



Dairy Science Park



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# Dairy Science Park

Society Profile - June 2019



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# **Dairy Science Park**

A society registered under Societies' Registration Act XXI of 1860 (Reg No.4582/5/8589 dated 2-7-2015) by Registrar Joint Stock Companies and Societies, Government of Khyber Pakhtunkhwa, Peshawar, Pakistan and accepted by KP Chamber of Commerce and Industries as a Corporate Member and the United Nations as SDG Action 9671

## **VISION**

To support the people of Khyber Pakhtunkhwa, Balochistan and Northern Areas of Pakistan and the adjoining regions in Afghanistan, Tajikistan, and China, through generation of decent employment and exportable surpluses across Food Value Chain

## **Mission**

Utilization of indigenous human and natural resources for welfare of the people around the Globe, through academia – industry linkages, with focus on entrepreneurship development, Halal/hygienic food production, biorisk management and production of quality-certified products

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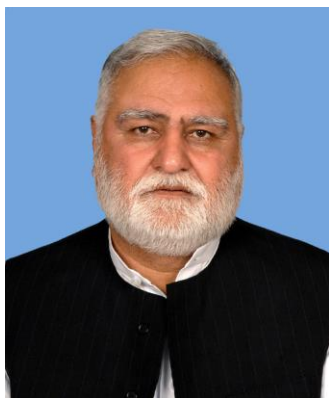
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### **Endorsement of Provincial Government and other authorities**



During my tenure as Chief Minister, I approved the Chief Minister Development Plan prepared by Prof Subhan Qureshi, which was later updated to Dairy Science Park through two international workshops held at the University of Agriculture, Peshawar, in 2011 and 2013, respectively. The Park has given birth to Peshawar Meat Company, which is to be implemented jointly by the University of Agriculture, Peshawar, the Department of Local Government and Rural Development, the Khyber Pakhtunkhwa Chamber of Commerce and Industry, the Small and Medium Enterprises Development Authority, and the Khyber Pakhtunkhwa Board of Investment and Trade.

**(Sardar Mehtab Abbasi, Ex Chief Minister KP)**



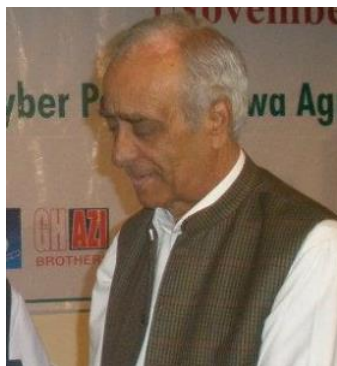
I was pleased to get an update on Dairy Science Park, presented to me as Livestock Development Plan during my tenure as Chief Minister Khyber Pakhtunkhwa. The concept is commendable as it focuses on self-reliance through utilization of the livestock resources of the region and developing the export potential of these resources. The proposal has been updated to Dairy Science Park extending its activities to other organizations and linking the region with developments at ten countries, especially USA and China, in addition to the Pakistan Army. We would continue our support DSP with the cooperation of national and international agencies, in larger interest of the people.

**(Akram Khan Durrani, Ex Chief Minister KP)**



The province of Khyber Pakhtunkhwa has been facing numerous challenges in the recent past affecting the socio-economic status of the people. The present government has decided to take concrete steps to revive the economy, pave way for huge investment, setup strong industrial base and promote tourism and trade activities in the province under a comprehensive plan. The novel step taken by the University of Agriculture supported by the provincial government departments, the Khyber Pakhtunkhwa Chamber of Commerce and Industry and SMEDA, is commendable. The Task Force on DSP has been an excellent model of out of box thinking. I hope that DSP will be successful in formulating a comprehensive strategy for developing the livestock resources for the welfare of people of this province. The provincial government will extend all possible support for making the Dairy Science Park a success story on the world map.

**(Mr Pervez Khattak, Ex Chief Minister KP)**



Dairy Science Park 2011 is a good attempt and attracted a good number of delegates from various universities and research and development organizations. Good livestock practices may be identified through the technical sessions for implementation in the field. The proceedings book has been produced as a beautiful document which will memorize you of this august gathering. The provincial livestock department has been helping the farming community through extension and research wings with various assigned tasks for the benefits of the public. The efforts of the University were commended for successful conduction of this grand event. The feed mill and dairy technology units are success stories of the faculty which will help in improving the quality of degree programs and will encourage the local farmers and industry people for entering into the business.

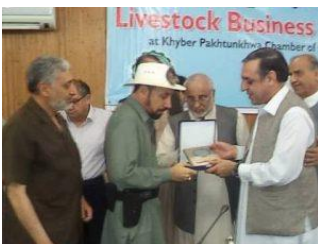
**(Arbab Muhammad Ayub Jan, Ex-Senior Minister KP)**





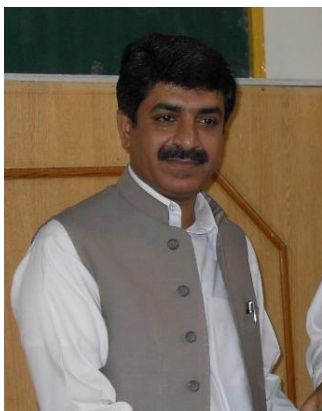
I was pleased to work with the Dairy Science Park since the last several years. The Society has emerged at the University of Agriculture, Peshawar and has abridged the gap between the government and academia in policy development and bringing reforms in the Society in line with the vision of the present government. An ongoing project of Rs.200 million was included in ADP for establishment of Slaughter Houses. The development and private sector organizations within the country and abroad, are invited to participate in this sacred mission and collaborate in launching this novel initiative.

**(Inayatullah Khan, Ex-Senior Minister KP)**



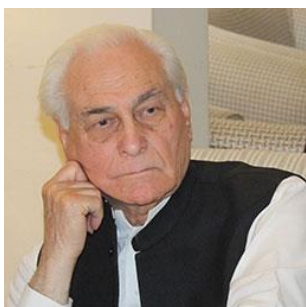
Khyber Pakhtunkhwa Minister for Agriculture Ikramullah Khan Gandapur inaugurated the Livestock Business Facilitation Desk of the Dairy Science Park at the KP Chamber of Commerce and Industries (KPCCI), Peshawar. KPCCI chief highlighted the issues faced by the business community regarding the prevailing situation of the law and order and hurdles in exporting livestock, poultry and other perishable commodities to Afghanistan. He urged upon a strong representation of the provincial livestock sector in the upcoming export show in Dubai. Prof M Subhan Qureshi thanked the President KPCCI for providing a physical shape to the thoughts of the professors and for actively participating in the international conferences and post-conference proceedings to make the dream true. The Minister for Agriculture appreciated the progress made under the Dairy Science Park with the co-ordinated efforts of the University of Agriculture Peshawar and KP Chamber of Commerce and Industries. He realized the importance of the sector in jobs creation and food production (Business Recorder, 26-5-2014).

**(Ikramullah Khan Gandapur, Ex-Senior Minister KP)**



I have been working with Dairy Science Park for several years. The UN has accepted their partnership for two SDGs. Their proposals for legislative reforms to protect the interests of stakeholders are worth consideration. KP government would extend all possible support to achieve the goals set for brining peace and prosperity in the Region. A Task Force for DSP would be established for establishment of the DSP Board in light of a wide-based consultation, Government of KP. The Task Force will identify and analyze the barriers in livestock and poultry production, processing, service delivery and marketing in the province, with special focus on small and medium sized facilities through involvement of stakeholders and the international conference series of DSP.

**(Arif Yousaf Advocate, Ex-Convener TF-SDGs, KP Assembly)**



The innovative idea of the Local Government Department regarding establishment of DSP could be appreciated to provide hygienic food production to the whole province. However, it is not clear that the KP DSP Park Board Act 2016 has been approved by the Provincial Assembly or otherwise. In addition, the detail breakup of the total cost of Halal meat shall be required from international recognized agency, which is not mentioned in the concept paper. Having registered under Society Registration Act XXI of 1980 as Dairy Science Park (DSP), it needs clarification that how DSP, a non-profit organization will work for enhancement of the marketing of the dairy product with the support of Agriculture University Peshawar and Local Government Department or Agriculture Department. DSP resembles in functions with Livestock Extension/Research, Agriculture Department and the Agriculture University Peshawar and their valuable input may be instrumental to avoid duplicity of functions. Business Recorder, 10 Jan, 2017.

**(Muhammad Azam Khan, Ex-Additional Chief Secretary GoKP)**



Consistency of DSP in arranging a biennial series of International Workshops on Dairy Science Park is commendable. Three workshops were held in 2011, 2013, and 2015 and more will be hopefully held. The industrial exhibitions attracted participation of manufacturers, marketing companies, government, NGOs, and private sector organizations. DSP has got international exposure, like the recent consultative meetings on Biorisk Management. We would like to incorporate such concepts into various curricula in biological, health, and environmental sciences at national level.

**(Prof Dr Mukhtar Ahmed, Ex-Chairman Higher Education Commission)**



I would like to congratulate you on the wonderful leadership that the DSP has provided for the livestock industries of KP. It is well recognized that most small-holder farming operations in this region depend on livestock as a source of meat, milk and fiber and also as a basis for the generation of income for their families. Their animals also serve as a mechanism for providing saleable assets to pay for family emergencies and celebrations.

Seldom have the staff of a university based institute been so well integrated with their activities among farming communities, achieving great success in providing extension on animal nutrition, reproduction and health management. The frequency with which politicians rely on advice from DSP is developing policy for the management of livestock marketing/animal health services bears testimony to the pre-eminence of DSP and its staff. I feel proud of being part of the Park and would love to support it further.

**(Prof Peter Wynn, CSU, NSW, Australia)**





It was my most memorable moment when I met Prof. Subhan Qureshi in Egypt and found him to be a truly committed scientist with a deep empathy towards the livestock and dairy farming community of KP province. His deep understanding of the issue and aspiration to find innovative solutions can attract attention of policy makers so that the needed resource base is generated to impact incomes and livelihoods of farmers as well as strengthen scientific environment to benefit the students. As a development professional, I shared my experiences and we deliberated the ideation of DSP – an enabling platform which will bring all the stakeholders together to deliberate problems and issues and find sustainable solutions by optimizing resource use. We discussed the process out of my experience on Agri-Science Park and tried to embed the dairy and livestock sectors to it. Today I am glad that Prof. Subhan Qureshi has walked the talk by establishing DSP, which I believe is a global best practice. There isn't a similar platform on Dairy so far that I know of. Hoping to see you all in the next Int'l Conference on Dairy Science Park!!

**(Abdul Rahman Ilyas, ICRISAT, India)**



I remember my first consultation with Mr Abdul Rahman Ilyas during 2010 in Egypt, who suggested the name Dairy Science Park to be given for our struggle to utilize the livestock resources of the region for prosperity of the people. Interest of Sardar Mehtab Ahmad Khan Abbasi, Governor KP, during his tenure-ship as Chief Minister during 1998 motivated me to continue my struggle. Various provincial dignitaries supported us and Mr Inayatullah Khan took the message very seriously and pursued it through release of ADP funds and support of an autonomous DSP Board. The Chairman HEC, Prof Mukhtar Ahmad has been very kind in supporting DSP as Center of Excellence.

**(Prof M Subhan Qureshi, President DSP/Ex-Dean FAHVS, UAP)**

## **THE LIVESTOCK RESOURCES**

Pakistan's Khyber Pakhtunkhwa, former Federally Administered Tribal Areas (FATA), Balochistan and the Northern Areas (DSP Region) have been the sites of international conflicts. The region is mostly mountainous and arid, rich in natural resources, predominantly livestock like sheep, goats, cattle, buffaloes, and poultry. The total value of livestock heads is Rs.13.90 trillion (US \$91.71 billion, Table 1, 2). However, the huge resource base can neither provide good economic return to the producers, nor quality food to the consumers. These holdings threaten public health safety.

Over the years, livestock subsector has surpassed the crop subsector as the biggest contributor to value added in agriculture. Presently it contributes 60.5 percent to the overall agricultural and 11.2 percent to the GDP during 2018-19. Gross value addition of livestock has increased from Rs. 1,384 billion (2017-18) to Rs.1,440 billion (2018-19), showing an increase of 4.0 percent over the same period last year. The importance of livestock sector can be realized from the fact that it is not only a source of foreign exchange earnings by contributing around 3.1% to the total exports, but also a source of 35-40% of income for over 8 million rural families and providing them food security by supplementing high value protein of animal origin.

Despite the fact that livestock sub sector could not attract large amount of investment due to its inherent subsistence and structural characteristics, this sector has shown a healthy growth of 4.0 % in 2018-19 over the previous year of 2017-18.

Traditionally livestock resources are managed by Livestock and Dairy Development Departments at the provincial level. The primary focus is made on animal health and breeding coverage through veterinary hospitals at district, tehsil and village council level. Mobile veterinary clinics provide additional coverage. Private veterinary clinics have been providing services to the farmers with various levels of reputation. This becomes an earning source for the officers as well as for the provincial government treasury which keep the incidence of diseases as a desired target, conflicting with the farmers' interests, who want disease free animals and appropriate financial returns to meet family expenses. The Annual Development Programs executed by the provincial departments are rarely found compatible with the farmers' needs.

Veterinary Research Institute and centers are functioning as diagnostic, research and vaccine production units at provincial level. Deputy Commissioners regulate the prices of commodities without going for categorization of milk and meat on the basis of quality. It discourages the quality products to fetch the appropriate prices. Food Safety Authorities have been launched for quality assurance of hygienic and Halal food items provided the consumers. However, instead of supporting the emerging businesses, they raid the facilities in hostile manner and focus on imposing heavy fines and sealing of the food processing facilities instead of creating enabling environment to support the business networks. Livestock Farmers Associations have been in place but their role in price fixation of the commodities, planning and implementation of the development and research projects has been at minimum level.

**Table 1. Livestock population of Pakistan and share of the DSP Region (million heads)**

Species	1976	1986	1996	2006	2019*					
					Pak	KP%	Bal %	NA %	DSP (%Pak)	Value DSP (Rs. trlns)
Buffaloes	10.6	15.7	20.3	27.3	40.0	7.06	1.17	0.00	8.23	0.74
Cattles	14.9	17.5	20.4	29.6	47.8	20.20	7.61	1.39	29.19	2.34
Goats	21.7	29.9	41.2	53.8	76.1	17.85	21.92	1.75	41.51	0.62
Sheep	18.9	23.3	23.5	26.5	30.9	12.63	47.96	2.40	62.98	0.95
Camel	00.8	01.0	00.8	00.9	01.1	6.52	41.30	0.00	47.83	4.30
Horses	00.4	00.4	00.3	00.3	00.4	23.53	23.53	0.00	47.06	2.82
Asses	02.2	03.0	03.6	04.3	05.4	13.11	11.01	0.70	24.82	0.62
Mules	00.06	00.1	00.1	00.2	00.2	43.75	6.25	0.00	50.00	1.50
Poultry Domestic	32.03	57.50	63.20	73.65	88.49	37.61	8.02	0.49	46.12	0.01
<b>Total</b>										<b>13.90 (US \$91.71 billion)</b>

**Source:** Economic Survey of Pakistan 2018-19; \* Provincial share (%) is based upon Pakistan Bureau of Statistics 2006 and Northern Areas share on the basis of 1986 data.

