



Annual
Report
2017-18

**ENDOWMENT FUND SECRETARIAT
UNIVERSITY OF AGRICULTURE, FAISALABAD**



Board of Directors (BoD)



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Chairman BoD / Vice Chancellor, UAF



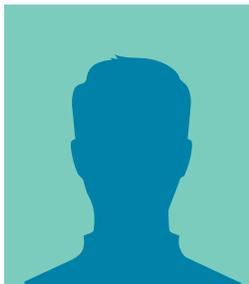
Dr. M.E. Tusneem
Ex. Chairman, PARC/NAEAC/HEC



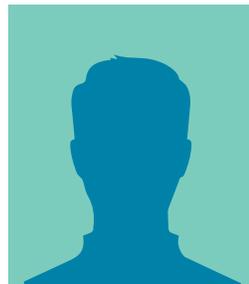
Dr. M. Anjum Ali Buttar
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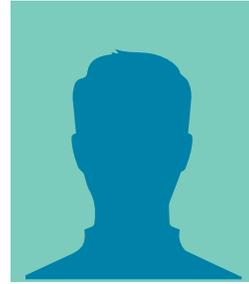
Mr. Faisal Hassan
Progressive Farmer



Vice Chancellor
University of Agri. , Peshawar



Executive Director, ALP (PARC)
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in Pakistan



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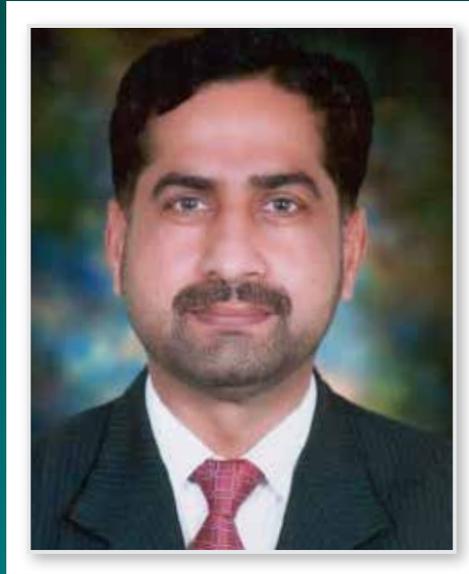
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Prof. Dr. M. Jafar Jaskani
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Amir Saeed Rana
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Sajid Ali Khan
Lecturer

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VISION

To assist the agriculture sector in becoming competitive, profitable and sustainable through innovation and commercialization.

MISSION

1. To support UAF faculty and the national scientific community working for the cause of agricultural and rural development.
2. To promote competitiveness in agriculture through competitive/commissioned Research & Development initiatives.
3. To explore ways and means for strengthening of Endowment Fund for Research & Development.

OBJECTIVES

- a. To support UAF programs for advanced training in biotechnology, agricultural sciences research, technology transfer and product commercialization.
- b. To strengthen faculty and support R&D activities of UAF.
- c. To support similar programs with other institutions of higher learning, private sector, not-for profit organizations, and domestic and international organizations.
- d. To encourage increased cooperation among scientists conducting agriculture-related research at universities in Pakistan and the United States of America.



Introduction

Establishment of Endowment Fund at UAF

The Government of Pakistan and United States of America signed a US\$ 12.4 million Food for Progress Agreement of September 15, 2013. Under this Agreement, the Syndicate under Section 25(2)(i) of the University of Agriculture, Faisalabad Act, 1973 approved to establish Endowment Fund at UAF. The Ministry of Finance transferred Rs. 650.00 million to UAF in 2006. The principal amount is invested in scheduled banks approved by Board of Directors. The income generated is allocated for different activities in line with the Pakistan's long term goals for the agriculture sector which focus on food security, poverty alleviation and promoting broad based equitable and sustainable agriculture. The Endowment Fund is an independent entity and possesses all of the powers necessary to carry out its functions.

Management of the Fund

The Board of Directors (BoD) is the governing body of this Fund and is responsible for its program, financial and managerial policies. Following is the composition of Board:

- | | |
|---|-------------|
| • Vice Chancellor, UAF (Chairman) | Ex-off |
| • Vice Chancellor, Agriculture University Peshawar, KPK | Ex-off |
| • USDA Agri. Attache in Pakistan or his nominee | Ex-off |
| • Agri. Specialist, USDA, US Embassy in Pakistan | Ex-off |
| • Eminent Scientists (Two) | For 3-years |
| • Progressive Farmer (One) | For 3-years |
| • Executive Director, ALP (PARC), Islamabad | Ex-off |
| • Registrar, UAF | Ex-off |
| • Treasurer, UAF | EX-off |
| • Executive Director, EFS, UAF (member/Secretary) | Ex-off |



Endowment Fund Secretariat

Endowment Fund Secretariat is responsible for the operation of the Fund which consists mainly of the selection, processing, approval, monitoring, evaluation and coordination of projects supported in whole or in part by it. All the activities are planned, approved and coordinated through Endowment Fund Secretariat (EFS) under the supervision of Executive Director.

1. Executive Director, Professor nominated by Vice Chancellor, UAF
2. Additional Director, Regular (One)
3. Deputy Director, Regular (One)
4. Lecturer, Regular (One)
5. Accounts Officer, Regular (One)
6. Administration/Supporting Staff (4 Nos)

Programs

With the approval of Board the following programmes are being sponsored by EFS, UAF

1. Faculty Development
2. Technology Transfer
3. Product Commercialization
4. Research & Development

Evaluation of the Proposals:

The project proposals are processed in accordance with the procedures approved by the BoD as under:

- Invitation of proposals in the National Press.
- Initial evaluation by Endowment Fund Secretariat.
- Review of proposals by two national referees (Nominated by the Chairman BoD/Vice Chancellor)
- Submission of project proposals to TAC along with recommendations of referees for evaluation.
- Rationalization of the recommended proposals by the Committee constituted by the Chairman BoD.
- Final selection/approval by the Board.
- Signing of Implementation Agreement between the executor/PI and UAF.
- Issuance of Administrative approval of the projects.



Section

1

FACULTY DEVELOPMENT

Capacity-building in agriculture and allied disciplines has been the prime focus of Endowment Fund, UAF. Further, interaction with the international community and exposure to the developed systems are the additional benefit of this program. A Faculty Development Committee comprising senior teachers evaluates and recommends such applications to the Chairman BoD for approval.

1. Short training (abroad)
2. Short training (inland)
3. Travel grants for presenting papers (abroad)
4. Short visit for institutional collaboration
5. Seminars/Workshops/Conferences organized at UAF

Achievement of the year

During 2017-18, following is the achievements under Faculty Development :

- | | |
|--|----|
| 1. Short Training (abroad) | 07 |
| 2. Travel Grants (abroad) | 15 |
| 2. Short visit for institutional collaboration | 09 |
| 3. Seminars/Workshops/Conferences organized at UAF | 21 |

1.1 Short Term Trainings (abroad)

This program has been designed with the objective to accelerate the quantum of research and development in Agricultural Universities through short term trainings that are catalytic to the technological and socio-economic development of the country. Under this program, teachers, scientific and technical staff and researchers of the University of Agriculture Faisalabad can avail the grant for short term local as well as foreign training of their own choice but related to their current field of specialization.

Sr. #	Name/address	Title/Host Institute
1.	Dr. Bilal Saeed, Lecturer, Department of Entomology, UAF	Advanced Techniques of Phytoparasitic Arachnids Acarology Laboratory, Department of Invertebrate Zoology Saint Petersburg State University, St-Petersburg, Russia Duration: August 07 to 30, 2017
2.	Dr. Muhammad Saeed, Assistant Professor, NIFSAT, UAF	4th International Course on Food Safety and Additives International Agri. Research & Training Center (Izmir, Turkey) Duration: September 18-22, 2017
3.	Dr. Muhammad Awais Ghani, Assistant Professor, Institute of Horticultural Sciences, UAF	Modulating Plant MicroRNAs Using Short Tandem Target Mimic (STTM), Houghton, Michigan, USA Duration: Dec 15 to 25, 2017
4.	Dr. M. Naveed, Assistant Professor, Institute of Soil & Environmental Sciences, UAF	2018 Synthetic Biotechnology Training Course for Developing Countries, Jointly 1st TWAS Symposium on Plant Natural Product Synthesis by Microbe, China Duration: January 15 to 19, 2018
5.	Dr. Muhammad Atiq, Assistant Professor, Department of Plant Pathology, UAF	International Workshop on the Prevention and Control of Diseases and Insect Pests of Cross-Border Plant in China Duration: June 10-29, 2018
6.	Dr. Zulfiqar Ahmad Saqib, Assistant Professor, Institute of Soil & Environmental Sciences, UAF	International Sustainable Management of Soil and Water Resources, Izmir, Turkey Duration: June 09-20, 2018
7.	Dr. Muhammad Kashif Iqbal Khan, Assistant Professor, NIFSAT, UAF	5th International Course on Food Safety & Additives, Turkey Duration: June 25-29, 2018

1.2 Travel Grants for Presenting Paper abroad

Endowment Fund Secretariat encourages faculty members to have international exposure by presenting their research findings at various international seminars, conferences, workshops, etc. Following travel grants were provided to faculty members for presenting papers at international events:

Sr.#	Name & Address of the Grantee	Title of Paper, Organizer, Venue
1.	Dr. Babar Shahbaz, Associate Professor, Institute of Agri. Extension & Rural Development, UAF	Higher Education in Agricultural Sciences: Analyzing Gender Divide and Women Disinclination Towards Higher Studies in Pakistan in 4th International Conference on Agriculture and Forestry (ICOAF) Organized by: University of Peradeniya, Sri Lanka August 24-25, 2017 Venue: Colombo, Sri Lanka
2.	Dr. Muhammad Sana Ullah, Assistant Professor, Institute of Soil & Environmental Sciences, UAF	Influence of Root Litter Addition on Composition and Function of Subsoil Microbial Communities under Grassland in 6th International Symposium on Soil Organic Matter Organized by: Rothamsted Research Institute, Harpenden, UK September 03-07, 2017 Venue: Harpenden, UK
3.	Dr. Irfan Afzal, Associate Professor, Department of Agronomy, UAF	Hermetic Storage of Maize Seeds Preserves Seed Quality through Minimizing Deteriorative Changes Associated with Seed Longevity in 12th Triennial Seed Conference Organized by: University of California, Davis, USA and International Society for Seed Science September 10-14, 2017 Venue: Monterey, California, USA
4.	Dr. Fahad Rasheed, Assistant Professor, Department of Forestry and Range Management, UAF	Leaf Spectral Reflectance as a Tool for the Early Water Stress Detection: A Case Study in three Poplar Hybrids in 125th Anniversary IUFRO Congress-2017 Organized by: National Institute of Research in Agronomy (INRA)-Nancy, Champenoux, France September 18, 2017 Venue: Champenoux, France
5.	Dr. Zubair Aslam, Assistant Professor, Department of Agronomy, UAF	Sorghum Crop Residues may Influence Weed Infestation and Soil Health in Spring Planted Mung Bean in International Symposium on Crop Roots and Rhizosphere Interactions Organized by: Northwest Agriculture and Forestry University (NWAUFU), China and The University of Western Australia (UWA), Australia October 09-13, 2017 Venue: Yangling, Shaanxi Province, China
6.	Dr. M. Sohail Sajid, Associate Professor, Department of Parasitology, UAF	Role of Migratory Birds for Increasing Threats of Zoonotic Infections in the Scenario of Climate Change in International Conference on Building Human and Animal Health Capacities Organized by: Jordan University of Science and Technology, Amman, Jordan October 17-19, 2017 Venue: Amman, Jordan

Sr.#	Name & Address of the Grantee	Title of Paper, Organizer, Venue
7.	Prof. Dr. Ijaz Ahmad, Department of Theriogenology, UAF	Evaluation of Soya Lecithin Based Extender as a Substitute of Tris-Egg Yolk Extender for the Cryopreservation of Nili-Ravi Buffalo Bull Semen in International Buffalo Symposium-2017 Organized by: Ministry of Livestock Development of Nepal along with Nepal Agriculture and Research Council (NARC), and Michigan State Uni., USA November 15-18, 2017 Venue: Chitwan, Nepal
8.	Dr. Muhammad Imran, Lecturer, Department of Parasitology, UAF	Sero-prevalence of Echinococcosis (Echinococcus Granulosus) in Camel Population of Selected Ecological Zone of Baluchistan, Pakistan in 4th International Conference and Industrial Exhibition on Dairy Science Park (DSP-2017) Organized by: Selcuk University, Konya, Turkey and Dairy Science Park November 01-05, 2017 Venue: Selcuk University, Konya, Turkey
9.	Ms. Binish Sarwar Khan, Lecturer, Institute of Home Sciences, UAF	Anaemia-still a Major Health Problem in 4th International Conference and Industrial Exhibition on Dairy Science Park (DSP-2017) Organized by: Selcuk University, Konya, Turkey and Dairy Science Park November 01-05, 2017 Venue: Selcuk University, Konya, Turkey
10.	Dr. Ghulam Mustafa, Assistant Professor, CABB, UAF	Biotechnological Advancements for the Improvement of Sugarcane Crop in 6th IAPSIT International Sugar Conference (IS-2018) Organized by: Thailand Society of Sugar Cane Technologists March 06-09, 2018 Venue: Udon Thoni, Thailand
11.	Dr. Shahid Majeed, Assistant Professor, Department of Entomology, UAF	Assess the Behavior of Aedes aegypti against organic Volatiles in the 54th Annual Scientific Conference of the Malaysian Society of Parasitology and Tropical Medicine (MSPTM) 2018 Organized by: The Malaysian Society of Parasitology and Tropical Medicine (MSPTM) March 14-15, 2018 Venue: Kuala Lumpur, Malaysia
12.	Dr. Faiz Ahmad Joyia, Assistant Professor, CABB, UAF	Towards Stable Agrobacterium Mediated Genetic Transformation in Trifolium alexandrinum L. in International Agricultural Science Congress Organized by: Van Yuzuncu Yi University, Van, Turkey May 09-12, 2018 Venue: Van, Turkey

