





A P NEWSLETTER A Newsletter of the Agricultural Innovation Program (AIP) for Pakistan

Message from the Project Leader Greetings from AIP!

I am pleased to share updates on the Agricultural Innovation Program for the July-September 2015 quarter.

In August, AIP held its annual conference in Islamabad with the theme "Agricultural innovations for improved productivity and economic growth," which highlighted its accomplishments. The informative technical sessions indicated a way forward to improve the Pakistani agricultural sector.

The commissioned projects ensure that all activities are in line and progressing towards achieving AIP's aim, i.e., improving agricultural productivity and creating new livelihoods for farmers through science. The establishment of volunteer

farmer model training dairy farms in AIP project villages has given more than 1,000 dairy farmers access to improved animal health and milk production. AIP accelerated the deployment of new rust resistant, high yielding and adaptable wheat varieties for the benefit of more than 10,000 smallholder farmers across the country. Meanwhile, the maize component is facilitating and upscaling the delivery of local maize hybrids to more than 100 farmers in Khyber Pakhtunkhwa province. AIP's national partners were instrumental in locally manufacturing and pilot-testing the multi-crop zero till planter. Rice crop emergence was 115 plants/m² from 13 kg of seed per acre and crop growth is fairly good. The socioeconomics component is closely analyzing the access, availability and adoption of conservation agriculture technologies among agricultural communities in Pakistan. AIP has also enhanced the data analysis skills of 40 social scientists from KP province. The use of nets and vertical structures to support bottle gourd has enabled farmers from KP province to improve vegetable quality and fetch higher prices on the market.



AIP's Perennial Horticulture component has successfully extended its results to a wide range of citrus, mango, guava, pistachio, olive, and ber stakeholders. New indigenous mango varieties are being commercialized by progressive mango growers in Punjab province.

E-Pak AG carried out a number of activities by collaborating with academics, local communities and stakeholders to revolutionize the agricultural sector with ICT. It is also ensuring equal opportunities are being provided to women.

AIP, under its human resource development component, successfully enhanced the practical skills of 53 participants in leading effective meetings and scientific writing.

AIP is a result of the synergy among Pakistan Agricultural Research Council (PARC), the International Livestock Research Institute (ILRI), the International Rice Research Institute (IRRI), the World Vegetable Center (AVRDC), the University of California at Davis, and the International Maize and Wheat Improvement Center (CIMMYT). It is funded by the United States Agency for International Development (USAID). With these national and international partners on board, AIP continues to improve Pakistan's agricultural productivity and economy.

For details on AIP's activities and upcoming events, please visit our website aip.cimmyt.org. Your comments and suggestions are welcome.

Enjoy reading!

Md. Imtiaz

Project leader

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Inside This Issue:

Highlights of the USAID-funded AIP Annual Conference 2015 2



AIP-Livestock......4





AIP-Rice......10 AIP-Agronomy10



AIP-Socioeconomics11 AIP-Vegetables......12



AIP-Perennial Horticulture 14



AIP-Human Resource Development (HRD)15 Vocational Training15 AIP-E-PakAg16

Highlights of the USAID-funded AIP Annual Conference 2015

On August 24-25, 2015, a two-day annual conference with the theme "Agricultural Innovations for Improved Productivity and Economic Growth" was organized by CIMMYT in Islamabad in partnership with PARC and primary partners, and funded by USAID.

The conference highlighted the accomplishments of AIP such as new technologies and practices resulting from improved skills of the vast network of farming communities and people from the public and private agricultural sectors who have been organized, trained and mobilized by the program. The conference also provided a common platform to exchange information, discuss opportunities, challenges and plans for future collaboration with stakeholders. It was attended by several high level government officials, members of the diplomatic corps, key policymakers, private sector representatives, academics, international experts, scientists, researchers and other major stakeholders including farmers. students and representatives of local organizations.

The conference was very productive and led a way forward to improve the agricultural sector across the diverse AIP portfolio which includes new varieties, new technologies (mechanization), value chain development (durum wheat, rice, vegetables, perennial horticulture and livestock), human resource development and the introduction of a competitive grants system through the creation of provincial Agricultural Research for Development (AR4D) Boards.



The conference was formally inaugurated by the Federal Minister for National Food Security and Research, Pakistan, Mr. Sikander Hayat Khan Bosan along with the Mission Director Mr. John Groarke and CIMMYT Director General Dr. Martin Kropff.



