Consultations held in Mali and Malawi

Aligning CGIAR interventions with country priorities and agendas

With the objective of integrating the work of various CGIAR institutions across a country, national-level site integration meets were held in Mali and Malawi. The discussions centered around how the CGIAR centers and the CGIAR Research Programs (CRPs) can better support country level agricultural research for development agendas and priorities; need for integration and mechanisms for resource mobilization.

Participants at the 2-day consultations at Mali and Malawi represented the government, NGOs, donors, private sector, farmer groups and CGIAR centers.

National Consultation in Mali

The objectives of the two-day consultation were:
- To understand priority needs of the national clients
- To understand how efforts of CGIAR can complement those of other partners and national programs
- To develop a national integration plan for Mali
- To develop a plan for tracking progress and assessing impact of integrated implementation
- To develop resourcing modalities for implementing the integrated plan
- To develop governance structure, communications plans and coordination mechanisms.

The gaps and opportunities for integrated implementation of agricultural research for development in Mali were identified and discussed. The need to define common monitoring and evaluation systems were highlighted.

Working groups were formed to reflect on: (i) key features of integration, (ii) principles for site selection and integrating actions, and (iii) effective collaboration and cooperation. The discussions emphasized the operational aspects of integration. Resource mobilization emerged as a major issue and participants agreed that innovative strategies are required both at the CGIAR and national systems to achieve this.
"In any case, resource mobilization should be considered at two levels: one that supports strategic research and the other to target applied research with the aim to achieve immediate solutions and impacts. The private sector is likely to support this for immediate impact and change in the livelihoods of farmers. Still there is a need to sustain strategic research with funding from traditional funding sources," said Dr Joseph Sedgo, Country Head, Alliance for a Green Revolution in Africa (AGRA), Mali.

As the CGIAR centers and partners work toward integration, it is necessary that monitoring and impact evaluation takes place smoothly and in a collaborative manner without creating additional workload. To enable participants appreciate the challenges of blending different monitoring and evaluation approaches and methodologies by different centers and partners a presentation was made by Dr Hippolyte Affognon, Senior Project Manager, ICRISAT.

"Major challenges in integration as we’ve experienced with some projects will be to harmonize protocols; organize joint visits and learning events as each partner has its own agenda. We can learn from previous projects that attempted this approach," shared Dr Jean Baptiste Tignegre, Vegetable Breeder, World Vegetable Center (AVRDC).

The communications opportunities in integration of CGIAR sites to create mutual understanding, strengthen relationships among site stakeholders and thus avoid duplication were shared by Ms Agathe Diama, Regional Information Officer, ICRISAT-Mali. Strategies would include joint visits, events, studies, survey, supporting ‘peer exchange and learning’ visits, as well as Innovation Platforms.

During the closing event Dr Ramadjita Tabo, Regional Director for West and Central Africa, ICRISAT, shared with the participants the next steps and said a summary report of this meet will be submitted to the CGIAR Consortium Office.

The consultation was held on 1-2 March at ICRISAT-Mali and was attended by about 70 participants from various sectors.

**National Consultation in Malawi**

In Malawi, the idea of site integration received the backing of the Ministry of Agriculture, Irrigation and Water Development (MoAIWD) and Mr Bright Kumwembe, Chief Director, MoAIWD, appreciated CGIAR for the idea, as it would help reduce duplication and wastage of resources particularly where several organizations were conducting similar activities in isolation. He expressed optimism that concrete interventions would see the CGIAR Centers and their partners focus in a collective manner and contribute to the national priorities.

The Ministry of Economic Planning and Development, outlined the Malawi Growth and Development Strategy (MGDS), which are the country’s eight key priorities and of which agriculture and food security is the top priority.

Although there were some examples of CGIAR centers working together, major challenges arose due to different project timelines and divergent interests or targets of donors.

Presentations by the various CGIAR centers brought forth the overlapping areas and the need for greater collaboration and alignment.

