

# **REPORT VISIT OF DELEGATION OF UNIVERSITY OF AGRICULTURE, FAISALABAD TO IRAN**

**(March, 2-16, 2010)**



**UNIVERSITY OF AGRICULTURE, FAISALABAD**

**March, 2010**

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# **REPORT ON VISIT OF DELEGATION OF UNIVERSITY OF AGRICULTURE, FAISALABAD TO IRAN**

(March, 2-16, 2010)

## **Executive Summary**

Iran is a country of 70 million people with great history and traditions. The country came into its present form after the revolution of 1979. The rule of Pahlavi dynasty ended by the revolution led by Imam Khomeini. The culture and entrepreneurship of Iranian people has had international recognition. The influence of Iran in the subcontinent has lasted for centuries, which is still depicted in many common traditions, architecture and vocabulary that goes beyond the religious boundaries. The Persian remained the official language for centuries as well as the favorite language for poetry and scholarship in the subcontinent. The oil economy of Iran has transformed many aspects of Iranian life. More than 70% of the population now lives in urban centers instead of traditional villages where agriculture stands ignored. The gender bias is non-existent. The government of the day has paid due attention to education. The investment in education has been rewarding. The Iranian universities are publishing in the best research journals. University of Tehran is rated in the top 400 universities of the world. All education is nearly free. The ministry of education controls schools and non-university education while universities are controlled by the ministry of science and technology. The religious education has its own control mechanism run by the

clergy heads from the holly city of Qum. The government places a very high priority to the opinion of the academia. The President of University of Tehran is cabinet level advisor to the President of Iran. A professor of agricultural economics from College of Agriculture and Natural Resources, Karaj remained Finance and Planning Minister in the previous regime. In conclusion, the universities in the Iran are centers for the social, cultural, political, diplomatic and economic progress of the country and provide leadership in all spheres.

The take home lesson in two lines could be stated as:

- Iranians have best understood the Iqbal's message of 'khoodi'
- The women in Iran are emancipated.

The visit has been very valuable for achieving the objectives of students and teachers and exchange between the FUM and UAF to promote science and technology and cultural exchange between the two countries.

## **Background**

The University of Agriculture, Faisalabad (UAF), Pakistan and Ferdowsi University of Mashhad (FUM), Iran, signed an MOU on 16<sup>th</sup> January, 2009 during the visit of Iranian delegation headed by His Excellency the Governor of Khurasan-e-Razavi Province. As a follow-up of his visit to Mashhad, the Honorable Chief Minister of the Punjab desired to develop a road map for achieving the objectives of the MoU. To develop an action plan, the worthy Chief Minister, Punjab approved a sum of Rs. 2 million for the visit of the following delegation to Iran under the leadership of Prof. Dr. Iqrar Ahmad Khan, Vice-Chancellor:

1. Prof. Dr. Iqrar Ahmad Khan, Vice Chancellor, UAF
2. Prof. Dr. Asif Ali, Director, External Linkages, UAF
3. Prof. Dr. Allah Bakhsh, Director Research, UAF
4. Ch. Muhammad Hussain, Registrar, UAF.
5. Mr. Natiq Hussain, Chief, Planning & Evaluation Cell, Govt. of the Punjab.
6. Dr. Muhammad Zafar Iqbal, Director, Agri. Biotechnology Research, Institute, AARI, Faisalabad.

The President, Ferdowsi University of Mashhad, sent an invitation letter to the Vice Chancellor, UAF and to the other 5 delegates to visit FUM from 2-16 March, 2010 to explore the opportunities and avenues to develop a workable frame of activities for training and collaborative R&D benefiting the two brotherly neighboring countries.

The UAF welcomed the offer of the visit and scheduled itinerary of the visit from 5-15 March, 2010 in consultation with FUM.

Following the agreed schedule, the delegation reached the Ferdowsi University of Mashhad on 5<sup>th</sup> March, 2010 late in the evening. The Director, International Affairs received the delegation. The FUM had an elaborate schedule of the visit.