AIP's display area showcasing the portfolio of the commissioned projects.



The Federal Minister for National Food Security and Research, Pakistan, Sikander Hayat Khan while addressing the audience at the inaugural session.



Dr. Nadeem Amjad, PARC Member Natural Resources, reading the message from PARC Chairman Dr. Iftikhar Ahmed at the occasion.

AIP Annual Conference 2015



CIMMYT Director General Dr. Martin Kropff while speaking at the occasion.



Mission Director USAID Pakistan Mr. John Groarke acknowledging the remarkable results of AIP.



Dr. Imtiaz Muhammad, CIMMYT Country Representative, giving updates on AIP activities.



Lifetime achievement award is given to Dr. Thomas Lumpkin, former CIMMYT Director General.



Lifetime achievement award is given to Dr. Iftikhar Ahmad, PARC Chairman.



Gratitude to the United States Government which was received by USAID Pakistan Mission Director Mr. John Groarke on behalf of the United States Government.











AIP Annual Conference Technical Session



The technical session was led by AIP Project Manager Ms. Shamim Akhtar, and comprised of component updates and global trends followed by discussion with national and international experts.

AIP-Livestock

AIP-Livestock is led by the International Livestock Research Institute (ILRI).

For feedback and queries, contact Ibrahim Mohammed (ILRI): m.ibrahim@cgiar.org

Mass Awareness to Improve Milk Production in Animals in District Bahawalnagar, Punjab Province

AIP-Livestock carried out on-farm trials to demonstrate the importance for milk production of adlib water availability and balanced feeding. Seventeen dairy farmers were selected for these trials from two villages of Bahawalnagar district, Punjab province, namely 67-4-R and Ahata Mukhian.

On 5-6 August 2015, two mass awareness farmers' days were organized as follow-up of farmer-managed trials. More than 270 farmers from project villages and adjoining areas attended these events. The farmers were made aware of the importance of drinking water and feed for maximizing milk production in animals through a series of lectures by the AIP-Livestock team and the experiences of the farmers involved. Fact sheets on the importance of water and balanced feeding to increase milk production were also distributed among all the participating farmers at both sites.





Volunteer Farmer Model Training Dairy Farms Established for Sustainable Livestock Production

Healthy cattle are a sign of sustainable livelihoods for dairy farmers. Animal health is positively affected by appropriate housing facilities. The AIP-Livestock project villages lack sanitation and critical elements for clean milk production, and have colossal feed wastage and limited access to drinking water for the animals.

AIP-Livestock has established model training dairy farms equipped with improved animal housing. Model farms were

established at four selected villages in Bahawalnagar and Jhang districts of Punjab province, namely Chella, Ahata Mukhiaan, 28/3 R and Noor Sar. Another 1,000 dairy farmers in project villages have direct access to these farms. Improved animal health will result in better milk production and increased incomes.



Model farm in Bahawalnagar district.



After



Model farm in Jhang district.

Snapshot Survey Identifies Challenges Faced by Dairy Farmers in Balochistan, Sindh, AJK and Gilgit Baltistan



AIP-Livestock conducted snapshot surveys to identify the challenges faced by dairy farmers. The survey was carried out on 465 respondents in Balochistan and Sindh provinces and AJK, Gilgit Baltistan regions.

Location	Respondents
Baluchistan	65
AJK	99
Gilgit Baltistan	146
Sindh	155



Roofing

Flooring

Existing problems are related to:



The survey revealed that farmers lack appropriate animal housing facilities such as a feed manger, a proper water trough, flooring, roofing, milking areas and calf pens. Poor hygiene and restricted access to water and feed result in low milk production.

Based on the results, the best-bet interventions related to management and input-output supply constraints will be introduced by AIP.



Training for Improved Small Ruminant Production in Balochistan Province

A training workshop on small ruminant value chain development was held at the Animal Science Institute (ASI), Livestock Department, Quetta, Balochistan province on September 14-17, 2015 to enhance the knowledge of extension workers (23 men and 2 women) on small ruminant production including animal housing, feeding, reproduction management and health care. The most recent advances on these subjects related to Baluchistan's



agro-ecologies were delivered to the participants. Training participants engaged in interactive activities, group work and presentations on small ruminant production.

