



Photo: Sabine H, ICRISAT

Farmers, extension workers and researchers at Ms Ana Alberto's plots in Dororo for a demonstration of participatory evaluation of common bean.

Farmers in Central Mozambique taste success using an Open Innovation Platform approach

The success of commercialization of common bean in Dororo district has caught the attention of government officials of Mozambique and other regional organizations who are keen to spread the learnings further.

This year 15 associations visited the farmers to learn their production technologies and the way they manage themselves using the 'open' Innovation Platform (IP) approach. Farmers observed how the integration of legume crops (common bean and mucuna) and livestock for soil fertility management through crop rotation, cover crops and manure reduces the dependence on external inputs. Combined with draft power animal management, this has increased productivity and production not only of common bean but of their entire farms.

How it happened

"Through the IP, farmers decided to work together on commercializing their produce. They negotiated their own rules for collaborations and engaged in the trainings on common bean whole heartedly," says Ms Ana Alberto, a farmer, analyzing the impact of the IP on livelihoods as a chain of effects.

The project results have shown that an open IP approach does not limit itself to the community and can spark cross-scale collaborations that are critical for further developments. With the emphasis on crop-livestock-

“The farmers should be invited to provincial agriculture meetings to spread the learning to other districts.”

– **Dr Carlos Quembo**

Director, Agricultural Research Institute of Mozambique (IIAM) Central Zone

market integration and the farmers being more organized at the IP, new doors opened for them. Various organizations supported them in various activities, one of them was the building of grain storage facilities. Farmers were also trained to store their grains collectively. They now wait for an opportune time to market their grain for a good price, rather than sell at low prices at harvest time.

Mr Amone Macufa, a farmer, not only increased his production from 4 to 10 tons in the past three years but also this year sold his beans at a higher price of US\$1.10 per kg after waiting for 4-5 months, instead of selling his beans at US\$0.70 per kg directly after harvest.

The IP has empowered farmers' participation in markets. Farmers now collectively decide at what time they would sell their produce and at what price, expecting higher revenues than what they would get by selling individually.



Photo: Sabine H, ICRISAT

IN MARARA

Another successful example of open IP and crop-livestock-market integration

In this district, farmers manage the largest cattle and goat herd sizes in the country and supply to the capital Maputo more than 1,600 km away, despite unpredictable rainfall and frequent food insecurity.

Mr Marizane, Marara IP, shows Dr Hauser, BOKU, and Mr Onofre, ICRISAT/IIAM, how he uses drought-tolerant maize, sorghum, pigeonpea and mucuna for food-feed and income generation.

Challenges

Farmers in Dororo benefit from high rainfall and good soils, yet inaccessible roads hinder them from selling their produce at a profit to markets in Chimoio town, which is less than 60 km away. At the project's final workshop, Dr Quembo emphasized the critical need to improve the poor road conditions. "If we don't improve the roads we cannot succeed further in improving marketing of beans. It's important to carry the potential further to the responsible ministries even after the project has finished, else all the effort will be lost," he said. The issue has been raised with the relevant government authorities.

Project: Developing resilient and profitable farming systems in Central Mozambique: A conceptual approach, 2012-2015

Investor: Austrian Development Agency

CGIAR Research Program: Dryland Systems

Partners: Agricultural Research Institute of Mozambique (IIAM), Centre for Development Research, University of Natural Resources and Life Sciences, Vienna (BOKU) and the University of Zimbabwe.

Participants at the Marara IP envisioned market-oriented livestock production with crops for food and feed as promising pathways. They highlighted benefits from testing a wide range of food and feed crops – sorghum, maize, groundnut, pigeonpea, cowpea, mucuna – on demonstrations plots.

According to farmers, the legalization of their association, along with a title for 13,000 ha land achieved through a partnership with a local NGO was among the most important IP achievements. At a time when mining is taking over large tracts of land, the association is needed for farmers to get compensation from mining companies.

The local government also recognizes the association as a partner in improving the infrastructure in the local marketplace. Farmers consider this a step further towards improving the conditions for selling livestock. Beyond technologies and markets, the IP has helped connect farmers with actors who have the potential to improve conditions and attract them to invest in agriculture. ■

Project on chickpea and pigeonpea launched in Ethiopia

A new project targeting chickpea in north Gondar region of Ethiopia and pigeonpea in northern Uganda was launched in Addis Ababa, Ethiopia in July.