Sr.#	Name & Address of the Grantee	Title of Paper, Organizer, Venue
13.	Prof. Dr. Shahzad M. A. Basra, Department of Agronomy, UAF	<ol style="list-style-type: none"> Diversification of Alternate Crops for Adaptation in Changing Climate of Pakistan (Poster Presentation) Moringa Oleifera: A Journey from Neglected to a Popular Multipurpose Plant in Pakistan (Oral Presentation) in International Agricultural Science Congress Organized by: Van Yuzuncu Yil University, Faculty of Agriculture, Van, Turkey May 9-12, 2018 Venue: Van, Turkey
14.	Prof. Dr. Haq Nawaz Bhatti, Department of Chemistry, UAF	Potential of Clay Composites for the Treatment of Dyes Containing Water: Batch and Column Study in 3rd International Conference on Integrated Environmental Management for Sustainable Development (ICIEM-2018) Organized by: ENIS, University of Sfax, Tunisia May 02-05, 2018 Venue: Sousse, Tunisia
15.	Dr. Nabeel Khan Niazi, Assistant Professor, ISES, UAF	Arsenic Removal Efficiency of Perilla Leaf Biochar in Aqueous Environments: A Spectroscopic and Microscopic Examination in 2nd International Conference on Bioresources, Energy, Environment and Materials Technology (BEEM 2018) Organized by: Korea Biochar Research Center (KBRC), South Korea June 10-13, 2018 Venue: Hongcheon, Gangwon Province, South Korea

1.3 Short Visits for Institutional Collaboration

Travel grants for short visits abroad are provided for strengthening international collaboration and participation in events after nomination by the vice chancellor to represent UAF. Following faculty members were awarded grants under short visits program:

Sr.#	Name/Department	Purpose / Host / Date	Country
1.	Prof. Dr. Ahrar Khan, Dean Faculty of Veterinary Sciences, UAF	To establish relationships between UAF and Shandong Vocational Animal Science and Veterinary College (SVASVC) in Shandong Vocational Animal Science and Veterinary College, Weifang, Shandong Province, China August 5-12, 2017	China
2.	Prof. Dr. M. Sajjad Khan, Dean, Faculty of Animal Husbandry, UAF		
3.	Prof. Dr. Zafar Iqbal Qureshi, Chairman, Department of Theriogenology, UAF		
4.	Prof. Dr. M. Aslam, Director, Institute of Animal and Dairy Sciences, UAF		
5.	Mr. Umar Saeed, Treasurer/Member Board, Endowment Fund, UAF	<ul style="list-style-type: none"> 160th International Conference on Economics, Finance and Accounting (ICFA) (November 02-03, 2017) Global Management Accountants Conference (November 04th, 2017) 	UAE-Dubai
6.	Prof. Dr. Anas Sarwar Qureshi, Department of Anatomy, UAF	To participate in the international week held in Afyon Kocatepe University, Turkey on 16-22 April, 2018 regarding Erasmus + exchange program	Turkey

Sr.#	Name/Department	Purpose / Host / Date	Country
7.	Prof. Dr. Rashid Ahmad, External Linkage, UAF	Short visit to Huazhong Agricultural University (HZAU), China in order to explore collaboration opportunities especially in the areas of plant, Horticulture, Agricultural Economics and Management Sciences and sign a framework MoU on mutually agreed activities. May18-26, 2018	China
8.	Dr. Saddam Hussain, Assistant Professor, Department of Agronomy, UAF		
9.	Dr. M. Amjad Iqbal, Assistant Professor, (HZAU Alumnus) Inst. of Agri. & Resource Economics		

1.4 Seminars/Conferences/Workshops/Trainings organized at UAF

Endowment Fund provides financial support to UAF faculty members to organize seminars/conferences/workshops at the campus. During the year 2017-18, EFS sponsored following events:

Sr. #	Organizer	Title of Seminar/Workshop/Conference
1.	Dr. Muhammad Ather Javed Khan, Department of Continuing Education, UAF	Training of Instructors at In-Service Agricultural Training Institutes & UAF for DAS" scheduled on July 10 to July 22, 2017 & July 24 to August 05, 2017 in the UAF
2.	Dr. Muhammad Yaseen, Incharge, Department of Mathematics & Statistics, UAF	Statistics for Veterinary and Animal Science using R i. July 17-19, 2017 ii. July 20-22, 2017
3.	Prof. Dr. Zahir Ahmad Zahir, Institute of Soil & Environmental Sciences, UAF	Beans with Benefits: Potential and Limitations for Mungbean August 08-10, 2017
4.	Dr. Ghulam Murtaza, Director Academics, UAF	Orientation Program for Newly Inducted Faculty July 31 to August 04, 2017
5.	Dr. Muhammad Yaseen, Incharge, Department of Mathematics & Statistics, UAF	Statistics Methods for Researchers Using R (for basic sciences) Group – I August 07 to 09, 2017 Group – II August 10 to 12, 2017
6.	Mr. Farooq Hassan, Research Officer, BIC, UAF	DICE-AFS, 2017 Agriculture and Food Science Innovation Event November 07-08, 2017
7.	Prof. Dr. Amer Jamil, Department of Biochemistry, UAF	International Symposium on "Health and Nutrition (ISHN)" October 30, 2017
8.	Dr. Muhammad Jehanzeb Masud, Assistant Professor, Department of Irrigation and Drainage, UAF	Training Workshop "Precision Agricultural Navigation System" October 22 to 28, 2017
9.	Dr. Muhammad Jehanzeb Masud, Assistant Professor, Department of Irrigation and Drainage, UAF	Visit of Foreign Delegate from University of Prince Edward Island (UPEI), Canada for Academic Collaboration October 14 to 22, 2017
10.	Dr. Khalid Mehmood Ch., Incharge, Institute of Agri. Extension & Rural Development, UAF	E-Learning Course on ICT-based Services for Agricultural Extension November 27 to 30, 2017
11.	Dr. Adnan Younis, Assistant Professor, Institute of Horticultural Sciences, UAF	Recent Trends and Opportunities in Landscape December 20, 2017

Sr. #	Organizer	Title of Seminar/Workshop/Conference
12.	Dr. Syed Asher Mahfooz, Assistant Professor, Department of Clinical Medicine & Surgery, UAF	Internees-Stakeholders Interactive Workshop on the Development of Training Modules January 08, 2018
13.	Prof. Dr. Muhammad Tariq Javed, Department of Pathology, UAF	International Conference "Dairy Animal Health Challenges (DAHC-2018)" January 17-18, 2018
14.	Dr. Khuram Zia, Assistant Professor, ORIC, UAF	1st Entrepreneurship Festival Faisalabad 2018 (eff 18) January 19, 2018
15.	Dr. Ghulam Murtaza, Director Academics, UAF	Training workshop "Orientation Program for Newly Inducted Faculty" February 12, 2018
16.	Prof. Dr. Ahrar Khan, Dean, Faculty of Veterinary Sciences, UAF	International One Health Conference March 19-20, 2018
17.	Prof. Dr. Muhammad Tariq Javed, Department of Pathology, UAF	National Training on Histopathology (HP-2018) April 20, 2018
18.	Dr. Beenish Israr, Lecturer, Institute of Home Sciences, UAF	"Home Economics to Home Sciences: Journey of Entrepreneurship through Generation" March 16, 2018
19.	Dr. Iftikhar Ahmad, Assistant Professor, Institute of Horticultural Sciences, UAF	International Workshop "International Workshop on Modern Floriculture Production & Product Development Techniques" April 03-04, 2018
20.	Dr. Abdul Ghaffar, Chairman, Department of Physic, UAF	International Conference "New Frontier of Experimental and Theoretical Physics" April 16-17, 2018
21.	Prof. Dr. Aman Ullah Malik, Director, Institute of Horticultural Sciences, UAF	Fruit Tree Value Assessment April 18, 2018



HIGHLIGHTS OF SOME EVENTS

Title of the event: Two Weeks Training Course for Diploma in Agricultural Sciences (DAS) Instructors at In-Service Agricultural Training Institutes & UAF
10-07-2017 to 22-07-2017 (1st Batch) &
22-07-2017 to 05-08-2017 (2nd Batch)

Name of Organizer: Dr. Muhammad Ather Javed Khan, Associate Professor,
Department of Continuing Education, UAF

Objectives of the Event:

To train the Diploma in Agricultural Sciences (DAS) Instructors of IATIs (In-Service Agricultural Training Institutes) and UAF according to the revised scheme of study

Outcome of the Event:

The present training was arranged as a refreshing course to share the up-dated knowledge about agricultural developments and other allied disciplines for the Instructors of In-Service Agricultural Training Institutes (IATIs) & UAF. They gained a lot from the training to teach the students of DAS according to recent developments/ inovations/ approaches to enhance the outcomes of agriculture sector.



Title of the event: Statistics for Veterinary & Animal Science using R
July 17 to 19 & 20 to 22, 2017 (Batch-I)
Statistical Methods for Researchers using R (for Basic Science)
Aug 07 to Aug 12, 2017 (Batch-II)

Name of Organizer: Dr. M. Yaseen, Department of Mathematics & Statistics, UAF

Detailed Proceedings of the Event:

In order to get the maximum benefit from any research, it is imperative to convert the research data into information through valid Statistical Analysis using advanced statistical software. Available commercial statistical software are very expensive and have limited analysis capabilities. In contrast, R is a free & open source programming language and an integrated suite of software facilities for statistical computing and graphical display.

Among other things it has:

- (a) An effective data handling and storage facility,
- (b) A suite of operators for calculations on arrays, in particular matrices
- (c) A large, coherent, integrated collection of intermediate tools for data analysis
- (d) Graphical facilities for data analysis and display either directly at the computer or on hard-copy

The Dean Faculty of Veterinary Science inaugurated the first batch of the training workshops on 17 July, 2017. While addressing to the audience, the Dean urged all the faculty members to learn the novel techniques of data analysis and new statistical tools and get the maximum benefit from this opportunity. The workshop coordinator and the In-charge, department of Mathematics & Statistics, Dr. Muhammad Yaseen, stressed the importance of Statistics and Data analysis in research and highlighted the need to learn the software R. He pointed out that it is mandatory for each researcher to have basic knowledge and understanding of Statistics.



Title of the event: Workshop on Beans with Benefits: Potential and Limitations for Mungbean Production August 08-10, 2017

Name of Organizer: Prof. Dr. Zahir Ahmad Zahir, Institute of Soil & Environmental Sciences, UAF

Dr. Roland Schafleitner (international coordinator of the project chaired a meeting of the project partners to discuss different aspects of the project. Inauguration of the workshop was carried out on August 09, 2017 at CAS auditorium. During the workshop Dr. Shahid Riaz Malik from NARC presented opportunities for integrating mungbean in existing cropping system in Pakistan followed by Dr. Ravza Mavlyanova on mungbean research and breeding in Uzbekistan. Dr. Khalid Hussain, ARID Zone Research Institute Bakhra discussed challenges and opportunities for mungbean seed production and procurement. Dr. Aziz ur Rehman, Ayub Agricultural Research Institute, Faisalabad presented his findings on mungbean production status and constraints in Punjab. Dr. Thomas H. Hilger discussed soil fertility and mungbean production while Dr. Ghulam Abbas highlighted breeding strategies and opportunities for mungbean in Pakistan. Dr. Asghar Ali briefed about the role of mechanization in mungbean production/ harvesting/ threshing. Prof. Dr. Zahir Ahmad Zahir discussed perspectives and applications of biofertilizers for mungbean production while Dr. Hafiz Naem Asghar explained inoculation techniques for mungbean.

On August 10, 2017, Dr. Muzammil Sattar focused on integrated pest management in mungbean while Dr. Shavkat Kenjavayeb highlighted integrated mungbean research from Uzbekistan and Pakistan: challenges and opportunities. Dr. Muhamamd Hanif Munawar discussed mungbean diseases and their management. Dr. Imran Pasha discussed opportunities for value addition in mungbean: an over view of its functional and nutraceutical worth. Ms. Saima Rani described the role of local community for mobilization of mungbean production in Pakistan. Dr. Muhammad Jawad Asghar focused on gene improvement of mungbean through hybridization with mashbean. Mr. Muhammad Yasin presented value addition of mungbean in cosmetic industries. In the concluding session, Dr. Shahid Riaz Malik, NARC presented recommendations of this workshop emphasizing reforms in marketing system and promoting genetic resources to meet the challenges of climate change.



Title of the event: Orientation of Newly Inducted Faculty
July 31 to August 04, 2018

Name of Organizer: Prof. Dr. Ghulam Murtaza, Director Academics, UAF

Objectives of the Event:

The objective of this activity was to impart the skill to the young teachers to build professional careers on strong basis using modern concepts of using information technology in teaching and class assessment, time management and stress management, quality assessment and evaluation. Furthermore, it will provide knowledge of ethics at work place improving their skills in developing healthy interaction with the students in class room.



Title of the event: Distinguished Innovation Collaboration Entrepreneurship event (DICE-AFS 2017)
November 07-08, 2017

Name of Organizer: Business Incubation Center, ORIC, UAF

Objectives of the Event:

The key objects of this Event (DICE-AFS 2017) were:

- To connect Academia, Industry, technology vendors and other stakeholders to share and collaborate on innovative concepts and ideas regarding the development of agriculture, food security and value addition in Pakistan
- To promote entrepreneurial culture among the students for grooming them as job providers rather job seekers to combat the problems of unemployment.
- The exhibition on this event to showcase innovative projects by the students, will be an opportunity for the researchers and stakeholders to pick best of the best technology for commercialization
- To boost up internationalization by inviting expatriate Pakistani's to support entrepreneurship culture in the country and share their knowledge for uplifting the economy of Pakistan.