Another two-day training workshop on Small Ruminant Value Chain Rapid Assessment was held on 15-16 September 2015 at Quetta. It was attended by 40 participants from provincial livestock departments, Sardar Bahadur Khan Women's University, the Forest Department, FAO, the Center for Advanced Studies in Vaccinology & Biotechnology and the University of Balochistan.



Fattening Lambs/Kids for Higher Returns

Eid-ul-Azha is an Islamic festival which is known as the Feast of Sacrifice. Goats, sheep, cattle and camels can be slaughtered as sacrifice. The fattening potential of native lambs/kids for Eid-ul-Azha was assessed at Chakwal in Punjab province and Ahmadun in Balochistan province.

The fattening trial involved 5 farmers from Ahmadun who own 60 male lambs of Shinwar breed and 4 farmers from Chakwal who own 30 male kids mainly of beetal breed and 16 male lambs of Kaghani cross. These animals were separated into sub-groups and offered five different ration formulations. These test rations were offered at 1 kg/day for 30 days.

For lambs at the Balochistan site, the average live-weight gain in the treatment groups ranged from 1.2-2.1 kg, while lambs in the control/grazing group lost weight (-0.3 kg). The low live-weight gain may be due to low availability of fresh rangeland biomass. The lambs in Punjab showed higher weight gain compared to lambs in Balochistan. This was mainly due to higher feed/fodder availability. In the treatment group the live-weight gain ranged from 3.8-5.4 kg, as compared 1.2 kg in the control group. The goat kids showed similar increases at the Punjab site.

Farmers made a profit of Rs. 7,000 on average by selling fattened lambs/kids at Eid-ul-Azha, and some farmers' animals that were fed on different rations generated profits of more than Rs. 23,000 per animal. In Chakwal, profit received on each rupee invested in the fattening operation was 0.5, whereas in Ahmadun it was 0.3.



Effects of Rotational Grazing on Rangeland and Livestock Productivity



Biomass production Kg ha⁻¹

Under AIP-Livestock, in March 2015 a plan was developed to rehabilitate the existing rangeland of Chakwal district in Punjab province. The initiative was taken to educate farmers on grazing management thus improving their livelihoods. Improved fodder varieties were introduced in Dhulli and Begal in Chakwal district. The rangeland area in Chakwal was protected from grazing in September 2014, and biomass production was monitored. Vegetation was sampled in May and August 2015. The biomass was estimated using the 1 m² quadrate. All the species were clipped at stubble height. Palatable species were separated and weighed again to determine their proportion in the overall biomass.

The data revealed that in May 2015, after winter rains, total biomass in the protected areas at Dhulli and Begal sites, respectively, was 774 and 669 kg ha⁻¹ and 350 and 286 kg ha⁻¹ in the unprotected areas. Biomass was measured again in August during the monsoon and found that the total biomass in protected areas at Dhulli and Begal sites, respectively, was 1476 and 780 kg ha⁻¹ and 480 and 310 kg ha⁻¹ in the unprotected areas.

Stock Water Pond Established in Arid Areas of Balochistan Province

In arid areas, surface water is the main source of water for purely pastoral livestock. In the rainy season, precipitation over limited catchment basins runs off and concentrates in natural ponds where the soils are sufficiently impervious to prevent leaking. Most of these ponds dry out a few weeks after the end of the rainy season due to the combined effect of evaporation and seepage. In view of these issues, two stock water ponds were established at Ahmadun, Ziarat, in Balochistan province. Each pond has the capacity to store 13,160 ft³ (372.42 m³) of water. This surface water development will increase the storage capacity of stock water ponds and extend their period of utilization, creating reservoirs for improved rangeland resources. After several meetings with the community, Atriplex lentiformis and Acacia victoria were chosen for introduction to the site.



Stock water pond at Ahmadun, Ziarat.



Rehabilitation of rangeland with Atriplex lentiformis and Acacia victoria.

Cereals and Cereal Systems

AIP-Wheat

AIP-Wheat is led by the International Maize and Wheat Improvement Center (CIMMYT).

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Wheat Varietal Diversification Contributing to Food Security and Better Incomes for Smallholder Farmers

AIP-Wheat fast-tracked deployment of more than 300 tons seed of 17 new rust resistant, high yielding and adapted wheat varieties. Participatory varietal selection, paired plot demonstrations, variety-by-agronomy interventions, and village-level seed production and provisioning were pursued to increase on-farm varietal diversity. More than 7,000 smallholder farmers in rural areas of 63 moderately-to-highly food-insecure districts across Pakistan–several of them rust hotspots–participated in this, through a wide network of 27 public and private partners.