The problems affecting Malawi’s agricultural priorities were also discussed, which included climate change, seed systems, land holdings, appropriate technologies to achieve sustainable production and productivity, women and youth in agriculture, excessive reliance on rainfed agriculture and low levels of agricultural mechanization.

The consultation held on 18-19 February, had about 80 participants from diverse sectors, including smallholder farmers. The Farmers Union of Malawi outlined their expectations of stronger collaboration with CGIAR Centers and other partners for the benefit of smallholder farmers.


EIAR celebrates its Golden Jubilee

ICRISAT congratulates the Ethiopian Institute of Agricultural Research (EIAR), a major institutional partner in Ethiopia on their Golden Jubilee.

ICRISAT has a long history of collaboration with EIAR. Key areas of contribution include providing access to germplasm resources from ICRISAT genebank, developing and sharing of elite parent material, supporting development and release of varieties with tolerance to major biotic and abiotic stresses, contributing to sustainable management of natural resources and intensification of the systems and building research capacity of institutions and individuals.

Over the years, Ethiopia has availed more than 11,000 accessions from ICRISAT genebank and used in its breeding program to develop improved varieties of mostly chickpea and sorghum. One of the most visible successes is for chickpea which won the prestigious National Science, Technology and Innovation award. About 15 of the 24 chickpea varieties released nationally, many of which are widely adopted by farmers, are based on genetic material from ICRISAT. Availability of diversified sorghum and finger millet breeding materials lead to development and release of several widely adopted varieties that include Dinkmash (ICSV 1 (SPV 351), ESIP 11 (IS 9302), ESIP 12 (IS 9323), 76 T123 (IS 76), Macia, Melkamash and two hybrids ESH1 and ESH2. Most of the groundnut varieties and the pigeonpea variety released in the country are also from ICRISAT material.

In addition, ICRISAT has active collaboration with EIAR in natural resource management especially in the areas of watershed management, sustainable intensification and adapting to climate change, which was built on the foundations of the joint vertisol project of late 1980s.

Established in 1966 as Institute of Agricultural Research (IAR), EIAR grew over the years to become one of the largest national agricultural research institutes in Africa. During a press briefing, Dr Fentahun Mengistu, Director General, EIAR, outlined the many achievements of the institute which included, among others, release of over 1,035 improved crop varieties, 36 export quality specialty coffee varieties and animal breeds, capacity building of stakeholders and technology dissemination, collaboration with various national and international R&D institutes on strategic areas, contribution to development and support of agricultural policies and strategies. EIAR also recognizes the imminent challenges of climate change for Ethiopian agriculture, including the disastrous effects of El Niño in 2015-2016.

The celebrations, which concluded on 28 February, were marked by a number of events that included travel workshops, symposiums and conferences, national agricultural technology exhibition and television programs organized under two themes ‘50 Years of Service for Ethiopian Agriculture’, and ‘Agricultural Research for Ethiopian Sustainable Development and Renaissance’. The events showcased the achievements and impacts over the last 50 years and put the future agricultural directives in line with ensuring national renaissance.

ICRISAT participated in and contributed to many of these events. Dr Tilahun Amede, Principal Scientist - Natural Resources/Systems Agronomy, ICRISAT-Ethiopia, and Dr Christopher Ojiewo, Senior Scientist - Legumes Breeding, ICRISAT-Ethiopia, participated in the inaugural event on 26-27 January.

Dr Amede, chaired two sessions on the thematic area of ‘Land and Water Research in the last 50 years’. He also served as one of the three panelists in the one-day plenary forum ‘Natural Resources Research for Development and Resilience’ held on 25 February at EIAR. Dr Ojiewo participated in the Researchers’ Forum.

ICRISAT put up a stall at the exhibition highlighting its work. The response from the visitors at the stall was very positive and many have registered to receive copies of various ICRISAT publications on display.

