In Malawi, women from Phalula village are earning a good income from groundnut and pigeonpea. This empowers them to make household decisions. ICRISAT has been working with them since 2012.

**Strong seed supply chains and digital tech to power agriculture in Malawi and Zimbabwe**

*Strengthening ties with the government, donors and partners; partnerships to strengthen seed supply chains; mobile data capture, open access data; and aligning with donors and partners were some of the high points of the visit of Dr David Bergvinson, Director General, ICRISAT, to Malawi and Zimbabwe recently.*
Strong seed supply chains...from page 1

Strengthening seed supply chains in Malawi

On his visit to Malawi, Dr Bergvinson, met Mr Saulos Chilima, Vice President of Malawi. During the meeting, insights were shared and Mr Chilima said that ICRISAT should create greater awareness of its work among the people in Malawi.

Dr Bergvinson also announced the distribution of 10 tons of pigeonpea seed to about 2,000 farmers whose crops had been damaged by the recent floods. He noted that the supply of certified pigeonpea seed in Malawi is significantly short of the required 2,200 t.

Dr Allan Chiyembekeza, Minister of Agriculture, Irrigation and Water Development, articulated the fruitful and strong working relationship with ICRISAT since the early 1980s. “ICRISAT investments are aligned well with the government’s growth and development strategy, aimed at ramping-up agricultural productivity to deliver prosperity to Malawians. As a result of our partnership ICRISAT-led projects and national partners account for over 40% of the legume seed sown in this country,” said Dr Chiyembekeza.

Launch of seed warehouse and seed management information system

At the Chitedze Agricultural Research Station in Lilongwe, Irish Ambassador Ms Áine Hearns and Dr Bergvinson jointly launched an Irish Aid-funded seed warehouse and a seed management information system. Appreciating Irish Aid’s support to the Malawi Seed Industry Development Project (MSIDP), Dr Bergvinson said, “Through the MSIDP, between 2008 and 2013, the per capita annual legume consumption doubled to 9 kg, and farmers now earn an extra US$450 from legume production.”

Speaking at the launch, Ms Hearns said, “These investments for agricultural research services are part of Ireland’s larger efforts to improve access to agricultural productivity enhancing technologies in Malawi. I am gratified to see one of our strongest partners in Malawi, ICRISAT, bring to fruition the shared vision of increasing agricultural productivity of smallholder farmers.”

She observed that these investments had catalyzed a nationwide increase in seed production. “From 2008 to 2013, these investments have increased legume certified seed supply in the country from 270 tons to 2,405 tons, an 8-fold increase. Over 2 million farmers have been reached with this seed. The increased seed production necessitated a physical infrastructure upgrade to store seed and assure quality. I am happy to note that today these investments have come full cycle. We have ramped up seed production, increased storage capacity, and indeed now for the first time, have a seed system management information system in the country,” she said.

Interaction with farmers

Success has been achieved through the development of a community seed bank and intercropping experiments, thanks to a collaboration between National Smallholder Farmers’ Association of Malawi and ICRISAT since 2006. Dr Bergvinson visited a group of farmers conducting groundnut field trials in Kapili, Mchinji whose best practice has been adopted by farmers from other districts such as Ntchisi and Kasungu.

Dr Bergvinson also visited a large estate in Kakuyu, Namitete. Mr Mazur Beda, the estate manager, explained the management practices used on the 100 ha groundnut field, characterized by high plant density, use of tractors, and application of herbicide and NPK fertilizer, with an expected yield of 3 t/ha.

Mr Beda described post-harvest operations as one of the key constraints, and pointed out the huge potential of small-scale machinery for solving the issue. Dr Bergvinson spoke of the importance of establishing agronomy for estate farming, and

Dr Bergvinson and Irish Ambassador to Malawi Ms Hearns at the launch of the seed warehouse and seed management information system.
discussed plans for applying digital technologies that would integrate cloud computing, remote sensing, and financial services. “Mobile phones are a vehicle to put the technologies in place,” he said. Mr Beda suggested a tie-up between farmers’ unions and Airtel (a telecom service provider) for cashless transactions.

**Meeting with staff of ICRISAT-Malawi**

Dr Bergvinson and Dr Moses Siambi, Regional Director Eastern and Southern Africa, ICRISAT, interacted with staff and discussed the country strategy. Dr Patrick Okori, ICRISAT Representative for Malawi, presented the draft framework of the strategy; Dr Samuel Njoroge, Scientist, Legume/Cereal Pathology, discussed research efforts to tackle plant diseases in the region; Dr Taku Tsusaka, Associate Scientist, Production Economics, mapped the socioeconomic research along the value chain; and Dr Anitha Seetha, Post-doctoral fellow, Grain Legumes, introduced the issues of food safety and nutrition.