**Table 2. Livestock Production in Pakistan and the DSP Region during 2019**

Production/Species	Pakistan	KP	Balochistan	Norther Areas	DSP Region	DSP Value (Rs. trln)
<b>milk (billion kg)</b>	<b>59.76</b>	<b>7.17</b>	<b>2.67</b>	<b>0.32</b>	<b>10.16</b>	<b>1,016</b>
Cow	21.69	4.38	1.65	0.30	6.33	633
Buffalo	36.19	2.55	0.42	0.00	2.98	298
sheep	0.04	0.01	0.02	0.00	0.03	3
Goats	0.94	0.17	0.21	0.02	0.39	39
Camel	0.908	0.06	0.38	0.00	0.43	43
<b>Meat (billion kg)</b>	<b>4.48</b>	<b>0.99</b>	<b>0.47</b>	<b>0.04</b>	<b>1.50</b>	<b>612.26</b>
Beef	2.23	0.30	0.10	0.02	0.42	166.91
Mutton	0.73	0.11	0.26	0.02	0.38	305.13
Poultry	1.52	0.57	0.12	0.01	0.70	140.22
<b>Total</b>						<b>1628.26 (US\$ 10.74)</b>

**Source:** Economic Survey of Pakistan 2018-19; \* Provincial share (%) is based upon Pakistan Bureau of Statistics 2006 and Northern Areas share on the basis of 1986 data.

## **SECTOR ISSUES AND IMPACT**

The huge livestock resource base of DSP Region could not be utilized to provide good economic return to the producers, nor quality food to the consumers. The main reasons behinds this state of affairs are poor socio-economic status of the farmers, lack of resources and focus on part of the state institutions, and a hostile marketing system. The sector issues may be summarized as:

- Poor practices at farmers' and industry level and limited scope of education system create hurdles in food safety and entrepreneurship
- Slaughter houses/poultry butchers delivering meat contaminated with dung, flies, cats and dogs create threats to public health
- Rising level of unemployment and underutilized/unskilled labor at farms, factories and marketing networks
- Price capping of livestock products restricts industrialization
- Utilization of medium sized farms for entrepreneurship, technical, financial, marketing and regulatory support to these units is not included in the Mandate of any government or other agencies
- Private companies selling meat/milk items of unknown quality and Halal status, at inappropriate rates
- Input suppliers are grabbing the major share of farmers' produce and deliver low quality inputs
- Live birds/livestock transportation and marketing in open places and vehicles contaminate the environment, presenting a dirty picture of the Region and the Muslim Ummah
- Marketing dead/diseases animals/birds and their food products with no check on Halal/hygienic status
- Halal bones are exported at throw away prices and Haram gelatin is imported at very high rates
- Legal courts ban import of useful products and export of economically viable products

## **ACADEMIC STRENGTHS**

Faculty of Animal Husbandry and Veterinary Science has been an important component of the University of Agriculture, Peshawar, which supported the livestock sector through teaching, research and industrial support services. DVM degree program has been in place since 2004, before which the degree of BSc (Hons) Animal Husbandry degree was awarded. DVM is a composite degree covering animal production and health disciplines and has adopted the standard curriculum approved, monitored and accredited by the Pakistan Veterinary Medical Council and the Higher Education Commission. Postgraduate programs are offered in Livestock Management, Animal Nutrition, Animal Breeding and Genetics, Theriogenology, Pathology and Poultry Science, qualifying the candidates for award of MSc (Hons)/M Phil and PhD degrees. The Faculty has also been helping the university administration in supervision and coordination of academic and allied activities.

The teaching and research at the Faculty is being supported by facilities like University Dairy Farm, Poultry production setup, Veterinary, Reproduction and Surgery Clinics, a Semen Production Unit, a Feed Mill and Dairy Technology Center. The already existing dairy herd of Dutch Hosltein Friesian, two more were added comprising a herd of Australian Friesian and another of Australian Jersey. One broiler and one quail unit are also maintained and the products are provided to the campus residents on payment. Dairy cattle, sheep, goats, broilers and quails flocks are maintained for research and production at the Farms Block. A well-equipped hatchery is available producing day old chicks for research and production purposes. Sufficient land is available for forage research at the farm center. The faculty has linked with the research and development stations in the province.

Laboratories setup has been available in various disciplines of animal health and production sciences. Microbiological, parasitological, pharmacological and physiological facilities are available at the Academic, farm and clinical blocks. Spectrophotometry, ELISA, hematology, serology, FT-NIR and other essential facilities are shared by various groups in the faculty and are also made accessible to the sister organizations on request. PCR, gas chromatography and other advanced techniques, available in IBGE, PCSIR and Peshawar University are utilized by postgraduate students.

College of Animal Husbandry and Veterinary Sciences, Abdul Wali Khan University, Mardan has been established with the objectives: i) to produce quality graduates having knowledge and professional skills compatible to jobs and development to national and international level; ii) to conduct a research in the veterinary field for minimizing the livestock and poultry losses to enhance the economic resources of the community; iii) to ensure the provision of safe and quality animal origin food to the human population; and iv) to play a role in genetic potential change in existing breed of livestock and poultry bird to produce more milk, meat, wool and eggs. The College has been offering DVM and M Phil degree program since 2014. Faculty members total 18.

Faculty of Veterinary & Animal Sciences, Gomal University DI Khan been admitting students for 5 years composite degree program since 1996 under supervision of Pakistan veterinary Medical Council. Laboratories have been equipped with scientific equipment. Clinical and hostel blocks have been established. M.Phil Program has been in place. Poultry and Livestock Farms have been constructed. Post mortem room and one dog ward have been completed.

### **INDUSTRIAL LINKAGES**

The Faculty of Animal Husbandry and Veterinary Sciences has been considering the Khyber Pakhtunkhwa province as a natural resource base, possessing livestock and poultry resources with an estimated value of Rs.1.09 trillion. Meat is an important products and its proper management can overcome the protein deficiency of the nation and produce surpluses for export, not less than US 2.00 billion.

An organized effort has been made at the Faculty under the Dairy Science Park to utilize the livestock resources with optimum efficiency with a focus on industrialization. A



biennial series of international workshops has been in progress on Dairy Science Park; successfully holding conferences during 2011, 2013 and 2015 at Peshawar and during 2017 at Konya, Turkey. Each workshop was attended by 450+ participants, from academia, government and private sector organizations.

Under the DSP the laboratory setup at the Animal health Department has been utilized for investigating disease problems in the medium sized livestock and poultry herds/flocks. The Poultry Science Department has introduced new concepts in postgraduate research like maggot meal, silk worm meal, meal worm, omega-3 enriched eggs, iron and zinc enriched eggs, quality control through drug-residues, aflatoxin levels, antibiotic resistance, herbal probiotics as growth promoters, improvement meat quality through dietary antioxidants supplementations, stress management through antioxidants, semen evaluation, breeding through artificial insemination, introduction and evaluation of rabbits for meat production.

The sheep, goats, poultry, dairy and beef animals are being studied for their productivity, products quality and business potential. Carcass yield and quality. Processing of meat, palatability and consumers' preferences are documented. The local livestock and poultry breeds are investigated for productivity and business incubation. Commercial farmers are provided technical services and good practices are introduced. The University Cattle Feed Mill has been run under a lease arrangement with a private partner. It has provided a gateway to the University System for applied research and an effective outreach setup for the medium sized commercial livestock farmers. The Faculty members and postgraduate students have been utilizing these facilities for applied research and getting feedback from the farmers utilizing these products.

### **BIRTH OF DAIRY SCIENCE PARK**

The Dairy Science Park has been utilized as a platform to coordinate the activities mentioned under industrial linkages mentioned above. It has emerged at the University of Agriculture, Peshawar, engaging the youth in productive economic activities. Medium-sized units are being networked with services providers, markets, and emerging entrepreneurs. The United Nations has accepted Dairy Science Park as partner for implementing Sustainable Development Goals, notified at: <https://sustainabledevelopment.un.org/partnership/?p=9671>.

### **CHRONOLOGICAL DEVELOPMENTS**

1. Livestock Development Plan was prepared on advice of the Ex-Chief Minister/present Governor Khyber Pakhtunkhwa, Sardar Mahtab Ahmad Khan Abbasi, communicated vide letter dated 30<sup>th</sup> November, 1998, for productive utilization of provincial livestock resources targeted at export.

2. The Plan was updated to Dairy Science Park through three successive international workshops during 2011, 2013 and 2015 at the University of Agriculture Peshawar.

3. The President Khyber Pakhtunkhwa Chamber of Commerce and Industries (KPCCI), Mr Zahidullah Shinwari approved the Standing Committee on Livestock for integrating various stakeholders.

4. The Minister for Agriculture, Sardar Ikramullah Gandapur inaugurated Livestock Business Facilitation Desk at KPCCI.

5. The Special Assistant to Chief Minister on Law, Mr Arif Yousaf supported legislative reforms to protect interest of the stakeholders during the process of industrialization. He commended acceptance of the Park by the United Nations for two sustainable goals of self-employment for the youth and hygienic food production for the people of KP and FATA. He advised for perusal of the SDGs at the Cell established at the Provincial Assembly of Khyber Pakhtunkhwa.

6. The Special Assistant to Chief Minister on Livestock, Mr Mohibullah Khan supported the plan for preparing the province for International Halal Meat Market and advised for development of a policy to address the current challenges.

7. The DSP head office/Display Center has been established at the City Towers, University Road Peshawar and the Park has been registered under Societies' Registration Act XXI of 1860 to facilitate entrepreneurship development for young graduates and provide market linkages for the local livestock and poultry production system. An MoU was signed with the Khyber Institute of Veterinary Sciences, Peshawar for collaboration in livestock entrepreneurship development (LED).

8. A collaborative arrangement was agreed with CEBG, Pakistan Army for utilizing the semen and embryos from elite dairy and beef ruminants at the medium sized farms in the province and FATA.

9. A collaboration on "Biorisk Management" is with process with the Sandia National Laboratories USA. A four-members delegation of the Park visited the Netherlands in March 2015 for launching the initiative and a 9-members delegation visited Dubai during May 2016 to develop Pakistan Biorisk Curriculum for Universities in the Pakistan and the Region.

10. A letter of intent was signed with the Chinese Academy of Agricultural Sciences for collaborative research on development and trade of Halal products.

11. Focal Points have been appointed for the Park for Australia, China, India, Pakistan, Afghanistan, Middle East, Turkey, Netherlands, USA and Canada.

12. The Governor Khyber Pakhtunkhwa has appreciated the mission and placed the Dairy Science Park on his official profile at FATA-DA <http://fatada.gov.pk/about-us/governers-profile/>.

13. The Senior Minister for Local Government and Rural Development, Mr Inayatullah Khan has allocated Rs.200 million for establishing a model slaughter house in consultation with the Park.

14. The Senior Minister urged upon efficient utilization of the natural resource available in the Khyber Pakhtunkhwa province for the welfare of the people. The gap between the policy makers, academia and industry was highlighted. The Dairy Science Park (DSP) was declared as a platform to bridge up this gap. The Senior Minister advised that the amount of Rs 200 million released by the Local Government, Election and Rural Development Department KP for the establishment of Slaughter house at Peshawar may be utilized in appropriate consultation with the DSP experts.

15. The Senior Minister advised that an autonomous DSP Authority may be established under the supervision eminent academicians, and representatives of the Government, industry, farmers and civil society, focused at the burning issues of self-employment and hygienic food production. The Authority will provide an infrastructure for Business Incubation Centre (Rs.250 million) to promote industrial research under an Endowment Fund (Rs.250 million). This is line with the HEC vision of “facilitating higher educational institutions to develop entrepreneurship capacities and mindsets of youth”. Follow up meeting will be held to process the case.

16. Chief Minister KP approved DSP Task Force for boosting commercialization process in the livestock sector.

17. Fourth International Conference and Industrial Exhibition for Dairy Science Park was held at Selcuk University, Konya, Turkey and an MoU was signed with Konya Technopark for research and development linkages.

18. Fifth, Sixth and Seventh International Conferences and Industrial Exhibition have been scheduled for Khartoum Sudan, Beni Suef Egypt and Quetta Pakistan. The Quetta event would focus on establishment of Quetta Technopark in partnership with the FAO-UN and Government of Balochistan. Peshawar Technopark would be suggested through similar exercise.

## **ACHIEVEMENTS**

### **Biennial Series of International Conferences and Industrial Exhibitions**

#### **DSP I – 2011 Peshawar**

The First International Conference and Industrial Exhibitions on Dairy Science Park was held on November 21-23, 2011 at the Agricultural University Peshawar, with the theme, “Developing a hub of dairy enterprises in the flood affected regions of Khyber Pakhtunkhwa through partnership of academia, government, entrepreneurs & civil society”. Cooperation was provided by the Extension and Research wings of the Livestock and Dairy Development, Pakistan Veterinary Medical Association and

Livestock Trainers and Consultants as organizing partners. HEC assisted as the main sponsor, followed by financial assistance of Alltech Pakistan Ltd, Ghazi Brothers, Karachi; Inter-cooperation (IC) Pakistan, Peshawar. ICI Pakistan and Naseem Traders/Romer Lab Rawalpindi also displayed their products through stalls. Technical support was provided by ICRISAT India, SMEDA Peshawar, KPCCI, Charles Sturt University, NSW, Australia and Agri Livestock Bureau, Faisalabad. Website coverage was provided by AU Peshawar, Engormix.com, World Veterinary Year, 2011; World Vet Association; Int Soc Zool Sci; IBKRC Philippines; The Dairy Site News; Khyber Pakhtunkhwa Official Gateway News and Events. pakissan.com. Press coverage was provided by Daily Mashriq, Daily Aajj; Daily Pakistan Observer; The Frontier Post; Business Recorder; Associated Press of Pakistan; The Weekly Technology Times, Pakistan.

The conference was attended by +450 delegates from all four provinces of the country and Azad Jammu and Kashmir belonging to a variety of segments of the society. During the three days of the workshop, experts from academia, research, extension and industry, policy makers and farmers community presented 35 papers and exchanged ideas to work out a comprehensive plan for the development of dairy industry of the province. The workshop was inaugurated by the Honorable Minister for Agriculture, Arbab Muhammad Ayub Jan and concluded by Haji Hidayatullah Khan, Minister for Livestock.

Ninety-one Abstracts and 13 titles were published in an abstract book, ISBN-978-969-422-001-7. Another volume of the book was published covering recommendations, daily proceedings and pictorials. Fifty selected papers were published as a special supplement of the Journal of Animals and Plants Sciences. A committee shaped up the recommendations into various components including Business Support, Infrastructural Support, Legislative And Policy Support, Animal Production Support, Animal Health Support, Environment And Energy Solutions, Institutional Strengthening and Coordination.

### *Recommendations*

Honorable Minister of Agriculture, Government of Khyber Pakhtunkhwa, Arbab Muhammad Ayub Jan mentioned during the inaugural session of the workshop that unemployment is one of the major issues of our province and can only be addressed effectively if we develop dairy sector as there is a huge potential for its growth in the near future and to generate employment opportunities. The Honorable Minister for Livestock Haji Hidayatullah Khan has expressed his enthusiasm for increasing the size of ADP in the province and considered the livestock sector as having numerous benefits as explained in the light of the Holy Qur'an.

Both the Honorable Ministers commended the inexorable efforts of the Vice Chancellor, Agricultural University Peshawar and the Dean, Faculty of Animal Husbandry and Veterinary sciences and stressed upon preparing and pursuing the recommendations of the workshop for welfare of the people. Before finalization of the draft recommendation, the Business Incubation Program of the HEC and the Policy

Action Plan for Implementation of Khyber Pakhtunkhwa Comprehensive Development Strategy 2010 on Livestock Sector, prepared by a Think Tank on advice of the provincial government and hosted by the University, were reviewed.

