leaders of the Information Technology Center for Agriculture and Fisheries (ITCAF) and BAR to move forward innovations in knowledge sharing. Presentations were made by Drs G Dileepkumar and Rosana P Mula to sensitize the Filipino science community on these innovations.

The Way Forward: PhilDRI

In its mission of empowering poor people to overcome hunger, poverty and a degraded environment, ICRISAT intends to support the Philippines for increased public investments in rainfed and upland agriculture to ensure that the country becomes self-sufficient in food. To move this initiative forward, an institutional mechanism is needed, such as the creation of the Philippine Dryland Research Institute (PhilDRI). Towards this, House Bill 76752 has been filed by Cong. Leonardo Montemayor in the 14th Congress. PhilDRI will be the Philippines’ first line of defense against drought and climate change, and will substantially contribute to improving the livelihoods of poor communities in the rainfed and upland areas. ICRISAT will be an active partner of PhilDRI and in all other relevant endeavors of the Philippines to achieve food security in rainfed areas.

Filipinos on ICRISAT’s Governing Board

- Dioscoro L Umali, University of the Philippines: 1972 to 1979
- William D Dar, Philippine Government: 1997 to 1999
- Senen Miranda, Soil and Water Engineer: May 1980 to Dec 1982
- Cynthia S Bantilan, Research Program Director, Markets, Institutions and Policies: Aug 1992 to date
- Hector V Hernandez, Director, Human Resources and Operations: Apr 2009 to Jun 2013
- Rosana P Mula, Coordinator, Learning Systems Unit: Oct 2005 to date
- Myer G Mula, Scientist, Seed Systems: May 2008 to date
- Cristina P Bejosano, Head, Public Awareness and Marketing Support: Mar 2011 to date
- Richard P Burgos, Chief of Staff, DG’s Office: May 2012 to date
- Junel B Soriano, Visiting Scientist, Community Watershed: Nov 2012 to date

Working with Development Partners and Investors

ICRISAT works in close partnership with farmers/farmer organizations, public and private institutions, governments, and development investors worldwide in generating science-based agricultural innovations to achieve food sufficiency, intensification, diversification, resilience, health and nutrition, and women empowerment particularly for smallholder farmers in the dryland tropics. In 2012, ICRISAT’s top donors include: the CGIAR Fund (CGIAR is a global agricultural research partnership for a food secure world); the Bill & Melinda Gates Foundation; the United Nations (UN); the Rockefeller Foundation; and the Ford Foundation. ICRISAT has a strong network of public and private investors in Asia and sub-Saharan Africa. In 2012, ICRISAT’s top investors include: the CGIAR Fund (CGIAR is a global agricultural research partnership for a food secure world); the Bill & Melinda Gates Foundation; the United Nations (UN); the Rockefeller Foundation; and the Ford Foundation.

ICRISAT is a member of the CGIAR Consortium.
In the same year, an MoU was signed between ICRISAT and DA-BAR with support from the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD) on the commercialization of sweet sorghum, peanut and pigeonpea in the Philippines. A series of sensitization activities were undertaken by Dr Dar and ICRISAT scientists to strengthen the existing partnership. These included attendance at conventions/conferences, farmers’ field days, and training. In 2010, Dr Dar visited Secretary of Agriculture Proceso Alcala to revitalize the partnership with the DA. During the visit, Dr Dar reiterated ICRISAT’s commitment to assist smallholder farmers of the country.

**Germlasm Exchange**

A major milestone of the partnership is the germplasm exchange where ICRISAT has provided the Philippines through its various research for development (R4D) institutions, germplasm of peanut, pigeonpea, chickpea, and sorghum (including sweet sorghum). To date, ICRISAT has provided 3302 samples of 2786 germplasm accessions to the Philippines. From 2000 - 2012, it also supplied 58 sets of trials, 901 advanced breeding lines, 36 mapping population parents, and 72 segregating populations.