Dr Bergvinson described the ICRISAT-Agribusiness Innovation Platform as a vehicle for coordinating stakeholders along the food value chain. He further discussed the need to enhance the following areas: mobile data capture; centralized data management; open access data; longitudinal data to analyze causalities; coordination between NARS strategy and farmers’ needs; alignment of the country strategy to government mandate; harmonization with other investment organizations; mapping of donor demand and partner needs; external communication of ICRISAT contributions to community development; role of informal seed systems.

**Climate-smart crops – sorghum and pearl millet – for drought-hit Zimbabwe**

The importance of nutri-cereals such as sorghum and pearl millet in drought-hit Zimbabwe as part of smallholder farmers’ risk mitigation strategy and adaptation to climate change was highlighted during discussions between Dr Joseph Made, Minister of Agriculture, Mechanization and Irrigation Development, Government of Zimbabwe, and Dr Bergvinson.

Dr Bergvinson, who was on a visit to Zimbabwe during the first week of April, also met the Honorable Chief Shana of Jambezi village and discussed the need to improve farmers’ access to seeds of new varieties of sorghum and pearl millet.

The acute drought in Zimbabwe may lead to a 50-70% reduction in maize production, according to initial estimates by the FAO. Hence, the country would need to import a million tons of cereals as food aid. However, since sorghum and pearl millet are drought tolerant crops, farmers growing these nutri-cereals were able to secure a harvest.

Processing was identified as one of the major constraints to increasing local production and consumption of nutri-cereals. Dr Bergvinson discussed the possibility of a South-South collaboration between India and Zimbabwe with Dr Made and other government officials, Mr Ringson Chitsiko, Permanent Secretary, Ministry of Agriculture, Mechanization and Irrigation Development and Ms Danisile Hikwa, Principal Director for the Department of Research and Specialist Services. Discussions were held with various national partners to adopt models such as those developed by the ICRISAT-Agribusiness Incubator Program to support small and medium enterprises.

Dr Bergvinson took the opportunity to discuss ICRISAT’s efforts to develop country strategies in order to support governments to deliver on their mission to support the agricultural sector. The Government of Zimbabwe through the engagement with senior personnel in the Ministry of Agriculture, Mechanization and Irrigation Development, pledged their support to the development of the country strategy to deepen the Institute’s engagement and impact in Zimbabwe.
Jambezi farmers switch to sorghum and pearl millet

Farmers in Jambezi Village, Hwange District, near the iconic Victoria Falls, switched to sorghum and pearl millet and have done reasonably well despite the poor rainfall. Chief Shana emphasized the importance of the community adopting conservation agriculture, and said he will lead by example together with his community leaders.

The farmers have strong support from local government and district officials such as the Honorable Chief Shana; Mr Tapera Mugoriya, the District Administrator for Hwange; Mr Dumisani Nyoni, the Provincial Agricultural Extension Officer for Matabeleland North; and ICRISAT.

Many of these farmers have been part of a project that focused on the provision of seasonal climate forecasts through mobile text messages. These farmers have also adopted conservation agriculture and microdosing practices.

The Jambezi Small Grain Producers Association is an important reason for the farmers’ willingness to grow nutri-cereals. The association has established a nutri-cereals processing plant and farmers in the area are able to access this market easily. The local Department of Agricultural, Technical and Extension Services (AGRITEX) officials and ICRISAT have started to train farmers in seed production.

Going Digital

Digital agriculture and the use of mobile technology to enable farmers’ access to transparent and equitable markets emerged as an important theme. A Memorandum of Understanding was signed between Econet Wireless Zimbabwe and ICRISAT. This partnership will leverage Econet’s EcoFarmer initiative which aims to provide farmers with access to information such as seasonal forecasts and prices as well as agronomy related tips throughout the growing season.

During his meeting with Mr Douglas Mboweni, Chief Executive Officer, Econet Wireless Zimbabwe, Dr Bergvinson discussed his vision for using digital technology to accelerate agricultural development by using geospatial datasets, cloud computing, genomics to provide farmers with tailored, targeted and timely information.

Interaction with ICRISAT-Zimbabwe staff

Dr Bergvinson visited the various departments housed at ICRISAT-Zimbabwe and also toured the fields and living quarters. During his visit to Matopos Research Station, the Director General also discussed the development of country strategies with ICRISAT staff in Zimbabwe. All staff at the station were able to interact with the Director General to ask various questions on the strategy development process as well as other issues such as workforce planning, data management, performance-based evaluations, culture and values.
Tracking pros & cons of dietary changes
Limited diet diversity is causing some vulnerable communities in India’s drylands to suffer a double burden of both under and over nutrition despite improved economic conditions in the past 20 years. This has been shown by detailed surveys of food consumption and body mass index of people in 487 households in eight villages located in three Indian states - Telangana, Andhra Pradesh and Maharashtra. The data is from village studies conducted regularly by ICRISAT since 1976, that provide a unique insight into a wide range of information.