Detailed Proceedings of the Event

Distinguished Innovation Collaboration Entrepreneurship (DICE) event themed Agriculture and Food Sciences 2017 was held at Expo Center of University in which students from 30 universities presented 126 innovative ideas/projects. The event was arranged by the ORIC, UAF in collaboration with DICE Foundation USA. The event was inaugurated by Belgium Ambassador Frederic Verheyden who was flanked by Prof.Dr Muhammad Iqbal Zafar Vice Chancellor UAF, Prof Dr Zahir Ahmad Zahir Director ORIC, Mr. Shabbir Hussain Chawala President Faisalabad Chamber of Commerce and Industry, Dr Habib Aslam Gaba Chairman Academia Industry Linkages, FCCI, and other notables.



i) National Seminar on Challenges for Research Commercialization and Way forward

The theme of the seminar was to highlight/uplift commercialization process in the universities. The Speakers of the seminar focused on bridging the gaps between Academia and Industry.

Guest Speakers:

Dr.Habib Aslam Gaba

Chairman, Industry Academia Linkages

Topic "Knowledge and Skills Gap between Industry and Academic Researchers: A Challenge to Commercial Productivity"

Dr.Ahmad Raza Bilal

Associate Professor, Chair Technopreneurship and Innovation, Superior University Lahore

Topic: "Linking Research Outcome to Successful Commercialization: Way Forward for Small Entrepreneurs"

Ms. Samar Hasan, Co-Founder, Epiphany

Topic: "Social Entrepreneurship"

ii) National Seminar on Biofertilizer: Pros & Cons of Entrepreneurship in Pakistan

A National Seminar on Biofertilizers: Pro & Cons of Entrepreneurship in Pakistan was held at New Senate Hall. The Vice Chancellor, Prof. Dr. Muhammad Iqbal Zafar showed his concern, that Agriculture land fertility was decreasing with each passing year that poses threat for food security situation. This seminar highlighted Biofertilizers as best supplement to chemical fertilizers.

Guest Speakers:

Prof. Dr. Zahir Shah, Department of Soil and Environmental Sciences, The University of Agriculture Peshawar

Topic: "Biofertilizers and Farmers Response in KPK"

Dr. Maqbool Akhtar, Jaffer Brothers Pvt.Ltd

Topic: "Challenges for Marketing of Biofertilizers"

Dr. Farukh Hassan, Neha Tech Pvt.Ltd

Topic: Commercial Production of Bioactive fertilizers: Myths and Reality

Dr.Nadeem Tariq, Neha Tech Pvt.Ltd

Topic: Strategies for Changing Mind Set to Familiarize Biofertilizers through Entrepreneurial Approaches



Title of the event: International Symposium on Health and Nutrition (ISHN)
October 30, 2017

Name of Organizer: Prof. Dr. Amer Jamil, Department of Biochemistry, UAF

Objectives of the Event:

To create awareness among the community regarding:

- Alarming situation of health and nutrition in the country
- What are the basic steps that should be taken to counter malnutrition?
- What should be our diet for a healthier life?
- What routine medical tests should be done to avoid fatal diseases?

Detailed Proceedings of the Event

The symposium was organized in collaboration with Nutrition Section, Ministry of Planning, Development and Reform that is striving hard to eradicate malnutrition from the country, SUN (scaling up nutrition) Movement Pakistan and World Food Program (WFP).

Opening technical talk of the symposium was delivered by an internationally renowned scientist, Prof. Dr. Anwar-ul-Hassan Gilani, sitara-i-imtiaz, Chairman Pakistan Council for Science and Technology, Islamabad who was Guest of Honor of the inaugural session. His talk was well appreciated by the participants. The inaugural session was concluded with a vote of thanks by Prof. Dr. Khalil-ur-Rehman, Chairman Dept. of Biochemistry followed by tea break.

Technical session was chaired by Mr. Muhammad Aslam Shaheen, Chief Nutrition Planning Commission of Pakistan/SUN focal point Pakistan. Dr. Sadaf Sardar, National Program Officer-SUN Secretariat, Ministry of Planning, Development & Reform Islamabad who talked about SUN movement and its working in Pakistan for improvement of health and nutrition status of the people of Pakistan. Dr. Yahya Gulzar, World Health Organization (WHO) and Mr. Syed Saeed Qadir United Nation's Children Fund (UNICEF) discussed about the importance of health and nutrition especially with reference to children and women. Dr. Ali Ahmed Khan Nutrition policy program officer, World Food Program (WFP) discussed various programs of WFP being implemented in Pakistan. Keynote lecture was delivered by Dr. Habib Aslam Gaba, Consultant Cardiologist on "Physical Inactivity: the biggest health problem of the 21st century".

A very interactive and thought-provoking panel discussion was conducted in which participants showed immense interest, and posed a number of questions that made the session useful for the participants. Twenty-three posters were also presented in the symposium. The symposium was concluded by Mr. M. Aslam Shaheen and committed to come time and again whenever there is a need to create awareness about health and nutrition.



Title of the event: Visit of delegates from the University of Prince Edward Island (UPEI), Canada for initializing Pilot project on household waste water treatment and 1+3 engineering degree program October 14-22, 2017

Name of Organizer: Dr. M. Jehanzeb Masud Cheema, Department of Irrigation & Drainage, UAF

Objectives of the Event:

- to initialize undergraduate pilot project on village level for household water treatment
- to develop student level collaboration with UAF engineering students
- to finalize details of 1+3 engineering degree program

Meeting with the Vice Chancellor-UAF, COP- CAS, Dean and Faculty of Agric. Engg. Faculty.

On the day 1, The delegation from UPEI met the Vice Chancellor, Prof. Dr Iqbal Zafar, and discussed the purpose of their visit. They briefed about the pilot global project and 1+3 degree programs initiative between FAE&T, UAF and SDE, UPEI-Canada.



The delegation visited CAS office and met with the COP-CAS, Prof Dr Iqrar Ahmad Khan and updated him about the visit activities.



The UPEI delegation then visited Faculty of Agricultural Engineering and Technology and discussed 1+3 degree programs in detail with the Dean and Chairmen of the Departments of FAE&T.

Dr Wyne Peters (Director of Students and Dr. Aitazaz Farooque (Assistant Professor) briefed the faculty about the initiative and opportunities the students can avail after completing their bachelor degree from UPEI. The UPEI team told that they are agreed to initiate 1+3 degree after completing few formalities. They were expecting a visit of their President during February or March, 2018 to formally sign an agreement.



On October 17, 2017, the team visited WASA labs to see the facilities for water analysis and treatment.



Afterwards, the foreign and local team visited Proka Wastewater Treatment facility of WASA in Proka. The WASA officials briefed about the system and told that after treatment the water is being thrown into the drain.



On the same day, the team visited a Village 232 JB Jhang to see the method of household wastewater disposal. The team came to know that most of sewage was being used for irrigating crops. Toxic sewage was being sent directly to fields without any treatment thus causing water borne diseases.



On the same day, team visited village in Sargodha to see the sewage water drain system



On October 19, a meeting was organized to discuss 1+3 degree curriculum. Curriculum team of FAE&T and UPEI discussed semester wise curriculum and ways to make it at par with the curriculum of UPEI.



On October 20, A seminar was organized in the CAS lecture theatre that was attended by faculty and students of Agricultural Engineering Faculty. The UPEI team highlighted their work and told audience that the wastewater seeps into the ground, contaminating the groundwater. A combination of unsanitary waste disposal, coupled with a lack of treatment strategies contributes to the poor quality of life experienced by the villagers and the high rates of waterborne illnesses. The majority of villagers are farmers earning an average income of only 350 Pakistani rupees (PKR) per day (\$1CAD = 85PKR). The villagers are uneducated about the health hazards associated with poor water management. The value of income over health hazards leads to farmers using wastewater to irrigate their crops, which causes contaminated crops.



Outcome of the Event:

UPEI team was satisfied with the curriculum of BSc Engineering Degree Program and agreed to initiate 1+3 degree after completing few formalities.

A close research collaboration was developed between the students from UPEI and Students of FAE&T, UAF.

The team of UPEI started a pilot Global Project to provide a low cost solution to treat household wastewater in the villages which will help in reducing water borne diseases.

Title of the event:
Training workshop on precision agricultural navigation systems
October 22–28, 2017

Name of Organizer: Dr. M. Jehanzeb Masud Cheema,
Department of Irrigation & Drainage,
UAF

Objectives of the Event:

- Establishment of first Continuously Operating Reference Station (CORS) in the country
- Technology transfer and implementation of CORS technology in the university
- Demonstration of CORS applications navigation system especially for precision sowing

Detailed Proceedings of the Event :

A team of three engineers from China Huace Company (CHC) visited UAF from October 22 to 28, 2017. The company aimed to establish Continuously Operating Reference Station (CORS) in the university as well as technology transfer and implementation of CORS technology in the university and demonstration of CORS applications navigation system especially for precision sowing and auto steering system.

The team met UAF Vice Chancellor, Prof Dr Iqbal Zafar and Prof Dr Iqrar Ahmad Khan, Chief of Party, CAS-UAF and briefed about the collaborative work they aimed to start with the precision agriculture program of CAS-UAF. The CHC team was warmly welcomed and ensured complete support for their work.

The CHC team also visited various locations in the university to install CORS station and it was decided to install on CAS building due to availability of Internet, power back and security.

Next day was spent on installation of different equipment for CORS station and its trouble shooting in the lab.

Next two days i.e. October 25 and 26, 2017 were spent on installing the navigation system on a local tractor obtained from Directorate of Farms, UAF. The CHC engineers installed and trained our engineers about system installation. Two days were spent due to local fabrication of some system parts and the calibration and testing of the auto steering system operations.

On October 27, 2017, a workshop entitled “International Training Workshop and Demonstration on Precsion Navigation Systems” was arranged in the CAS Lecture Theatre to dissemination technology information to the stakeholders regarding precision navigation systems.

A large number of acadmicians, farmers, industry people and students from UAF, Punjab University, MNSUA-Multan, LUMS, AMRI-Faisalabad and Multan, Agriculture Field Wing, AgriTech industry, Millat Tractors etc attended the workshop and got information on new/advanced technologies of auto steering and precision navigation systems.

At the end of the seminar a demonstration of the auto steering system was arranged in which a physical demostration of Auto Steering System was carried out. The tractor maintained less than 1 cm accuracy while moving in a straight line as well as in a pivotal circle.





Title of the event: E-Learning Course on ICT-Based Services for Agricultural Extension
November 27-30, 2017

Name of Organizer: Prof. Dr. Khalid Mahmood Ch., Institute of Agri. Extension & Rural Development, UAF

Objectives of the Event:

Main objectives of the training module were to acquaint the participants with;

- Utilization of Information and Communication Technologies (ICTs) for Agricultural Extension Services (AES)
- Emerging models of and trends in ICT-based AES
- ICT utilization to accommodate the needs of farmers and rural SMEs

Detailed Proceedings of the Event :

National Productivity Organization (NPO), Ministry of Industries and Production in collaboration with Asian Productivity Organization organized an International e-Learning Course on ICT Based Services for Agricultural Extension. The Main objective of this programme was to highlight the recent trends and applications of ICT as well as Digital Technology and successful cases of ICT adaptation in collaborated countries. Eight countries including Pakistan, India, Iran, Malaysia, Sri Lanka, Indonesia, Philippines presented their county presentations covering practicing Models in particular countries.

Dr. Muhammad Saeed, Director APO welcome the participants.

Through video-conferencing, Dr. Noel Magor (Former Head, Training Center (TC) and Impact Acceleration Unit, International Rice Research Institute, Los Banos, Laguna, Philippines) delivered his 30-minutes presentation on the topic "ICTs in Agriculture Extension Service (AES) and Agriculture Advisory Services (AAS): ICT context, trend, approaches and challenges"

Dr. Sutrisno Hadi Purnomo, Faculty member, and researcher at Faculty of Agriculture, Sebelas, Maret University, Indonesia presented on the topic "Impact of ICTs in teaching and Learning and implications for Rural Development. He highlighted the role of ICT in Poverty alleviation and Better Livelihood. He further stated that ICT can work as a bridge between Rural and Urban Area.

Mr. M. F. M. Rizwan delivered his presentation on the topic of "Preparing Agricultural Extensionist for ICT-Learning Environment: Training of Teachers (TOT) to multiply the ICT Learning Effect in which he covered the topics of



e-agriculture and M-Learning (use of Mobile as ICT) in agricultural Informatics, entrepreneurship and Technology Dissemination. He focused on Content Management System (CMS), Management Information System (MIS), Decision Support System (DSS) and Marketing Information System (MIS), also he elaborated the use of ICT for effective teaching. Second day started with the presentation of Dr. Sutrisno Hadi Purnomo, Faculty member, and researcher at Faculty of Agriculture, Sebelas, Maret University, Indonesia. He focused on the Cyber Extension Mechanism: knowledge flow in agriculture Extension to increase farmers' benefit. He elaborated the concept, tools and working system of Cyber Extension and its application in different countries of the world. His presentation enclosed the examples of Cyber Extension i.e. Daknet (wireless technology) in India, Agrarian Information System in Peru and Cyber Extension Website in Indonesia. He also explained different Models of knowledge Management in Cyber Extension.

Mr. Noel Magor, (Former Head, Training Center (TC) and Impact Acceleration Unit, International Rice Research Institute, Los Banos, Laguna, Philippines) presented cases for the ICT utilization to accommodate the needs of Farmers and Rural SMEs. He introduced ICTs applications for the dissemination (Access to Information and Knowledge) and discussed Radio 2.0 for campaigns and reach in Tanzania, Uganda and Ethiopia etc. His presentation reflects the point that Digital Green Video has 10 times more impact than per dollar spent on classical extension.