Among the major events organized as part of the Golden Jubilee celebrations are ‘National Conference on Agricultural Research for Ethiopian Renaissance’ on 27 January, ‘EIAR Crop Research 50 year anniversary Symposium’ on 22 February, ’National Agricultural and Technology Exhibition’ during 25-27 February, ‘Researchers’ Forum’ on 26-27 February, and national symposiums by various directorates between 23 and 26 February. At the closing ceremony on 28 February the President of Ethiopia, HE Dr Mulatu Teshome, and Mr Ato Tefera Deribew, Minister of Agriculture also participated.

To know more on Ethiopia
http://exploreit.icrisat.org/page/ethiopia/696
International Women’s Day celebrations at ICRISAT

On 8 March, the women staff at ICRISAT, Patancheru came together to celebrate International Women’s Day. The program included interacting with three amazing women on topics of women’s health, work and on child birth.

One of the experts was Dr Sarada, a consultant Obstetrician and Gynecologist at the Continental Hospital. She interacted with the women on the topic of women’s health in their 40s and 50s. Dr Vijaya Krishnan, a passionate advocate and practitioner of natural birth practices and the Cofounder and Director of Healthy Mother Wellness and Care, was the other expert who shared her experience and thoughts on healthy mother and work place related issues. Ms Joanna Kane-Potaka, Director - Strategic Marketing and Communication, ICRISAT shared her observations of how women in the work place can improve their contribution and grow within the organization.

This was followed by fun activities.

Gender projects in ICRISAT
http://exploreit.icrisat.org/page/gender/660
http://www.icrisat.org/empowering-women/

ICRISAT is committed to the Pledge for Parity (#PledgeForParity) for its women employees and the farmers we serve through our science and partnerships. To this end, I will be setting up a mentoring program convened by myself as the head of ICRISAT to support our dedicated women to realize their full potential. In doing so, ICRISAT will realize its full potential as an organization to improve the livelihoods of smallholder farmers and their families in the Semi-Arid Tropics of South Asia and sub-Saharan Africa.

I am especially proud and impressed with the dedication and passion of our women staff to make a difference in the lives of smallholder farmers – especially women farmers who play such a vital role in agriculture around the globe.

Happy International Women’s Day!

Dr David Bergvinson
Director General, ICRISAT
Launch of ICRISAT Women’s Forum – India

On International Women’s Day, the ICRISAT Women’s Forum, India, was launched by Dr Shoba Sivasankar, Director, CGIAR Research Programs Dryland Cereals and Grain Legumes.

The forum has been set up to increase co-operation and co-ordination, strengthen links between women employees; provide a forum for expression and exchange of views; plan initiatives and trainings to equip women employees for enhanced roles and responsibilities; and identify and address critical needs of working women.

Women in Agriculture

In this series speakers talk about the challenges women face in agriculture and how suitable policies, training, education etc., can empower them to play a significant role in ensuring food security for their families. This series was launched on International Women’s Day at ICRISAT. View videos here: http://www.icrisat.org/100-voices/

“The challenges range from empowering women, giving them the rights to capital - for example land, financing, inputs.”
Prof Wendy Umberger, Board member, ICRISAT; and Professor and Director, Global Food Studies, Faculty of the Professions, University of Adelaide, Australia

Ms Gloria Afolayan, National Centre for Genetic Resources and Biotechnology (NACGRAB), Nigeria; and PhD Scholar, West Africa Centre for Crop Improvement (WACCI), University of Ghana

“In order to empower more women in agriculture, women have to be taught, especially those who are not well educated.”
Ms Marzia Sadaat, Community Mobilizer, International Center for Agriculture Research in the Dry Areas (ICARDA), Afghanistan

“Women in Afghanistan are very strong and they are successfully working in agriculture. If the conditions are more favorable, they can do other activities in the agricultural sector.”

Dr Albertus Kamanzi, Research Fellow, Institute of Rural Development Planning (IRDP), Dodoma, Tanzania

“The land where women work does not belong to them, so there is no incentive for their work.”