The recommendations Committee comprised Prof M Subhan Qureshi, Dr Nazir Ahmad and Dr Asad Sultan. Recommendations were presented as follows:

#### Business support

1. The Higher Education Commission of Pakistan has introduced the Business Incubation which is a business support process that accelerates the successful development of startup and fledgling companies by providing entrepreneurs with an array of targeted resources and services. These services are usually developed or orchestrated by incubator management and offered both in the business incubator and through its framework of contacts. A business incubator's main goal is to produce successful firms that will leave the program financially viable and freestanding. These incubator graduates have the potential to create jobs, revitalize neighborhoods, commercialize new technologies, and strengthen local and national economies.

a. promote the commercial research culture through the strong venture of university-industry Tag.

b. boost the economic development by verge of Industrial Research output.

c. foster the formation and development of start-up businesses to the point of obtaining significant, third-party investment support.

d. educate startup companies/entrepreneur about the process of new venture development to improve their potential for future entrepreneurial success.

e. create an entrepreneurial community to give students the experience of learning through mutual support, a process critical for successful entrepreneurship.

2. The Faculty of Animal Husbandry and Veterinary Science has worked in this direction through several programs. Broilers and quails production has been in practice for meeting the requirements of consumers at the Greater University Campus. Dairy Technology Center and Feed Mill have been run on sustainable basis for boosting the dairy enterprises in the accessible areas. The Dairy Herd Improvement Program of the Veterinary Clinics has linked private dairy farmers with the faculty.

3. The semi-commercial activities of the faculty will be pulled under Dairy Science Park at Agricultural University Peshawar, in line with the idea generated in Egypt during conversation between Prof M Subhan Qureshi, Chief Organizer IW-DSP, 2011 and Mr Abdur Rahman Ilyas, ICRISAT, India. The enterprises owned by the the business partners will be affiliated with the park as model enterprises for technology application and further replication.

4. Private sector will be encouraged and attracted to invest in livestock and dairy sector by providing them conducive environment and relief in policies. Government shall extend special benefits in terms of electricity charges, provision of barren land on lease basis and taxation etc, to all types of relevant enterprises.

5. Financing partners will be provided for the program through local institutions. International investment will be explored through foreign missions, especially the Middle East, Malaysia, Turkey, Iran and other friendly countries. The Khyber Pakhtunkhwa



Chambers of Commerce and Industries will look for partnership with similar bodies in the rest of Pakistan and the friendly countries.

6. Creating an information system for all sorts of livestock activities to update farmers about market, institutions and other facilities available to them.

#### Infrastructural support

1. Establishment of salvage farms for rearing and caring of dry animal and to prevent them from slaughtering to maintain the genetic pool of best breeds of livestock population

2. Establishment of model dairy farms for extension, research and business demonstration purposes at regional level under partnership with the private sector

3. Establishment of modern slaughter houses with advance facilities to ensure the production of quality meat to the consumers and to be used for research purposes targeted at meat industry expansion and provision of HALAL MEAT to the entire Muslim community. The first model will be established at Agricultural University, Peshawar.

#### Legislative and policy support

1. Reviving the existing livestock policy and making a new policy compatible with local environment. Regulating the livestock production system for incorporating environmental, economic and public health concerns. Revising pricing policy for livestock and dairy products in accordance with input and output expenses in the business

2. Quality control systems shall be introduced and standards shall be defined for milk, meat and by-products to certify for entry into local and international markets. Quality control shall be introduced in milk and meat marketing.

3. New legislation shall be made to overcome problems associated with exporting livestock and dairy products

4. Devising and strict implementation of policies to control the smuggling of livestock across border to Afghanistan and other countries.

5. Periodic livestock census should be conducted to generate valid data and make right decision accordingly.

6. Regulating the slaughtering of animals to prevent the losses of potential animals, especially under-age and pregnant animals and to address public health concerns by rejecting animals carrying zoonotic risks.

7. Current marketing system is outdated and need to be re-structured and re-organized. This requires a detail analysis of the present marketing system to make it producers' and consumers' friendly and attract new investments. The income coming out of the slaughter houses and cattle market shall be spent on the business support initiatives proposed under this draft.

#### Animal production support

1. Integration of the four pillars into development strategy, i.e. 1) Genetics 2) Nutrition 3) Management 4) Health.

2. Local breed improvement programs should be launched and collaborated with other provinces. A provincial nucleus of different breeds of dairy animal should be established to improve their production potential and to conserve them through advance techniques. Achai conservation activities may be linked with research setup for meaningful data analysis and strategy development.

3. Camel has got extraordinary potentials to produce milk. This milk has been narrated as a panacea for different human diseases in Hadith. This miraculous milk should be investigated in modern scientific ways to be used as a good source of income and medicine.

4. Azikhili Buffaloes, a well known breed of the province has got wonderful features and milk producing potentials. It is warranted to deeply investigate their genetic make-up to fully exploit its milk production potentials and adoptability to the local climate.

5. Farmers must be educated to raise dairy goats (beetle) and sheep (damani) who are unable to raise cows and buffaloes due their rearing cost.

6. Nutritional status of livestock in the province should be improved by promoting high yielding and nutritive fodders and improving pastures conditions for grazing livestock.

7. Establishment of silos (for silage making) at commercial level to ensure the availability of feed for livestock throughout the year at affordable prices for both commercial and non-commercial farmers

8. Research work is needed to examine non-conventional feed resources in dairy animals to control and reduce high feed costs and to generate more income

#### Animal health support

1. Developing and testing locally produced medicines and vaccines to reduce health related costs and to create new employment opportunities.

2. The potential benefits of herbs in veterinary medicine shall be exploited on modern scientific basis to ensure safe end products for consumers.

3. Vaccine production shall be supported for qualitative and quantitative improvement against foot and against locally prevalent diseases and considered for export through incorporation of international standard.

4. Modern biotechnological techniques shall be used to minimize the reproduction and production losses in the dairy industry.

5. Efforts shall be made to investigate and minimize all sorts of stresses, especially heat stress to improve reproduction in dairy animals. Different approaches must be undertaken (nutritional and environmental) to cope with high heat stress during summer temperatures and production stress in the genetically improved animals.

6. Alternative and easy methods/tests shall be developed for minimizing losses in productivity and fertility e.g. newly emerging methods of early pregnancy.

#### Environment and energy solutions

1. Environment related issues should also be focused before launching any big dairy project to keep our environment safe.

2. Renewable energy solutions may be introduced for safety of environment and self sufficiency in energy production.

### Institutional strengthening and Coordination

1. Various institutions in the public and private sectors are working to support the livestock related activities, however the coordination is not very effective. The major stakeholders namely academia, research, extension, civil society and industry must join hands for collaborating their activities and sharing information and resources for achieving the common goal of supporting the livestock sector to play its due role in food security and income generation. A working committee may be assigned this task.

2. An interactive forum for discussing the major issues to develop, update and implement a comprehensive policy for the development of the industry, is required. It may be mandated for frequent exchange and dissemination of information among different segments of livestock sector through successful organization of workshops, conferences and seminars.

3. Researchers and institutions need to be facilitated and strengthened to promote quality research and resolve problems of dairy sector. International standards shall be incorporated in the research system. Career development of the scientists for better delivery of services is required.

4. Creating new and re-organizing the existing extension system to provide facilities to farmers at their door steps. Extensive involvement of the extension officers in the development process.

5. Training of livestock workers, researchers and other scientist to cope with the new challenges of modern livestock and dairy sector. Short training courses for livestock farmers and school and college students (during summer vacations) in the rural areas.

6. Establishment of ISO standard laboratories to assess the quality of feed, water, drugs and other inputs for consumption by livestock and analysis of livestock products for fitness for human consumption. Devising on farm tests to check feed and water quality.

7. The ITAC Cell at the KPCCI will be assigned the task of livestock business support and linkages with the University, Livestock and Dairy Development Departments, (Extension and Research) and SMEDA. Effective linkage of the cell with other CCIs and financing agencies.

8. Incorporating the internship concept into the work plans of all relevant organizations for career development of the outgoing graduates and producing quality manpower for boosting the national economy through jobs finding in the local industry and abroad.

### DSP II – 2013 Peshawar

The Second International Conference and Industrial Exhibition on Dairy Science Park was organized in 2013, Nov 18-20, focusing on developing enterprising capacity of livestock and poultry farmers of Pak-Afghan Region for meat production. The Conference was attended by 500+ members. The Higher Education Commission was the main sponsor supplemented by other sister and development agencies and private

companies. Papers were presented by during 9 sessions by speakers from various parts of the country, 6 faculty members for Kabul and Nangarhar University Afghanistan and Dr Mithat Direk from Selcuk University, Turkey. 200 abstracts were published in the proceeding book with ISSN number. A recommendation committee has compiled their findings and are being shared for implementation by various relevant stakeholders, mainly focused on business incubation and development of the required infrastructure and services. A roadmap for implementation of the Park as a Business Incubation Center is under consideration by the HEC for sponsorship.

### Recommendations

1. The Standing Committee on Livestock at the Khyber Pakhtunkhwa Chamber of Commerce and Industries will analyze the strengths and weakness in the production and marketing lines and working on strategies to provide immediate and long term solutions.
2. Utilizing the Working Group on Livestock and Poultry Business at the Small and Medium Enterprises Development Authority for modulating and supporting the SMEs in the private sector through involvement of graduates and their integration with service providers and marketing actors.
3. Qualified graduates with aptitude, commitment and required skills shall be encouraged and supported to initiate their own entrepreneurship in livestock and poultry production, processing and marketing under various schemes like Prime Minister Youth Support Program.
4. New investment opportunities in the livestock sector need to be highlighted through workshops and seminars in consultation with stakeholders, in partnership with the Khyber Pakhtunkhwa Chamber of Commerce and Industries, the provincial government and the University.
5. All types of animals trafficking needs to be covered under regulation and documentation within the province and along the national and international borders, provided with appropriate technical and legal support.
6. Supporting the present production lines in livestock and poultry with abattoirs, meat processing, storage and transportation faculties at various sites; starting with a demo model at the University.
7. Demonstrating potential commercial activities like silage, hay making and special fodders in certain areas and their availability in feed scarcity areas during certain seasons.
8. Replication of quails, broilers and turkey farming as entrepreneurship models developed at the University of Agriculture Peshawar, for replication elsewhere and integration with marketing network.

9. Linkages with the national and international Industry may be strengthened by involving the graduate internees in the livestock production, value addition and marketing system and the business/civil society organizations in extension, teaching and research.
10. Diploma courses for graduates and short term training courses for skilled workers are recommended in livestock entrepreneurship focused at establishing a network of production, processing and marketing lines.
11. The quality control program available at the Universities and research organization may be strengthened to accredit livestock and poultry products for international markets. Applied doctoral research will be conducted to evaluate and certify the inputs and products.
12. Conducting regular surveys to monitor the trends in livestock production and marketing for identify technical and marketing needs of the sector for further intervention.
13. Revisiting the courses for graduate and postgraduate veterinary syllabi and tailoring them with ground realities in the livestock sector.

#### Farmers' Perceptions

1. A draft report was prepared by Mr Azam Shah Dairy/Sheep Farmer/Ex-member Federal Livestock Board and presented in his inaugural paper during the Livestock Development and Business Session of the Dairy Science Park 2013. The same is hereby reproduced by the Chief Organizer, Prof M Subhan Qureshi as follows.
2. Pakistan's livestock sector could not get succeeded in utilizing its economic potential up to an optimum level due to no integration of facts into national development agenda like contribution of the sector to GDP up to an extent of 12%, 55% being within Agriculture Sector. Khyber Pakhtunkhwa being a hilly, arid or mountainous terrain, is suitable for meat production, rather than dairy, however, it could not be integrated into the policy. Livestock assets in the country exceed Rs.1000 billion.
3. Although the sector is ignored at policy level, it still showed an appropriate growth rate of 3.5%, mainly achieved on the basis of interest of the farming and business community at informal level.
4. Majority of livestock holdings belong to low social economic class, falling below poverty line; possessing livestock heads but not the required land. They can be easily shifted to a status entrepreneurship through research, development and



- marketing support, alleviating their poverty and producing surpluses for the export sector.
5. The livestock farmers are living under primitive system, with the worst type of practices. Integration of scientific practices and marketing backup will increase their income several folds, leaving a visible impact on national economy.
  6. A hostile pricing system is preventing growth and development of this sector. The controlled prices of products and uncontrolled prices of farm inputs make the business vulnerable, leading it to total collapse under certain circumstances. The local government authorities must understand that the price of a buffalo during 1990 was Rs.1,000 and milk price was Rs.10. Presently the two figures have reached to Rs.150,000 and Rs.75. Proportionately the current milk price must not be less than Rs.150, if the government wishes to regulate it; otherwise it must be left free as for inputs. Legislation is needed for supporting the existing farming system and attracting new investment.
  7. The trickledown effect of the research and development project up to the grass root level is totally lacking, which needs consideration at policy level. The research is conducted under the best possible environment, which does not reflect the real issues prevailing under farmers' conditions.
  8. At the time of independence the number of industries was limited; however, the industrialization of textile sector has enabled it to contribute a significant share to the export sector. Huge loans were granted in the name of Livestock industry; however these led to defaults which are frequently reported in the print and electronic media.
  9. If the present government allows the poor people to get resources for developing their livestock holdings into viable entrepreneurs, and develop new ones, it would be leaving a good impact on the future of the province and performance of the present government.
  10. Such steps would raise the people of the poverty and bring social, economic and political stability in this vulnerable province.
  11. The people of the province have always welcomed change. An effort of the Federal Livestock and Dairy Development Board was successful in establishing fattening farms and about 5000 viable units were established. However, the government did not fulfill their commitment and amount of Rs.6.4 million due to be paid to the farmers was refused. It led to breaking of the Units and herds of the farmers. As a member of the Board I was disappointed and pulled away from it; however, on request of Prof M Subhan Qureshi I have come back again to share my feelings with you.

12. An international Halal meat market is dealing with a trade of US\$ 635; does our province involved in meat production does not deserve to get its due share of 10%? Halal Industry Park has been established at Faisalabad; and no body at top level in the province is noticing the Dairy Science Park established here in this province.
13. A Muslim consumer in any part of the world would be pleased to get Halal meat with Peshawar label; and a farmer in KP would get due return for his/her investment in such case. We can easily make this dream true through joint efforts. The roadmap of the Dairy Science Park focusing at graduates' entrepreneurship to be supported by the University, the government and the Chamber of Commerce and Industry seems to be a feasible step to harvest the future.

#### Animal Health Coverage

1. Prof. Dr. Khushi Muhammad, Chairman, Department of Microbiology, University of Veterinary and Animal Sciences, Lahore was kind enough to provide recommendations for this section, reproduced as follows.
2. There are various types of infectious diseases that are highly detrimental for dairy industry. For last many years, dairy animals are being imported without proper planning and ignoring the L&DD Pakistan policy that has resulted in occurrence of many diseases causing heavy economic loss to newly developed dairy farms. The infectious problems are Foot and Mouth Disease, Hemorrhagic Septicemia, Hemoparasites, brucellosis, Congo virus, etc. On account of these, diseases, some of the farmers are out of dairy farm business.
3. Foot and mouth disease (FMD) causes high morbidity (50-80%) in dairy animals and high mortality (50-80%) only in young calves in addition to reduced milk production, weight gain, working efficiency, skins/hides quality, and abortions, mortality in young calves, treatment cost and trade embargo. In this way, total loss only due to the FMD is more than Rs 4 billion/ annum. Currently, Veterinary Research Institutes (VRIs) at Lahore, Punjab and Peshawar, KPK, and UVAS, Lahore are producing approximately 2 million doses of FMD vaccine. Infrastructure (Flow) of the 13 above mentioned institutes is more suitable for research purposes rather than vaccine production.
4. There are many diseases against which vaccines are not being produced in the country. Government is therefore required to make necessary arrangements to provide funds to researchers in research or teaching institutes for isolation and molecular characterization of locally prevailing pathogens, evaluation of their immunogenicity (HACCP, BMR, SOP, etc), and training of technical man-power for production and evaluation of the vaccines. Government may encourage private sector for the development of biologics production units and vaccine production for commercial purposes.