### **Objectives of the visit**

1. To enhance mutual understanding of both the brotherly countries with respect to issues and opportunities in the agriculture sector
2. To identify various areas where each university and research institution has specific strength, experience and skill to share with each other.
3. Based on the above proposes the future course of action through mutual understanding/agreement not only to enhance economic activities/ cooperation but also incorporate the successful stories of each country in the improvement of curriculum as well as research plan.

## Ferdowsi University Mashhad

The first meeting was arranged with the President, FUM on March 6, 2010 at 9.00 a.m. in the meeting room of the President office. All Vice Presidents and Dean Faculty of Agriculture attended the reception. The President welcomed the delegation and gave an overview of FUM. He informed the delegates that this is 60<sup>th</sup> anniversary of the university and FUM is one of the top 10 among 100 universities of Iran. He wished to convey his regards and respect to the Honorable Chief Minister of Punjab for supporting the MoU between both the institutions.



**Briefing at the Reception Ceremony**



In return, the Vice Chancellor, UAF gave a quick run down about UAF. He extended his warm appreciation for the wonderful hospitality and cooperation received from FUM. He apprised the participants that in the most recent ranking carried out by the Higher Education Commission, the UAF has been ranked as the Number 1 professional university and number 4<sup>th</sup> among all 130 universities in Pakistan. He conveyed the high remarks made by the Chief Minister Punjab about Iran in his speech as Chief Guest at Khanna-e Frahnag, Lahore on the National Day of Iran. He reinforced his desire to come up with a doable action plan of mutual collaboration during the visit.



**UAF delegates with the President and senior management of FUM**



Both President FUM and Vice Chancellor, UAF appreciated that national universities do reckon as institutions of higher learning and are looked up to as a major source of leadership in designing and carrying through the blueprints of national programs of socioeconomic development, sustained peace, prosperity and assurance of a better life for now and the future. By virtue of their characteristic organizational structure, maintenance of an elite workforce of a highly qualified faculty and a youthful corps of postgraduate students, these universities are ideally placed to perform as efficient, creative and proactive centers of excellence and service.

The two leaders believed that their partnership in pursuit of excellence over the years will grow from strength to strength to make great strides in the areas of mutual academic and R&D concerns. It was reiterated that the tenacity of purpose enshrined in the MoU shall never relent and be overtaken by a sense of fatigue but instead stays as a propelling force till the end.



**Exchange of Souvenirs**

## **Faculty of Agriculture, FUM**

For achieving the objectives, the delegation visited the FUM faculties/ Departments/ institutions and had broad interaction with the faculty and students.



### **Warm welcome at the Faculty of Agriculture**

At the Faculty of Agriculture, the Dean delivered a presentation about the faculty, academic programs and facilities at the Faculty. The Heads of the departments were also present in the briefing and individually gave overview of the activities in the departments. The salient features of the faculty are



- 10 Departments
- 17 Professors, 28 Associate Professors, 51 Assistant Professors and 11 lecturers
- 10 Research centers
- 2 Centers of excellence
- 1 Animal science research centre
- 1 Experimental farm of 200 ha
- 7 Scientific journals
- 2100 students, 58% BS, 30MS, 22% PhD



**Meeting with the Heads and Chairmen of Depts. of Faculty of Agriculture**

The Dean further emphasized on three subjects of collaboration between UAF and FUM.

- Appointment of External Examiners for PhD thesis examination
- Student Exchange and sabbaticals
- Joint research projects through international funding, particularly IDB and COMSTECH



**With Dean Faculty of Agriculture and Senior Faculty**

The Vice Chancellor, UAF appreciated their cooperation, the ongoing programs and the available facilities. He further appreciated the investment being made on the Human Resource Development in Iran and their desire for internationalization. Leadership of the two sides agreed on the idea that they should do something tangible and not just signing the agreements and MoUs. As the Faculty of Agriculture, FUM has Institutes of Pomegranate and Special Crops, the Vice Chancellor showed his interest to grow the collaboration in the training and capacity building at UAF in these areas. In addition, the climate change mitigation, water conservation, stress breeding and biotechnology were considered the potential areas of collaboration.