He explained the case study of the International Rice Research Institute IRRI- Philippine Rice Knowledge Bank and Bangladesh Rice Knowledge Bank dissemination pathway.

After the final presentation, all the participants were given opportunity to discuss and to prepare country's presentation. Key points of entire discussion were noted and the task of making country's presentation was given to Dr. Babar Shahbaz, Faculty Member of IAERD.

Participants attained the experience of diversified cyber extension approaches that might be useful in their local environment with some modifications according to the local needs.

Title of the event: Recent Trends and Opportunities in Landscape
December 20, 2017

Name of Organizer: Dr. Adnan Younis, Assistant Professor, Institute of Horticultural Sciences, UAF

Landscape is the art of developing property for its greatest use and enjoyment. Urban areas, like Faisalabad, are facing the problems like noise pollution, dust, gaseous pollution and summer peak temperature due to increasing urbanization, industrialization and mechanization. Air pollution problems are more concentrated, and the landscape is significantly altered, reducing personal health benefits available to people by having access to parks and green open spaces. Dr. Tariq Iqtadar Ex. Director Floriculture Punjab said that the effective landscape design is also a science because it involves understanding the urban environment and selecting plants that perform well in that environment. He further added that a well-conceived landscape design, properly installed and well maintained, adds value to property and enhances the quality of life in cities. Mr. Jawad Qadir explained some points on Exotic and Native species. He gave a brief description of exotic plants and also explained why native species are not used in landscape. He also explained the positive and negative characteristics of exotic plants. Mr. Tariq Tanveer, CEO Agri-tourism Qadir Bakhsh Farms discussed about the "Living Walls and Vertical Gardening". Mr. Ghulam Mustafa Shad, Deputy Director PHA, Lahore explained the overview of PHA and their work. He shared the project of Jallo Park Lahore. Butterfly garden, mazes garden, tree top walk way, Zen gardening, flowering carpets, children play area are some parts of that project. He told the audience that the Jallo Botanical Butterfly House has different butterfly species collected from all over the world & 35 to 40 local species.



Title of the event: Internees Stakeholders Interactive Workshop
January 08, 2018

Name of Organizer: Dr. Syed Asher Mahfooz, Assistant Professor, Department of CMS, UAF

Objectives of the Event:

1. Professional training of outgoing graduates and awareness about job opportunities in the industry.
2. To strengthen the linkage with industry stakeholders

Detailed Proceedings of the Event :

Dr. Nadeem Sarwar, CEO Sanna Lab. was the chief guest on this occasion. He appreciated the commendable efforts of the Faculty Internship working group and Dean Faculty of Veterinary Science for organizing this learning workshop. He also encouraged the interneers to get benefit from this opportunity. The private and public stakeholders from all over the Punjab participated in the workshop. The workshop has got its objectives in term of training of DVM students as capacity building. All the participants acknowledged the effort of Internship Working Group and assured that they will provide good training from their trained persons. Dr. M. Kashif Saleemi presented the learning objectives of the internship to the stakeholders and interneers. Dr. Awais Sohail Hanif from Chawala Dairy, Dr. Anjum Ali from Sabir Poultry and Fiaz Ahmad Chattha from Mukhtar Feeds also commented on the internship program and its objectives. From Faculty members Dr. Muzammal Hassan and Dr. M. Ijaz Saleem also participated in the discussion. In the end Prof. Dr. Ahrar Khan, Dean Faculty of Veterinary Science also thanked the stakeholders for their participation.



Title of the event: International Conference Dairy Animal Health Challenges (DAHC-2018)
January 08, 2018

Name of Organizer: Prof. Dr. M. Tariq Javed, Department of Pathology, UAF

Objectives of the Event:

- To provide a chance to expand collaborative network.
- To share knowledge and experience on dairy animal health and develop the solutions to the problem of the dairy industry.

Dr. Muhammad Afzal made a keynote speech where he highlighted the situation of FMD in the country, the situation of vaccine failure in the past of local and imported vaccine, till the start of FAO project by which the FMD virus was genotyped and vaccine from local serotypes was prepared.

Prof. Dr. Nasim Ahmad (Ex Pro-Vice Chancellor and Dean, UVAS) chaired the session on Strategies to improve fertility through synchronization as a tool for reproductive management in dairy buffaloes. Prof. Dr. Jainbao DONG told about from China on the likelihood of papillomavirus transmission by blood sucking fly in dairy cattle. He highlighted the role of fly in spread of cancer virus from one animal to other. Prof. Dr. Maqbool Ahmad talked on Reproductive problems/issues in Dairy Animals. Dr. Waqas Ahmad Khan talked on Genome-wide survey of selection signatures in Pakistani cattle breeds. Dr. Aziz ur Rehman, who did his PhD on paratuberculosis talked on economic impact of paratuberculosis in dairy animals. This is a zoonotic disease and prevalent in our animals and can be transmitted to human beings. Dr. Azam Kakar, Director World Bank Pakistan talked on Dairy Animal Health Challenges and Trend in Balochistan, Pakistan, Dr. Manzoor Hussain (FAO, NARC) on a successful model for the surveillance of Foot and Mouth Disease Outbreaks in Pakistan, Prof. Dr. Aneela Zameer Durani, talked on molecular epidemiology of bovine ephemeral fever.





Dr. Farkhanda Manzoor made deliberations on antibiotic residues in meat and about the magnitude of the problem. Dr. Muhammad Adeel made an online presentation from China on seroprevalence of Theileriosis, a parasitic disease and presented his recent research findings. Prof. Dr. M. Fiaz Qammar, talked on parasitism issue in dairy animals, Dr. Haleema Sadia on slaughterhouse based seroprevalence of partuberculosis in cattle and buffaloes in Pakistan, a zoonotic disease. Dr. Mugheez on seroprevalence of blue tongue disease in animals, a new disease in dairy animals that was put into picture to the scientist with future prospect of work. Dr. Riaz Hussain talked on clostridial myositis and showed wonderful pictures of postmortem he carried out at different times, again a very different but important disease of dairy animals. Dr. Razia Kausar talked on the importance of NGase enzyme in mastitis and she presented findings of her PhD thesis work. Dr. M. Ijaz Saleem, spoke on epidemiology of mastitis in goats. Dr. Sohaib Aslam made presentation on Tuberculosis in human and animals and talked the importance of its control in animals in Pakistan. Dr. Saqib Saeed talked on the toxoplasmosis issues in goat. Dr. Muzamil Hussain talked on the issue of improving breeding efficiency of high producing cow.



Title of the event: Orientation of Newly appointed Teaching Assistants (Spring 2018)
February 12, 2018

Name of Organizer: Dr. Ghulam Murtaza, Director Academics, UAF

Objectives of the Event:

The objective of this activity was to impart the skill to the newly appointed TAs using digital tools in teaching and practical/lab work, learning management system and use of turnitin for checking similarity index and plagiarism. Furthermore, it was desired to provide knowledge of ethics at work place improving their skills in developing healthy interaction with the students in class room.



Title of the event: One day National Training on Histopathology-2018
April 20, 2018
Name of Organizer: Prof. Dr. M. Tariq Javed, Department of Pathology, UAF

Prof. Dr. Zafar Iqbal, Dean Faculty of Veterinary Science was chief guest, while the guest of honor was Dr. M. Alam Sabir, the retired Professor of Pathology. Dr. Alam Sabri (Guest of Honor) also highlighted the significance of histopathology in biological sciences and was very happy to see the diverse nature of audience, from biochemistry, zoology, NIFSAT, Physiology and Pharmacology, DVM, HND, etc. with domination of female participation. Dr. Zafar Iqbal, Dean Faculty of Veterinary Sciences, appreciated the effort of training the diverse youth of the country and fully supported such activity and hoped to be a regular feature in coming times. He also highlighted the importance of various training programs and appreciated the steps taken in this direction.

Training Session were conducted by the following experts:

1. Dr. M. Sohaib Aslam (Lecturer, Riphah College of Veterinary Science, Lahore).
2. Dr. Shafia Tehseen Gul, Assistant Professor Department of Pathology, UAF on "Tissue Processing and Sectioning".
3. Dr. Riaz Hussain, Assistant Professor Department of Pathobiology on "slide preparation and staining".
4. Dr. Gulbeena Saleem, Associate Professor, Department of Pathology, University of Veterinary and Animal Science, Lahore.
5. Prof. Dr. M. Tariq Javed, Department of Pathology, UAF on "Slide Reading and Interpretation along with demonstration of histopathological changes in tissue slides.

The students were then moved from the New Senate Hall to Histopathology lab for practical demonstration of the histopathology process whose theoretical background was already given to the students. The students were divided into four groups and they are handled by four experts who demonstrated the complete histopathology process to the students. The groups were rotated. After the process was complete then lunch was given in lunch boxes. The resource persons and other personal were offered lunch separately.

Dr. Hafasa Memona, Lahore College for Women University Lahore and Dr. Irum Javed, Assistant Professor, GC University for Women Faisalabad appreciated the effort and emphasized to make it a regular feature.



1.5. List of Foreign Visitors/Experts Invited

Visit of foreign scholars is of utmost importance for faculty development as more people are benefited than the visit abroad of one individual. Foreign experts invited in training workshops/seminars/conferences are sponsored partially/fully as per requirement. Following Foreigner Scientists were invited during 2017-18:

Sr.#	Name of Visitors	Event
1.	Dr. Wayne Peters (Director of Students Experience)	Visit of students and faculty from the University of Prince Edward Island (UPEI), Canada for initializing pilot project on household waste water treatment and 1+3 engineering degree program October 15 – 22, 2017 Organized by: Dr. M. Jehanzeb Masud Cheema, USPCAS, UAF
2.	Dr. Aitazaz Farooque (Assistant Professor)	
3.	Zachary Denny - 3rd year Engineering student	
4.	Andrew MacEwen - 3rd year Engineering student	
5.	Skylar Tang – 3rd year Engineering student	
6.	Haley Butler - 4th year Engineering student	
7.	Zumer Fatima – 4th year Engineering student	
8.	Mr Lee, Engineer, China Huace Company (CHC) CHINA	Training workshop on precision agricultural navigation systems October 22 – 28, 2017 Organized by: Dr. M. Jehanzeb Masud Cheema, USPCAS, UAF
9.	Mr. Wu, Engineer, China Huace Company (CHC) CHINA	
10.	Mr. Yann, Engineer, (Expert Engineers CHC), China	
11.	Dr. Roland Schafleitner, World Vegetable Center	Beans with Benefits: Potential and Limitations for Mungbean Production August 08-10, 2017 Organized by: Prof. Dr. Zahir Ahmad Zahir, Director, ORIC, UAF
12.	Dr. Ravza Mavlyanova, Uzbekistan	
13.	Dr. Thomas H. Hilger, Germany	
14.	Dr. Shavkat Kenjabayev, Uzbekistan	
15.	Ms. Lisa Pataczek, Germany	
16.	Mr. Frederic Verheyden Belgium Ambassador	Distinguished Innovation Collaboration Entrepreneurship event (DICE-AFS 2017) November 07-08, 2017 Organized by: Director, ORIC, UAF
17.	Prof. Dr. Zhou Qihu, SVASVC, Shandong, China	Two days International Conference on “Dairy Animal Health Challenges” DAHC-2018 17-18 January 2018 Organized by: Prof. Dr. Muhammad Tariq Javed, Department of Pathology, UAF
18.	Miss Zuo Hengfen, SVASVC, China	
19.	Prof. Dr. Mithet Darek, Konya, Turkey	
20.	Prof. Dr. Jainbao DONG, SVASVC, China	
21.	Dr. Zhang Guangbin, SVASVC, China	
22.	Dr. Gnana Gunawardena, Sri Lanka	
23.	Mr. Theo Rutten (Floriculture Consultant) (PUM Senior Experts, Netherlands)	International Workshop on Modern Floriculture Production & Product Development Techniques April 03-04, 2018 Dr. Iftikhar Ahmad, Assistant Professor Institute of Horticultural Sciences, UAF
24.	Mr. Theo Van Der Krogt (PUMs Netherlands Senior Experts, Netherlands)	
25.	Mr. Kees Van Der Plas (Managing Director, Stoop Flower Bulbs, Netherlands)	



Section

2

TECHNOLOGY TRANSFER

This component provides an opportunity for the scientists to get financial support for transfer of technologies to the stakeholders. Endowment Fund Secretariat accepts proposals for technology transfer from all public entities which demonstrate needed research and development capabilities and financial responsibilities. The portfolio under this component consists of outreach projects, demonstration on campus, organizing Farmers' Fairs/ Exhibitions and Horse & Cattle Show.

The technologies disseminated through these projects relate to Animal Nutrition Strategies, Livestock Management through IT, Animal Disease Control, Water Use Strategies, Drip Irrigation, Policy Studies, Fruit Germplasm Collection, Soil Reclamation Strategies, Propagation of Floriculture, Reverse Engineering, Citrus Diagnostic Services and Nursery, Food Quality, Silk Production, Precision Agriculture, Seed Production Technologies, Cyber Extension, FM Radio, Integrated Farming, Gender Empowerment and use of ICT in Agriculture.

