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labour during the crucial planting season. Few financial institutions operate in the region and those that do often insist on repayment directly following the harvest, limiting the income that can be generated through sales.

The total combined coverage of MFIs in the region is just over 24,000 clients, less than 12 percent of all households, most of whom are in urban centres. In this context, where transport systems are very poor, and many villages are too costly to reach for MFIs, less than one percent of households have access to a formal savings product.

Because PLAR-IRM requires additional specialised labour for the effective implementation of select key practices, such as line transplanting and weeding, AKF introduced a pilot project in Befandriana to form and train groups in community-based savings

and lending. It is expected that this programme will help farmers smooth their incomes by giving them access to savings, lending and insurance services through the savings group. In addition, the programme is expected to provide a safe place to save and access savings and cash for poor households.

The pilot project will train more than 7,000 members in almost 400 independent community based groups for savings and lending by the end of 2012.

Over time, accrued savings will allow farmers to borrow money from their group to pay for improvements in production. Quick access to a small amount of credit or accumulated savings also help to pay school fees, for example, which can enable a farmer to defer selling or pre-selling harvests to a time when prices are higher.

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The Aga Khan Development Network (AKDN) is a group of private development agencies working to empower communities and individuals, often in disadvantaged circumstances, to improve living conditions and opportunities, especially in Africa and Asia. Its agencies work in over 30 countries for the common good of all citizens, regardless of their gender, origin or religion. Its underlying impulse is the ethic of compassion for the vulnerable in society.

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## MADAGASCAR



### The “Hungry Season” in Madagascar

*Across Africa, people in rural areas talk about the “hungry” or “lean” season, the period falling before the next crop is harvested, when food becomes scarce. Often, people eat a single meal per day and must deal with chronic hunger.*

*The knock-on effects include low birth weight for children born during the season, cognitive impairment, malnutrition and stunting that leads to greater lifelong risk for infectious diseases, and a decline in the energy needed to work regularly. In some cases, it leads to death, especially among children and older people. A lack of income during the period can also lead to indentured servitude to money lenders – and a subsequent cycle of poverty.*

*A 2005 Food and Agriculture Organisation report on Madagascar suggests that stunting among children under the age of five is as high as 48 percent and that the incidence of malnutrition is 37 percent.*

*In Madagascar, which has the highest per capita consumption of rice (138 kilos per year per person) in the world, the hungry season became especially acute in early 2011 as late and irregular rains delayed planting and the worldwide price of rice doubled.*

*Some people now consider rice “a luxury” in an environment where rice is the main staple and food represents 75 percent of a household budget. With over 85 percent of the population relying on rice cultivation for*

*their livelihoods, these two developments have had a devastating impact.*

*When the Aga Khan Foundation began working in the northern province of Sofia in 2005, its main aim was to double yields as a way of staving off the “hungry season”. Between 2005 and 2010, AKF trained more than 17,000 smallholder farmers through participatory rice-farming methods.*

*The results have been significant: on average, groups participating in the programme more than tripled their yields, from 1.5 tonnes per hectare to 5.49 tonnes per hectare. Some groups have even obtained yields greater than 8 tonnes per hectare.*

Techniques such as rationalised use of seeds, planting in rows and appropriate spacing can have a dramatic effect on yields.



*PLAR-IRM is specifically adapted to rain-fed lowland rice ecology, which currently represents about 35 to 40 percent of the rice growing area in sub-Saharan Africa. The PLAR-IRM method could be extended to an estimated 130 million hectares (320 million acres) that are available across the continent.*

### The PLAR-IRM Approach

The approach the Foundation offers for boosting yields is novel in that it is not prescriptive. It offers a range of methods that include better use of seed, including the reliance on improved seeds, and improved farming techniques that farmers are free to try.

The approach is people-centred – as opposed to technology-centred – and aims to build the ability of farmers and other actors in rice cultivation to discover improvements that are most suitable for their specific environments. The range of inputs include improved techniques for cleaning irrigation canals, better land preparation, managing water and local solutions for preventing and treating pests and weeds.