**Faculty of Agriculture briefing**



The delegates were taken to greenhouse facilities, which were in good working condition for conducting controlled environments and off season crop and plant nurseries. The delegates also visited the Animal Science department, which is part of Agriculture Faculty. Visits were also made to the Labs in the departments of Irrigation Water Engineering, Food Science, Horticulture, Agronomy and Breeding, Biotechnology and Faculty of Veterinary Sciences.



**Glasshouse facilities at Faculty of Agriculture**

There are 2100 students in the Faculty of Agriculture. In all cases, women were dominant in the classrooms, laboratories and offices. During our visit of Veterinary Faculty, we were told that 40-50

students are admitted every year into a five years purely clinical sciences program. The two faculties share courses between the animal sciences department in agriculture and clinical sciences in the veterinary. The agriculture faculty has 500 dairy cow and small animals at a farm, which are available to veterinary faculty for practical training and research.



**Lab facilities**

The Dean was very concerned about the fake journals in Pakistan, publishing papers without peer review with high publication charges.

This has spoiled the image to the extent that the papers published in Pakistani scientific journals carry no weight and rather have negative impact with the Higher Education Institutions of Iran. One of such fake journal pointed out is "Journal of Animal and Veterinary Advances" published by ANSinet, Faisalabad. This is a serious issue to be addressed and such publications should be banned immediately. The delegates, however, guided them to verify the standard of the target journals from the rating list available at the website of Higher Education Commission, Islamabad.

In the afternoon visit was made to Torghabe, a historical tourist sight and dry fruit market at Mashhad.

### **Central Laboratory of FUM**

Next morning started with the visit of Central Laboratory of FUM. It was really impressive in terms of the high-tech facilities available, the expertise for work and maintenance at hand. The most modern techniques of Nano-Technology were in operation for producing nano materials and their analysis. The Scanning and Transmission electron microscopes were working at their best. The high-Tech Lab resources appeared to be an area of interest for exchange of expertise and maintenance engineers for capacity building at UAF.





### **Central Lab, FUM**

The Vice Chancellor then delivered a very comprehensive presentation in a session of faculty, staff and students of the Faculty of Agriculture. He divided his presentation in three segments including, Agriculture in the Punjab, Agriculture Education and R&D in Pakistan and the overview of University of Agriculture, Faisalabad. He briefed the participants about the role of UAF as a leader in HRD, research and community building. He highlighted the UAF priority areas as: Biotechnology, Precision Agriculture, Climate Change, Entrepreneurship, Value addition, Community Service, Technology Transfer and Internationalization.

## Meeting with the Faculty and Students



### **Presentation by Prof. Iqrar A. Khan to the Faculty and students**

The presentation generated interest among the participants yielding questions, comments and discussions. The particular interest was about education of Iranian students at UAF. The Vice Chancellor very graciously offered his support to facilitate the students for education and training at UAF. The relationship of the agricultural universities with government research and extension was also discussed. Iran has institutional arrangements similar to those of Pakistan where universities are not formally connected to the government departments in the performance of research and extension work.

The vacuum is being felt but not intensely because of comfortable allocation of resources to all sectors. At the end, the Vice Chancellor presented an action plan for collaboration, which included faculty and students exchange, sandwich programs, joint research, and annual conferences.

### **Visit to traditional and historical places**

Afternoon was very pleasant, where the delegates were provided a chance to witness the artistic qualities of the people of Iran in the Malek House, a traditional and historic house in Mashhad. The artistic master pieces being crafted at this place were mind blowing and faculty and students of Home Economics at UAF could be exposed to these expertise.