2.1 Projects Completed during 2017-18

Sr.#	Title of the Project	Name of the PI	Duration
1.	a. Fabrication and Adoption of Multi Crop Reaper for Harvesting Different Crops b. Gasifier for Tube Well Operation to Save Energy	Dr. Manzoor Ahmad, Department of Farm Machinery & Power, UAF	2-Years 01.02.16 to 31.01.18
2.	Improvement of Rural Poultry through Technology Transfer	Dr. Zia-ur-Rehman, Assistant Professor, UAF Sub-Campus TobaTek.Singh	1-Year 01.02.17 to 31.01.18

2.2 Ongoing Projects during 2017-18

Sr.#	Title of the Project	Name of the PI	Duration
1.	Site-Specific Wheat-Crop Management for High Yield Using UAVs & Spectral-Sensors	Dr. Ahsan Latif, Department of Computer Science, UAF	2-Years 01.02.16 to 31.01.18 Extended 31.07.18
2.	Multiplication and High Density Plantation of Fig Fruit Plants in Saline Soil (Proka-2)	Dr. Saeed Ahmad, Associate Professor, Institute of Horticultural Sciences, UAF	3-Years 01.02.16 to 31.01.19
3.	Establishment of Community Oriented Modern Fruit Plants Nursery System at UAF Sub-Campus Burewala	Dr. Muhammad Fakhar-ud-Din Razi, Assistant Professor, UAF Sub-Campus Burewala	3-Years 15.02.16 to 14.02.19
4.	Time Efficient, Cost Effective and Stand Alone Nanophotocatalytic Wastewater Treatment Technology for Irrigation	Prof. Dr. Ijaz Ahmad Bhatti, Department of Chemistry, UAF	3-Years 15.02.16 to 14.02.19
5.	Dietary Modification with the Addition of Kitchen Gardening at Household Level through Technology Transfer in Burewala	Dr. Muhammad Asif Khan, Lecturer, UAF Sub-Campus Burewala-Vehari	3-Years 15.02.16 to 14.02.19
6.	Uplifting the Socioeconomic Conditions of Farming Communities by Promoting Forestry/ Agroforestry on Problematic Soils in Faisalabad and Adjoining Districts	Dr. Irfan Ahmad, Deptt. of Forestry & Range Management, UAF	3-Years 01.04.16 to 31.03.19
7.	Meadow Orchard System in Guava at PARS, UAF.	Dr. Rashad Waseem Khan Qadri, Assistant Professor, Institute of Horticultural Sciences, UAF	3-Years 15.03.16 to 14.03.19

Sr.#	Title of the Project	Name of the PI	Duration
8.	Promotion of Solar Cookers for Changing the Energy Use Behaviors of Communities	Miss Naveed Farah, Lecturer, Department of Rural Sociology, UAF	2-Years 01.02.17 to 31.01.19
9.	Processing and Preservation of Fruits and Vegetables at Domestic Level to Reduce their Losses through Successful Approaches and Trainings	Dr. M. Asif Khan, Assistant Professor, UAF Sub-Campus, Burewala	2-Years 01.02.17 to 31.01.19
10.	Reducing Rind Blemishes in Kinow Mandarin for Improving Comestic Quality and Farm Gate Income	Prof. Dr. Aman Ullah Malik, I.H.S, UAF	3-Years 01.02.17 to 31.01.20
11.	Establishment and Demonstration of Model Papaya Orchard for Technology Transfer at PARS for Growers	Dr. M. Azam, Assistant Professor, Institute of Horticultural Sciences, UAF	3-Years 01.02.17 to 31.01.20
12.	Punjab Agriculture and Dairy Leadership programme (PADLP)	Prof. Dr. Aman Ullah Malik, Institute of Horticultural Sciences, UAF	1-Year 01.05.17 to 30.04.18 Extended 31.07.18
13.	Dissemination of Farmer Friendly Diagnostic Techniques for the Control of Mastitis in Selected Districts of Punjab-Pakistan	Dr. M. Ijaz Saleem, Lecturer, Department of C.M.S, UAF	1-Year 01.03.17 to 28.02.18





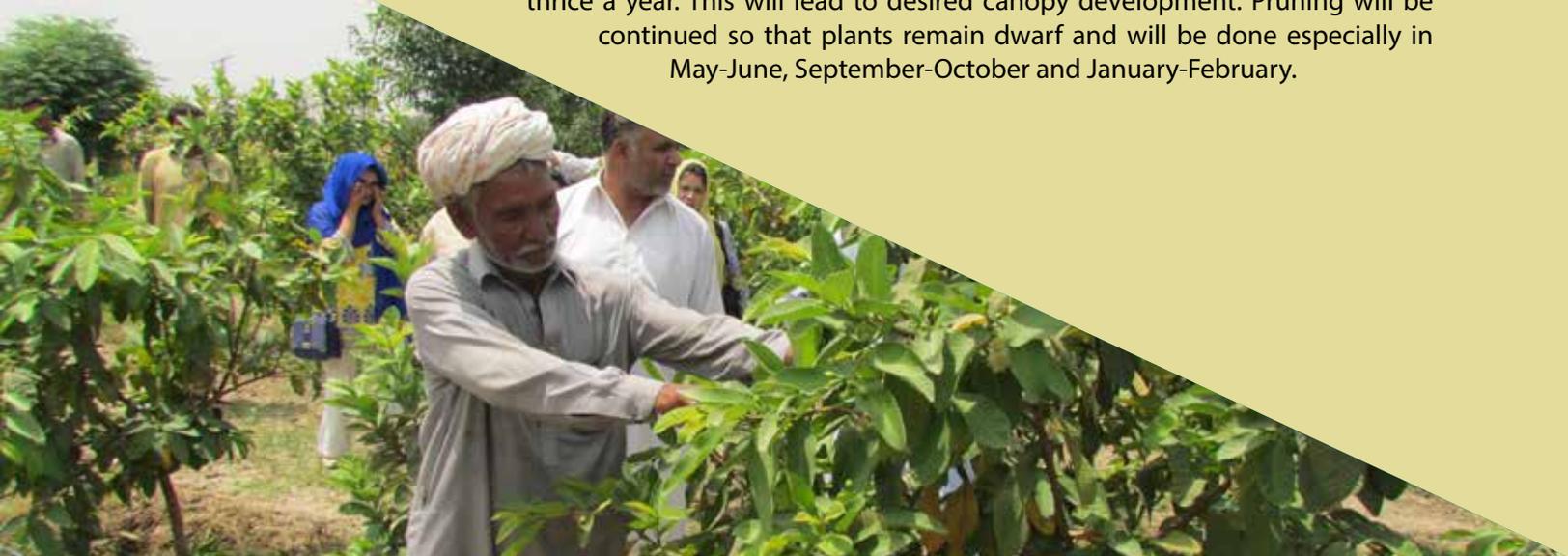
PROGRESS AND ACHIEVEMENTS FROM SOME SIGNIFICANT PROJECTS

MEADOW ORCHARDING SYSTEM IN GUAVA AT PARS, UAF

Traditional system of guava cultivation has often posed problems in attaining desired level of productivity due to large tree canopy. Now, there is a worldwide trend to plant fruit trees at high density to control tree size and maintain desired architecture for better light interception and ease in handling such as pruning and training, pest control and harvesting. Meadow orchard system is a modern method of fruit cultivation with dwarf plant and modified canopy.

Meadow orcharding system includes adoption of suitable plant density, canopy management, quality planting material, support and management system with appropriate inputs. In the first phase of the project “model meadow orcharding system” has been established at PARS-UAF. In the second phase canopy management has also been completed to give proper shape and quality fruiting. In the third and last phase of the project field trainings on establishment of meadow orcharding (planting density, canopy management, fruit fly management and economic analysis of conventional vs high density plantation) will be conducted to help guava growers for improving their economic condition faster.

For this purpose, the Drip irrigation system was installed in two acres at PARS. The layout was carried out by adopting the plant to plant and line to line distances of 6x3 and 5x10 feet. The pits of 3x3x3 feet were prepared and kept empty for 3 weeks then refilled with top soil + farm yard manure + silt (1:1:1) and plants were transplanted. Guava plants were topped (top portion was removed by the pruning scissor) at the height of 30-40 cm from the ground level after two months of planting. This cutting was to induce the emergence of new growth below the cut point. The emerged shoots could grow for 3-4 months before they were again pruned by 50 percent. Shoot pruning will be done thrice a year. This will lead to desired canopy development. Pruning will be continued so that plants remain dwarf and will be done especially in May-June, September-October and January-February.



PROMOTION OF SOLAR COOKER FOR CHANGING THE ENERGY USE BEHAVIOR OF COMMUNITIES

People in rural areas are not aware of the latest energy sources and techniques which are not only cost effective but also save them from negative health and environmental impacts. There is a need to create awareness about alternate energy sources among the rural households which have less harmful effects. The project is a move to create awareness about the solar based technology i.e. solar cookers - a simple, safe and convenient way to cook food without consuming fuels or heating up the kitchen.

Different types of solar cookers were fabricated under the supervision of Scientists from Engineering Faculty. These cookers were tested for their work efficiency and adjusted for the best performance. Before conducting the awareness creation, a short survey was conducted at selected villages of Faisalabad, Chak Jhumra and Okara. The survey was focused to assess the existing fuel consumption patterns and the energy needs of the people in these villages. For this purpose, the females were divided in small groups and the teams of Rural Sociology students discussed with them about the problems of using existing fuels and assessment of their future fuel needs. The females were conscious about the use of solar cookers but they had many questions about the working of these cookers.

Further, awareness sessions were conducted at different locations in these villages to disseminate the idea of solar cooking to rural communities. It was assumed that the promotion of solar cookers might be a hard task in the villages, but people were well aware of solar energy, so its acceptability already exists, however, the idea of solar cooker was absolutely new for them. A total of 350 males and females in 3 villages were mobilized about the use of solar cookers and they were informed about its advantages and disadvantages. The participants were informed about the health & nutrition benefits of solar cooking along with its cost effectiveness and eco-friendliness. Social mobilization was done using the street theatre approach and the message was well conveyed to the audience. Demonstration of solar cooker was made elaborating the various parts of the cookers and their working. People were informed about the techniques for the best use of cookers. For capacity building, 30 females from these villages were selected and they were invited to UAF to get practical training.



PROCESSING AND PRESERVATION OF FRUITS AND VEGETABLES AT DOMESTIC LEVEL

Conversion of perishable fruits and vegetables into their value-added products with increased shelf life is necessary for food security and for whole community. Most of the work done by agricultural research organizations has not reached the farmers due to weak extension services and absence of any coordination between the entities. In this project there was a wide range of technologies available that enabled smallholders and larger producers to improve the quality and quantity of fruits and vegetables during postharvest handling and storage. These strategies were integrated into agricultural programs to provide technical advice and affordable solutions to the farmers.

Approximately, 50 villages were selected. Furthermore distribution of literature and lectures have positive impact on the farming community to involve in this project. To aid local community in understanding the science behind processing and preservation brochure and pamphlets were published under this project and distributed among local families as well as farmers. Some of pectin and citric acid of good quality have been purchased and distributed among selected families. After that we organized a workshop at Sub-Campus Burewala regarding training of fruits and vegetables processing and preservation. Almost 100 farmers were invited in the seminar along with selected families. Product development competitions was also held among the participants. During the field days trainer from different processing industries were invited for product development and for the collaboration of researchers and industrialists with the farmers. Most of the beneficiaries valued livelihood assistance. The results were especially visible in the poor households. These trainings have benefited the target community to practice alternative livelihoods.





DIAGNOSTIC TECHNIQUES FOR THE CONTROL OF GOAT MASTITIS IN SELECTED DISTRICTS OF PUNJAB-PAKISTAN

Mastitis in goats, analogous to cattle and buffalo, is a disease of significant economic importance worldwide. Due to high illiteracy rate, goat-keepers have very little information and knowledge of mastitis, its control and prevention measures. So, the control of goat mastitis is much important to save the landless goat farmers from the economic losses of mastitis in term of low milk production, low quality of milk, increase culling rate. These losses can be minimized through transfer of the cheap mastitis diagnostic technologies to the goat keepers at their sites.

Five villages were selected from urban and peri-urban areas of Faisalabad, Chiniot and Jhang. Goat farmer's registration was made and mastitis related data was recorded from each village of the project sites. A series of workshop, seminars and farmers training program were organized at various villages of Project site to make aware of goat mastitis, its form and its economic losses to goat farmers. A lot of farmers were provided hands on training about mastitis diagnosis at early stage to stop the further economic losses. It was also observed that a huge number of farmers were demanding the treatment facilities of mastitis and other diseases. So, for the sake of smooth working and getting confidence of farmers, project team also provided veterinary services to diseased animals of registered farmers as well as non-registered farmers in the project areas.





IMPROVEMENT OF RURAL POULTRY

Rural poultry is an integral part in pastoral areas of Pakistan and providing animal protein in terms of egg and meat production along with financial support to the rural women. The consumer preferences is still towards desi meat and egg production. Rural poultry is free from contagious diseases, antibiotic residual effects and can tolerate harsh environmental conditions. The purpose of this project is to promote rural poultry and to enhance their performance. There are large genetic variations existing within the indigenous breeds and varieties and through proper breeding management, the awareness can be created among the farmers to keep limited number of productive hens and cocks as breeding flock. The technical interventions like efficient utilization of feed resources, genetic improvement, management, performance evaluation, Newcastle disease vaccination, bio-security measures, poultry products processing, product commercialization, cost-benefit ratio, microfinance and access to credit etc. are the major areas of technology transfer.

Twenty farmers were selected in each village to accomplish the project activities. Latest technologies about rural poultry were transferred through Farmer Group Organization meetings conducted in each village every month. Due to vaccination campaign against ND disease, there was improvement in village poultry health and production and control of diseases of poultry especially Newcastle disease. The problems and their probable solution related to rural poultry were also discussed in each farmer organization meeting. Training session on different technology transfer topics were conducted during the project period. The training on vaccination and biosecurity, feed technology, housing management, breeding management and marketing were conducted. The transfer of new technologies, innovation, research and development of new poultry products from academician to an end-user (rural poultry farmer) is an attempt to enhance the rural poultry productivity as well as the economies of the farmers.