The project focus for the two legumes is on –

- Developing and disseminating farmer and market preferred varieties and best bet technologies;
- Collection and characterization of unique germplasm;

- Developing integrated seed systems and market value chains to improve farmers' income.

Ms Silvia Fluch and Ms Eva-Maria Sehr represented Austrian Institute of Technology (AIT); Dr NVPR Ganga Rao, Senior Scientist - Breeding (Grain Legumes), Dr Christopher Ojiewo, Senior Scientist - Legumes Breeding (ESA) and Dr Sabine Homann Kee Tui, Scientist, Markets, Institutions and Policies, represented ICRISAT at the meeting. ■



Photo: Abrham Tigist, ICRISAT

Project: Food legumes for enhanced food and nutritional security, systems productivity and profitability of smallholder farmers in Ethiopia and Uganda

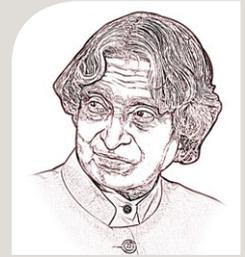
Investor: Austrian Development Agency (ADA)

CGIAR Research Program: Grain Legumes

Partners: Ethiopian Institute Of Agricultural Research, Gondar Agricultural Research Centre, AIT, Ngetta ZARDI-Lira and ICRISAT-ESA, Seed producers from North Gondar Region.

Research breakthroughs in agricultural biotechnology hold the potential for increasing crop productivity and the resistance of food crops to pests and diseases, thereby helping solve the food crisis. The future food demand cannot be met merely from incremental gains through conventional plant breeding. A quantum change in yield improvement is needed."

– Late **Dr APJ Abdul Kalam**, Former President of India and ICRISAT Ambassador of Goodwill



A tribute to Dr Kalam

ICRISAT lost one of its prominent Ambassadors of Goodwill with the demise of Dr APJ Abdul Kalam on 27 July. In June 2013 he was honored as Ambassador of Goodwill for his foresight, his support of science-based solutions, and his championing of the mission of the institute. On the occasion Dr Abdul Kalam inaugurated the greenhouse containment facility at ICRISAT's Platform for Translational Research on Transgenic Crops' (PTTC).

Vision 2020 for ICRISAT

Dr Kalam had listed research priorities for ICRISAT: development of nutritionally enhanced foods and getting them approved; analysis of barren lands in India to retrieve at least 50% in the next 10 years; and the study of water bodies to rejuvenate them by 2020.

Vision 2030 for Indian Agriculture

More recently, while releasing the Strategy Paper for Primary Sector Mission developed by ICRISAT for the Andhra Pradesh Government Dr Kalam said, "In order to address the goal of food security, India has to produce 350 million tons by 2030 as against the current production of 260 million tons in the country. With the growing

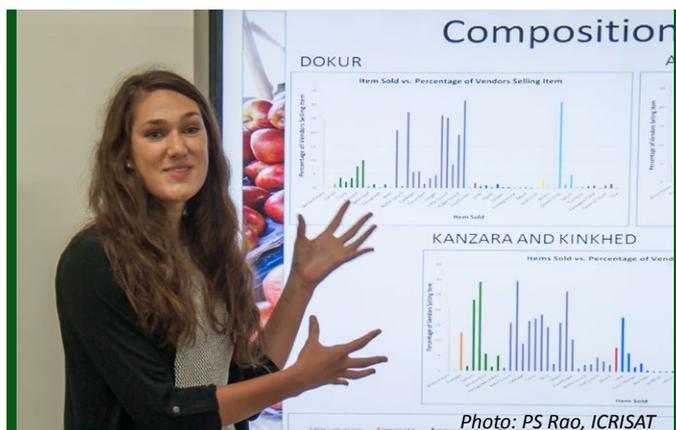


population and increasing income levels, the demand for food will increase along with growing scarcity of water and land for agricultural production."