- **Peanut**: ICRISAT supplied peanut germplasm line ICG 7827 (IL 24), which was released as UPL Pn 10 in 1992; Namnana-1 (ICGV 90320) was released in 2003 by Iligan Experiment Station, Isabela; NSIC Pn 12, locally known as Ilocos Pink was released in 2004 by the Mariano Marcos State University (MMSU) research farm at Dingras, Ilocos Norte; ICGV 00440 was released in 2007 as Namnama-2/NSIC Pn 14; and ICGV 86654 (Asha) in 2009 as NSIC Pn 15. In February 2006, the then President of India, His Excellency Dr AP Abdul Kalam, during his meeting with the President of the Philippines, Gloria Macapagal-Arroyo, symbolically presented her with foundation seeds of improved peanut and sweet sorghum developed by ICRISAT. Dr Dar and Philippine Agriculture Secretary Domingo Panganiban assisted in the bestowal.

- **Sorghum**: Two sorghum varieties were released in the Philippines in the early 1990s. In the case of sweet sorghum, a total of 1100 lines were sent for testing and three were found promising (ICSV 93046, ICSV 25340, and ICSV 25300). In April 2006, MMSU organized a pigeonpea festival and a Sorghum: ICRISAT helped in the establishment of the Open Academy and the DA-BAR in May 2005 awarded a project to ICRISAT on promotion of the ICRISAT ‘Asha’ peanut variety in the Philippines. BAR reported that ‘Asha is the only peanut released in the country that has the highest recorded yield of 3991 kg/ha – double the yield of regular varieties – bringing in an income of PHP 27,000/ha.**

- **Pigeonpea**: Of the various pigeonpea varieties sent for testing, ICP 88039 showed potential of 875 kg/ha and 325 kg/ha ratoin yield in rice-fallow system.

- **Chickpea**: On-farm and on-station trials of chickpea were conducted at the Benguet State University (BSU), La Trinidad, Benguet. Promising lines as a result of the trials are as follows: Highland condition – 2 desi and 2 kabuli (Yield: 1,166 - 2,500 kg/ha); and Lowland condition – 2 desi and 3 kabuli (Yield: 1,034 – 2,400 kg/ha).

In April 2013, Dr Dar and the Knowledge Sharing and Empowerment Program (KSEP) team had initial discussions with the OSU, through the production of pastries, bread, and cakes enhanced with the addition of pigeonpea and chickpea flour.

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- The overall goal of the project is to improve rural livelihoods by developing resilient rainfed agriculture for sustainable rural growth and inclusive development. The project has four major components: (1) soil health analysis; (2) enhancing productivity through best-bet management options on soil, crop and water; (3) capacity building; and (4) developing a model for up scaling. The project will be implemented for three years.

**Capacity Building and Knowledge Sharing**

Since ICRISAT’s inception of capacity building in 1974, it has trained 186 scientists/staff from various institutions in the Philippines. In July 2005, a series of training workshops on project development and resource generation were spearheaded through the initiative of Dr Dar and former Communication Director Dr Rex Narvaco. This is part of ICRISAT’s commitment to help build capacities of national systems on agricultural research and extension. In collaboration with the Agricultural Training Institute (ATI) and Commission on Higher Education (CHED), over 300 Filipino senior researchers and faculty underwent this training.

ICRISAT also initiated the conduct of a National Drylands Conference in April 2008, which endorsed the establishment of a Philippine Rainfed Agriculture Research & Development Institute (PhIRAI).

PhIRADEP, the precursor of PhIRAI (changed to PhidiR), hosted five in-country training of about 40-60 participants each in the Philippines. These were implemented by ICRISAT; BAR, and SUC partners, namely Bohol Island State University (BISU), Ilugao State University (IFSU), Mindanao State University (MSU), Cagayan State University (CSU), and MMSU with a view to improve knowledge and skills on rainfed cropping systems, natural resource management and related areas, and also to develop an action plan for community-based seed systems for rainfed crops.

**Open Academy for Philippine Agriculture**

- ICRISAT helped in the establishment of the Open Academy for Philippine Agriculture (OPAPA) in the model of its own Virtual Academy for the Semi-Arid Tropics (VASAT).

- In April 2013, Dr Dar and the Knowledge Sharing and Innovation (KSI) team had initial discussions with the...