Dr Claudia Ringler, Deputy Director, Environment & Production Technology Division, International Food Policy Research Institute, IFPRI

Dr Polly Ericksen - Programme Leader, Livestock Systems and Environment, International Livestock Research Institute (ILRI)

Dr Padmaja Ravula, Senior Scientist – Gender Research, ICRISAT - India

Dr Alison Bentley, Programme Leader, Trait Genetics, The John Bingham Laboratory, National Institute of Agricultural Botany (NIAB), Cambridge, United Kingdom
Building future agriculture entrepreneurs

Six unemployed South African youth, some having passed only their matriculation, completed their 4-month agricultural training program at ICRISAT-India. Building on the south-south collaboration framework, the initiative, supported by the South African government, is an effort to open up opportunities in the agricultural sector for youth in the region.

“This comes at a time when youth development as well as agriculture are top priorities of the South African government,” says Mr Mkhululi Mankazana, South African Minister Counsellor for Agricultural Affairs, South African High Commission, New Delhi, India, who presented the completion certificates to the trainees on 7 March at ICRISAT-India. Stating that there already exists a framework of cooperation between India and South Africa, Mr Mankazana said that the next step was identification of areas for research collaboration between institutions across the two countries.

The three women and three men are from Tshwone City, Gauteng province of South Africa, where the youth unemployment rate is about 33%. “The average age of farmers involved in primary agriculture in South Africa is 54-55 while the involvement of youth is minimal,” said Mr Mankazana. “There is a need to make agriculture an interesting and profitable for the youth of the country,” he added.

“South Africa has neglected agriculture training for a long time. Agriculture training is a priority and with the training at ICRISAT we hope these youth will become leaders,” said Dr Sam Motsuenyane, eminent entrepreneur and patron of the Dr Sam Motsuenyane Rural Development Foundation, which made it possible for the six youth to come to India.

Back home the trainees were unemployed. Many of them had only passed their matriculation and were scouting for better prospects. During their stint at ICRISAT, they were mentored by scientists from the ICRISAT Development Center (IDC) and the ICRISAT-Agribusiness Innovation Platform (AIP). The trainees trained on areas ranging from establishing seed business, groundnut confectionery setup to establishing constructed wetlands for wastewater treatment and reuse. They spoke about involving the youth and women in these interventions during implementation.

“Today’s youth are not aware of the potential in agriculture. It is not just limited to farming in fields, but there are a host of opportunities like agribusiness, where youth can engage themselves,” says Ms Lilly Thato Mabonela, one of the trainees. She wants the government and other organizations to do more to attract youth towards agriculture, like conducting awareness workshops in schools and colleges and offer free education to the disadvantaged youth of India and Africa.

“I am a matriculation pass, unemployed, married with two children and having to support the family. I was interested in entrepreneurship, saw the opportunity that could open up through the ICRISAT training program and was lucky to be accepted,” says Mr Page Baloyi, who, during the training program has prepared a business plan to set up a groundnut incubator on returning to South Africa. He sees this as an employment opportunity for many youngsters and women in the region.

“One thing that drives me is bringing about change,” says Ms Kagiso Bogoshi. She plans to set up a village seed bank.
Global Survey Shows Shortfall in Research Investment in Pulses

Results of the ‘Global Pulse Productivity & Sustainability Survey’ indicates that the annual investment in pulses is about US$175m for the 13 crops in the pulse category, while billions are invested into other crops such as corn. A media release about the report was issued by the Global Pulse Confederation during the Pan African Legume conference in Zambia on 1 March.

The survey highlights the concern among leading agricultural research institutions and personnel that the current level of research funding in pulses is too low and may impact efforts to improve food security and agricultural sustainability.

“Bottom line: we need a 10-fold increase in pulse research funding,” says Huseyin Arslan, President of the Global Pulse Confederation, which commissioned the survey. “With over 800 million people suffering from acute or chronic undernourishment, increasing pulse research is vital. We can only meet the world’s protein needs with better varieties of chickpeas, peas, beans, and lentils.”