5. The private biologics production units may be directed to get their units accredited from Pakistan National Accreditation Council (PNAC) and Ministry of Health. The accreditation must be essential for production of vaccines according to international standards.
6. In UVAS, it has been observed that total cost for one dose of FMD containing immunogen against “O”, “A” and “Asia-1” serotypes of FMD virus and *Pasteurella multocida* (cause of HS) is not more than Rs 30. The cost includes technical cost, depreciation cost of building and equipment, marketing cost. The market price of local market is rupees 50 while the cost of one dose of imported FMD vaccine of the same quality is more than Rs 150. Vaccine production is highly profitable entrepreneurship so private sector may come forward to support livestock production. Local vaccines shall be prepared using locally prevailing pathogens so shall be more effective to control the diseases.
7. The efficiency of the available diagnostic laboratories may be strengthened and accredited for diagnosing every infectious disease through advances, reliable, quicker and cheaper technologies. A strong and effective coordination with the sister labs, national and international organizations may be ensured.

#### Ministers Directive and Implementation

In pursuance to the directive of the worthy Minister for Agriculture and Information Technology during his visit to the University, a meeting of the Mr Ahmad Said, Chief Planning Officer, Dr Sher Muhammad Director General Livestock and Dairy Development and Prof M Subhan Qureshi Dean FAHVS, the University of Agriculture Peshawar was held on 26-10-2013 to discuss implementation strategy for the directive. The participants agreed on:

1. Introducing the business setup by the University graduates in broilers, quails, turkeys and ruminants farming, etc., and seeking the SMEDA support in developing the business further utilizing the latest techniques.
2. Inviting the KPCCI representatives to consider such enterprises for further investment, especially in establishing slaughtering facilities.
3. Launching research at the University on commercial aspects of the meat production and quality control, making the production system competitive at the international markets.
4. Establishing a mini-slaughter house at the University for graduate teaching and launching of postgraduate diploma courses livestock entrepreneurship.
5. Utilizing the resources, skills and knowledge available at the University and the L&DD Department for developing the private sector, enabling expansion and introducing quality control in the production and marketing chain.

6. Supporting the outgoing University graduates during their six-months mandatory internship as prescribed under the Pakistan Veterinary Medical Council Act 1996 through a joint project of the University and the L&DD Department.
7. Providing an enabling environment for establishing a private company by the Department and slaughter houses in the private sector.
8. Utilizing information technology in linking the enterprises effectively with the Department, the University, services/inputs providers and the International Halal meat market.
9. Holding 2nd International Workshop on Dairy Science Park, November 18-20, 2013, at the University in which the public and private sector and the Universities would be participating.

### DSP III – 2015 Peshawar

The Third International Conference and Industrial Exhibition on Dairy Science Park was organized on Nov 16-18, 2015, focusing on support to the war-hit economy of Khyber Pakhtunkhwa through self-employment and hygienic food production for local consumers and international Halal Meat Market. The Senior Minister Mr. Inayatullah Khan inaugurated the Workshop, participated by academic, government and industry leaders, policy makers and farmers, from all four province of the country, Azad Jammu and Kashmir, Afghanistan and Turkey. Mr Mohibullah Khan Special Assistant to Chief Minister on Livestock, Mr Arif Yousaf Special Assistant to Chief Minister on Law and Mr Jaffar Shah Member Public Accounts Committee and Arbab Asim Khan District Mayor Peshawar chaired various sessions, accompanied by Deans and institutional head from various organizations. Seven technical sessions were held comprising: i) Livestock Development and Business Incubation; ii) One Health; iii) Feed and Food Safety; iv) Animal Health and Technology; v) Poultry Science and; vi) Prospective Dairy Farming and Dairy Products in Pakistan. MoU's were signed by Dairy Science Park team with Mevlana Exchange Program and Selcuk University Turkey.

The Senior Minister Mr. Inayatullah Khan inaugurated the Third Workshop flanked by Prof Zahoor Ahmad Swati, Vice Chancellor of the University of Agriculture Peshawar and Prof M Subhan Qureshi, Dean FAHVS/Chief Patron DSP. Academic, government and industry leaders, policy makers and farmers, from all four province of the country, Azad Jammu and Kashmir, Afghanistan and Turkey, participated in the event.

The Senior Minister and Vice Chancellor expressed their appreciation that renowned scientists from within the country and abroad attended the event, focused on a burning issue of self-employment and hygienic food production in the region. Prof. M. Subhan Qureshi welcomed all the delegates and thanked them for sparing their valuable

time to attend the event. The Dean also thanked the organizers and then presented a brief overview of the DSP.

Prof Qureshi explained the aim of the third conference and mentioned that it is right time to start business incubation on the basis of the ideas that generates in the research Institutions in-order to support the industry and create self-employment. In this regard the production of hygienic meat and milk can play a key role.

The DSP has established collaboration with Sandia National Laboratories to reduce risk to human health from animal industry. Moreover, collaboration has been established with China Academy of Science to promote collaborative research for industrial support and exchange of scholars under the China Pakistan Economic Corridor (CPEC).

Prof. Qureshi proposed a business incubation center costing sum of 250 million for infrastructure in addition to Rs.250 million as a Endowment Fund. He recommended development of quality control standards at farms, clinics, processing and market places. Endowment fund would be utilized for developing/replicating feasibility models and revitalizing the underutilized assets in public and private sectors. The Endowment Fund will support industrial research projects under the Business Incubation Center.

The Vice Chancellor applauded the presence of so many eminent scientists from Pakistan and other brotherly countries which guarantees that many useful idea will be generated and the gap between academia, industry and producers will be bridged up. The worthy Vice Chancellor UAP welcomed and thanked the delegates, especially those coming from Turkey and Afghanistan. He expected that the technical sessions will come up with new ideas will be for the uplift of the livestock industry. He thanks the organizers for successfully arranging such a mega event which has honored the University of Agriculture Peshawar in a big way. The worthy VC also stressed that we have wasted 68 years, and despite of that fact that our homeland has one of the world best natural resources including those of agriculture land and livestock species but we failed to exploit those resources for the betterment of our people. He concluded his speech with the hope that the government will make policy that could enable us to utilize our agriculture resources optimally.

Mr Inayatullah Khan, the Senior Minister/Minister Local Government, Elections and Rural Development endorsed the comments of the worthy VC and Dean that our natural resource could not be utilized so for the uplift of the people, and further said that the province of KP has the potential for generating 30,000 MW of hydal power; 600 million barrels of crude oil; 10 trillion cubic feet of natural gas; and millions of acre of barren land in the Southern districts. In addition, the province can generate a lot of revenue from tourism.

The Senior Minister shared his concern over the failure to exploit the resource base. However, we do not need to spread disappointment and fear in the youth, rather we need to work hard and device policy for utilization of resources by bridging the gap



between the policy maker, academia and industry. The Senior Minister declared the Dairy Science Park as the bridge to fill up the gap. The Senior Minister informed the participants that his ministry has allocated a sum of 200 million for the establishment of model slaughter house. He endorsed the idea of establishment of autonomous DSP Board which will be run by eminent scientist, industrialists and farmers' representatives and the board will work as an independent organization.

In his concluding remarks the Senior Minister praised Prof M S Qureshi for his great vision for development of livestock sector and advised for a follow up meeting the establishment of DSP Board, Dairy Science Park Act and streamlining the slaughter house project within two week time. The District Nazim (Mayor), Arbab Asim Khan chaired second technical session on the second day of the three days workshop. He appreciated the theme of the workshop covering self-employment and hygienic food production in the region and desired cooperation under the Park for entrepreneurship of youth especially the youth in quails farming. He advised the Dairy Science Park organize to develop standard operating procedures for livestock farming, products processing and marketing for application in the field. He desired training of butchers in hygienic meat production and marketing. He also desired training of local government elected representatives to exploit the indigenous resources in an efficient way.

Mr Mohibullah Khan Special Assistant to Chief Minister on Livestock advised for preparation of a livestock policy for the province. He chaired concluding session of the Workshop along with Mr Arif Yousaf Special Assistant to Chief Minister on Law and Mr Jaffar Shah Member Public Accounts Committee. Mr Arif Yousaf highlighted the importance of sustainable development goals (SDGs) and was pleased to know about selection of the Dairy Science Park by the United Nations as a partner for SDGs. He was interested in the Dairy Science Park Act KP and asked the organizers to come up with the draft act for further processing to provide relief to the partners of the Dairy Science Park, creating an enabling environment for investment in the province.

Seven technical sessions were held comprising: i) Livestock Development and Business Incubation; ii) One Health; iii) Feed and Food Safety; iv) Animal Health and Technology; v) Poultry Science and; vi) Prospective Dairy Farming and Dairy Products in Pakistan. The Sessions were chaired by Prof M Sarwar, Prof Zafar Iqbal, Prof Ahrar Khan and Prof Anas Sarwar from UA Faisalabad, Prof Ashraf from UVAS Lahore, Prof Younas Rana from CVS Jhang, Dr Arfan from PMAS Arid University Rawalpindi, Dr Iqbal Khattak from VRI, Prof M Afzal AUP, and Dr Mithat from Turkey. Delegates from ILRI, L&DD, COMSATS, SMEDA, AJKU, Romer Labs, KMU and AWKUM participated. HEC was represented by Mr Nasir Shah Director QAA.

As suggested by Dr Mithat Direk, the biannual International Workshops on the Dairy Science Park, will be jointly organized in continuation with those held during the years 2011, 2013, and 2015. The suggested venue for the 2017 conference is Istanbul, Turkey.

### Recommendations

1. The Senior Minister urged upon efficient utilization of the natural resource available in the Khyber Pakhtunkhwa province for the welfare of the people. The gap between the policy makers, academia and industry was highlighted. The Dairy Science Park (DSP) was declared as a platform to bridge up this gap. The Senior Minister advised that the amount of Rs 200 million released by the Local Government, Election and Rural Development Department KP for the establishment of Slaughter house at Peshawar may be utilized in appropriate consultation with the DSP experts.
2. The Senior Minister advised that an autonomous DSP board may be established under the supervision eminent academicians, and representatives of the Government, industry, farmers and civil society, focused at the burning issues of self-employment and hygienic food production. The Board will provide an infrastructure for Business Incubation Centre (Rs.250 million) to promote industrial research under an Endowment Fund (Rs.250 million). This is line with the HEC vision of “facilitating higher educational institutions to develop entrepreneurship capacities and mindsets of youth”. Follow up meeting will be held to process the case.
3. The Special Assistant to the Chief Minister (Law) Khyber Pakhtunkhwa appreciated selection of the DS Park for partnership by the United Nations under Sustainable Development Goals for self-employment of the youth and hygienic food production for the people of Khyber Pakhtunkhwa and FATA. He informed that he is chairing the committee on SDGs in the province and would include DSP in the onward consultation process.
4. DS Park signed a memorandum of understanding with Selçuk University, Konya, Turkey and another with Mevlana Exchange Program, Turkey. The Turkish side was represented by Dr Mithat Direk and Pakistan was represented by Mr Arif Yousaf Special Assistant to the Chief Minister Khyber Pakhtunkhwa and Prof Dr M Subhan Qureshi, Dean FAHVS, UA Peshawar. The former MoU will facilitate exchange of staff and students Pakistani and Turkish Universities and the later will facilitate collaborative research and industrialization process in collaboration with Konya Teknokent (Selçuk University, Technopark).
5. MoUs were signed by the Vice Chancellor, The University of Agriculture Peshawar for academic linkages, with the two Turkish organizations.
6. The aim of third international conference was to formalize the business incubation process and the participating experts would be consulted to move forward in this direction.
7. The District Mayor Peshawar advised for initiating an MoU with the DS Park to establish youth entrepreneurship, develop quality standards for livestock farms,

- processing and marketing channels and train the elected representatives in utilizing natural resources for employment generation and food production. The Mayor appreciated the efforts of the University in development business models like quails production and helping the meat processing and marketing partners in adopting hygienic standards. He advised for developing quality standards and training of commercial farmers, butchers and industry workers to protect the environment and ensure access of the people to hygienic meat, eggs and milk. It will help in development of entrepreneurship for the youth and preparation of the region for Halal food local consumption and export. Research finding of FAHVS and elsewhere, would be utilized for this purpose.
8. The collaboration initiated by DS Park with the Sandia National Laboratory USA, Chinese Academy of Agricultural Sciences, CEBG of Pakistan Army and nine countries through Focal Points was appreciated. These linkages will be utilized for achieving objectives of the DS Park.
  9. Livestock Advisor appreciated the efforts of the organizers in conducting such an auspicious conference to discuss the issues of the Livestock Sector. He urged upon an enhanced collaboration among the Directorates General Livestock and Dairy Development Department (Extension and Research Wings), the Faculty of Animal Husbandry and Veterinary Sciences, UA Peshawar and the farming/business community. He urged on development of a livestock policy to respond to the prevailing issues.
  10. Dr Mithat Direk offered his support to organize the Fourth International Workshop on Dairy Science Park at Istanbul during November 2017 which was welcomed by the participants with thanks.

#### DSP IV – 2017 Konya, Turkey

The Fourth International Conference and Industrial Exhibition on Dairy Science Park was organized on Nov 1-5, 2017, focusing on “Achieving Food Security through Entrepreneurship Development and Biorisk Management (BRM)”, was held at Selcuk University Konya, Turkey.

The Fifth International Workshop on Dairy Science Park focusing on “Achieving Food Security through Entrepreneurship Development and Biorisk Management (BRM)”, has been scheduled for Khartoum University, Sudan, during November, 2019.

The Six International Workshop on Dairy Science Park focusing on “Generating Decent Employment and Exportable Surpluses across Food Value Chain”, has been scheduled for December, 2019 at Beni Suef University, Egypt.

The Seventh International Workshop on Dairy Science Park focusing on “Transformation of indigenous resources to prosperity of the people through business incubation” has been scheduled for Balochistan University Quetta, during September, 2019.

## BIORISK MANAGEMENT

***The Netherlands meeting:*** A collaboration on “Biorisk Management” is with process with the Sandia National Laboratories (SNL) USA. A four-members delegation of the Park visited the Netherlands on March 15-18, 2015 for launching the initiative. The tour was sponsored by the United States Department of State’s Biosecurity Engagement Program and Sandia National Laboratories. The One Health concept is based on the recognition that human and animal health are inextricably linked. SNL were represented by Dr Melissa Finley and Mr Robert Otero and DSP by Prof M Subhan Qureshi, Prof Sarzamin Khan, Prof Umer Sadiq, Dr Shakoor Ahmd and Mr Imran Khan. A presentation was made by Prof M Subhan Qureshi, covering the livestock production system in the Khyber Pakhtunkhwa province and FATA regions of Pakistan, rich in natural resources by hit by extreme poverty.

The livestock and poultry farming system are lacking quality control standards and lack of access to modern practices have an adverse effects on the profitability of these operations economically. Similarly the processing facilities and marketing outlets are run without quality control practices and any documentation for traceability. The Doctor of Veterinary Medicine degree program is focusing on treatment of diseases and lack appropriate concepts on Biorisk Management. The SNL delegates desired to collaborate with the Dairy Science Park in establishing a Center of Excellence on Biorisk Management.