Among farmers (87% respondents; n=603), there is an overwhelming acceptance and willingness to grow new wheat varieties. On average, they save 265 kg of wheat seed to grow the following year.

In addition to wheat varietal diversification, this initiative provides multiple benefits, such as:

- (i) Enhanced food and nutritional security
- (ii) Improved supply of wheat straw
- (iii) Increased incomes
- (iv) Making seeds available in the villages

In the coming season, nearly 5,000 tons of seed of these wheat varieties will be available in the villages through farmer-to-farmer seed spread. An additional 1,200 tons of seed have been produced through public-private partnerships.



Acceptance and possible uptake of a number of wheat varieties across various provinces of Pakistan.



Participatory varietal selection trial (5 new wheat varieties along with the farmer's own variety) at a farmer's field in Umerkot, Sindh province.

AIP-Maize

AIP-Maize is led by the International Maize and Wheat Improvement Center (CIMMYT).

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AIP Promoting Local Maize Hybrid Production

AIP is facilitating and upscaling delivery of local maize hybrids to farmers through on-farm demonstrations. This not only creates awareness and demand but also motivates local germplasm development efforts, particularly in the public sector where resources are limited. During Kharif 2014, AIP helped distribute seed of Babar, a hybrid released by the Cereal Crops Research Institute, Pirsabak, KP province, to more than 100 farmers.

In Kharif 2015, the program helped demonstrations of local hybrids from the Maize and Millet Research Institute, Yousafwala village, Sahiwal district, Punjab province. Earlier this year, a hybrid, namely YH1898, was released in Punjab province and the first demonstration seeds were distributed among farmers at 10 locations in Sahiwal district and adjoining areas. Large-scale seed production and marketing of the hybrid will be handled by Punjab Seed Corporation.





Farmer reading a bulletin on maize production technologies prepared by MMRI during the harvesting of maize demo plot supported by AIP.

Farmers comparing the yield of maize hybrids from MMRI being promoted by AIP in Sahiwal district, Punjab province.

Seed Company Evaluates Performance of AIP's White Maize in KP

Petal Seed Company (PSC), a private seed company operating mainly in KP province, is evaluating promising white maize hybrids and OPVs from AIP-Maize. The previous season, the company identified promising OPVs that yield up to 12 t ha⁻¹. The performance of these OPVs is being evaluated in farmers' fields in Mardan district. This season, the company also identified high yielding white maize hybrids of intermediate maturity. Promising hybrids will be further evaluated in the hilly areas of KP where farmers mainly use local or recycled maize seeds.

Muhammad Ishtihaq is leading the evaluation of the hybrids at PSC. He expressed appreciation for the efforts of AIP maize in KP by saying, "We are happy with the performance of the intermediate hybrids. We are hopeful that we will deliver them to farmers in the shortest time possible."





White maize evaluation at Petal Seed Company in KP.

AIP-Rice

AIP-Rice is led by the International Rice Research Institute (IRRI)

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IRRI Evaluates High Yielding, Stress-tolerant Indicia and Basmati Varieties



Submergence tolerance testing under controlled flooding at Rice Research Institute (RRI), Kala Shah Kaku, Punjab province.



AIP-Rice and RRI scientists observing IRRI material planted at RRI Kala Shah Kaku, Punjab province.

AIP-Agronomy

AIP-Agronomy is led by the International Maize and Wheat Improvement Center (CIMMYT)

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Pilot Testing of Locally Manufactured Multi-Crop Zero Till Planter for Rice

Greenland Engineering, Engro Eximp and CIMMYT collaborated on the local fabrication of a zero till (zt) multicrop planter in Pakistan. Greenland Engineering initiated the local fabrication of inclined plates seeding technique and placed them on the local zt drill. These locally manufactured zt planters were then evaluated for direct seeding of rice at five sites in Muridke, Sheikhupura district of Punjab. The results indicate no breakage of rice seed under dry and moist conditions. Rice crop emergence was 115 plants/ m² with 13 kg seed per acre and crop growth is fairly good.



Rice seeding using a multi-crop planter in Sheikhupura, Punjab province.