**Art and craft work at famous Malek House, Mashhad**



The FUM is named after the famous poet of Iran, the Ferdowsi. His tomb is at Toos and attracts the visitors for his poetry engraved and painted on the walls. Tea was offered at a nearby traditional restaurant, where a bearer narrated the old story of Rostum and Sohrab.



**Tomb of famous poet Ferdowsi at Toos**



**Carvings of Rostum and Sohrab story**



**Traditional story telling Hujra**





**Reception Dinner at Patida Restaurant Toos**



## **Livestock Farm, FUM**

The next day commenced with a visit of the Livestock Farm of the FUM, which was established in 1982 with just 50 cows as stock imported from Netherlands. With time it grew to 500 Holstein cows, the local breed however disappeared gradually. The average cattle milk production is 40 litter/day/ cow with a range of 20 to 60 liter/day. The management, milking and nutritional arrangements at Farm were also shown. The farm is equipped with accessory facilities of feed mill, milk parlor and experimental labs.



**Livestock Farm of the FUM**



## **Agricultural Research Farm, FUM**

The agricultural research farm was also visited, which has 200 ha experimental area under cereal crops, fruit trees, fodder, medicinal plants, Mentha, Cumin and Saffron. Saffron is a high value crop in Iran, which is cultivated on an area 60,000 ha with production of 160 ton and provide livelihood to about 8500 families.



**Saffron Field**

The research centre has allocated 8 ha for ecological agriculture, which had experiments on conventional methods, tillage methods and crop rotation to promote ecological farming. However, no certification system is in place yet. After visiting all the experiments the Vice Chancellor wished to share the germplasm of medicinal plants and



explore the possibilities of growing Saffron at the UAF research station at Murree.

### **Visiting Holy Shrine of Imam Raza**

The evening was very spiritual as the delegates were taken the Holy Shrine of Imam Raza for Ziarrat. At the shrine we were taken to an well structured exhibition displayed Imam Reza Foundation. The Imam Raza Foundation is a rich endowment and has multiple businesses with 120 companies. The range of business included bus manufacturing, engineering goods, stock exchange, software, telecommunications, ceramics, plastic wares and agri-business (farming, food processing, mechanization, cotton and textile) and distribution companies. An invitation was extended to the foundation to bring their exhibition at UAF.





## **Khorasan Razavi Agricultural and Natural resources Research Centre (KANRRC), Torogh, Mashhad**

Next morning the delegates accompanied by the Dean Faculty of Agriculture, FUM, visited the Khorasan Razavi Agricultural and Natural resources Research Centre (KANRRC) at Torogh, Mashhad.



### **Khorasan Razavi Agricultural and Natural resources Research Centre (KANRRC) at Torogh**

The centre was established in 1959 and now 200 researchers including 37 PhD are working in 10 different departments. The centre

had 13 regional stations working on crop and animal sciences. The DG of the center accompanied by his senior team of researchers gave us a guided tour of the facility. They have an active wheat breeding program currently housing more than 2000 wheat germplasm accessions acquired from CYYMIT, ICARDA and bred locally. They claim to have released varieties those have doubled the wheat production in the country. The horticulture section has a very active deciduous rootstock breeding program. The tissue culture section has an active program on potato micro and mini tuber production. The sugar beat breeding and agronomy section prepares plant material for eight sugar factories in the province, which are struggling for sufficient supply of beets for a longer duration. They are working on selecting spring and fall planting materials with proper agronomy. The food technology section has an active program on bread production, quality and shelf life. The visit was followed by a roundtable session which was joined by the provincial chief of agriculture. There was unanimity of views for collaboration and we planned for exchange of scientists and hold two focused workshops at AARI and UAF.