***The Dubai meeting:*** A 9-members delegation of DSP and a 4-members delegation of Sandia National Laboratories USA met in Dubai to hold the Pakistan Biorisk Management Curriculum Workshop during May 21-25, 2016. SNL was represented by Dr Melissa Finley, Veterinarian; Iris Shurdhi, Development Expert; and Giulio Mancini (Global Security Expert). DSP was represented by Prof M Subhan Qureshi, Chief Patron; Prof Sarzamin Khan, Chief Technical Advisor; Engr Irfan ul Haq Qureshi, Chief Executive; Prof Umer Sadique, Advisor One Health; Mr Nasir Shah, Advisor Higher Education; Mr Rashid Aman, Expert Entrepreneurship; Dr Shakoor Ahmad, Expert Quality Control; Ms Sadia Qureshi, Expert Halal Food; and Ms Samina Qureshi, Expert Economics (Guest Participant). The DSP participants belonged to the University of Agriculture, Peshawar, Higher Education Commission of Pakistan, SMEDA, and the Private Sector.

The Workshop concluded that the curriculum in practice in various universities of Pakistan under the supervision of Higher Education Commission of Pakistan needs to be mapped and reviewed for presence of Biorisk Management contents or availability of a full-fledged teaching program at undergraduate or graduate levels. Keeping in view the importance of the subject, the participants recommended that Biorisk Management may be given appropriate consideration while developing teaching programs at national level.

***The Bangkok meeting:*** Mr Arif Yousaf, Special Assistant to the Chief Minister (Law), Government of Khyber Pakhtunkhwa, Pakistan, who is also representing the province as a member of Task Force on SDGs, led a fifteen members delegation of Dairy Science Park Peshawar to attend a consultative workshop at Bangkok, Thailand from 12 to 19 November. Prof M Subhan Qureshi Dean FAHVS/Chief Patron DSP, University of Agriculture, Peshawar, Pakistan; Prof Umer Sadique, Prof Sarzamin Khan (UAP), Dr Zia ul Haq (KMU),

Mr Nasir Shah (HEC) and Engr Irfan ul Haq (DSP) and Mr Kamran Khan (farming and industry) represented DSP. The workshop focused on Curriculum Development for Pakistani and regional universities and is sponsored by the Sandia National Laboratories USA.

The workshop evaluated the biorisk contents of curricula in place at various universities. Recommendations were prepared for standardizing the courses and accommodating the concerns of the local livestock/poultry farming, products processing, marketing and quality control systems present in the region.

***The Phuket meeting:*** An awareness workshop was held at Phuket, Thailand, participated by experts of Dairy Science Park (DSP), Peshawar, Pakistan and Sandia National Laboratories (SNL), Albuquerque, NM, USA. The meeting was held on 19th to 21st April, 2017. The workshop was focused on awareness of the policy makers about the biorisk management (BRM) concepts and identifying the areas of interventions into the functions of government, academia and private sector organizations, with special focus on documenting and improving the status of biosafety and biosecurity associated with laboratory operations, clinics and the human food chain. In addition, the integration of Biorisk Management Curriculum into the existing curricula of Pakistani Universities and development of new courses with the coordinated efforts of the provincial and federal governments, private sector and civil society were considered.

During various presentations, the participants discussed the issues in detail and suggested measures through collaborative efforts of all stakeholders to be led by DSP-SNL partnership. The recommendations are summarized as follows:

- i) Dairy Science Park would train Food Safety Officers and develop quality and Halal standards with the cooperation of development partners like SNL, KMU and others. Diagnostic kits will be developed for detection of pathogens, toxins and Halal quality. A development project may be sponsored by the provincial government for this purpose.
- ii) The provincial government is considering establishment of a Dairy Science Park Task Force (DTF) to take care of interests of the producers, processors, consumers and service providers through various ministries. An earlier notification of the DTF was recommended.
- iii) The SDGs Task Force, Provincial Assembly KP must review the provincial priorities under SDGs and the sectoral policies and development plans must be tailored with the SDGs priorities;
- iv) The STF comprising parliamentarians must be supported by a group of technocrats to identify peoples' issues related to SDGs. Intervention strategies were suggested related to food safety, food security and youth entrepreneurship as covered under SDGs number 2, 3 & 8; accepted by the United Nations as #SDGAction9671 initiated by DSP.



- v) Establishment of community colleges under FATA University with the collaboration of DSP, to develop capacity of the people for utilizing indigenous resources for poverty alleviation, hygienic food production and youth employment.
- vi) Dr Azam Kakar from the World Bank Quetta suggested establishment of the Baluchistan Chapter of DSP to develop livestock resources, especially the sheep population on commercial basis. It was suggested that the local resources in KP and Baluchistan need to get developed through special economic zones, based upon availability of the local livestock, poultry and wildlife populations. The Higher Education has introduced tools of ORIC offices/Business Incubation Centers at various universities, which will be utilized by DSP through partner universities and the private sector.
- vii) The security personnel may be trained in biorisk management so that their health could be protected and good practices could be introduced at the international borders for protecting health of animals and the people. In addition, the capacity of the laboratories may be enhanced to handle forensic samples. It was recommended that: A Center of Excellence on Biorisk Management (CE-BRM) will work on development standards.
- viii) A Center of Excellence on Biorisk Management (CE-BRM) will work on development standards and imparting training to the biomedical workers and related professional groups in biosafety and biosecurity. CE-BRM will be established at Peshawar to be jointly managed by various partner universities of DSP.
- ix) To bring reforms into the structure and function of HERA in public interest and to utilize resources of the KP Board of Investment and Trade to support the small businesses engaged with food production in reducing cost of production and reducing risk of food related risks to the public health. The performance of various departments needs to be reviewed through a questionnaire to be monitored by the Finance Minister.
- x) The personnel trained under the SNL-DSP collaboration would be registered as alumni and the provincial government will implement the good practices in biorisk management at various points of the food value chain, as a part of KP DSP Act of the provincial Assembly.
- xi) Upgradation of the biological laboratories to BSL-2 and 3.
- xii) Pursuant to the recently promulgated KP Food Safety Authority Act 2014, it was recommended to revise the Act in light of the BRM and entrepreneurship challenges in the food value chain, with support of the academia-industry partnership.
- xiii) DSP will coordinate with the local and regional universities/organizations to accommodate Biorisk Management courses at provincial, national and regional levels

***The Colombo Meeting:*** A delegation of Dairy Science Park (DSP), The University of Agriculture, Peshawar, Pakistan completed their consultation on Biorisk Management



(BRM) with Sandia National Laboratories (SNL) USA at Columbo, Sri Lanka. The delegation of DSP was led by Mr Arif Yousaf, Special Assistant to Chief Minister on Law/Convener Task Force on Sustainable Development Goals, Government of Khyber Pakhtunkhwa and comprised Prof M Subhan Qureshi Chief Patron DSP, Prof Nazir Ahmad Dean FAHVS, Prof Umer Sadique, Dr Shoaib Sultan, Dr SB Khan, Dr Farhan A Khan, Dr Hamayun UAP, Prof Ghazala Yasmeen VC WUM, Prof Azam Kakar World Bank, Mrs Javed Farmer Sausage Co, Irfan Qureshi and Sadia Qurehi DSP, M Inam SSBU Sheringal, Dr Arshad PVMC, Prof M Rabbani UVAS and Dr Tayyab KMU. The Sandia team comprised Dr Melissa Finley, Mr Waleed Joyan and Ms Iris

A BRM Package was developed for integration into DVM curriculum at Pakistani Universities under the supervision of Pakistan Veterinary Medical Council. The draft has been uploaded at <http://dairysciencepark.org.pk/special-reports/>.

**The Konya Session:** Biorisk Management Session was held during the Fourth International Conference and Industrial Exhibition on Dairy Science Park at Selcuk University Konya, Turkey during November 1-5, 2017. The session was managed by: Chairman: Prof. Dr. Ghazala Yasmeen, Vice Chancellor, WU Mardan, Pakistan; Co-Chairman: Prof. Dr. Yılmaz Bahtiyarca, Selcuk University, Konya, Turkey; Moderator: Rifat Ullah, AUP, Pakistan. Seven papers were presented during the session.

**The Amman Meeting:** A delegation of Dairy Science Park attended a workshop on the Use of Research Methods and the Role of Molecular Biology, hosted by Sandia National Laboratories (SNL, USA), in Amman & Irbid, Jordan from 29 April – 1 May 2018. Dairy Science Park, University of Agriculture Peshawar was represented by Prof M Subhan Qureshi, Chief Patron DSP, Prof Nazir Ahmad Dean FAHVS, Prof Umer Sadique Chairman Animal Health and Dr Farhan Anwar Assistant Professor. Prof Masood Rabbani represented UVAS Lahore and Prof Zafar Randhawa, Dr Tariq, Dr Faqir Muhammad, Dr Kasib and Dr Shafia represented UA Faisalabad. Dr Melissa Finley and Dr Lynn Fondern represented SNL.

On first day a review of the training workshops and basic concepts of biorisk management were presented by Dr Melissa Finley and Dr Lynn. It was followed up by a review of the facilities and strength of the three Pakistani Universities and Dairy Science Park regarding availability of manpower, laboratory resources and academia industry linkages. The missing links and gaps were identified, with special reference to availability of molecular biological techniques at these institutions. On second day the Princess Haya Biotechnology Center (PHBC), MENA BioRisk Management and Genomic Training Division (BRMTD), Jordan University of Science and Technology, Irbid, was visited.

**The Dubai Meeting-II:** A Workshop was held at Dubai on Biorisk Management, organized jointly by Dairy Science Park Peshawar, Sandia National Labs USA and Pakistan Veterinary Medical Council Islamabad. This was eighth event of the series held at different locations around the World. BRM contents were developed for integration into DVM degree curriculum at Pakistani Universities. Participants from Sandia National Laboratories included Dr Melissa Finley, Mr Waleed Joyan and Ms Iris Shurdhi. Delegates from Pakistan comprised Deans and senior faculty members from the DVM degree awarding institutions of

Pakistan; senior civil officers of the federal and provincial government, Pakistan Veterinary Medical Council and Dairy Science Park.

Lectures were delivered by the resource persons from Sandia Laboratories USA and President PVMC. BRM related issues prevailing in the field were reviewed. Integration of the BRM contents into the DVM curriculum, already developed at Colombo and refined in the Deans meeting in Pakistan, were discussed in detail in three groups. Final draft was presented on third day for integration into DVM Curriculum. Prof M Subhan Qureshi suggested establishment of BRM Alumni Association as the eight workshops jointly organized by SNL, DSP and PVMC have trained a good number of persons which may play their due role in integrating BRM concepts into the Food Value Chain in Pakistan.

## **POLICY REFORMS**

Livestock Development Plan was prepared on advice of the Ex-Chief Minister Sardar Mahtab Ahmad Khan Abbasi, for productive utilization of provincial livestock resources targeted at export. The Plan was updated to Dairy Science Park through three successive international workshops during November 2011, 2013 and 2015 at the University of Agriculture Peshawar. The President Khyber Pakhtunkhwa Chamber of Commerce and Industries (KPCCI), Mr Zahidullah Shinwari approved the Standing Committee on Livestock for integrating various stakeholders. The Minister for Agriculture, Sardar Ikramullah Gandapur inaugurated Livestock Business Facilitation Desk at KPCCI/SMEDA.

The Special Assistant to Chief Minister on Law, Mr Arif Yousaf supported legislative reforms presented under the Dairy Science Park, to protect interest of the stakeholders during the process of industrialization. He commended acceptance of the Park by the United Nations for two sustainable goals of self-employment for the youth and hygienic food production for the people of KP and FATA. The Special Assistant to Chief Minister on Livestock, Mr Mohibullah Khan supported the plan for preparing the province for International Halal Meat Market.

The Senior Minister Khyber Pakhtunkhwa province has acknowledged efforts made under the DSP focused at efficient utilization of the natural resource available in the Khyber Pakhtunkhwa province for the welfare of the people. DSP was declared as a tool to fill the gap between the policy makers, academia and industry. The Senior Minister agreed with establishment of an autonomous DSP board, focused at the burning issues of self-employment and hygienic food production. The Board will provide an infrastructure for Business Incubation Centre to promote industrial research under an Endowment Fund, with a total cost of Rs.500 million).

The Higher Education Commission, Government of Pakistan accepted the Dairy Science Park as a Center of Excellence. Under the proposed project "Center of Excellence on Dairy Science Park" we have suggested conversion of KP and FATA into an export base for Halal Meat and other food products and the HEC has included it in the agenda for Sector Development Program. The Center is supposed to work an autonomous degree awarding institution.

The Senior Minister, Local Government, Government of KP chaired a high level meeting held on 3-3-2016 and agreed on proposal of DSP for implementation of an ADP project for establishing a Modern Slaughter House. Consequently, a Summary was initiated for Chief Secretary which was supported by Additional Chief Secretary. A note was initiated by the Senior Minister for Establishment of Task Force on Dairy Science Park which was approved by the Chief Minister on 2-8-2017. Dairy Science Park intends to establish Technoparks in various universities of the country through collaboration with Konya Teknokent and other development, government and private sector organizations.

A meeting was held at the University of Agriculture Peshawar and the Khyber Pakhtunkhwa Livestock Policy prepared by Prof Dr Muhammad Saleem Chaudhry on advise

of the ruling party, was finalized. The meeting was hosted by the Dairy Science Park and participated by representatives of the Director Generals Livestock and Dairy Development Department (Extension and Research Wings), Dean FAHVS, The University of Agriculture Peshawar and the private sector represented by the Dairy Science Park.

A team of Dairy Science Park comprising Prof M Subhan Qureshi, Chief Patron DSP, Director World Bank Quetta and Mr Shakoor Ahmad, Provincial Chief SMEDA (Baluchistan), called on the Governor Balochistan, Mr Muhammad Khan Achakzai, in his office. The Governor was briefed on launching of the Balochistan Chapter of Dairy Science Park, Peshawar and was invited to attend the Fourth International Conference and Industrial Exhibition of DSP at Konya, Turkey to be held on November 1-5, 2017. The Governor appreciated the mission and considered it as an important tool for the welfare of the people of Balochistan.

The management of the Agriculture University Peshawar (AUP) locked horns with Chief Patron of the Dairy Science Park (DSP), Professor M Subhan Qureshi, a former Dean of the Faculty of Animal Husbandry and Veterinary Sciences (FAHVS) over his activities to promote the use of modern technology for the development of livestock sector (Business Recorded Nov 14, 2017).

Additional Chief Secretary KP was approached vide letter dated 10-4-2018 by the Chief Patron DSP, to integrate the real issues faced by the stakeholders across livestock value chain, into the then proposed Livestock Policy KP, in light of the consultation made under the chairmanship of Senior Minister and approval of the Task Force DSP by the Chief Minister KP.

The Advisor to Chief Minister KP on Livestock was approached vide letter to utilize the funds (Rs.500 million) allocated for establishment of Insaaf Veterinary Clinics, for establishing viable entrepreneurship models like production farms, breeding farms for livestock and poultry, meat processing facilities, veterinary services centers, diagnostic and quality control laboratories. These need based interlinked facilities would be utilized for generating decent employment and exportable services.

## SUPPORT TO THE INDUSTRY

Emerging industries in milk and meat processing and marketing have been provided technical and Quality Control certification support to relieve threats from the District Administration. Meat shops are being established in private sector on modern lines of hygiene with a sound level of investment. Such shops have to sell their products at relatively higher prices.

***Meat Shop, Jan Shopping Arcade***, Peshawar Cantt has been established by Mr Habib Jan as model shop in Peshawar City. His facility was raided by the District Administration with the allegation that he is selling meat at higher prices. The DSP team visited his facility and inspected the quality of animals, slaughtering, processing, packaging and storage facilities. Jan Arcade had maintained quality of meat at their setup through procurement of the best and healthy animals of appropriate age, slaughtered and processed under hygienic and Islamic principles. The meat is graded as per accepted standards. Sufficient investment has been made in maintaining pathogens free environment and chilled storage. The Shop has gained consumers' confidence, attracting elite and quality conscious families across the City. Dairy Science Park has been providing technical Support to the Jan Arcade and ensure quality and Halal standards at their Meat Shop. The Minister Local Government has appreciated their meat quality during a presentation made by the Dairy Science Park and recommended its exemption from the general meat rates.