Several common themes emerged from the surveys, with the overarching visions for pulse crop research not varying a great deal between developed and developing nations. There is a strong desire and action across all national and global research and funding agencies to develop genomics tools for breeding programs, conduct state-of-the-art breeding programs for improvement in genetic gain, pest resistance and quality, improve crop production and crop protection practices, produce food sustainably, transfer information in a useable form, help make farming profitable, and develop new resilience in crops to meet climate change challenges, including drought and heat. In addition, all global funding agencies mention ending chronic hunger, providing nutritional foodstuffs to end malnutrition, and focusing on maternal health and the gender gap. These themes resonate around the world and across economies.

“Investments in pulses research have the potential for significant agricultural impact. The high nutritional value and climate resilience traits of pulses are well established to fight the global challenge of hidden hunger, poverty and environmental degradation, especially for the vulnerable populations of sub-Saharan Africa and Asia,” says Shoba Sivasankar, Director, CGIAR Research Program on Grain Legumes.

“With investment in crop improvement and agronomy research, pulses can be made resilient to climate change as well as diversify income sources for farmers. Focused research efforts creating expanded value-added marketplace for pulses will generate new market opportunities for farmers to make farmers prosperous as well as modernize our food system to become more sustainable, equitable and nutritious,” says David Bergvinson, Director General, ICRISAT.


First six underprivileged South African youth trained.... from page 6

for women in her community as a micro-enterprise and empower other women and youth to develop the same. This will help establish seed security. “For good quality seeds, a good source is needed and this is where I would like ICRISAT’s support,” she said.

The trainees consider themselves as a team and plan to share resources and work together on their return. A few of them plan to complete their higher education and some want to pursue agriculture related studies. As expressed by Mr Karabo Mphaphuli, “Future is looking bright for all of us,” he said, “I plan to further my education, starting from the bottom if needed, in agricultural economics, to help in building up the agri-business venture I plan to establish.”

“There is a need for a regular structured orientation program. This includes putting in place a system for intake and a system for measuring the quality of output; a follow up and hand holding process; and a funding arrangement,” said Mr SM Karuppanchetty, Chief Operating Officer - Agribusiness Incubator Program, AIP.

“There are three dimensions in which ICRISAT can contribute to bringing school dropouts and youth into agriculture. The first dimension is to enable youngsters understand agriculture (cultivation practices, technologies and commodities). The second dimension is to enable them to become agri-entrepreneurs. The third dimension is to establish a continuous program that opens opportunities for youth to enter the agriculture sector,” said Dr K V Raju, Principal Scientist and Assistant Director, ICRISAT Development Center, Asia.

The training program with funding from the Dr Sam Motseunyane Rural Development Foundation and support of the South African government through its Human Resource initiative, was coordinated by the Learning Systems Unit of ICRISAT.

To know more about IDC  http://idc.icrisat.org/
To know more about AIP http://www.aipicrisat.org/

Watch Mr Obakeng Nonyana, who plans to establish a constructed wetland to treat wastewater for reuse, talk about youth in agriculture. https://youtu.be/ZE7PwxXQvyc

Look out for videos of the rest of the trainees and others, in the “100 Voices –Youth in Agriculture” series that will be launched in Happenings next week.
New publications

State, Governance and Financing India’s Development
Editors: K Gayithri and KV Raju

Abstract: The edited volume provides a compilation of debates which deliberate how a development model should be designed and how it can produce socially just, sustainable and dynamic growth. The contributors focus on the best socioeconomic development path in Asia and beyond. The concept of the book arose as a result of an international EOT (Economy of Tomorrow) seminar series which assembled leading economic thinkers and policymakers from both Asia’s and Europe’s key economies.