### **Signing Action Plan for collaboration with FUM**

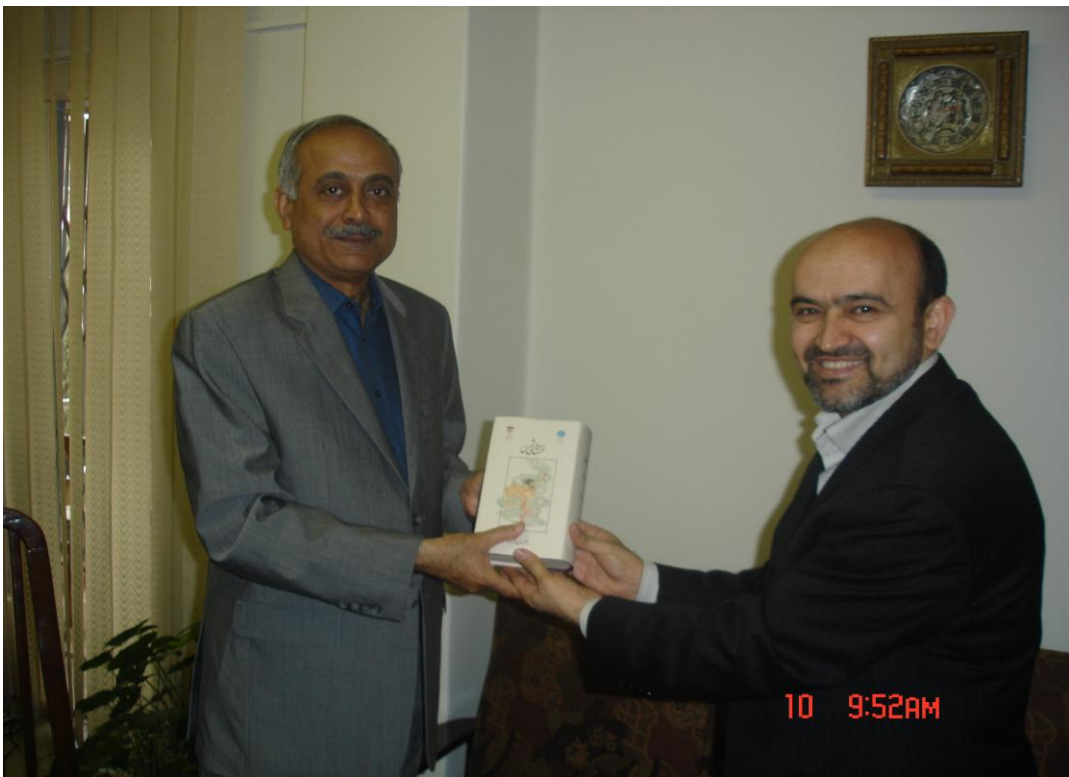
The Dean Faculty of Agriculture showed interest for hiring some visiting faculty from UAF and an Action Plan was signed for the year 2010 for faculty and student exchange between the two universities (Annex - A).



**Signing of Action Plan with Ferdowsi University, Mashhad**

### **University of Tehran, Tehran**

The FUM coordinated for our visit to the University of Tehran and College of Agriculture of Tehran University at Karaj. The day started by courtesy call on Vice President in his office. The VP conveyed greetings of the President and his regrets not been able to receive the delegates on account of a prescheduled meeting with the President of Iran. We were briefed about the University of Tehran, the largest and the best university in the country with international rating.



**Exchange of souvenirs at University of Tehran, Tehran**

The university has 13 faculties, 11 research institutes/centers and about 50 departments spread over four campuses including one English taught international campus in the Persian Gulf. There are 33000 students enrolled into more than 400 interdisciplinary majors and degree programs.

### **University College of Agriculture and Natural Resources, Karaj**

The agriculture college of the university is located at Karaj, about one hour drive from main campus. The university has a highly devolved the management structure. The highest forum is University Board and there are four commissions with powers delegated from the board. The agriculture college has its own commission chaired by the Dean who is the campus president. We agreed to work for developing a linkage. After visiting with the VP, we were driven to Karaj.