***Farmers' Sausage Company***, Industrial Estate, Hayatabad, headed by Mrs Javed, requested the DSP for inspection after they were fined and banned by the District Administration from functioning. The facility has been working since 2003 with family investment; getting not interest-based loans from the financial institutions. High quality equipment were purchased for the factory and quality control system was introduced. The products prepared at the factory were Baked Meatloafs, Mortadella, Smoked veal, Hunter sausages, Beef salami, Smoked chicken, Chicken pie, Chicken Sausages, Frankfurters, Pepperoni and Paprika. The inspection team were shown facilities by Mr Bahram Khan, comprising premises for handling the incoming meat after arrival, cold room, weighing scale, mincing assembly, mixing and crushing machine, smoking chamber and boiling pots. The experts examined the quality of the facilities, discussed the deficiencies and advised the Company executives on improvement of the same. The Company's executives were educated upon importance of hygienic practices and protocols in line with the national and international standards.

***A silage production facility*** was established by Khanzada Ahmed Kamal at Mardan. USAID Agribusiness Support Program provided him training and the equipment on subsidized rates. This facility has started producing silage on preliminary pilot basis. Maize fodder is being used as the crop for production of silage. ILRI has been sponsoring Mr Nadir Khan, PhD Scholar Animal Nutrition to work on silage production using various maize varieties under local conditions. Romer Lab Rawalpindi has provided inoculums for the experiment. Mr Kamal and another registered farmer in Peshawar have agreed to provide land for the experiment.

**Royal Dairies** has been established by Mr Kamran Khan, an Animal Husbandry Graduate and General Secretary of Dairy Science Park. Mr Khan has initiated his professional career by establishing a dairy farm; than shifted to milk marketing business where the sellers are compelled by the District Administration to sell milk at subsidized rates, ignoring grading milk on basis of quality. So Mr Khan has to quit the milk marketing venture. Then he established a quails breeding and fancy birds production entrepreneur at Badaber; a suburb of Peshawar City. Facing certain technical problems there, especially quails management during severe winter, and the electricity power failure in the country, Mr Khan established a dairy processing unit in the name of Royal Dairies. He has launched yoghurt and butter and got his products linked with the local superstores in Peshawar City. He has been linked with the Dairy Science Park in policy development, students entrepreneurship and interaction with the Corporate Partners.

**DSP Innovations** has been established as a registered firm with the Ministry of Industries, Government of Khyber Pakhtunkhwa, to bring innovations in the existing farming system in the private sector. Silage was purchased from Punjab and introduced at the dairy and calf fattening facilities in Peshawar City. Meat Park was established at Peshawar and silage was introduced at the fattening farm owned by another partner of Meat Park which replaced the wheat straw, reduced production cost and improved the growth rate and health of calves. However, the partnership could not continue due to delayed/non-payment to the two investing partners in feed and silage.

Peshawar Meat was established as a meat processing and packaging factory with labelled quality, traceability and shelf-life parameters. The facility was introduced as an entrepreneurship model and graduates were provided an opportunity to get access to practical learning. However, lack of availability of quality animals at appropriate age, competition of culled buffaloes with the prime meat produced by the factory and unfriendly attitude of the superstores managers forced DSPI to close the operation.

**DSP Clinic and Marketing Center Chamkani** was established to support the calf fattening facility, at GT Road, Peshawar. It was run by a part-time veterinary consultant DSP, Dr Muhammadullah who visited this and other farms in the premises and provided therapeutic and advisory services. DSP Innovations envisions, especially introduction of elite dairy and beef semen produced at CEBG facilities, into the local commercial farms. Good practices were introduced at the local farms, especially improved hygienic status through availability of plenty of clean water using solar water pumps and bio-waste management.

**Unemployed veterinary graduates**, about 1000 at provincial level, are being supported in career development by the Dairy Science Park. Small and Medium Enterprise Development is providing support to these young graduates in entrepreneurship development. Financial aid agency, especially Meezan Bank and Apna Bank have agreed to facilitate entrepreneurs through Islamic Financing Packages. Medicine and Feed companies working in the province and corporate livestock and poultry farms in the province and commercial and government firms in the Middle East are facilitating these young graduates in getting jobs.



**The provincial government** was convinced to allocate Rs.200 million for establishing a model slaughter house in consultation with the Park and has directed for establishment of Dairy Science Park Board to implement the idea in collaboration Peshawar Development Authority. These facilities will provide processing and marketing backup to the local livestock and poultry farms and link them with the international market.

**Advocacy Forum – DSP (AF-DSP)** has been established pursuant to recommendations of various committees and Board of Governors. The Forum is headed by Mr Arif Yousaf Ex MPA/Convener Task Force on Sustainable Development Goals of provincial assembly/Chief Patron DSP, assisted by Prof M Subhan Qureshi, President DSP.

Terms of Reference of Advocacy Forum Dairy Science Park have been notified. The Advocacy Forum would be hosted by Dairy Science Park and the Panels of Experts/local and international linkages, would be provided to the Forum. Meetings of the Forum would be held on quarterly basis. The issues faced by the milk and meat shops/processing factories, regarding price fixation and punishing/sealing of the facilities by government agencies, would be considered and way out would be suggested for implementation like implementation of SOPs, quality control analysis/certification and category-based pricing.

SOPs would be developed for implementation at milk and meat shops and processing facilities, protecting the environment and public health. A system would be devised for quality control inspection of the livestock farms, food processing and marketing facilities. Training facilities/kits would be arranged for personal hygiene and food safety of the workers of livestock/poultry farms, processing and marketing facilities.

Sharia compliance of the food produced at these facilities and open market would be monitored. Legislation would be worked out through provincial and national assemblies, for protecting interests of the stakeholders and for boosting generation of decent employment and exportable surpluses across food value chain. Establishment of an Endowment Fund for entrepreneurship development through seed money from the Government of Khyber Pakhtunkhwa and its enhancement through other sources. Assisting the public sector organizations in achieving their sectoral goals through participatory approaches.

## RESHAPING ACADEMIC APPROACHES

The teaching and research activities at the University of Agriculture Peshawar were reshuffled to respond to the existing and emerging challenges faced by the farming and business community and the consumers. Under the DSP the laboratory setup at the Animal Health Department is being utilized for investigating disease problems in the medium sized livestock and poultry herds/flocks and monitoring hygienic status of production, processing and marketing facilities of livestock and livestock products. The University Veterinary Clinic was transformed into a sustainable unit providing medicines and services under a revolving fund at a pharmacy shop.

***Livestock Management Department*** has been investigating the sheep, goats, poultry, dairy and beef animals for their productivity, products quality and business potential. Carcass yield and quality. Processing of meat, palatability and consumers' preferences are documented. The local livestock and poultry breeds are investigated for productivity and business incubation. Commercial farmers are provided technical services and good practices are introduced.

***University Feed Mill*** of Animal Nutrition Department has been run under a lease arrangement with a private partner. It has provided a gateway to the University System for applied research and an effective outreach setup for the mediums sized commercial livestock farmers. The Faculty members and postgraduate students have been utilizing these facilities for applied research and getting feedback from the farmers utilizing these products. Alternate feed resources are being explored and new technologies developed for enhancing feed utilization by the livestock and poultry species. Feasibility models are being developed for entrepreneurship in meat production.

### **Development of Entrepreneurship models**

Through the reshaped postgraduate research, the Poultry Science Department of the University successfully came up with several entrepreneurship models. Various poultry birds were studied including quails, under a revolving fund. Several studies were conducted to study the feed conversion ratio, supplementation of antioxidants, growth pattern, breeding efficiency and effects of aflatoxins on economic parameters and other aspects. It was concluded that AFB1 is capable of inducing clinico biochemical reactions and alterations in different organs when fed to quails in different concentrations. A study on effect of organic acids on the performance of Japanese quails and found that net return was significantly higher by the supplementation. Two studies were conducted to investigate efficiency of artificial insemination and identification of a suitable extender and their effect on quail eggs fertility. AI showed good results in Japanese quails in term of least fertility related problem as compared to natural mating. Proctodeal gland foam extender was found to be very effective for fertility, hatchability, sperm motility and count and as well as economical in terms of cost per chick.

***Feasibility of Quails Farming:*** Analysis of the data generated on quails at the Department showed that a revolving fund of Rs.400,000 to generate Rs.42,000 per month which is an excellent entrepreneurship model for the region.

***Feasibility of Rabbit Farming:*** Rabbit farming system was studied at Khyber Pakhtunkhwa (KP) under an ALP-PARC project. The study concluded that scope of rabbit as meat animal exists in the province and improvement in rabbit management could efficiently improve its production and utilization. The University has established an experimental rabbits unit and several studies are underway to demonstrate appropriate breeding, health and feeding management of this animal and utilize it as an alternate source of meat production and self employment for the youth. Based upon the data generated so far, a feasibility of the production system has been prepared and we recommend it as an entrepreneur for the youth of the province. The data analysis revealed that an investment of Rs.200,000 has resulted in generation of a monthly income of Rs.41,325 per month through keeping 500 rabbit. The model was extended to the field through farmers training, especially sponsored by SRSP.

## INSTITUTIONAL COLLABORATION

### **DSP/UAP/UVAS/UAF and Mevlana Exchange Program Turkey**

Dairy Science Park signed a memorandum of understanding with Selçuk University, Konya, Turkey and another with Mevlana Exchange Program, Turkey during DSP III – 2015 Peshawar. The Turkish side was represented by Dr Mithat Direk and Pakistan was represented by Mr Arif Yousaf Special Assistant to the Chief Minister KP (Law), Prof Zahoor Swati, Vice Chancellor UAP and Prof Dr M Subhan Qureshi, Dean FAHVS, UA Peshawar. President DSP Irfanul Haq Qureshi, CTA Prof Sarzamin Khan, Prof Mansoor Khattak, Dr Asif and Mr Intizar Ali PTI and Mr Zafar Hussain Feed Industry also attended the MoU signing ceremony.

Under the Mevlana Exchange Program, the two organizations agreed on collaboration, covering student and academic staff Exchange to concur with the principles and conditions set forth in Program to provide solutions to the issues highlighted under the Dairy Science Park. The MoU with Selçuk University will support self-employment models and hygienic food production utilizing the livestock resources. Collaborative research will be launched in livestock and poultry production and health for control of diseases and reduction of production cost per unit. Market access will be provided to the products of both the regions.

Similar MoU's were signed by Dr Mithat Direk on behalf of Mevlana Exchange Program with the University of Veterinary and Animal Sciences Lahore, University of Agriculture Faisalabad and Arid University of Agriculture Rawalpindi. The MoU's were aggressively followed up by these three universities and a lot of students and faculty members got short and long term trainings. The host organization, University of Agriculture Peshawar ignored this opportunity for a long time. However, Dr Umer Sadiq worked under the collaboration and managed to facilitate visit of 40 faculty members and postgraduate students of UA Peshawar to Turkey. Industrial collaboration was established between the two countries at the level of private investors.

### **HEC/Khyber Medical University/UAP:**

A memorandum of understanding for Collaborative Biorisk Management Initiative (CBMI) was signed between Dairy Science Park (DSP), Khyber Medical University (KMU), the University of Agriculture, Peshawar (UAP), and Higher Education Commission of Pakistan (HEC). The signing ceremony was supervised by Prof Mukhtar Ahmed, Chairman HEC. The MoU was a follow up of a consultative workshop held recently at Bangkok, Thailand, participated by experts of DSP, led by Mr Arif Yousaf, Special Assistant to Chief Minister Khyber Pakhtunkhwa on Law, who is also representing the province as Chairman of Task Force on Sustainable Development Goals of the United Nations for Khyber Pakhtunkhwa. The workshop at Bangkok was focused on the objectives of Biorisk Management, identifying courses where Biorisk Management Curriculum can be inserted into existing curricula of Pakistani universities, development of new courses, and formulating other measures for Biorisk Management. Senior faculty members of KMU attended the DSP-

SNL collaborative events on Biorisk Management and contributed in development of BRM curriculum and other relevant issues.

Senior Faculty Members of KMU participated in various events of DSP on Biorisk Management regarding curriculum development. BRM concepts were integrated into the postgraduate degree programs in various disciplines of the Institute of Public Health and Social Sciences, KMU.

### ***Women University Mardan***

An MoU was signed between the Mardan Women University Mardan (MWU) and Dairy Science Park Peshawar (DSP). The DSP team comprised Dr Maryam, Dr Hafsa and Mr Bilal, headed by Prof M Subhan Qureshi Chief Patron. Prof Ghazala Yasmeen, Vice Chancellor MWU signed the document and was assisted by Mr Adnan Ahmad and teaching staff. The Vice Chancellor appreciated the achievements made under the Dairy Science Park, especially the business incubation concepts and launching of Peshawar Meat as a model entrepreneur.

DSP and WUM would collaborate through “**Biorisk Management and Women Entrepreneurship (BMWE)**” for evaluating the biorisk factors associated with commercial farming, transportation, slaughtering, processing and marketing of livestock and poultry products and human health and veterinary clinical practices. The feasibility models and applied research conducted under the DSP would be shared with WUM for developing entrepreneurship for the young women. This would be targeted at achieving the two sustainable goals of DSP for self-employment of youth and hygienic food production for the people of Khyber Pakhtunkhwa and FATA as #SDGAction9671 of the United Nations.

The collaboration will safeguard the health of students, biomedical professionals (including laboratory staff, public and animal health workers), and the community. Standards and legislative guidelines will be developed for farming and processing units and service providers as they relate to dangerous and/or infectious pathogens. Interdisciplinary linkages in bio-risk management will be strengthened. Educated women will be supported in the region for establishing livestock and poultry based entrepreneurship. Hands will be joined for responding to Sustainable Development Agenda of the United Nations through #SDGAction9671.

### **Strategy**

- Training select faculty to implement the newly developed curriculum and to reach out to other universities to design, develop and implement similar curriculum to establish biorisk management curriculum and practices throughout the region
- Design, develop and implement outreach programs to train biomedical professionals in the field to handle dangerous samples

- Training of Senior level and middle level scientists, farmers, industry representatives, students and policy makers in biorisk management so that they can contribute to training and outreach
- Consultation among stakeholders on the issues related to zoonotic diseases, the food safety, trans-boundary diseases and losses to the farmers' income
- Evaluation of the small and medium sized livestock and poultry farms for public health safety and devising modules for minimizing the relevant threats

### ***SBBU University Sheringal, Dir***

Dairy Science Park Peshawar and SBB University Sheringal Dir, would collaborate for “Transforming Farm Resources into Entrepreneurship [TFRE]” focused at evaluating the livestock-based food value chain for entrepreneurship development and utilizing the indigenous natural & human resource base. An MoU was signed by Prof Khan Bahadar Marwat, Vice Chancellor SBBU and Prof M Subhan Qureshi Chief Patron DSP, Dr Muhammad Inam Director ORIC/HOD Animal Science Department SBBU and Mr Kamran Akram Khan, Secretary DSP. Dr Rafiullah Khan and Dr Naseer also attended the ceremony.

The two organizations would utilize the livestock and poultry production, processing, service delivery and marketing resources in the livestock food value chain for entrepreneurship development. Halal status of food value chain will be ensured at various stages of production and processing regarding animal species and food ingredients with special focus on traceability of products. Standards and legislative guidelines would be developed for farming and processing units and service providers as they relate to dangerous and/or infectious pathogens. Linkages will be strengthened with service providers for the emerging entrepreneurship models. The educated man and women in the region would be facilitated for establishing livestock and poultry based entrepreneurship backed up with hygienic and Halal standards. Sustainable Development Agenda of UN would be supported through #SDGAction9671.