2.3 Projects Review Workshop

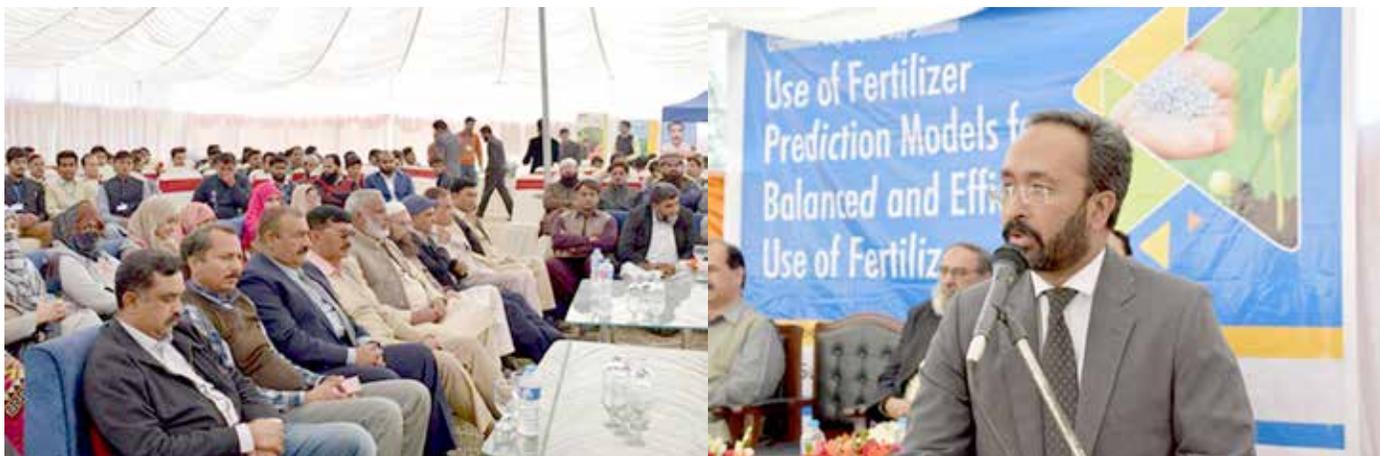
A Project Review Workshop was organized on April 10, 2018 by Endowment Fund Secretariat at UAF. All the concerned PIs/Deans/ Directors were invited to review the progress and share the achievements of recently completed and ongoing projects (which have completed at least one year).

2.4 Outreach Activities during 2017-18

The University Outreach activities initiated as a project during 2010-11 was converted into a Program with recurring budget under Technology Transfer Component. Under this program, faculty members submit a proposal for an activity ranging from one day to one week. Under outreach program, proposals may cover hands-on trainings, demonstrations, farmers' gatherings, exhibitions and lectures/seminars for the awareness/sensitization of the community.

These programs have received enormous response and have been highly admired. The outreach activities conducted during the year 2017-18 are as under:

Sr.#	Name & Department	Title	Date & Venue
1.	Dr. Tariq Aziz, Sub Campus Depalpur, Okara	Use of Fertilizer Prediction Models for Balanced and Efficient use of Fertilizer	December 09, 2017 Renala khurd, Okara
2.	Dr. Adnan Younus, Assistant Professor, I.H.S, UAF	Promotion of Edible Landscape in urban Areas	February 04, 2018 Qadir Bakhsh Farm, Chak No. 199 RB, Faisalabad
3.	Dr. Adnan Younus, Assistant Professor, I.H.S, UAF	Xeriscape: A Sustainable Land Scape Approach	April 08, 2018 Qadir Bakhsh Farm, Chak No. 199 RB, Faisalabad
4.	Dr. Zulfiqar Ahmad Saqib, Assistant Professor, Institute of Soil & Environmental Sciences, UAF.	Hands-on Training of Rural Community for Sustainable Management of Soil and Water Resources	April 10-12, 2018 at Vehari and Sahiwal
5.	Dr. Summer Abbas Naqvi, Assistant Professor, Institute of Horticultural Sciences, UAF	Capacity Building of Date Palm Stakeholders	April 05, 2018 May 21, 2018 July 22, 2018
6.	Dr. Muhammad Azam, Assistant Professor, Institute of Horticultural Sciences, UAF	Papaya Production Technology	April 28, 2018
7.	Dr. Muhammad Rashad Waseem Khan Qadri, Assistant Professor, Institute of Horticultural Sciences, UAF	Guava Canopy Management	April 27, 2018



HIGHLIGHTS OF SOME EVENTS

Event: One-day seminar on use of fertilizer prediction models for balanced and efficient use of fertilizers

Team Leader: Dr. Tariq Aziz

Date: December 9, 2017

Venue: UAF Sub-campus Depalpur, Okara

The event was organized at UAF Sub Campus Depalpur, Okara to create awareness and highlight importance of fertilizer prediction model among farmers for the efficient and balanced use of fertilizers, training of campus staff for the establishment of focal cell of the fertilizer prediction model to train local communities and to impart training for use of fertilizer prediction models to the district staff of Agri. Extension and Soil fertility. About 300 farmers/stakeholder/Resource Persons attended the event at Okara during Question-Answering session, there were positive feedbacks from the audience especially from the farmers about mobile application for fertilizer prediction model. In the broader Perspective, the outcomes may be categorized as the use of fertilizer prediction model and mobile application of the model will certainly help the farming community by judicious resource use and the learning will increase the productivity and increase the profit of the farmers with the utilizations of balanced use of inputs and the new varieties of the crops etc.



Event: Promotion of Edible Landscape in urban Areas
Team Leader: Dr. Adnan Younus, Institute of Horticultural Sciences, UAF
Date: February 4, 2018
Venue: Qadir Bakhsh Farm, Chak No. 199 RB, Faisalabad

EDIBLE LANDSCAPE is the practical combination of food plants within an ornamental or landscape setting. It provides a unique ornamental component and additional health benefits. Edible landscape design is a food producing landscape which is both beautiful and completely in tune with a naturalistic feel. The team leader introduced the concept of edible landscape that it is a design of food producing landscape with mixture of aesthetic, recreational, and functional utility, requires careful planning. Vegetable gardens or edible landscapes create a flavorful, practical and visually pleasing design. The mixed scheme of plants helps to counter-balance the over-emphasize line and structure of landscape features. This type of landscape can provide a variety of food for family and also add aesthetic beauty to our surrounding. Both beauty and delicious eating can be found in the edible garden. And the produce will be more healthful, if it is consumed fresh. The content of produce such as vitamin, mineral, and anti-oxidant is maximum when you consume it as shortly as possible after picking. He also explained the things which we need to grow vegetables in kitchen garden and different methods of growing vegetables and a demonstration was performed



Event: Xeriscape: A Sustainable Land Landscape Approach
Team Leader: Dr. Adnan Younus, Institute of Horticultural Sciences, UAF
Date: April 08, 2018
Venue: Qadir Bakhsh Farm, Chak No. 199 RB, Faisalabad

Xeriscaping is about selecting plants that can thrive in the landscape with as little supplemental water as possible. This means choosing a variety of native plants, as well as other well-adapted species. However, though xeriscaping is about low-water landscaping, people who are interested in this style of landscaping often look at other ways of having a smaller footprint on the planet. To create awareness and enhance the interest of people towards the concept of water conservation through xeriscape, an outreach activity was held on 8 April 2018. For which an arrangement of about 200 people was done at Qadir Bakhsh farms in Gatwala. Families, children, professionals and students participate in it. The chief organizer of the event and said that this kind of intellectual workshops will enhance the knowledge of students and make Pakistan a better place to live in moreover he said that we must play our own positive role in our society and should at least plant trees and plants for our own use. And briefly describe about the importance and beauty of cactus and his efforts to spread awareness about the use of cactus and succulents



Event: Training on efficient date palm pollination using pollinator
Team Leader: Dr. Summar A. Naqvi, Institute of Horticultural Sciences, UAF
Venue: Date Palm Research Sub Station, Jhang

(A) April 05, 2018

The goal of this workshop was the training of existing technology and tools for efficient use of pollens for better production. The training included introduction of date palm, differences in male and female inflorescence, male pollen extraction and conservation, methods of pollination, mechanical pollinizer structure, male pollen extraction and conservation. Outcomes of the activity were capacity building of date palm stakeholders, growers/Students were trained on pollen drying and conservation. Hand pollinator were designed and growers/students were provided hands on trainings



(B) June 25, 2018

The goal of this workshop was to train date palm stakeholders for bunch management and their covering avoiding monsoon rain damage. The training included introduction of date palm, Early, mid and late varieties, Bunch management, Fruit thinning, Prevention against monsoon rain, Bunch management, Fruit thinning, Bunch covering against rain. The outcomes of the activity were Capacity building of date palm stakeholders, Growers/Students were trained on bunch management and its coverings. Covering bags were imported, distributed to the farmers and growers/students were provided hands on trainings





Event: Hands-on training of rural community for sustainable management of soil and water resources

Team Leader: Dr. Zulifqar Ahmad Saqib, Institute of Soil & Environmental Sciences, UAF

Date: April 10-12, 2018

Venue: Vehari (Chak 69, WB Chak 81 WB & Chak 79 WB), Sahiwal (Purbera village/Chak No. 58 AWD)

The outreach activity was very helpful to create awareness in the farming community about current and emerging problems of groundwater contamination, particularly arsenic toxicity. Motivation and training of rural people for adopting strategies and community based measures to resolve the impact of soil and groundwater issues. This outreach training activity help in developing understanding about various problems and its impact on soil and groundwater resources in farming community as well as young generations through school meetings. The activity translated and demonstrated easy, simple and farm level solutions for sustainable management of degraded soils and poor-quality water resources to the rural community and guide them how to cope with the situation to minimize health risks. It was experiences that such type of activities could be more fruitful with better outcome, if senior students of college level especially girls are trained and targeted as audience or participants



Event: Papaya Production Technology
Team Leader: Dr. Muhammad Azam, Institute of Horticultural Sciences, UAF
Date: April 28, 2018
Venue: Basti Fareeda Abad, Sahiwal

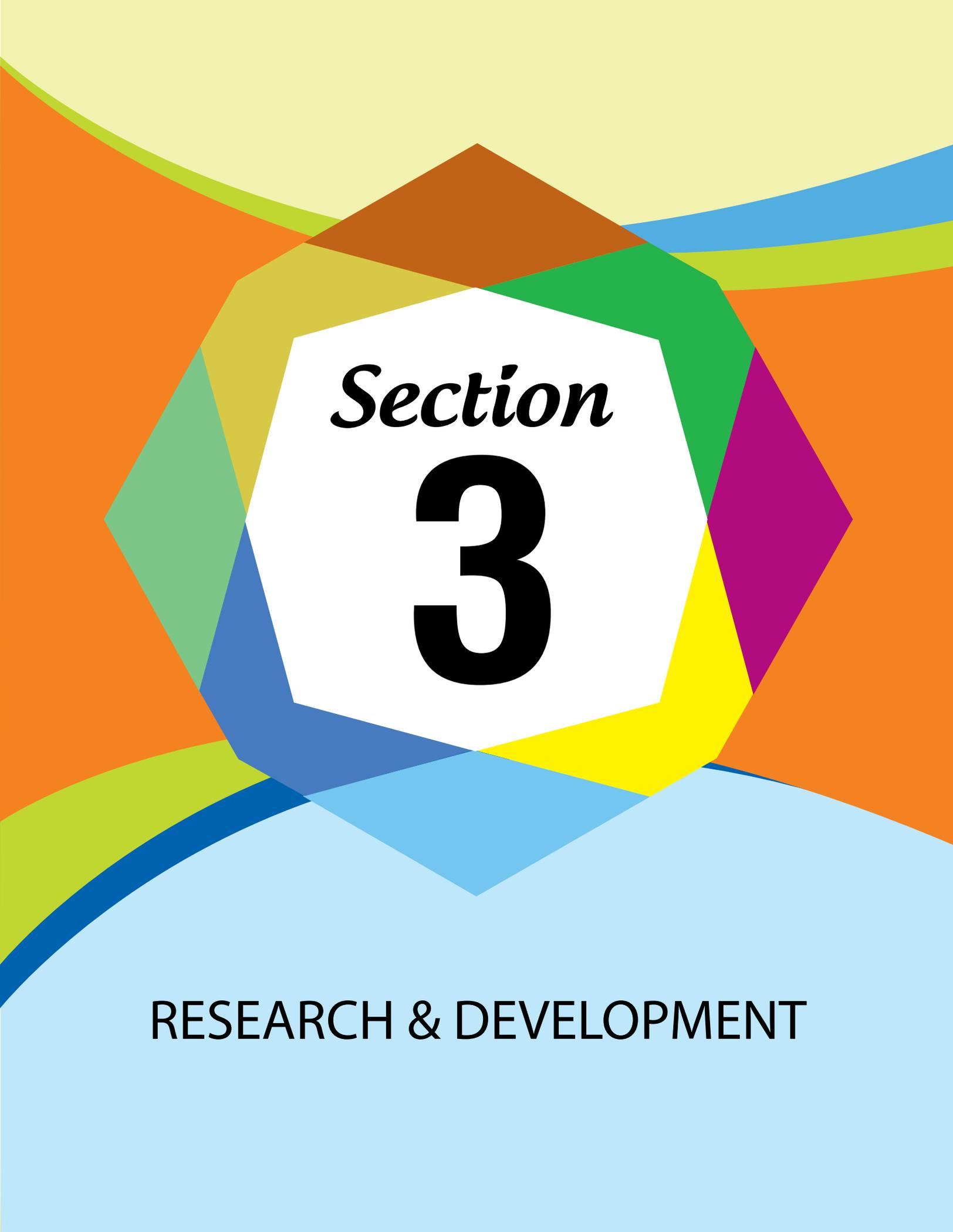
Papaya growers were briefed about the different management practices about papaya production technology. This activity enhances basic understanding of the farmers about the papaya nursery, and use of different media for proper nursey germination and growth. In detail discussion, this activity also increased awareness in farmers about the proper time of papaya transplanting, irrigation practices, fertilizer and insect pest management. Brochure of Papaya production technology distrusted among the farmers for their complete understanding of different operations. Overall, objective of this workshop was reduce the extra cost of production and increase high quality production. Papaya farmers were very happy for this activity. This activity increased the basic knowledge of the papaya growers and discussed the issues related to management and production. Farmers suggested to be organized more such activities during summer and winter seasons and train the farmer about different management practices for the improvement of papaya production



Title of the Event: Guava Canopy Management
Team Leader: Dr. Rashad Waseem Khan Qadri, Institute of Horticultural Sciences, UAF
Date: April 27, 2018
Venue: Sharqpur, Sheikhpura

One-day workshop was organized on Guava Canopy Management. Guava growers and student were briefed about the different management practices about guava production technology. This activity enhances basic understanding of the farmers about the guava canopy management, clonal propagation and dieback management. This activity motivates farmers regarding high density plantation of guava and importance of canopy management. During discussion guava production technology was shared for farmers understanding regarding irrigation timing, fertilizer application timing, control of fruit fly and dieback management. General objective of this workshop was to increase quality of farmer produce by managing plant canopy and reduce the cost different operation e.g. pruning, spraying and harvesting. Guava growers were happy after learning canopy management through this activity. During discussion different issues were raised by farmers regarding fruit quality, dieback, blossom end rot and planting density. Farmers suggested to be organized more such activities during winter and summer to train the farmer about canopy management and fertilizer requirements.