### **Welcome at University College of Agriculture and Natural Resources, Karaj**

At Karaj, we were briefed by the Dean who was assisted by his four VPs. The University College of Agriculture and Natural Resources has 14 departments offering 150 degrees and majors. About 3500 students are enrolled in the college with 45% are in their postgraduate studies program including 550 PhD students. About 11 scientific journals are published from the college. The college has the following academic units:

#### **I. Agricultural Section**

1. Faculty of Soil and Water Engineering
  - a. Department of Soil Science
  - b. Department of Irrigation and reclamation



2. Faculty of Crop and Animal Sciences
  - a. Department of Agronomy and Plant Breeding
  - b. Department of Animal Science
3. Faculty of Agricultural and Biosystems Engineering
  - a. Department of Agricultural Machinery
  - b. Department of Food science and Technology
4. Faculty of Horticultural Science and Technology
  - a. Department of horticultural science
  - b. Department of Plant Protection
5. Faculty of Economics and Agricultural Development
  - a. Department of Agricultural Economics
  - b. Department of Agricultural Extension and Education

## **II. Natural Resource Section**

- a. Department of Fisheries and Environmental Science
- b. Department of Rehabilitation of Arid and Mountainous Regions
- c. Department of Forestry and Forest Economics
- d. Department of Wood and Paper Science Technology

## **III. International Research Center for Living with Desert**

- a. Department of Management of Desert Regions
- b. Research Department of Technology and Engineering
- c. Research Department of Humanities and Arts
- d. Research Department of Biological Sciences
- e. Research Department of Agricultural Sciences and Natural Resources



### **Director ORIC, UAF at Irrigation Engineering Department**

After the briefing and exchange of souvenirs, we were given the tour of college started at the University Museum. A 1923 original building has been converted into a museum with an elaborated collection of zoological, botanical and traditional agricultural materials. That was followed by a visit to the Fisheries and Wild Life Department. After lunch, two of our team members went for tour of irrigation and economics departments separately and four of us stayed together. The four visited Horticulture, Agronomy, Plant Breeding and Germplasm Center. Horticulture visit revolved around greenhouses meant for plant collection of ornamentals and medicinal plants and propagation facilities.



### **Floriculture at University College of Agriculture and Natural Resources, Karaj**

A genomics center in the Agronomy and Plant Department is concentrating on transgenic plants for drought resistance using canola as a model crop. The germplasm center has a herbarium collection of cereals and grain legumes. The facility has a strong potential for material exchanges.





### **Breeding ornamental flowers**

The Pakistani embassy was contacted but the Ambassador was not available. A person by the name of Sajid who introduced himself as deputy of ambassador was courteous and he was briefed on the purpose of visit.



**This is Sheraz**





**Special Iranian Kahwa serving at Sheraz**

### **Meeting and visits during transit at Dubai**

On the way back, taking the opportunity of transit stop at Dubai, the six member delegation headed by Vice Chancellor, University of Agriculture Faisalabad discussed the prospects of working on Mango sudden death with Dr. Mike, who specially travelled from Masqat Agriculture Research Station, Oman. He was of the view that as mango is poly embryonic fruit thus its major task is to find out disease resistance material. No chemical control is feasible as the symptoms appear when the plant dies. He also mentioned that we should find out the source for disease resistance from Kashmir wild grown



mangos. The Vice Chancellor, UAF proposed to engage some PhD students in the studies. We agreed to hold a workshop on mango on 26-27 March, 2010 in Faisalabad at the occasion of University Festival 2010. Dr. Mike proposed collaboration from Oman to find resistance in mango. The other major such problem is with the shesham trees in Pakistan, having the same disease. The other potential collaboration is possible to work on melons & cucurbits, where the Oman has experience.



Meeting with Prof. Mike Deadman at Dubai

The University showed interest for this collaboration venture and invited Dr. Mike to participate in the Festival starting from March 22, 2010.