“Our surveys show that there appears to have been no improvement in the diversity of diets of rural men, women, boys and girls,” said Dr R Padmaja, Scientist - Gender Research, ICRISAT. “Preliminary findings reveal that starchy staples, such as rice in Telangana and wheat in Maharashtra, form the major portion of diets,” she said. “Micronutrients are found in staples and cereals, but their intake is below the recommended dietary allowance for India.”

Women’s weight gains tracked
“We found that while under-nutrition in women has halved in the Maharashtra villages since 1976, the incidence of overweight women has grown from nil to 7%, and 18% still remain underweight.

“Even though most women consumed 4-5 food groups, indicating a medium level of diversity, many were consuming calorie-dense foods.”

“We expect the high consumption of rice and wheat in some villages is due to the effect of the Public Distribution System (PDS) program which provides rice and wheat to rural households at a subsidized price,” Dr Padmaja said.

Difference in boys and girls
The surveys showed children had greater diet diversity, with the majority eating 4-5 or more than five food groups. Some only ate 2-3 food groups, but this varied between study districts.

“A significant finding was that boys generally had greater diet diversity than girls, indicating preferential feeding in some areas, although this was not the case across the board,” Dr Padmaja said.

Unknown disease impacts
Despite moderate to high diversity in diets, the prevalence of stunting (low height for age) in children was high in some Maharashtra villages.

“This could be due to insufficient food intake or the result of disease, especially water-borne infections. This has raised an important question as to the impact of sanitation on nutrition, and the absorption of nutrients.”

Policy implications
Before the introduction of subsidized rice and wheat, sorghum and pearl millet were consumed in high quantities. These grains are considered a poor person’s diet, even though they are more nutritious.

The increase in obesity can also be attributed to the increased consumption of fast foods and lifestyle changes like increased mechanization and shift of livelihoods to non-farm work.

“The concern is that these changes are contributing to the growing levels of lifestyle-related diseases like diabetes and hypertension in the community.”

“A better understanding of these patterns can help guide policies and programs to address malnutrition and multiple micronutrient deficiencies. We plan to exploit the survey data further to look for answers to the seemingly chronic reasons why income appears to be a small factor in changing nutritional status,” said Dr Padmaja. More information http://www.slideshare.net/icrisatsmco/arm6-session604gendernutritionpadmaja-nx-powerlite

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Project: Village Dynamics in South Asia

Investor: Bill & Melinda Gates Foundation

Partners: IRRI & Socio-Consult, Bangladesh, ICAR-RCER, IIWM, NIAP and ICRISAT, India
Giving back to society

Reiterating the long and deep relationship between the Sehgal Foundation and ICRISAT, Dr Suri Sehgal and Ms Edda Sehgal, of the Sehgal Foundation visited ICRISAT this week.

“The association between the Sehgal Foundation and ICRISAT goes back 15 years and they came at a time when funding was very difficult for agricultural research and they really made a difference to help us keep the efforts moving,” said Dr HD Upadhyaya, Director Genebank, ICRISAT. The Foundation has helped fund research on sorghum, pearl millet, biotechnology and community watersheds, and has supported students and visiting scientists. The Foundation has a team based at ICRISAT that undertakes research on maize improvement.

Since 1999 the Sehgal Foundation has supported community-led rural development in India, with key programs addressing agricultural development, water management and good governance, with a strong theme of women’s empowerment.

The book Seeds for Change which chronicles the journey of the Sehgals, was launched at a ceremony in Hyderabad this week. From humble beginnings, Dr Sehgal gained admission to Harvard University to complete his PhD in plant genetics. He subsequently worked in corn breeding and held various international positions before establishing his own successful hybrid seed companies. The Sehgals have now translated their business success to philanthropic leadership and values.

“Once we achieved wealth, as a family we felt very strongly it was time for us to give back to society, and particularly to help uplift the rural people in my country of origin, India,” Dr Sehgal said at the launch.

Chickpea farmers field day in Odisha

The newly approved project ‘Promotion of Improved Chickpea Varieties in Rice Based Cropping Systems of Odisha’ funded by Rashtriya Krishi Vikas Yojana, Government of Odisha, held its first Farmers Field Day in four sites at Keonjhar and Mayurbhanj districts from 31 March to 4 April. Government officials and 235 male and 74 female farmers participated in the event and shared their experiences in cultivation and performance of the improved chickpea varieties introduced in their area.
Identifying the genetic architecture of complex traits in chickpea

To identify and dissect the genetic architecture of complex traits in chickpea, a specifically designed Nested Association Mapping (NAM) population of chickpea is being developed.