AIP-Socioeconomics

AIP-Socioeconomics is led by the International Maize and Wheat Improvement Center (CIMMYT)

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Assessing the Impact of Conservation Agriculture Technologies and Practices

AIP-Socioeconomics carried out a comprehensive survey on the use of conservation agriculture (CA) technologies and practices in Punjab and Sindh provinces.

The study focused primarily on the awareness, availability, affordability and adoption of CA technologies such as ZT drill, happy seeder, bed planter, ridger, and laser leveler, as well as CA practices such as micronutrient application, reduced tillage, direct seeding of rice (DSR), crop residue management and adaptation to climate change. More than 120 farmers from both provinces were interviewed. Preliminary survey findings indicated that CA technologies are not accessible to farmers due to non-affordability, the unavailability of machinery repair facilities and the lack of knowledge on optimum application of nutrients.

The availability and affordability of CA technologies are very important issues that need to be addressed.

Enhancing Data Analysis Skills of Social Scientists in KP Province

AIP-Socioeconomics enhanced the data analysis skills of 40 scientists from KP province. On 4 August 2015, an orientation workshop on data analysis tools SPSS and STATA was organized by CIMMYT in partnership with the Social Sciences Research Institute, Tarnab, Peshawar, KP province.





Orientation workshop on SPSS and STATA.

AIP-Vegetables

AIP-Vegetables is led by The World Vegetable Center (AVRDC).

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Intercropping Vegetables for Better Incomes



AIP is assisting vegetable farmers, both men and women, at their doorstep from sowing to harvesting by training them to raise healthier crops with better crop protection and post-harvest management practices. These efforts have enabled vegetable farmers to increase their incomes through intercropping of vegetables that are disease tolerant and high yielding in the regional environment. New agricultural technologies and new compatible varieties will enable farmers to produce higher yields and ultimately improve their livelihoods.

AIP-Vegetables helped a group of 10 farmers at Chevanda to expand protected vegetable cultivation. Bitter gourd varieties Prachi, Palee and Bejo-034 were introduced in the area. Leading variety Palee gives the highest yield per acre in the region, as verified by demonstration experiments conducted at 9 farmers' fields in the cluster. Palee replaced by 888, can harvest higher yields in the intercrop. Among four demonstration varieties, cucumber variety 5555 is a better option to replace variety Nobel in the region. Farmers in the cluster intercropped better varieties, obtained higher yields and increased their income per acre.

"Intercropping of vegetables has improved my farming practices. I have replaced traditional cultivation with protected cultivation. I have grown bitter gourd var. 888 with cucumber var. 2833 using intercropping and earned very noticeable income, Rs. 8,78,332/ acre. I am thankful to the American people, USAID, CIMMYT and AVRDC for enhancing farming practices and improving my income."

- Abdul Shakoor, a vegetable grower from 20-Chevanda, Punjab province.

Removing Lateral Shoots in Cucumber

Removal of lateral shoots in cucumber is a very simple practice that increases yield by increasing the number of fruits on an individual plant. Dr. Major Dhaliwal, Dr. Rakesh Sharda from PAU, Ludhiana, India, and regional director of AVRDC visited Pakistan. During his field visit at Bhikhi, Sheikhupura, Dr. Major Dhaliwal suggested removing lateral shoots from cucumber from 1 to 2 feet. By doing this simple technique, the number of fruits per plant increases and fruit size is good as well. So our beneficiary farmer in Sheikhupura practically adopted this method and removed lateral shoots of 1 to 2 feet from cucumber plants (Waleed hybrid). After doing this, in the very next picking there were many healthy fruits and the number of fruits was three times higher as compared to other plots where this practice was not carried out. One farmer told me that he is very happy he adopted this simple technique because he gets more yield. This season, I myself will tell other cucumber growers to adopt this simple technique.

Enhancing Quality of Bottle Gourd by Amending Planting Geometry in Khyber Pakhtunkhwa Province

Low yield of local varieties coupled with poor quality fruit marred cucurbit culture in the region for years. AIP-Vegetables in collaboration with Pakistan Agriculture Research Institute (S) D.I. Khan introduced vertical gardening methods to improve farmers' livelihoods and enhance the sustainability of local agriculture.

Field demonstrations were carried out and farmers received seed of two bottle gourd hybrids, namely long and super hybrid F_1 , as well as nets and technical assistance on improving planting geometry. After successful germination of the bottle gourd hybrids, vertical nets were installed on bamboo stakes and the crop was trained to grow up the nets. Farmers using the vertical method have reported improved fruit quality and yield.