Applied research generated locally and internationally, would be harvested for entrepreneurship development for the youth. Liaison will be kept with the ORIC offices of the Universities for technology development and field applications to provide solution to the emerging issues. Training and facilitating the outgoing graduates to establish start up projects would be one of the activity to be undertaken under MoU. Refreshers training courses would be arranged for capacity enhancement of the senior/middle level scientists, farmers, industry representatives, students and policy makers in relevant good practices. Consultation among stakeholders would be ensured on the issues related to producers, consumers and service providers through an Advocacy Forum. The small and medium sized livestock and poultry farms would be evaluated for public health safety and devising modules for minimizing the relevant threats.

Director ORIC SBBU Sheringal, Dr M Inam accompanied the DSP delegation finalizing the DVM curriculum through integration of Biorisk Management concepts.



### ***Sindh University Jamshoro***

Prof Qureshi, Dr Aqeel Memon, Dr Imdad Leghari and Dr Kabir Afridi, Dairy Science Park experts, visited Sindh University Jamshoro for signing an MoU between the two organizations. The MoU was titled as “Collaborative Biorisk Management Initiative (CBMI)” with a view to protect public health through policy interventions, aimed at preventing and controlling biorisk factors including proliferations of pathogens in animal, human and environment segments independently and in interaction.

As per this memorandum, SU and DSP would cooperate through evaluating the biorisk factors associated with commercial farming, transportation, slaughtering, processing and marketing of livestock, poultry and fisheries products and human health and veterinary clinical practices. This would be targeted at achieving the two sustainable goals of DSP for self-employment of youth and hygienic food production for the people of Sindh, Khyber Pakhtunkhwa and FATA. In addition, the two signatories will also develop a biorisk management curriculum for incorporation of the concepts into syllabi of Pakistani Universities and launching new undergraduate and graduate degree programs for evaluating biorisk factors and their management associated with commercial farming, processing, transportation and marketing of livestock, poultry and fisheries products, and also provides support in training of selected faculty, scientists, students of SU experts from various disciplines of biological sciences, industry representatives, biomedical professionals, local livestock, poultry and fish farmers and policy makers for public health safety and minimizing the threats of zoonotic diseases.

The bilateral initiative will also work towards improving the productivity, products quality and reducing the production cost of products across the food value chain, covering milk, meat, eggs, fruits and vegetables, which will be utilized for entrepreneurship development for young men and women, and also in the production of halal foods for local consumers and exporters that would be achieved by launching the academia-industrial linkages, especially with the support of Konya techno-park, Turkey.

To help safeguard health of students, biomedical professionals (including laboratory staff and public and animal health workers) and local communities, research projects would be launched; standards and legislative guidelines for farming and processing units and service providers will be developed. The project aims to build University of Sindh as a leading institution to provide assistance to other similar institutions on the implementation of biorisk management curriculum, and to strengthen interdisciplinary linkages in biorisk management. This initiative will also focus on incorporating international obligations on biorisk management into the local health regulations in the overall interest of general public.

VC-SU Prof. Dr. Fateh Muhammad Burfat and DSP-Chief Patron Prof. Dr. Subhan Qureshi signed the MoU as chief representatives of their respective organizations in a simple yet graceful ceremony at SU vice chancellor’s office.

### ***SBB-UVAS Sakrand***

A visit was made to Shaheed Benazir Bhutto University of Veterinary and Animal Sciences (SBBUVAS), Sakrand, the newly established University. Prof Mushtaq, Prof Gerhard, Prof Qureshi and Prof Khatrai. Prof Dr Ahmed Sultan B Jatoti, Dean Animal Production and Technology and Prof Rajput, Dean Veterinary Sciences facilitated the visit. The three visiting experts presented their talks followed by questions and answers. Traditional ajrak was presented to the guests as souvenirs.

### ***Sindh Agricultural University Tandojjam***

Dairy Science Park team interacted with the Universities of Sindh for developing a joint strategy to respond to the issues faced by the people through academia industry linkages. Collaboration was made in organizing International Training Workshop on Bovine Reproduction and Artificial Insemination at Sindh Agricultural University Tandojam, signing an MoU with Sindh University Jamshoro and holding a special session on Theriogenology at the Shaheed Benazir Bhutto University of Veterinary and Animal Sciences (SBBUVAS), Sakrand.

The Training Workshop at SAU comprised sessions prevailed over five days. The participants were nominated by provincial livestock department of Government of Sindh and postgraduate students of Theriogenology. The Resource persons comprised Prof. Dr. Mushtaq A Memon, Washington State University USA, Prof. Dr. Gerhard Schuler, Justus-Liebig-University Giessen, 35392 Giessen, Germany and Prof M Subhan Qureshi, University of Agriculture, Peshawar/Chief Patron Dairy Science Park. Prof Pershotam Khatri was Chief Organizer of the Event and presented the traditional Ajrak as souvenir to the Resource Persons.

Prof Memon covered Anatomy of Female Reproductive System, Estrus Cycle, Demonstration of Bovine Female Reproductive Tract/Organs in Phantom Hall (Practical), Merits & demerits of Artificial Insemination and Reproductive disorders of Female system. Prof. Dr. Gerhard Schuler delivered lectures on Hormones of Reproduction, Semen Examination/Evaluation, Hygiene and precautions/preventive measure for A.I., Breeding Bull Soundness, Breeding values. Prof M Subhan Qureshi delivered lectures on Reproduction – Nutrition Interaction in Dairy Animals and Stress Physiology – Reproduction interactions.

Prof. Dr. Jaimal Dhanani, Prof. Dr. Ahmed Nawaz Tunio, Prof. Dr. Akeel Ahmed Memon and Dr. Asmatullah Kaka covered various topics in bovine reproduction and artificial insemination like Reproductive Biotechnologies, Use of Ultrasound and pregnancy (Practical), Thawing, Preparation of A.I. Gun (Practical), Demonstration on passing insemination gun/ technique of insemination on female reproductive tract (Practical) in Phantom Hall; Insemination practice in Live animals, Rectal palpation & Examination (Practical). Field visit was held and Veterinary camp was organized at Achhro Thar near to Khipro, Sindh.

### Center of Excellence on Bovine Genetics

CEBG was approached by DSP for bilateral collaboration in research and training/business support to the farmers and veterinary practitioners of Khyber Pakhtunkhwa. The elite semen and embryo available at CEBG, from cattle with a milk yield of up to 14000 per lactation for dairy cows and a daily weight gain of above 1000 g for beef animals were recommended for supply to the local farmers and practitioners under the Park in addition to the training courses, at appropriate rates. A joint pilot project may be launched for rearing such calves at farmers level. DSP will facilitate marketing of CEBG products and services at NGOs and other organizations in KP.

### Chinese Academy of Agricultural Sciences

A letter of intent was signed with the Chinese Academy of Agricultural Sciences for establishing Economic Collaboration through Livestock Commercialization (ECLC) in the Pak-Afghan Region to raise the income of local people through intervention strategies, training of educated personnel, professionals and students. Human resource development, an international dialogue and collaborative research project forms an integral part of this collaborative effort to assist the local institutions and civil society organizations in capacity development. ECLC will help build capabilities of the local research and development organizations and groups of farmers, butchers, veterinarians, para-vets. This capability will enable the stakeholders to support viable livestock farming producing milk, meat and eggs qualifying the local and international quality standards.

The Endowment fund will help the young educated persons in establishing their entrepreneurs and common facility centers will be established for meeting the marketing and processing requirements of entrepreneurs. KP Chamber of Commerce and Industries (KPCCI), Peshawar, Pakistan and Small and Medium Enterprises Development Authority (SMEDA), Peshawar, Pakistan will be implementing partners of the ECLC.

## **RENEWABLE ENERGY AND ENVIRONMENT PROTECTION**

Biogas generating system has been introduced at mediums-sized farms in the province. A review study was supported, directed at establishment of commercial biogas sector for electric power generation. Keeping in view Pakistan's agriculture base and environmental concerns, we focus on biogas sector for electric power generation. Biogas can act as an alternative, sustainable, and renewable energy resource. Our analysis illustrated that there is a pronounced potential for commercial biogas sector for mitigating energy crisis in Pakistan. Solar energy has been found in abundance in the region and training programs were organized to introduce biogas and solar energy for farm operations. The outgoing graduates have been motivated to introduce the technology as a tool for sustainable development in the field. Two biogas backed electricity generation units were installed at the University of Agriculture, Peshawar and COMSATS University, Abbottabad as demo models for replication and training of stakeholders.

GreenWend has been launched as a company with the mission: "Now is the time to make your own energy. Avoid the rising energy costs and enjoy peace of mind with GreenWend!. The company deals with Solar System designing, Installation and Maintenance for Your Homes, business places and agriculture sectors. This company is founded to reduce the energy crisis in Pakistan and bring the people towards green energy. We are providing designing, installation and maintenance services of solar energy in Pakistan. Our goals are: Decreasing electricity bills; Decreasing load on public sector power operations; Skill development of youth for decent employment; Business incubation of salable research; Assisting Dairy Science Park in implementing SDGs 2, 3, 4 and 8, covering zero hunger, good health and well being, women empowerment, decent employment and adding SDGs 7, 9 and 13, covering affordable and clean energy, industry innovation and infrastructure and climate action. Our products are: Solar Panels, Inverters, Batteries installation with a one year free maintenance warranty; Domestic packages of solar systems with the capacity of 1 KW, 2 KW, 3 KW, 5 KW, 7 KW and 10 KW; Remote solar monitoring; Innovations in solar technologies. We are categorized as: Solar Energy Company; Solar Energy Service; Electric Utility Provider; Skill Development Training; Artificial Intelligence in Solar Systems; Business Incubation; Agricultural operations

## THE FUTURE ROADMAP

The Roadmap of DS Park has been prepared in line under the following policy guidelines:

- United Nations - Transforming our world: the 2030 Agenda for Sustainable Development, #SDGAction9671
- Pakistan Vision 2015, Government of Pakistan
- Industrial Policy Khyber Pakhtunkhwa 2016

### **1. Dairy Science Park (The Society)**

A society emerged at the University of Agriculture, Peshawar, Pakistan, registered under Societies' Registration Act XXI of 1860, Government of Khyber Pakhtunkhwa supporting self employment and hygienic food production in partnership with UN SDGs (Requirements: The Senior Minister LG committed constitution of Task Force and a Grant of Rs.50 million to demonstrate commercialization models and prepare act for DSP Board).

#### **Objectives:**

1. To attract the stakeholders for active participation in the development process.
2. To spread awareness among the masses and sensitize them to understand the issues of food security and quality.
3. To support utilization of livestock resources for self-employment of the youth.
4. To network the farmers, investors, experts and public sector organizations for joining hands in covering the province into an export base for Halal Meat, milk and eggs in an environment friendly, cost effective way, fulfilling demands of local markets.
5. To utilize the academic, research and development resources of the provincial government and the Dairy Science Park for improvement in livestock farming through quality control standards and certification for biosafety.
6. To provide marketing linkage to the producers, input suppliers and service providers in livestock and allied sectors.

### **2. DSP Board (Development Component)**

Establishment of a Dairy Science Park Board has been agreed by the provincial government, for developing the province as a Halal Meat Export Base utilizing the manpower, research and development institutions and unutilized/under-utilized public and private assets through PPP, DSP Veterinary Clinics and Marketing Centers, Agri-Marts, franchise developments, commercial companies, etc. Requirement for the Authority comprise: i. KP DSPA Act; ii. Endowment Fund Rs.250 million. A Task Force has been agreed by the Senior Minister Local Government and directed for initiation of a Summary for Approval of the Chief Minister KP. The following guidelines have been provided:

### Principles

- The Board will be established as a symbol of hope for the people of KP and the adjoining regions of FATA and Afghanistan.
- The Board will ensure productive utilization of the human resource and material assets in the best interest of the province and the region through partnership with the public and private sector organizations and individuals.
- The Board will be a regulatory, financial, development and marketing authority supporting commercialization of livestock and allied sectors in KP.
- The Board will work on the basis of self reliance and no repeated funds will be requested for routine operational activities; however, for introduction of special packages and campaigns grants and donations will be accepted.
- Selection and promotion of staff and fixation of salary will be made on performance basis.
- Sales and purchases will be made through local committees and advertisements in the printed and electronic media; local and international; and quality of materials will be preferred for purchases.
- Performance audits will be preferred over fiscal audit and liberty will be provided to local committees in financial transactions to avoid unnecessary delays.
- Endowment Fund will be utilized up to maximum to support establishment of new entrepreneurs, improvement of existing entrepreneurs, establishment of common facilities centers and launching of feasible and innovative investment models.
- Information Technologies, business administration, material engineering; environment sciences, satellite information system, etc, will be integrated into the Board's functioning using the national and international linkages.
- Technical, administrative and financial progress of the Board will be reported monthly and a toll free telephone number will be publicized widely to get advice and inputs from the masses and complaints for any irregularity, for the purpose of transparency and accountability.
- Members and staff of the Board will work like a family with equal respect and working space for all.
- Awareness campaigns will be held widely to reach the target groups and get them engaged with Dairy Science Park network for participating in the provincial development agenda.

### Strategic Vision

- Developing SOPs for producers, processors, marketing partners and service providers and certification for quality assurance
- Introducing innovations like biogas, solar water pumps, good practices and traceability in the medium sized livestock and poultry farms registered with DSPS through Business Facilitation Centers in the private and public sectors
- Price of the products of the registered farms will be fixed for the registered farmers in consultation with the price regulating committee of the DSPB
- Financial, technical and marketing support to the youth for self-employment
- Facilitation of Corporate and Development Partners of DSPS in horizontal and vertical expansion of business activities



- Introduction of Agri-Marts, and a chain of restaurants linked with the registered farmers
- Establishment of livestock and poultry breeding farms in partnership with the public or private organizations/individuals
- Training of entrepreneurs, farm/industry workers, scientists
- ISO certification of producers, processors and service providers through DSPS Panel of Experts and Development Partners
- Financial support to the registered members through Islamic leasing, Mudaraba and Takaful
- Competitive Research Grants for: i) developing feasibility models for entrepreneurship; ii) export-oriented/import-substitutional industrial research
- Infrastructural support for providing cold chain, transportation, cold storage and air cargo for Halal meat
- Legislation for protecting interests of the consumers and members/partners of the Park
- Accepting and donating grants, aids and loans in the interest of the people of KP
- Close liaison with the international partners and friendly countries in achieving the goals

#### Endowment Fund

- Developing feasibility models
- Facilitating groups of stakeholders in establishing entrepreneurs
- Input supply and services through Business Facilitation Centers
- Replication of prototypes through graduate entrepreneurship
- Establishing breeding stocks, farming and value addition, renewable energy, housing
- Branding of DSP Halal meat and outlets/ export for product marketing
- Charity and Bait-ul-mal for the neglected segment of Society
- Fund to support various livestock and poultry development activities including training, market research, upfront procurement for sale to the dairy farmers or dairy industry of containers, coolers, instant chillers, liquid nitrogen flasks and other equipment; to support innovations, the development and promotion of farm products, consumption and export of farm products

### **3. University of Veterinary Innovations and Commercialization (UVIC, Academic Component)**

Faculty of Animal Husbandry and Veterinary Sciences (FAHVS), the University of Agriculture Peshawar will be upgraded to UVIC to promote industrial research, quality control, entrepreneurship development, Halal certification, and legislative support to the entrepreneurs. Logistic support will be provided to the DSP Society and DSP Board.