The book has a topical significance in the current socioeconomic scenario. The huge infrastructure inadequacies and social development concerns arising in the context of all ill-designed public investments compensated by private investments is a major challenge that India would face in achieving higher rates of economic growth and human development. The chapters in this volume examine the nature of development experience in some key select sectors in the backdrop of planned intervention by the government. The empirical verification of the impact of state intervention discussed by different contributors provides an overall view of the effectiveness with which public policies have been translated into real development.

Draft Genome Sequence of Adzuki bean, Vigna angularis


Published: 2015. Scientific Reports, 5 (8069). pp. 1-8. ISSN 2045-2322

Abstract: Adzuki bean (Vigna angularis var. angularis) is a dietary legume crop in East Asia. The presumed progenitor (Vigna angularis var. nipponensis) is widely found in East Asia, suggesting speciation and domestication in these temperate climate regions. Here, we report a draft genome sequence of adzuki bean. The genome assembly covers 75% of the estimated genome and was mapped to 11 pseudo-chromosomes. Gene prediction revealed 26,857 high confidence protein-coding genes evidenced by RNAseq of different tissues. Comparative gene expression analysis with V. radiata showed that the tissue specificity of orthologous genes was highly conserved. Additional re-sequencing of wild adzuki bean, V. angularis var. nipponensis, and V. nepalensis, was performed to analyze the variations between cultivated and wild adzuki bean. The determined divergence time of adzuki bean and the wild species predated archaeology-based domestication time. The present genome assembly will accelerate the genomics-assisted breeding of adzuki bean.

http://oar.icrisat.org/9295/

Innovation Platform: Method to Engage Crop-Livestock Stakeholders in West Africa

Authors: Jarial S, Ajeigbe HA, Yahaya S, Issa S and Nouri MK
Published: 2015. International Journal of Agricultural Extension, 3 (3). pp. 201-207. ISSN 2311-8547

Abstract: With an objective to understand the process on how can research (ers) in innovation platforms contribute in engaging crop-livestock stakeholders in mixed –farming systems of the semi-ard tropics of West Africa, five innovation platform meetings were initiated. The trans boundary transect between Nigeria and Niger called as Katsina Kano and Maradi (KKM) five villages was purposively selected as action site. Apart from innovation platform methodology, mixed methods using quantitative and qualitative methods like- structured questionnaires, focused group discussions, interviews (semi structured, face to face, unstructured) with farmers and stakeholders; direct observations, information from participants in various meetings and discussions during innovation platform meetings and site visits were undertaken. Following the analytical framework of innovation methodology data was coded and characterized to identify the role of researchers in innovation platforms to contribute in engaging crop-livestock stakeholders in mixed –farming. Results indicated that research and innovation platforms can engage stakeholders for a win –win situation. Demand driven research strengthens innovation platforms: researchers work is better informed, more systematic and more authentic. Researchers help in understanding in the Innovation platforms challenges faced by different stakeholders, through diagnostic exercises, visioning, and needs assessment. Platforms strengthen research by feedback so that it is more likely to be adopted. Researchers contribute to innovation platforms through traditional research, b) by knowledge management and action research; c) enabling environment; d) network brokering and mobilising funds. However, researchers face constraints associated with innovation platforms sustainability because of fixed budgets, staff time and resources. For sustainability of innovation platforms it should governed locally.

http://oar.icrisat.org/9295/

A Reliable Method for Phytophthora cajani Isolation, Sporangia, Zoospore Production and in Planta Infection of Pigeonpea

Authors: Sharma M and Ghosh R
Published: 2016. Bio-protocol, 6 (2). 01-09. ISSN 2331-8325

Abstract: Phytophthora blight caused by Phytophthora cajani (P. cajani) is a potential threat to pigeonpea (Cajanus cajan L.) production, affecting the crop irrespective of cropping system, cultivar grown and soil types. The primary mode of infection of P. cajani is sporangium and zoospore. Therefore, sensitive and reliable methods for zoospore production and estimating infection severity are desirable.
in case of Phytophthora blight of pigeonpea (Sharma et al., 2015). Here we present a protocol for isolation of P. cajani from infected plants, sporangia and zoospore production and in planta infection technique of pigeonpea seedlings. These methods will be important tool to devise a platform for rapid and reliable screening against Phytophthora blight disease of pigeonpea as well as for host x pathogen x environment interaction studies.