Currently, field-based phenotyping of 3,000 chickpea lines from the composite collection is being carried out at six national agricultural research system (NARS) locations in India. These lines are also being re-sequenced at ICRISAT. This project brings together six partners including four NARS institutes, ICARDA and ICRISAT to use the chickpea genome sequence for its improvement.

At the inaugural session of the meeting on ‘Utilizing Chickpea Genome Sequence for Crop Improvement’, Dr Dharm Pal Malik, Additional Commissioner (Crops), Department of Agriculture and Cooperation (DAC), Ministry of Agriculture, Government of India, spoke of the need for improved chickpea to meet the goal of nutritional food security.

Dr NP Singh, Director, IIPR, explained how the project will help translate genomics research for chickpea improvement.

The project includes partners from all the major chickpea growing regions in India. All the centers presented the progress on the project activities. In addition, ideas for improving the implementation as well as planning activities for the forthcoming season of the project were discussed. Prior to the meeting, ICRISAT team visited the chickpea field trials at several partner locations.

This meet was hosted by the Indian Institute of Pulses Research (IIPR), Kanpur, on 11 April.

This project is being undertaken as part of the CGIAR Research Program on Grain Legumes.

Investor: Department of Agriculture and Cooperation (DAC), Ministry of Agriculture, Government of India under centrally sponsored scheme National Food Security Mission-Pulses

Partners:
- NARS partners – Indian Institute of Pulses Research (IIPR), Kanpur; Rajasthan Agricultural Research Institute – Durgapura (RARI); Junagadh Agricultural University (JAU)-Junagadh; and RAK College of Agriculture (RAKCA)-Sehore
- ICARDA and ICRISAT

Dryland Cereals Competitive Grants 2015

To build stronger collaborations, strengthen partnerships and to deliver innovative, practical and adoptive technologies to farmers, the CGIAR Research Program for Dryland Cereals (Dryland Cereals) is launching the Dryland Cereals Competitive Grants Scheme. Innovative proposals are invited from partners for the Dryland Cereals Competitive Grants 2015. The research proposals should be aligned with Dryland Cereals focus crops (barley, finger millet, pearl millet and sorghum) and its thrust research areas including priority setting, adoption, crop improvement, crop management, seed systems, postharvest technologies, processing, health/nutrition, input- and output-market access.

All applications should be submitted online by 8 May. The results will be announced by end of May. The projects are expected to start from 1 June 2015, and will complete by end of May 2016.

Welcome

Mr Kunal Sarkar, an Indian national, joined ICRISAT-India, as Senior Manager – Human Resources on 14 April. He will be leading the Recruitment and Compensation & Benefits teams.

Mr Sarkar is a graduate in Commerce and has done his MBA in Human Resources from ICFAI University, India. He has over nine years of experience in the private sector with companies such as Hutchison, IBM and Wipro across different verticals in HR. Prior to joining ICRISAT, he was with Dr Reddy’s Laboratories, Hyderabad, as HR Lead for Asia Pacific countries. Mr Sarkar comes with knowledge of diverse industries, geographies and cultures. He has also successfully spearheaded multiple projects on manpower optimization, HR systems and talent management.

We welcome Mr Sarkar to Team ICRISAT and wish him all success.

Readers’ comment

I particularly liked the story on the VDSA. A lot has been made in the past 10 years or so in the States and in business circles of the importance of understanding one’s customers’ need through a type of social anthropology. And you have been doing this now for 40 years. Spectacular!

— Dr Neal Gutterson, Vice President of Agricultural Biotechnology, DuPont Pioneer, USA

Glad to go through ICRISAT happenings dated 27 March. Based on ICRISAT’s interventions in Kenya, I am sure the sorghum production system will improve in that country. Glad that the first hybrid pigeonpea has been released by ICRISAT in Orissa state. This will surely improve the production in the state.

— Dr GR Maruthi Sankar, Principal Scientist, Agricultural Statistics, AICRP, Central Research Institute for Dryland Agriculture

Dear friends

I would like to share with you insights of farmers, policy makers, entrepreneurs, development donors and more as I travel to the field and visit people who are changing the world. I would also really appreciate your views on the issues and opportunities being highlighted.

I made a commitment that in my first 100 days I would visit all 7 countries in Africa where ICRISAT has an office. I am almost there and keen to share with you the inspiration and learnings from the people on the ground.

I started in West Africa in the harsh farming environments in Mali, seeing women displaying their produce at the annual agricultural show in Niger, and speaking about scaling out new technology using innovation platforms at a workshop in Senegal - and now I am in Southern Africa visiting Malawi where farmers are reaping the rewards of growing improved groundnut, in Zimbabwe where farmers growing resistant crops like millets are faring best in a severe drought.

I encourage you to share your comments or sign up to receive the latest posts. See http://dgblog.icrisat.org/

— David Bergvinson