Techniques such as rationalised use of seeds, planting in rows and appropriate spacing can have a dramatic effect on yields. Chemical fertilisers are not used.

Some farmers adopt a particular method or input; when they are successful, that method or input is more widely employed in their field, and often imitated by farmers who have not received formal training.

### The Participatory Approach

Part of the reason for the success of this approach is that farmers are not considered “recipients” or “adopters” of new

technologies, but rather are offered a range of choices which they then apply through a process of discovery that marries innovation to indigenous knowledge and practice. AKF refers to this unique approach of innovation combined with participatory learning as the Participatory Learning and Action Research (PLAR) – Integrated Rice Management (IRM) approach.

The PLAR-IRM approach was developed in response to the diversity of agro-climatic conditions in rain-fed, lowland rice-production systems. It was found that while technological packages conceptualised by researchers and extension agents could be effective in more uniform irrigated rice-production systems, in the diverse landscapes typical of rain-fed, lowland rice-production systems, farmers’ participation, and local knowledge, were essential.

Since its inception in 2005, AKF has brought PLAR-IRM’s low-input improved rice farming techniques to more than 17,000 small-scale farmers in Sofia region. PLAR-IRM groups have been formed in five out of seven districts of Sofia (Mandritsara, Befandriana Nord, Analalava, Port-Bergé, and Bealanana).

An extension to the programme, called *formation-diffusion* (see below), has reached two additional districts (Mampikony and Antsohihy) and expanded coverage in the

districts that the programme already serves.

### Impact

The results have been significant: on average, groups participating in the programme more than tripled their yields, from 1.5 tonnes per hectare to 5.49 tonnes per hectare. Those employing fertilisers have pushed their totals to 6.06 tonnes per hectare. Overall yields also improved as farmers who had not participated have adopted some of the measures.

AKF now reaches roughly one million people either directly or indirectly in rice growing areas in Asia and Africa. While hunger has not been banished from the region, farmers who have benefited from the participatory methods often say they no longer suffer from a “hungry season”.

### Scaling Up the Programme

The PLAR-IRM method currently reaches rice farmers through two principal training components: intensive training and the formation-diffusion programme.

Initially, the programme worked intensively with groups of 25 to 35 rice farmers established in a village. These groups were formed usually on the basis of a common bond, such as use of the same water source for crop irrigation. Training was provided to groups by trained facilitators in an intensive fashion for

a three-year period, beyond which groups became independent. The process leading to “independence” was two years in duration, during which groups were provided technical and organisational support through additional training modules, including financial education, harvest management, and negotiation skills.

In order to improve coverage and reach, farmers who lived in areas that were not accessible during the rainy season were reached through a dissemination programme, started in 2009, called *formation-diffusion*.

Formation-diffusion seeks to provide a condensed four-day training on major IRM practices in villages where no PLAR-IRM groups have been established (and preferably remoter areas of the region).

The current aim is to reach 40,000 farmers in northern Madagascar, but the programme could then be expanded to other parts of the nation.

### A Savings Programme that Aids Farmers

The success of the programme in raising yields has created new challenges, such as a need for secure storage, mechanisms for savings and the marketing of surpluses.

Of particular concern for farmers is finding the resources to pay for

*Rain-fed lowlands are characterised by “low-precision” farming, which has limited water control, low fertilizer input, poor crop management practices, narrow windows for sowing and harvesting, etc.. Farmers in lowlands are not always served well by narrowly defined technologies; rather, they need a wide range of “flexible” options. With PLAR-IRM, farmers try out new methods, fine-tune existing techniques and then integrate both traditional and new practices to create a “best fit” of crop management practices.*



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#### Previous page:

*A farmer uses a sarcleuse to weed his field. Spacing and planting in rows makes weeding easier and improves yields.*