http://oar.icrisat.org/9296/

Identifying Determinants, Pressures and Trade-offs of Crop Residue use in Mixed Smallholder Farms in sub-Saharan Africa and South Asia


Published: 2015. Agricultural Systems, 134. pp. 107-118. ISSN 0308-521X

Abstract: The objective of this paper is to provide a comparative analysis of the determinants of crop residues (CR) use and to examine some options to cope with pressures and trade-offs in 12 study sites across sub-Saharan Africa and South Asia. Drawing on socioeconomic data at household and village level, we describe how cereal intensification and livestock feed demand influence use, pressures and trade-offs of CR use across study sites, specifically cereal residue. Our results show that in low cereal production and livestock feed demand sites, despite a low demand for CR and availability of alternative biomass, pressures and trade-offs of CR use are common particularly in the dry season. In sites with moderate cereal production, and low–moderate and moderate livestock feed demand, alternative biomass resources are scarce and most residues are fed to livestock or used to cover household needs. Subsequently, pressures and potential trade-offs are stronger. In sites with low cereal production and high livestock feed demand, pressures and trade-offs depend on the availability of better feed resources. Finally, sites with high cereal production and high livestock feed demand have been able to fulfil most of the demand for CR, limiting pressures and trade-offs. These patterns show that agricultural intensification, better management of communal resources and off-farm activities are plausible development pathways to overcome pressures and trade-offs of CR use.

http://oar.icrisat.org/9299/

Exploring Root Development and Architecture in One of the Most Heat and Drought Tolerant Cereals, Pearl Millet


Abstract: To better understand pearl millet root growth pattern in soil and the impact of drought stress, we used the Hounsfield CT Facility (University of Nottingham). This allowed us to non-invasively analyze over time the soil volume explored by the pearl millet root system under different moisture conditions. Using the RootTrace facility (University of Nottingham), we performed high-throughput phenotyping of a set of 108 genetically diverse pearl millet inbred lines, monitoring their early seminal root growth. These phenotypic data will be combined with genotyping-by-sequencing (GBS) data in order to identify genomic regions controlling this trait via genome-wide association studies (GWAS).

http://oar.icrisat.org/9298/

Smallholder Farmer Perceptions on Climate Change and Variability: A Predisposition for their Subsequent Adaptation Strategies

Authors: Jiri O, Mafongoya P and Chivenge, P


Abstract: This study was conducted in Chiredzi district, Masvingo, Zimbabwe. The study objective was to examine farmer perceptions on climate variability, current adaptive strategies and establish factors influencing smallholder farmers’ adaptation to climate change. A survey was conducted with 100 randomly selected respondents from four wards. Additionally, data was collected through focus group discussions and key informant interviews. The results showed that farmers perceived that there has been a decrease in annual rainfall and an increase in average temperatures. A linear trend analysis of rainfall and temperature data from 1980 to 2011 corroborated the farmers’ perceptions. Farmers’ adaptation options included adjusting planting dates and crop diversification. Off-farm income has reduced the dependence of the farmers on agriculture. A multinomial regression analysis showed that socioeconomic factors such as gender, age, number of cattle owned, land size and average crop yields influenced farmer adaptation strategies. The study concludes that although farmers are diverse in their socio-economic attributes, they exhibit homogeneous perceptions on changes in climate, which are consistent with observations of empirical climate data. These perceptions help to shape smallholder farmer coping and adaptation strategies.

http://oar.icrisat.org/9297

Comparative Analysis of Fodder and Grain from Dual Purpose Barley vis-a-vis Local Variety in Hills of Uttarakhand, India.