Section

3

RESEARCH & DEVELOPMENT

3.1 Projects Completed during 2017-18

Sr.#	Title of project	Name of PI	Duration
1.	Establishment of Cotton Wild Species Living Herbarium for Demonstration and Research Purpose.	Dr. Amir Shakeel, Department of Plant Breeding & Genetics, UAF	3-Years 15.03.15 to 14.03.18
2.	A Clinical Study to investigate the Liver Specific microRNAs as Non-Invasive Biomarkers of Hepatitis: A Novel Diagnostic Tool	Dr. Muhammad Imran Arshad, Assistant Professor, Institute of Microbiology, UAF	2-Years 01.03.16 to 28.02.18
3.	Evaluation of Dietary Probiotics and Zinc for Production of Antimicrobial Residue-free Broiler Meat in Heat Stressed Broilers	Dr. Hafsa Zenab, Associate Professor. Deptt. of Anatomy & Histology, UVAS, Lahore	1-Year 01.02.17 to 31.01.18
4.	Synthesis, Characterization and Applications of Nanomaterials to Inhibit the Growth of Bacteria	Dr. M. Yaseen, Assistant Professor, Department of Physic, UAF	1-Year 01.02.17 to 31.01.18

3.2 Ongoing Projects during 2017-18

Sr.#	Title of project	Name of PI	Duration
1.	Development of a local and sustainable potting substrate for containerized nursery production	Dr. Iftikhar Ahmad Assistant Professor, Institute of Horticultural Sciences, UAF	3-Years 15.10.16 to 14.10.19
2.	Identrification of Lytic Phages and Cloning Lytic Enzymes Against Multidrug Resistant Staphylococcus Aureaus From Mastitis Cases.	Dr. M. Aamir Aslam, Assistant Professor, Institute of Microbiology, UAF	2-Years 01.02.17 to 31.01.19
3.	Evaluation of Novel Inoculants of plant Growth Promoting Rhizobacteria for Biofortification of Cereals	Dr. Maqshoof Ahmad, Lecturer, Deptt. of Soil Science, Univ. College of Agri. & Envir. Sciences, Islamia University of Bahawalpur.	2-Years 01.02.17 to 31.01.19
4.	Evaluation of Cell Mediated Immune Responses (CMI) as a Diagnostic Marker for Field Diagnosis of Latent Bovine Brucellosis	Dr. Al-Hafizah Shafia Tehseen Gull, Assistant Professor, Department of Pathology, UAF	2-Years 01.02.17 to 31.01.19
5.	Epidemiology and Characterization of Bacterial Pathogens Associated with Epizotic Ulcerative Syndrome (EUS) and Motile Aeromonas Septicemia (MAS) from Pakistani Farmed Fish	Dr. Shahzad Ali, Assistant Professor, Faculty of Fisheries and Wildlife, UVAS, Lahore	2-Years 01.02.17 to 31.01.19



PROGRESS AND ACHIEVEMENTS FROM SOME SIGNIFICANT PROJECTS

ESTABLISHMENT OF COTTON WILD SPECIES LIVING HERBARIUM FOR DEMONSTRATION AND RESEARCH PURPOSE.

Crop wild species collectively constitute an enormous reservoir of genetic variation useful for plant breeding initiatives and critical to meeting the challenges of global food security through enhanced agricultural production. The key to successful crop improvement is a continued supply of genetic variability and beneficial traits contained in this diversity, and wild relatives of modern crops are the source of much of this novel diversity providing genes with improved nutritional quality, resistance to pests and diseases as well those traits adapted to drought and extreme temperature. Cotton wild species are best source of gene for quality, biotic and abiotic stresses. In Pakistan, there is only one cotton botanical garden in Central Cotton Research Institute (CCRI), Multan maintaining some wild species of cotton. With the advancement in research field, this botanical garden is not enough to fulfill the requirement of researchers, breeders and learners to achieve their desired goals. New strategies and efforts are required to develop a major cotton botanical garden in the fertile land of University of Agriculture, Faisalabad. This cotton botanical garden will not only help in the conservation of threatened or useful cotton plants but also enhance the public understanding about the importance of plants for our lives, for the protection of environment and the better future of planet. This garden will also open new research endeavor for plant breeders, entomologist, plant pathologist and for plant biotechnologist.

To accomplish this, seed, cuttings and plants of thirty eight species were collected from Central Cotton Research Institute (CCRI) Multan, Cotton Research Station(CRS) Multan and United States Department (USDA) of Agriculture. The collected seeds of wild species were grown in germinator at controlled conditions. The germinated seeds were transferred in earthen pots and then shifted to growth chamber under controlled conditions. After three-week growth, seedlings were transferred in field-experimental-area of Department of Plant Breeding and Genetics, University of Agriculture, Faisalabad. Each species was planted in single row with plant to plant and row to row distance of five feet. Seed of four cultivated specie namely *G. herbaceum* A1 & *G. arboreum* A2, (diploid); *G. hirsutum* 2(AD) 1 and *G. barbadense* 2(AD) 2 (tetraploid) was directly sown in the field during the month May 2016. Five different varieties of each cultivated species were planted in single row. During February 2017, the cuttings of different species were grown in earthen pots. The plant developed from these cuttings were transferred in field during September 2017. Similarly seeds of different species of cotton, collected from various institutes, have also been grown in earthen pots along with different types of *Gossypium hirsutum* as Okra, super okra and freego bracket types and colored cotton. These seedlings were transferred to field during May 2017. Data for different plant traits were collected for developing cotton descriptor.



A CLINICAL STUDY TO INVESTIGATE THE LIVER SPECIFIC MICRORNAS AS NON-INVASIVE BIOMARKERS OF HEPATITIS: A NOVEL DIAGNOSTIC TOOL

Hepatitis is an endemic and alarming disease worldwide and is highly prevalent in Pakistan. The hepatitis progresses from acute to chronic and ends in hepatic fibrosis or liver cancer. The entry of viral agents or hepatotoxic substances led to damage of hepatocytes and release of damage associated molecules in circulation. Among them, the microRNAs (miR) are readily released in circulation/ blood during infection of liver with HBV/HCV. The liver specific miR may serve as biomarkers of different stages of hepatitis such as acute/fulminant, chronic, liver fibrosis/cirrhosis and hepatocellular carcinoma. Previous data provide basis for detection of miR in hepatitis patients worldwide, however, data regarding molecular screening of hepatitis by using miR as diagnostic marker remain obscure in Pakistan. Therefore, the present project is designed to investigate the liver specific miR-122, miR-192 and miR-29 as non-invasive markers of liver pathology in human. The rapid detection of liver specific miR may provide a diagnostic/prognostic tool to discern different stages (acute vs chronic) of hepatitis in Pakistani population.

The microRNAs are highly conserved small non-coding RNAs about 22 nucleotides and are crucially involved in post-transcriptional mRNA/gene regulation. The liver specific microRNAs including miR-122, miR-130, miR-183, miR-196, miR-209 and miR-96 are potential indicators of liver injury or hepatitis and their level in circulation varies with progression of hepatitis. Therefore, circulating miR can be used as novel biomarkers of liver injury. Previous studies evidenced the expression of different miR in liver fibrosis, hepatocellular carcinoma (HCC) and acetaminophen induced acute liver failure in human. We aimed to decipher the level of liver specific miR in HCV and HBV affected human patients in Pakistan due to variation of prevalent genotypes of hepatitis viruses in Asia and scarcity of data. We found that the liver specific miR-122, miR-129 and miR-192 were up-regulated in the sera of HCV/HBV affected human and may serve as non-invasive biomarker of viral hepatitis. Efforts have been made for National Collaboration with DHQ, Allied Hospital, Liver Center Faisalabad and NIBGE. Similarly, community awareness has been made through seminars on Hepatitis B & C in Pakistan.



Development of a local and sustainable potting substrate for containerized nursery production

Growing substrates are being used by horticultural nursery industry since 1950's when containerized nursery production started in Europe and USA on large scale. However, in Pakistan and many other developing countries, majority of nursery production of horticultural crops is being practiced in soil and/or silt. Use of soil or silt poses many problems for quality plant production due to many soil borne pathogens and poor air: water ratio in various soils. The choice of growing medium, along with container type, is one of the critical decisions that must be made when starting a nursery. In Pakistan, currently over 90% of nursery production is being carried out using soil or silt as potting media, which poses many issues for quality plant production. It is need of the time to develop a local sustainable substrate, which can be successfully used for best quality nursery production of horticultural crops. Nowadays, search for alternative high-quality and low-cost materials as growing media in horticulture is a necessity due to the increasing demand and rising costs for peat, the most widely used substrate component during the last decades, as well as for its uncertain availability soon owed to environmental constraints.

Horticultural nurseries were surveyed in five major cities of Punjab to develop profile of nurserymen and overview current usage of potting substrates for commercial nursery production of horticultural plants on a detailed

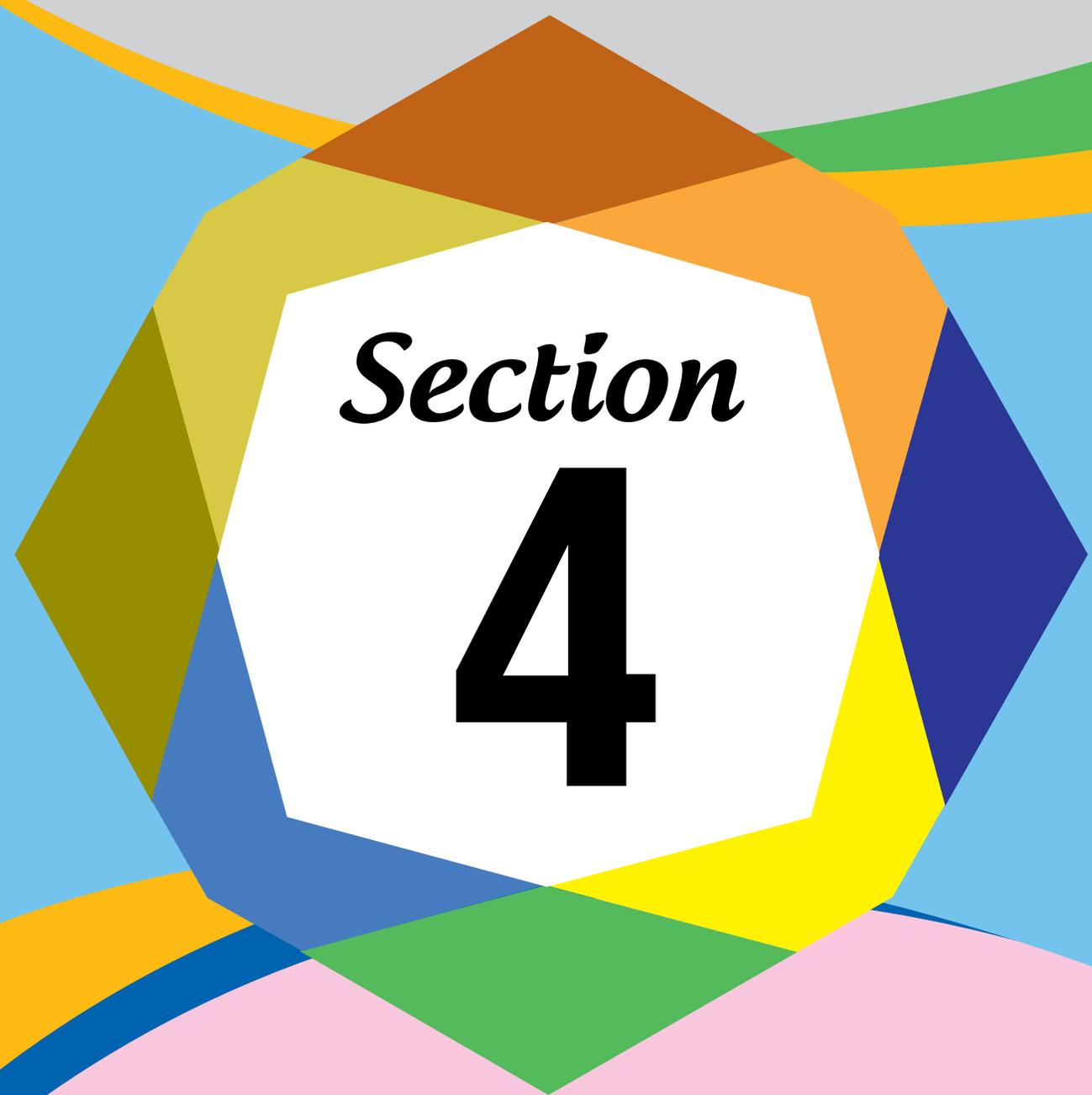


questionnaire. Results were pretty amazing that almost all local nurseries were using only soil/silt and farm yard manure (non-sterilized) for nursery raising, plant propagation and as potting substrate, reported several issues with poor quality plant production and soil borne diseases and demanded for a local cheaper soilless substrate for use as imported materials are quite expensive and not available when required.

