



## ***ICTs for Sustainable Food Production and Agriculture***

*Technology and Information for the next Green Revolution*

*June 2009*

## Project Summary

ICTs play a key role in improving the availability of agricultural production and market information in developing countries. ICT-based market information systems have a proven track record for improving rural livelihoods in middle income developing countries where they have been introduced. However, these systems are generally limited in scale and have not been effectively replicated beyond the local level. Also, relatively few schemes exist in smaller countries that lack the economies of scale of an India or a China. Furthermore, while internet-based market information systems work well in more developed, literate markets, other media, such as mobile phones or community radio, could be appropriate alternatives in least developed countries (LDCs), especially in sub-Saharan Africa.

Poor access to information and communication was one of the main reasons the original green revolution failed in Africa (see figure 1). However, the current mobile revolution in Africa offers real hope for a different outcome now. The rapid spread of mobile phones in Africa has transformed the continent, with mobile ownership now exceeding one-quarter of the African population at the end of 2007.

This project will survey the current state of the art in the effective use of ICT in agriculture and food production, identify models that work, and examine the scope for effectively replicating these models on a wider basis, with the appropriate adaptation to local needs and circumstances. Another aim is to assist governments and local authorities in adaptive policy-making so that they are better able to respond to future food crises, whenever and wherever they occur.

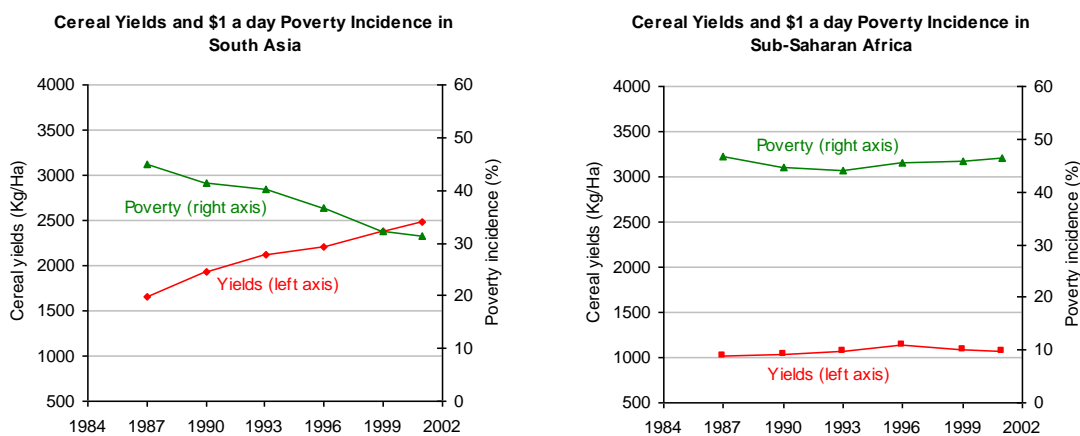
## Project Description

This project will have four main components:

### 1. Sharing Best Practice and Creating Communities of Practice

Working with leading experts in the field, *infoDev* will review best practice in the use of ICTs for sustainable agriculture and food production. This will include the development of a knowledge map of existing initiatives, a set of best practice guidelines and a “how-to-do-it” toolkit for practitioners who design field based projects.

**Figure 1: Agricultural yields and poverty reduction**



Source: World Bank “World Development Report 2008: Agriculture for Development”

Capacity-building workshops will be held in beneficiary countries for local community officials, farmers and their representatives, aid and donor agencies, agricultural extension workers and researchers using the toolkit.

As a means of spreading good practice and creating a living community of practice where interested entities, groups, companies and individuals can learn from each other, *infoDev* will organize and host an Annual Practitioners Forum, convening researchers and practitioners from around the world to discuss trends, share experience and see the latest technology in action. These would be global in scale, but could also be organized regionally. In between meetings, an online community of practice hosted by *infoDev* will serve as a development resource for practitioners and spur regular debate and experience sharing.

## **2. Pilot Programs**

After identifying strong examples of ICT-based interventions in agriculture and food production, *infoDev* will collaborate with ARD to roll out pilot programs which replicate the approach used in one country in other countries, or which scales up existing schemes over a wider geographical area. The number of countries/regions selected for these pilot programs would be dependent on the scale of donor funding.

## **3. Mobile for Agriculture Solutions**

Mobile banking has been a transformative application in developing country markets, with innovative schemes such as *M-Pesa* and *Wizzit* making waves, while mobiles have also been used for market information systems (such as Gov Gnana Seva in Sri Lanka). *infoDev* proposes to study, through wide survey research, the impact that mobile applications have had and could potentially have on agriculture and food production in developing countries, whether via the use of mobile phones for providing stored credit for agricultural transactions, as a platform for remittances and conditional cash transfers, as a market information tool or as a means to undertake targeted extension services to farmers. This research will provide important glimpses into how mobile and wireless technology is transforming the landscape of the developing world and into the needs and preferences of its users.

## **4. ICT in Agriculture Sourcebook**

On the basis of these three components and other Bank initiatives, *infoDev* and the World Bank's Agriculture and Rural Development (ARD) division will collaborate to create a definitive, globally recognized ICT in Agriculture Sourcebook, which will serve as a practical and comprehensive guide to operationalizing the good lessons derived from existing initiatives.

## **Indicative Budget**

Depending upon the level of funding and the interest among the donor community, the following indicative budget, in US\$, could be proposed for this activity during the period 2009-2011 (three years).

Expected Outputs	Duration	Cost (in \$US)
1. Sharing best practice and creating communities of practice	Development of knowledge-map in 2009. Capacity-building workshops in 2009- 2010 (approximately two per year). Annual Global Practitioners Forum, starting in 2011.	US\$800 K
2. Pilot programmes	Starting in 2010 with the aim of launching two pilot programmes per year	US\$350 K per pilot programme = US\$1'400
3. Mobile for agriculture solutions	Research conducted 2009-2011 culminating in the publication of the ICT in agriculture sourcebook	US\$200 K
4. ICT in Agriculture sourcebook	Completion in 2011	US\$120 K
<b>Total</b>	<b>2009-2011</b>	<b>US\$2'520 over three years</b>

## Key Partners

The principal contractors for the projects will be *infoDev* and the World Bank's Agriculture and Rural Development Department. Other potential partners could include:

- Operational partners, including IISD, LIRNEasia, EDGE Institute.
- Institutional and regional organizations and donors, including FAO and UNECA
- Private sector partners in the mobile or technology fields, including Nokia, Vodafone; and agricultural market information systems providers, such as TradeNet and Manobi.

## Implementation Risks and mitigating measures

The main risks to the project include:

- Lack of political support for the program in the potential beneficiary countries;
- Technological obsolescence in the ICT tools used;
- Lack of dissemination of the research results to the relevant agricultural communities;
- Too narrow a focus on ICTs may overlook other important ways to reduce rural poverty
- Lack of scope for technology transfer.

Steps taken to mitigate these risks include mixing research and assessment with operational work to ensure it stays current and rooted in practical application. The project will study, replicate and scale up programs that already exist and that are known to work. *infoDev*'s partnership approach, which brings together the expertise of the World Bank with experienced practitioners in the donor, NGO, international organization and academic communities and private sector, will help to ensure that the project establishes strong political and stakeholder connections in beneficiary countries. A suitably broad approach to knowledge mapping and best practice collation will offset dangers of too narrow a focus. Various dissemination methods (e.g. the capacity building workshops, annual forum, community of practice website and sourcebook) have been built in to the project.