Authors: Jaria J


Abstract: Central to the challenge of feed scarcity in hills of Uttarakhand, trials were conducted in two location of Tehri Garhwal and Pithoragarh districts, Uttarakhand, India, for fodder grain and residue yields under different management. Fodder quality of the feed was analyzed using proximate principles. Results revealed that, the improved variety BHS 380 performed better in terms of fodder, grain and straw yields. Location wise, the
**Condolence**

Mr Eric Malcolm McGaw passed away on 3 March. During his tenure with ICRISAT he served as Research Editor from 1989-92; Public Awareness Officer during 1992-97 and from 2001 to 2004 he was Head, Communications, in the erstwhile Project Development and Marketing Office (presently Strategic Marketing and Communication).

Mr McGaw, born on 4 October 1948, was an American citizen. He had many achievements to his credit, some of which were: Silver award for writing from Agricultural Communicators in Education (ACE) in 1996 for the series Food from Thought; Gold award for Four Color Special Report in 1996 from ACE for the ICRISAT Southern and Eastern Africa Region Annual Report 1995; Author of Improving the Unimprovable, ICRISAT’s successful nomination for the King Baudouin Award 1996.

He is survived by his wife Elena and three children.

Mr EM Vinod Kumar Security Supervisor, Security Services, passed away on 23 February.

Mr Kumar joined ICRISAT on 22 March 1993 as security guard in Security Services. He served the Institute for over 22 years.

He is survived by his wife Ruthamma and two children.

Team ICRISAT conveys its condolences to the family members of Mr McGaw and Mr Kumar at this time of loss.

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**Reader’s Comment**

Sorghum and pearl millet are still the most important weaning staples in sub Saharan Africa. This breakthrough (high iron sorghum variety in Nigeria) is by no means a small feat to us. Wishing ICRISAT more successes in its efforts to stem the tide of hunger and malnutrition in the developing world.

*MD Magaji,*
Agricultural Research Council of Nigeria, Abuja

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**New publications.... from page 9**

performance in terms of grain and straw yield was commendable in Pithoragarh compared to Tehri Garhwal. In Tehri Garhwal BHS 380 produced substantially higher quantities of grain (4.78t-ha), straw (7.31t-ha) besides 3.78t-ha of green fodder during lean season, likewise in Pithoragarh district BHS 380 yielded higher quantity of grain (7.23 t-ha) and straw(13.80t-ha) besides 1.28 t-ha of green fodder during lean season, under delayed sowing in December. Crude protein in green fodder of BHS 380 was more than the local and can result in quality feeding in fodder scarce season for livestock.

[http://oar.icrisat.org/9300/](http://oar.icrisat.org/9300/)

**Study of Heterosis and Pollen Fertility in CGMS Based Pigeonpea [Cajanus cajan(L.) Millspaugh] Hybrids.**

Authors: Kumar S, Debnath MK, Sameer Kumar CV, Singh PK and Sultana R

Published: 2016. Research in Environment and Life Sciences (RELS), 09 (01). pp. 107-110. ISSN 0974-4908

**Abstract:** Twenty CGMS-based pigeonpea [Cajanus cajan(L.) Millspaugh] hybrids were synthesized manually by crossing five CMS lines (A lines) with 11 male lines (R lines) and these hybrids were evaluated to study yield potential with the performance of their R- lines. The results showed that the restoring capacities of restorer lines are very important to quality seed production and for yield potential. Result from the study indicated that most of the R- line acts as good restorer and it ranged from 98.50% (ICPL 20108) to 59.22% (ICPL 2009. In present study most of the hybrids showed standard heterosis towards in desirable direction for yield and yield contributing characters over the checks so these cross combination of parent may be exploited to developed the hybrid in pigeonpea for obtaining higher grain yield. The range of standard heterosis over Asha for grain yield per plant was ranged from -13.06 (ICPA 2092 x ICPL 20123) to 40.91% (ICPA 2047 x ICPL 20126).