Based on findings of the survey, various locally available agricultural bi-products, viz. rice hulls, sugarcane pressmud, coco coir, rice hulls ash, sawdust, peanut hulls, date palm soft wood, corn cobs, wood chips and pine bark were identified, which can be used as component in development of a substrate, collected, processed if required like crushing or composting, and evaluated for their physico-chemical analysis.

Different selected components were mixed in different ratios for vegetable and flower nursery production as well as potted ornamental plant production and experiments are being conducted to check suitability and sustainability of different components.



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Section

4

PRODUCT COMMERCIALIZATION

Commercialization is to convert ideas, research, or prototypes into viable products that retain the desired functionality. Commercialization also involves formulating the manufacturing and supply chain strategies, devising plans, and implementing such plans. For commercialization of cutting edge products and technologies, concept papers are invited from scientists working in the public sector agricultural organizations.

4.1 Project Completed during 2017-18

Sr.#	Title of the Project	Name of PI	Duration
1	Processing of Raw Turmeric Using Newly Developed Dryer and Tumbler to preserve Curcumin.	Dr. M. Azhar Ali, Department of Structure & Environmental Engineering, UAF	1-Year 01.06.17 to 30.05.18

PROCESSING OF RAW TURMERIC USING NEWLY DEVELOPED DRYER AND TUMBLER TO PRESERVE CURCUMIN

Kasur is famous for producing 72% of Pakistan’s total turmeric production. Different conventional methods like boiling and sun drying are used for the processing of turmeric. Curcumin is the key element in turmeric that is heat and sunlight sensitive. During boiling of raw turmeric, a major portion of curcumin evaporates. While, the rest of curcumin’s breakdown start during direct sunlight drying. The poor grinding methods also generate heat that is also one of the reasons of evaporation of curcumin. The main aim of present research work is to preserve color, aroma and curcumin in turmeric powder.

The present research work is providing the solution for efficient and hygienic processing of turmeric in terms of maximum preservation of curcumin. In the first phase, hot air dryer has been designed and working successfully to dry raw turmeric rhizomes. In the second phase, a tumbler/polisher machine has also been designed and developed to polish the surface of dried rhizomes in a more hygienic way without any heating and boiling process. In third and last phase, clean and dried turmeric rhizomes converted into powder using a hammer mill that is also installed at Agri. Engg. Workshop and working successfully.

In above described technology, the curcumin concentration was achieved maximum of 4.50% as compared to the commercially available powders having curcumin concentration ranges from 1.1 to 1.4%.



4.2 Exhibition Centre

Establishment of Exhibition Centre is a milestone of EFS, which is meant for display/demonstration of developed and tested innovative and cost effective technologies to attract the stakeholders of agricultural industry in the country. The themes of exhibitions will generally be pertinent to educational, economic, social or technological developments. The exhibits will serve as excellent material for complementing science teaching.

The University of Agriculture Faisalabad is an attractive place for visitors and scientists participating in seminars and workshops. About 300-400 national and international events are organized in the university annually. In addition to that farmers, industrialists, students from other institutions visit this alma matter frequently. The idea of incubation of technology at the campus could be an attraction for the visitors on one hand and source of information and motivation regarding the improved technologies for the farmers on the other hand. Display/demonstration of developed and tested innovative and cost effective technologies is very important for imparting awareness among students and other stakeholders of the agricultural industry in the country. Endowment Fund has established an exhibition centre for making display/demonstration facility available to exhibit technologies being developed and adopted. Endowment Fund, UAF constructed an Exhibition Centre in the heart of Campus. It has eight (8) halls at ground floor and six (6) at first floor. The building is fully air conditioned but each hall may be run independently. The exhibition centre has the facility of internet, WiFi, Fire safety, open area for heavy machinery and vast parking area.



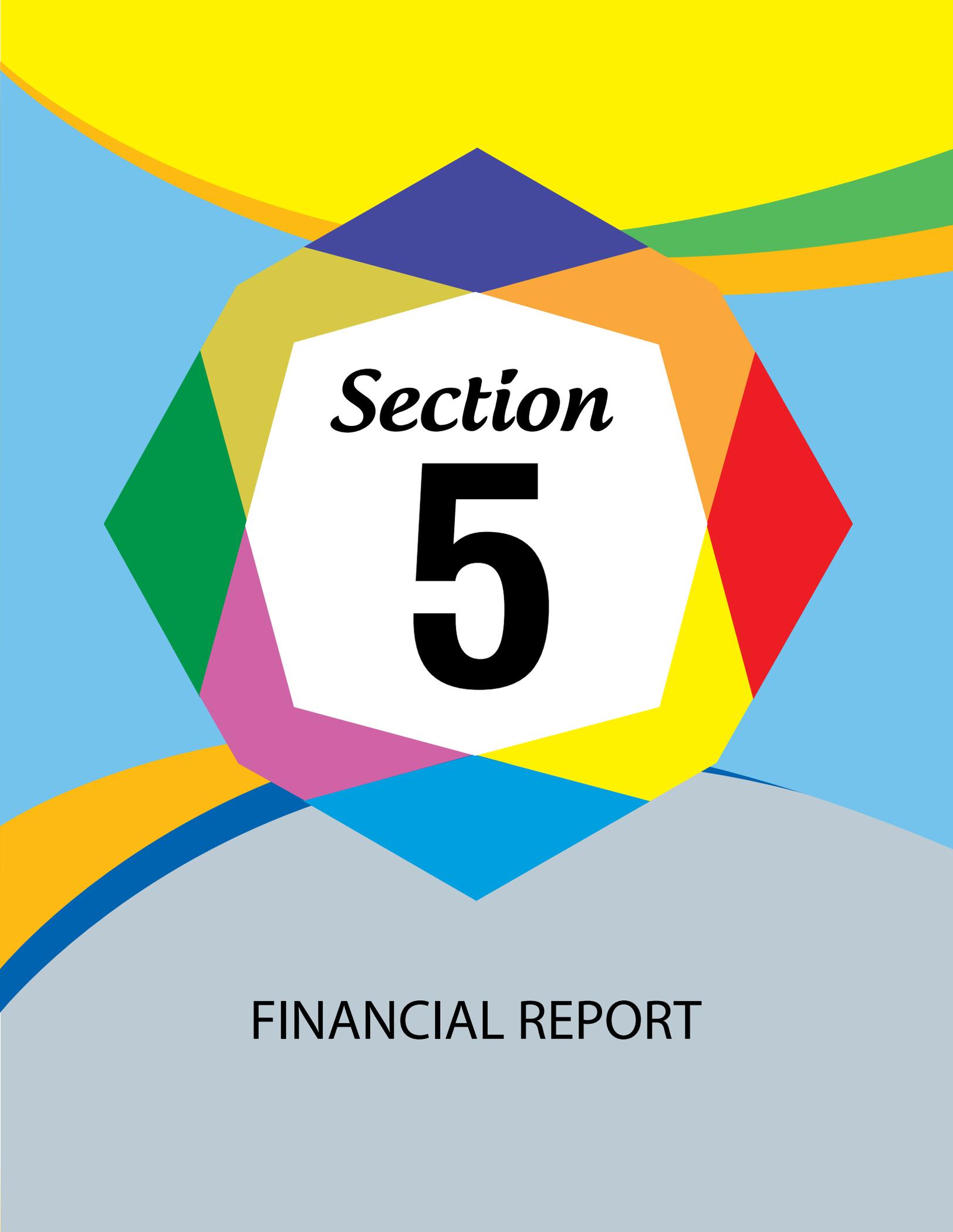
4.3 Farm Market

Four Sheds of Farm Market/Sasta Bazar were established in 2014 and Director Farms is running the facility. Rental income is shared by UAF and EFS on equal basis. It is pertinent to mention here that apart from the facilitation to general public, the students of the University of Agriculture, Faisalabad pursuing studies in the Faculty of Social Sciences and Institute of Business Management Sciences having specialization in Agricultural Economics and marketing may conduct their studies/internship and research thesis in farm markets. So, the Sasta Bazar and Market has been developed to act as a laboratory to enhance practical knowledge of the students pursuing their studies.



4.4 Business Incubation Centre (BIC)

Endowment Fund Secretariat collaboration with HEC, USAID and competitive support fund (CSF) established Business Incubation Centre (BIC) in 2009-10 with the following objectives: Business Incubation is a business support process that accelerates the successful development of startup companies by providing entrepreneurs with an array of targeted resources and services. Incubators nurture young firms helping them to survive and grow during the critical startup period when they are most vulnerable. Incubators provide hands on management assistance, access to financing and exposure to critical business or technical support services. Incubators have different goals including diversifying rural economies, providing employment and transferring technology from universities. The academic affiliated business incubators have a great impact on entrepreneurs, students and universities. Now Business Incubation Centre (BIC) has been made a component of ORIC. Endowment Fund Secretariat is active partner of the Commercialization activities through financing or technical assistance.



Section

5

FINANCIAL REPORT

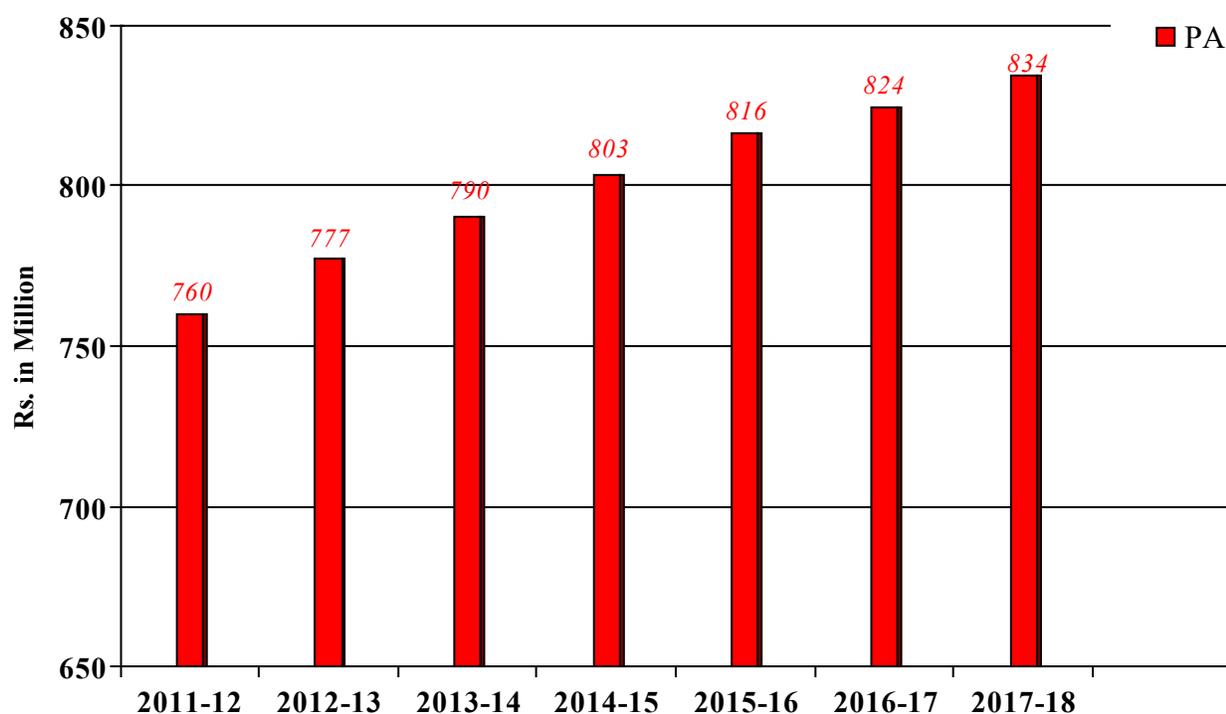
INCOME FROM ENDOWMENT FUND'S INVESTMENT

The Principal amount is invested in approved banks. A portion of its profit is retained for adding in the principal amount @ 15% of the profit to counter the impact of inflation/devaluation of rupee. The volume of principal amount at the start of financial year 2017-18 was Rs.824 million which was available for investment.

(Rupees in Million)

Description	Amount	Profit
Investments in Banks	824.000	60.731
Total:	824.000	60.731

The principal amount enhanced to Rs.834 million at the end of the financial year 2017-18



Growth of Principal Amount

EXPENDITURE

The Expenditure for the year, 2017-18 was originally estimated as Rs. 90.802 million for the five components. The project proposals were short listed but meetings of Technical Advisory Committee (TAC) and Board of Directors (BoD) could not be conducted. Only the releases of ongoing project were made during the financial year 2017-18. Therefore, the expenditure different activities remained as Rs. 28.282 million and total cash outlay was Rs. 38.283 million. The break up is given in Table-II.

TABLE-I

(Rupees in Million)

RECEIPTS	Actual
Opening Balance 1st July, 2017	26.642
Income from Investment 2017-18	60.731
Other Receipts *	03.429
Total Receipts	90.802

*Income from Exhibition Center, ongoing projects and savings from completed projects.

TABLE-II

(Rupees in Million)

ALLOCATION / EXPENDITURE	Revised Estimates
Faculty Development	13.062
Technology Transfer	06.115
Product Commercialization	00.373
Research & Development	02.292
Operation EFS	06.440
Transfer to Principal Amounts (15% of the Income from investment)	10.000
TOTAL EXPENDITURE/CASH OUTLAY(a)	38.282
SURPLUS / SAVINGS(b)	52.520
Total (a+b)	90.802