The use of nets and vertical structures to support bottle gourd is helping the farmers of D.I. Khan, KP Province, Pakistan, harvest better quality fruit that fetches higher prices in markets.



Using nets and amending planting geometry has enhanced the quality of our fruit.

Farmer's experience in their words

"Pest infestations were less severe after using vertical structures for growing bottle gourd."

– Malik Ramzana, a farmer from Hissam.

"Using nets and amending planting geometry has enhanced the quality of fruit; this will help in fetching higher prices in the market."

Field Days on Improved Mungbean Production in Punjab

Three field days on mungbean production as a catch crop were organized by AIP-Vegetables in collaboration with the Pulses Research Institute (PRI), AARI, Faisalabad, the Citrus Research Institute (CRI), Sargodha, and the Arid Zone Research Institute, Bhakkar. In total 449 farmers were made aware.



A progressive citrus grower closely observing mungbean successfully intercropped with citrus at CRI Citrus Farm, Sargodha, during a field day on 4 August 2015.



On 30 July 2015, participants in the field day at Panwan Nankana Sahib District, Punjab province.



On 6 August 2015, Dr. Asghar Ali, AVRDC, explained the active nodules, an indication of successful nitrogen fixation process, to participating farmers.

Revolutionizing the Cropping System through Combine Harvesting of Mungbean in Thal Region, Punjab Province

Combine harvesting technology enables farmers to manage crops more efficiently and reduces yield loss.

On 27 August 2015, combine harvesting of mungbean was performed in farmers' fields by AIP-Vegetables in collaboration with the Arid Zone Research Institute (AZRI), Bhakkar, in two villages in Bhakkar district, Punjab province, namely, Daggar Rohtas and 34/TDA.

The crop was sprayed with chemical desiccant five days before combine harvesting and was sufficiently dried up. The combine harvesting operation was successful and will have positive impact on future production of mungbean in the area.



Jubilant farmers and AZRI and AIP-Vegetables team celebrating successful mungbean combine harvesting at Daggar Rohtas, Bhakkar, 27 August 2015.



Successful mungbean combine harvesting operation underway at village 34/TDA, Bhakkar.



Better Onion on Its Way

More than 1,000 kg each of quality onion seed of three varieties (Sariab Red, Chiltan-89, and Phulkara) produced in Balochistan province was packed and made available for marketing in the region. On 7 August 2015, this important milestone was celebrated in a ceremony at the Directorate of Vegetable Seed Production, Agricultural Research Institute (ARI), Quetta, Balochistan province. Chief Minister of Balochistan Abdul Malik Baloch and Agriculture Minister Sardar Muhammad Aslam Bazenjo along with Federal Minister of National Food Security and Research Sardar Sikander Hayat Bosan participated in the ceremony and showed keen interest in innovative onion seed production and packing. On this occasion, the Chief Minister thanked AIP-Vegetables for helping ARI teams in Balochistan transfer innovative seed production methods to farmers along with improved postharvest and packing techniques. He suggested that field activities in Balochistan be expanded to reach a large number of farmers.



Quality onion seed for distribution and multiplication in the farming community of Balochistan province.

AIP-Perennial Horticulture

AIP-Perennial Horticulture is led by UC Davis

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Citrus Infrastructure and Mega Field Day

A postharvest lab and lath house have been established and inaugurated by the DG of Research for Agriculture in the Punjab Dr. Abid and Dr. Louise Ferguson at CRI Sargodha on August 17, 2015. The lath house will be used for producing clean nursery plants to distribute to growers while the postharvest lab will work on standardizing more recipes using value-added citrus products. Additional citrus events this quarter include:

	Participants			
Event	Men	Women	Total	Date
Citrus mega field day	392	5	397	August 17, 2015
Transfer of Grape Production Technology to the Farmers of Pothwar Region	13	72	85	August 18, 2015





Technically Improved Grape Growing

The model demonstration block established at the Koont farm in collaboration with PMAS-Arid Agriculture University Rawalpindi, continues to provide an invaluable training ground for grape growing. This innovative project builds the capacity of farmers in vineyard management by providing hands-on technical training throughout the quarter. As a result of the trainings mentioned below, new management practices are being applied on 405 acres. Specific trainings this quarter include:

