farmers' understanding of the cost-benefit ratio of every technology is critical.
- Communicating related information such as weather forecasts, input prices and sources, and output market information increases receptivity.
- The availability and accessibility of the right agricultural inputs, including credit, is a crucial driver.

Increasing the number of advisers and their proficiency is also essential. In this connection, private sector staff should be trained to complement public extension. Programmes for certifying the private sector's crop advisers are promising, as are the training and certification of agro-input dealers.

Due consideration should be given to innovative approaches to the creation of user-friendly and real-time knowledge sharing platforms. Use of information and communications technologies, such as the internet and mobile telephony, has had positive results in some developing countries and should be scaled up.

Innovative approaches for effective last-mile delivery

Nutrient Manager for Rice on the internet and mobile phones (NMRice Mobile): a decision-making support tool using modern communication platforms

Nutrient Manager for Rice is a new decision tool that helps rice farmers in East Asia optimize their use of nutrient inputs. In addition, NMRice Mobile, a mobile phone-based interactive voice response (IVR) application that sends farmers text messages with a field-specific fertilizer guideline, is operating in the Philippines through a partnership involving the public sector and two private phone companies.

The tool and a demonstration of its application is available at:
<http://irri.org/knowledge/tools/nutrient-management-decision-tools>



Photo: © IRRI

Hariyali Kisaan Bazaar: bridging the gaps – last-mile delivery to Indian farmers

The Hariyali Kisaan Bazaar in India is a "one-stop solution-provider" that ensures the availability of the right products at the right time and at a fair price, together with free farm advisory services. It provides year-round customized services, which it bundles with products. Qualified agronomists manage the sales process. DCM Shriram Consolidated Ltd. (DSCL), capitalizing on its more than 45 years of experience in agri-input markets and first-hand knowledge of Indian farmers, has set up a chain of centres to provide end-to-end ground level support. This includes providing advice, making products available and offering on-field application support, thereby accelerating adoption levels to help increase farm productivity and the profits of Indian farmers.

For more information, see www.dscl.com



Photo: © DSCL

Agricultural input supply and distribution development: Extending Agro-Dealers Networks (EADN)

In Sub-Saharan Africa, agro-dealers' associations are being formed through IFDC's Extending Agro-Dealers Networks (EADN) project. Linkages among national and regional agro-dealer associations will improve members' buying power and access to loans. They will also address cross-the-border issues and better inland markets service. These associations actively participate in assessing market situations, as well as in assisting human capacity building and the introduction of new technologies to farmers. Developing strong, active agro-input dealer networks and associations increases the effectiveness of last-mile delivery.

For more information, visit www.ifdc.org/Projects/Recent/EADN



Photo: © iStockPhoto

Nutrient Expert for Hybrid Maize

Nutrient Expert for Hybrid Maize is a new computer-based decision support tool. It has been developed to assist local experts in South-east Asia in quickly formulating fertilizer guidelines for tropical hybrid maize, based on the principles of site-specific nutrient management. This tool facilitates the development of recommendations with a quick guide for each region, enabling local experts to run multiple scenarios to identify the most common characteristics or factors affecting fertilizer rates in the region. Originally in English, Nutrient Expert for Hybrid Maize is now available in Bahasa Indonesia and Vietnamese.

For more information, see <http://seap.ipni.net/articles/SEAP0059-EN>



Photo: © IPNI

Empowerment of rural India by IFFCO Kisan Sanchar Ltd.: PC/internet-based initiatives for connectivity and content – “Cyber Dhabas”

The Information and Communication Technology (ICT) Initiatives for Farmers and Cooperatives, popularly known as “IFFCO’s Agri-portal”, is a vision of extending the e-revolution to farmers and cooperatives initiated by IFFCO Kisan Sanchar Ltd. in 2000. The broad aim of this endeavour has been to empower farmers and cooperatives with the latest information and communications technology. Sixteen states have been covered, with substantial content in local languages and audio summaries. In addition to web-based access, about 100 localized touch screen kiosks or “Cyber Dhabas” have been put into service. However, most farmers first need to be taught to use computers.

For more information, visit www.iksl.in



Photo: © IFFCO

Certified Crop Advisers (CCA) programme in India

The Certified Crop Advisers (CCA) programme is a voluntary process through which the American Society of Agronomy (ASA) grants recognition to individuals who meet predetermined standards (exams, education, experience and ethics). It establishes a life-long learning process as part of the requirements for remaining certified. The CCA programme is considered a global standard for agronomists. Because the standards are the same wherever the programme is operational, a farmer or employer can rely on CCA certification as a quality control measure to identify appropriate agronomy advisers.

India is the first country in South Asia to establish the CCA programme where 78 nationals have passed the exams in 2010. The programme is administered by the Indian Society of Agribusiness Professionals (ISAP) under a licensing agreement with ASA. The Programme will expand to Nepal, Bangladesh and Pakistan over the coming years.

For more information, see www.certifiedcropadviser.org



Photo: © CCA

For further information:

IFA International Workshop on Effective Last-Mile Delivery, 10-12 February 2010, New Delhi, India, Proceedings: www.fertilizer.org/ifa/HomePage/LIBRARY/Conference-papers/Agriculture-Conferences/2010-Workshop-on-Effective-last-mile-Delivery

Innovative last-mile delivery initiatives:

www.fertilizer.org/ifa/HomePage/SUSTAINABILITY/Knowledge-transfer-innovative-approaches

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