## **International Center for Biosaline Agriculture (ICBA), Dubai**

Meeting with Dr. Mike was followed by the visit of International Center for Biosaline Agriculture (ICBA) at Dubai. The center was established in the early 1999 to build a research and development institute focusing on the problems of salinity and use of brackish irrigation water. The Islamic Development Bank (IDB) took the lead under the supervision of Dr. Ahmed Mohammad Ali, in establishing this center to build world class modern research facilities along with hiring of international scientists to conduct research on improving the well-being of the poor farmers cultivating under marginal conditions. This center was funded through the generous support from the Government of UAE, the Arab Fund for Economic and Social Development, OPEC Fund for International Development, the International Fund for Agricultural Development and Municipality Development of Dubai.



The total area of ICBA's headquarter is about 100 ha, out of which 35 ha have been fully developed for research and development. This area is divided into 14 blocks of 2.5 ha each. This institute has one Board of Trustees consisting of one Chairman and 14 members and one Board of Directors having one Chairman and 9 members for overall supervision and guidance of institute. The main objective of the institute is to demonstrate the value of marginal and saline water resources for the production of economically & environmentally useful plants, and to transfer the results of our research to National Research Services & Communities. The second objective is to develop sustainable water management systems to irrigate food and forage crops, and growing ornamental plants with marginal and saline water. The ICBA also help water scarce countries to improve the productivity, social equity and environmental sustainability of water use through an integrated water resource systems approach with special emphasis on effective use of marginal quality water.

Strategic Plan for 2008-12 was developed to achieve its mandate. ICBA has been providing research, development, partnership-building, networking, capacity-strengthening, knowledge-sharing and advisory services, with particular focus on

- Integrated water resource system
- Marginal quality resources
- Capacity building and knowledge-sharing





The ICBA farm has two sources of water: low salinity water ( $2-3\text{dSm}^{-1}$ : 1400-2100 ppm) received from Dubai Electricity and Water Authority (DEWA) and high salinity water ( $20$  to  $33\text{ dSm}^{-1}$ : 14000-25000 ppm) from two drilled wells at the farm. Water is stored in three closed water tanks which contain fully sealed plastic sheet sufficient to store 350-2000  $\text{m}^3$ . The maximum annual rainfall in the country is 100 mm. Now the center has also started working on climate change aspects. The center campus consists of the following:

- Auditorium and training building
- Gene bank
- Central Analytical Laboratory
- Seed unit

- Greenhouses
- Shade houses
- Storage facilities
- Plant processing and drying rooms
- Machinery and workshop building

The ICBA has four technical programs listed below:

- A. Plant Genetic Resources (through selection and adoption only)
- B. Production and Management Systems
- C. Communication, Networking and Information Management
- D. Training, Workshops and Extension

ICBA is presently conducting over 15 projects at its Research Station covering broad areas of its mandate in marginal water and bio-saline agriculture, a brief introduction of some of them is at **Annex-B**:

The center has gene bank of 99 cultivars/species/genotypes of crops, food & forage crops, herbs and shrubs etc. About 9415 plants have been screened. Main strategy of the center has been selection and adaption of salt tolerant genotypes instead of basic research. Eighteen varieties of date palm have been identified for salt tolerance and among them 10 have origin at UAE and 8 at Saudi Arabia.

The Vice Chancellor Prof. Iqrar Ahmad Khan thanked the ICBA administration for facilitating the visit of the delegate and sharing the experience and knowledge to manage the salinity and use of brackish water for saline agriculture. He emphasized to institutionalize the

relationship so that UAF could benefit from the technologies developed and achievements of ICBA. Both UAF and ICBA agreed to draft an MoU to strengthen and formalize the relationship between both the institutions for enhancing mutual cooperation for benefit of the stake holders. The Vice Chancellor extended invitation to the Director and scientists of ICBA for attending the University Festival from March 22-26, 2010.