ICRISAT mourns the death of a visionary leader and prays for his eternal repose. We express our deepest condolences to his bereaved family. ■

GenNext trained in developing a sustainable global food system

Closing the gaps in R&D of crops like sorghum, millet and cassava; enabling access to micro-nutrient dense foods for a larger population; and bringing in changes in maternal and child feeding habits can address the persistent challenges of food and nutrition security, said Prof. Prabhu Pingali, Director, Tata-Cornell Initiative for Agriculture & Nutrition, addressing students at a training on Sustainable Global Food System.



A participant at the training.

Prof Pingali's presentation on structural transformations happening in agriculture and its implications for global food systems indicated that though the transformations are not frictionless, they still contribute to agricultural and overall growth. He said there is a need to pay attention to inter-regional and intra-societal differences while governments develop and facilitate the required social safety nets. The impacts on nutrition along the entire food system also need to be carefully addressed, he stated.

A group of experts from Cornell University, Tata Institute of Social Sciences (TISS) Mumbai and Hyderabad, University of Hyderabad and ICRISAT conducted the training that was held from 20 - 23 July at ICRISAT headquarters. It was attended by 27 graduate students from TISS, Hyderabad. ■

Training course: Sustainable Global Food System: Food Policy for Developing Countries.

Investor: Tata-Cornell Nutrition Initiative (TCi)

CGIAR Research Program: Policies, Institutions and Markets

Partners: Tata Institute of Social Sciences (TISS) Mumbai & Hyderabad and ICRISAT

LAUNCHING

TAKE 2 | Highlights of Science Seminars

The new Take 2 series showcasing brief video highlights of presentations from ICRISAT's Science Seminars is for busy people interested in agricultural research and development. This series is now being launched with the first ten science seminars. <http://www.icrisat.org/icrisat-take2.htm>



Arthropods in agricultural landscapes: challenging and supporting food and fibre production.

– **Dr Nancy Schellhorn**, Spatial Ecology team, CSIRO, Australia



Spatial data infrastructure for sustainable development: Putting information and communications technologies to work for nations and communities.

– **Mark Sorensen**, General Manager, GPC Group, United Arab Emirates

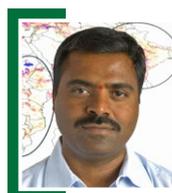
The Water, Land & Ecosystems CGIAR Research program.

– **Dr Andrew Noble**, Director, CGIAR Research Program on Water, Land and Ecosystems



Climate smart agriculture and commodity risk management.

– **Michael Ferrari**, Senior Climate Scientist & Director, aWhere, USA



Supporting the mission of ICRISAT using geospatial tools.

– **Dr Murali Krishna Gumma**, Scientist (GIS/Geospatial science), ICRISAT, India



Integration of new tools for improving genetic gain for yield in water-limited environments.

– **Dr Greg Rebetzke**, Group Leader, Breeding High Value Food Crops, CSIRO, Australia

Global Choke Point: Water-energy-food confrontations in China, US and India.

– **Dr Jennifer Turner**, Director, China Environment Forum, Woodrow Wilson Centre Washington, USA



Are we measuring what we think we are measuring? Results of two pilot studies using DNA fingerprinting for varietal identification.

– **Dr Mywish K Maredia**, Professor, Department of Agricultural, Food, and Resource Economics, Michigan State University, USA



Forward and reverse genetics for functional genomics and breeding.

– **Dr Bradley Till**, Food and Agriculture Organization (FAO)/International Atomic Energy Association (IAEA) Joint Programme, Plant Breeding and Genetic Laboratory, Austria



Next generation Mutagenesis (NextGem): Enabling endless opportunities for genetics, genomics and breeding.

Professor Guri Johal, Purdue University, USA

Farewell

The following staff members are retiring on 31 July 2015:



Mr D Rangaswamy Reddy, Technical Officer, RP – Grain Legumes, after serving the Institute for over 34 years.



Mr D Joginder Kumar, Transport Associate, FETS – Transport Services, after serving the Institute for over 18 years.



Mr P Haridas, Security Associate, Security Services, after serving the Institute for over 20 years.

On their retirement, Team ICRISAT wishes them a very happy retired life.