	Participants			
Event	Men	Women	Total	Date
Training on Effect of Trellising System on Table Grape Quality	25	5	30	July 1, 2015
Training on Transfer of Grape Production Technology to Farmers	25	5	30	September 14, 2015

Mango Production Period Expanded through Commercialization of New Indigenous Varieties

At the mango day held in Vehari, Punjab province, on August 20, 2015, 145 plants of four accessions (MLT-240, RYK-265, KHW-250 and KHW-251) were distributed among 30 selected farmers of the 105 who attended. Chosen farmers were selected based on their ability and willingness to adhere to the rigorous monitoring required. Distributed mango plants will be observed and evaluated for their field adaptability through regular field visits by the project team. These new varieties will contribute to expanding the mango production period in Pakistan.

New Projects on Value Chains with Great Potential

This quarter, the following newly-funded research projects began implementation activities.

Value Chain	Collaborator	Number of projects	Focus
Pistachio	ARI Quetta	4	Nursery, orchard management and growers association formation
Olive	ARI Tarnab	2	Awareness-raising among farmers about olive oil quality in relation to harvesting stage; effect of boron spray on fruit setting
Guava	ATI Sakrand, UAF	3	Postharvest resource center; Farmer Field Training Centers; Empower farmers/ extension department of Sindh province
Ber	UAF	1	Mother block of best performing ber varieties for farmers in southern Punjab

n.

AIP-Human Resource Development (HRD)

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Vocational Training

Successful Workshops on Enhancing Practical Skills

In response to the findings of training needs assessment, the UC Davis team led two workshops this quarter. Effective Meetings, part 2, was held on August 22, 2015 at UAF. Dr. Mark Bell organized this workshop, which had two objectives: (1) review five steps for a good meeting; and (2) identify how to deal with common meeting issues. Twenty-two participants

(16 men, 6 women) attended the workshop. The evaluation results show that the participants were very satisfied with the workshop and praised the excellent presentation style and materials.

A Scientific Writing Workshop was held at NARC on August 26-27, 2015 and was co-led by Dr. Mark Bell and Dr. Tom Rost (both of UC Davis). A total of 31 participants (21 men, 10 women) attended the workshop, including representatives of all AIP Partners (AVRDC, CIMMYT, PARC, IRRI and UCD). The purpose of the workshop was to (1) know the primary sections included in a standard scientific paper; (2) understand the primary content and purpose of each section; and (3) draft (selected sections of) a scientific paper. The evaluation results show that the workshop achieved its objectives and participants appreciated the practical skills they learned.



E-Pak Ag

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Exchanging Ideas for Improved Agricultural Systems Using Information and Communications Technology (ICT)

UC Davis, in collaboration with UAF, organized a consultative workshop on the use of information and communications technology (ICT) in agriculture on 4 August 2015. Seventy-three participants (60 men, 13 women) representing all ICT stakeholders and agriculture attended the workshop. This workshop, held at Agriculture University Tandojam, Sindh province, is the latest in a series of e-Pak Ag workshops on ICT in Ag facilitated by Dr. Babar Shahbaz (UAF). These workshops are steadily building an understanding of the ICT landscape, the stakeholders involved and existing key opportunities.

Gender-Based ICT Activities

UC Davis is collaborating with Dr. Aneela Afzal at AAUR to engage schoolgirls aged 12-18 years in agricultural activities using ICT. During this quarter, a workshop on designing an engaging class to teach schoolgirls to use ICT for improving home agriculture reached 66 participants including 41 women and 25 men.

A website (www.ictpakfarming.org.pk) to provide information on information on agriculture to the farming community was formally launched on August 20, 2015. The ceremony was attended by more than 100 stakeholders and included speeches by Dr. Mark Bell and the chief guest, Prof. Dr. Rai Niaz, Vice Chancellor, PMAS-Arid Agriculture University.

ICT and Extension Workshop at UAF

On August 21, 2015, Dr. Mark Bell conducted a workshop looking at the fundamental issues of using ICT for extension purposes. A total of 34 participants (26 men, 8 women) were made aware of ICT and its use in extension, the issues involved and solutions that make ICT more effective. The group was a mix of participants with considerable ICT experience and participants with little to no ICT experience. The evaluation results show that the workshop achieved its objectives and participants were very satisfied with the useful content and interactive style.

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