**Action plan  
for the year 2010**

**Sub-MOU signed by University of Agriculture, Faisalabad and Ferdowsi University of Mashhad**

Under preview of the MOU signed on 16<sup>th</sup> January 2009, both parties further agreed on the following action plan for the year 2010:

- 1- Both parties shall provide accommodation and host tuition fee waiver for up to 5 qualified PhD exchanged students nominated by each other for a period of 6 month research work .
- 2- Both parties shall offer two sabbatical positions to the academic staff nominated by the other side and shall do their best to provide the candidates with accommodation office and access to research/laboratory facilities.
- 3- Both parties agreed on organizing two joint seminars/conferences to be held in both Institutes. The first seminar will be organized at UAF.
- 4- From UAF Prof. Dr Asif Ali, (Director External Linkage, UAF, Tel: 0092-41-9200032, asifpbg@hotmail.com) and from FUM Dr Mohammad Hussein Abbaspour (Postgraduate director, Faculty of Agriculture, FUM, abaspour@um.ac.ir) will be the contact persons to keep correspondence to further discuss the executive/administrative issues regarding implementing of this action plan.

This action plan was signed on Tuesday, the 9<sup>th</sup> of March 2010 during the visit of UAF delegate headed by Vice Chancellor Prof. Dr. Iqrar Ahmad Khan at Ferdowsi University of Mashhad from 5 to 9, March 2010.

University of Agriculture Faisalabad



Prof. Dr Asif Ali  
Director External Linkage

Ferdowsi University of Mashhad



Dr. Abedin Vahedian  
Director Scientific & International Relations

**ICBA MAJOR PROJECTS/ ACTIVITIES:****A. Plant Genetic Resources**

- i. **Conservation and sustainable use of plant genetic diversity to improve productivity of marginal ecosystems**
- ii. **Screening and evaluation of germplasm for forage and seed yield potential using marginal quality water**

**Barley:** More than 300 barley genotypes including varieties, accessions and landraces, and 1000 triticale accession are being evaluated at 5, 10 & 15 dSm<sup>-1</sup> (3500-10500 ppm).

**Buffel Grass:** 40 accession of buffel grass were evaluated in the field under 8, 16 and 24 dSm<sup>-1</sup> salinity levels.

**Fodder beet and fodder rape/brassica varieties:** Fifteen varieties of fodder beet and 7 of fodder rape/brassica were tested using salinity levels of 5, 10 and 15 dSm<sup>-1</sup> (35-00-10500 ppm).

**Safflower:** Sixty flower accession were advanced to field evaluation at 5, 10 and 15 dSm<sup>-1</sup> (35-00-10500 ppm) from the original 600 genotypes screened in a split plot design with three replications.

**Pearl millet, sorghum, barley, triticale, sesbenia, cowpea guar and sunflower:** More than 300 genotypes of pearl millet, 306 genotypes of sorghum, 2300 accession and varieties of barley, 950 accession of triticale, 100 accession of sunflower, 65 species/varieties and accession of sesbenia, 48 accessions of quinoa, 46 accession of guar, 23 accessions of cowpea and 98 accessions of pigeon pea were evaluated at 5, 10 and 15 dSm<sup>-1</sup> (35-00-10500 ppm).

- iii. **Evaluation of native and introduced genotypes under local conditions**
- iv. **Propagation and multiplication of halophytes and salt tolerant plants for fodder, bio-energy and landscaping**

**B. Production and Management Systems**

- i. Optimizing management practices for maximum production
- ii. Bio-saline agroforestry: Remediation for saline wastelands through production of renewable energy biomaterials and fodder.
- iii. Agroforestry using *Acacia ampliceps*, *Sporobolus* and *arabicus* and *Paspalum veginatum* at different salinity levels.
- iv. Prospects of growing *distichis spiata* var. Yensen-4a (NyPa forage) with sea water under arid environment.

**C. Horticulture**

- i. Investigation of elite date palm varieties for salt tolerance

**D. Land and Water Management**

- i. Mapping the soil at ICBA Research Station
- ii. Evaluation of treated water from the first AFG salt-treatment plant for sunflower
- iii. Water balance study for barley: Experiment in weighing lysimeter
- iv. Salinity monitoring system at ICBA

**E. Services: Central Analytical Laboratory (CAL)**