#### Research priorities

- Integration of the teaching and research with the sectoral issues, emerging challenges and needs of the stakeholders
- Development of quality control and certification standards for medium-sized entrepreneurs engaged in livestock and poultry production, processing and marketing; farmers' groups; exporters and corporate sector
- Establishment and collaboration with reference laboratories for quality control and certification of medium sized entrepreneurs, farmers' groups, exporters and corporate sector
- Integrating environmental, ethical and public health concerns into the livestock food value chain
- Introducing innovations like biogas, solar water pumps, good practices and traceability in the medium sized livestock and poultry entrepreneurs
- Analyzing financial, technical and marketing issues in livestock and poultry production practices
- Studies on cost-effectiveness of livestock and poultry entrepreneurship
- Creating a database of Corporate and Development Partners of DSPS for horizontal and vertical expansion in livestock and poultry entrepreneurship
- Analysis of issues faced by livestock and poultry breeding farms in partnership with the public or private organizations/individuals
- Studies on infrastructure availability for, milk/meat/eggs factories, cold chain, transportation, cold storage and air cargo for Halal meat
- Studies on legislative barriers faced by the producers, service providers and consumers of livestock and poultry products
- Studies on the status and identifying success stories in financing of livestock and poultry entrepreneurship under the Islamic perspectives
- Monitoring and facilitating the developments made under the Dairy Science Park through local government and other sponsors

### Structural reforms

The existing Faculty (FAHVS) will be split into two Faculties of: i) Veterinary Sciences and; ii) Animal Production Sciences and a third; iii) Faculty of Dairy Science Park will be created as follows:

#### **a. Faculty of Veterinary Sciences**

- Institute of Biosciences: The existing disciplines and resources available for teaching and research in Anatomy, Physiology and Biochemistry; these facilities would be strengthened for educating the students on the basics of animal production, health care and stress factors hitting these two parameters.
- Institute of Pre-Clinical Sciences: The existing disciplines and resources available for teaching and research in Pharmacology, Microbiology, Pathology and Parasitology; these facilities would be strengthened for better understanding the diseases patron and role of the pharmaceutical products in improving health and productivity.

- Institute of Clinical Sciences: The existing disciplines and resources available for teaching and research in Reproduction, Medicine, Surgery and allied disciplines; these facilities would be strengthened for meeting challenges faced by the farming and business communities, generation of self-employment and production of hygienic food for the local people and export.

**b. Faculty of Animal Production Sciences**

- Institute of Dairy and Meat Sciences: The existing Department of Livestock Management will be upgraded to the Institute of Dairy and Meat Sciences and would take care of advances in dairy science, management systems, breeding studies, management innovations, stress management and farm automations
- Institute of Animal Nutrition and Feed Sciences: The existing Department of Animal Nutrition would be upgraded to Institute of Animal Nutrition and would take care of exploring indigenous feed resources, fattening trials, alternate feed resources and industrial application of nutrition sciences
- Institute of Poultry and Wildlife Sciences: The existing Department of Poultry Sciences would be upgraded to Institute of Poultry Sciences and would take care of broilers and layers production, quails breeding and farming, turkeys farming, ducks farming, rabbits farming, worm meals studies, enzymes application in poultry feeds and fortified eggs production

**c. Faculty of Dairy Science Park**

- Department of Products Technology: The existing Dairy Technology Center will be added with a Meat Technology Center and will be upgraded to the status of Department of Products Technology under the Faculty of Dairy Science Park; responsible for teaching and research on dairy/meat/eggs products, covering nutrients analysis and quality parameters
- Department of Biorisk Management: The existing biorisk management initiated through the Zoonosis Information Resource Center and Zoonotic Disease Laboratory sponsored by the Relief International and the Pakistan Biorisk Curriculum sponsored by Sandia National Laboratories USA, will be upgraded into the Department of Biorisk Management under the Faculty of Dairy Science Park. This Department will take care of teaching and research in biorisk management and develop quality standards for livestock and poultry farms, processing facilities and marketing outlets.
- Department of Entrepreneurship and Certification: This Department will comprise the University Feed Mill, University Dairy Farm, Regi Town Slaughter House under construction by the provincial government and other potential activities of the Faculty and provincial Government/private sector.

The Department will work on teaching, research and development of feasibility models for self-employment of youth and hygienic food production for the people. This Department will collaborate with the Dairy Science Park Society and its registered partners, the sister Departments and private sector/development organizations, to evaluate the registered enterprises for profitability, quality parameters, Halal standards, supporting commercialization and certification.

**CPEC Vision:** DSP envisions KP and northern areas of Pakistan and the adjoining areas of Afghanistan, Tajikistan, and China into a food export base. For this purpose satellite campuses of the University will be established at Kashgar, Gilgit, Bannu, and Gwadar. Partnership will be established with local investors, corporate farmers and processors to initiate joint ventures.

#### Academic Programs

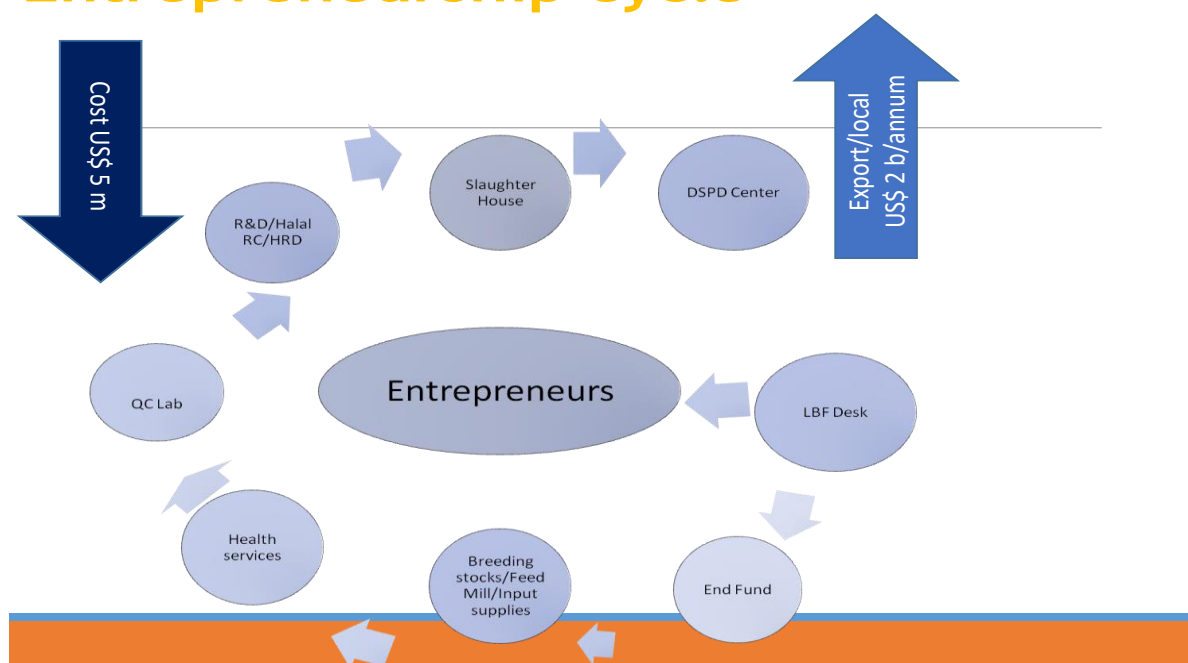
- The Existing Faculties will continued the DVM/MSc Hons/PhD degrees, already in place. New degrees may be introduced as per society needs and availability of resources; Postdoc in various disciplines with sufficient academic standing
- Faculty of Dairy Science Park will introduce M Phil/PhD in Agribusiness (Livestock)/Meat and Dairy Technology/Public Health and Biorisk Management; Diplomas in Livestock Entrepreneurship/Halal Food; Certificate courses; Postdoc in various disciplines with sufficient academic standing

The Academic Programs have been approved by Boards of Studies of Animal Health and Poultry Science Departments and will be submitted to the remaining Boards for approval.

### **Summary of cost (Pak Rs.)**

Item of work		Year 1	Year II	Year III	Total
I	Civil work	121,618,000	2,146,680	0	<b>123,764,680</b>
II	Furniture and furnishing	5,500,000	0	0	<b>5,500,000</b>
III	Equipment	11,000,000	30,000,000	19,638,674	<b>60,638,674</b>
IV	Vehicles	25,700,000	0	0	<b>25,700,000</b>
V	Lab glassware and chemicals	400,000	600,000	1,000,000	<b>2,000,000</b>
VI	Books, periodicals, software and internet	1,000,000	753,320	0	<b>1,753,320</b>
VII	Purchase of animals	2,060,000	0	0	<b>2,060,000</b>
VIII	Purchase of animals feed	800,000	0	0	<b>800,000</b>
IX	Miscellaneous	4,876,926	500,000	500,000	<b>5,876,926</b>
X	Total Salaries	28,840,000	31,624,000	11,442,400	<b>71,906,400</b>
XI	Endowment Fund for entrepreneurship	700,000,000	0	0	<b>700,000,000</b>
	<b>Total</b>	<b>901,794,926</b>	<b>65,624,000</b>	<b>32,581,074</b>	<b>1,000,000,000</b>

## Entrepreneurship cycle



### Impact

1. Conventional medium-sized livestock and poultry farmers to be converted into viable model enterprises through innovations: 500
2. New entrepreneurs to be trained and facilitated: 1000/year
3. Consumers and general public to be educated in public health and quality standards, through seminars, workshops, field days, mobile SMS, telemedicine, and mass media: 100,000/year
4. Students to get admitted into diplomas and degrees in livestock entrepreneurship, biorisk management, and meat technology: 100/yr
5. Availability of Halal meat, exportable surpluses (at least US\$ 5.00 billion) and self employment for the people of KP, FATA, Northern Areas and the adjoining regions of Afghanistan, Tajikistan & China.
6. A stable peace and soft image of the people in the region

# **Quetta TechnoPark (TPQ)**

## **Balochistan University Quetta**

### **Preamble**

A meeting was held on 16-10-2017 under Chairmanship of Mr Arif Yousaf, Special Assistant to Chief Minister/Convener SDGs Task Force, Khyber Pakhtunkhwa Assembly in his office, attended by Prof M Subhan Qureshi, Chief Patron Dairy Science Park, The University of Agriculture, Peshawar and representatives of Higher Education Department, Women University Mardan and Higher Education, Achieves and Libraries Department.

Preparations were reviewed for holding the Fourth International Conference and Industrial Exhibition on Dairy Science Park at Selcuk University, Konya, Turkey on November 1-5, 2017. Mr Arif Yousaf led a delegation of fifty persons from various Universities, government and private sector. In addition delegates from about twenty countries, spread over five days and nine technical sessions. The event was covered by Turkish and Pakistani newspapers like Business Recorder, Dawn, Haberler and Milliyet.

A visit was made by the delegates to Konya Teknokent, an autonomous organization providing an academia-industry linkages for entrepreneurship developing through applied research and legislation to patent novel and high value products and services. Detailed discussion was held with them and bilateral MoUs will be signed shortly between Dairy Science Park - Konya Teknokent.

It was recommended that an autonomous TechnoPark, to be registered as Society under Societies' Registration Act XXI of 1860, will be established at Mardan (TPM), with leading role of Women University Mardan, Dairy Science Park, KP Chamber of Commerce and Industries/SMEDA and Government of Khyber Pakhtunkhwa. Similar TechnoPark will be established at Quetta (TPQ), which has already been agreed by BRSP, BCCI, SMEDA, BU, BUITMS and SBK WU and endorsed by Governor Balochistan.

### **Mission**

Utilization of indigenous human and natural resources for welfare of the people through academia – industry linkage, with focus on entrepreneurship development, Halal/hygienic food production, smart energy, biorisk management, information technology and production of quality-certified products for local consumption and export.

### **Vision**

Effective use of the Information Technologies, Agricultural Technologies, Biotechnology, Design Technologies, Environment and Energy Technologies available at the universities/R&D organizations in the country and abroad, ensuring support to the provincial economy.



## Strategy

QTP will assist the young graduates to establish their entrepreneurship models and to promote the existing business models into internationally accepted corporate companies. The individuals, firms and organizations would be supported in utilization of their assets in the best possible manner. The universities would be facilitated to transfer their salable research and innovation packages for industrialization focused at development of a knowledge-based economy.

## Board of Governors

The Board of Governors would be having full administrative, legislative and financial powers to achieve the goals and objectives set under mission, vision and strategy given above.

1. Chairman: ----- Mr Arif Yousaf, Special Assistant to Chief Minister On Law, GoKP
2. Co-Chairman: Dr M Azaam Kakar, President DSP Balochistan Chapter/Prof M Subhan Qureshi
3. Member Prof Dr Javeid Iqbal, Vice Chancellor Balochistan University, Quetta
4. Member Representative Planning and Development Department, GoB
5. Member Representative, Higher Education Department, GoB
6. Member Representative, Local Government E&RD, GoB
7. Member Representative, Secretary Agriculture GoB
8. Member Representative of Secretary Finance, GoB
9. Member Representative, BCCI/SMEDA
10. Member Representative, Food Industry
11. Member Representative, Agriculture Farmer
12. Member Representative, Farming Innovations
13. Secretary Director ORIC, Balochistan University Quetta

## Project Director

Project Director will be appointed by Board of Governors at appropriate salary package, with PhD in relevant disciplines and demonstrated services at national and international level. He will be assisted by an Executive Committee and essential staff to be approved by the Board of Governors QTP and he will report progress as per TORs.

### **Terms of Reference**

1. QTP will be hosted by Balochistan University Quetta, initially as a project financed by the Endowment Fund of Rs.50 millions. Later on the project will be registered as Society under Societies' Registration Act XXI of 1860.
2. QTP will utilize the existing farming; processing and marketing channels of livestock based food chain for introduction of quality standards and producing hygienic food/developing employment models.
3. Identification and analysis of the barriers in livestock and poultry production, processing, service delivery and marketing in the province, with special focus on small and medium sized facilities through involvement of stakeholders and the international conference series of DSP.
4. To work with District Administration and other relevant authorities to implement the Biorisk Management and pricing mechanism for supporting entrepreneurship.
5. To utilize the Endowment Fund mentioned in clause 1, of Rs.50 million to: i) support business incubation; ii) marketing/investment partnership on the basis of Islamic Financing; iii) entrepreneurship development; iv) establishment of AgriMarts; introduction of SMART Energy for domestic and commercial facilities and Telecommunication technologies through Academia-Industry Linkages.
6. To generate funds for similar activities through assistance from national and international donors and corporate partners; to formulate financial rules regulations, more focused on performance audit; vii) to hire essential staff on contract or casual basis.
7. To undertake any developmental, welfare or R&D activity in the interest of producers, consumers, service providers or the society in general.
8. To prepare Balochistan TechnoParks Act in light of the mission, vision, principles, strategic outlines for Endowment Fund developed by Dairy Science Park Society available at <http://dairysciencepark.org.pk/>.
9. QTP will be supported by Dairy Science Park through its panel of experts, corporate partners and development parterres, with special focus on TechnoParks of Turkish Universities and the United Nations who have accepted DSP as SDGAction9671).
10. QTP will be developed as a sustainable development model for academia-industry linkages in the country.

Prof M Subhan Qureshi  
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# **Mardan TechnoPark (TPM)**

## **Women University Mardan-Special Economic Zone**

### **Rashakai-CPEC**

#### **Preamble**

A meeting was held on 16-10-2017 under Chairmanship of Mr Arif Yousaf, Special Assistant to Chief Minister/Convener SDGs Task Force, Khyber Pakhtunkhwa Assembly in his office, attended by Prof M Subhan Qureshi, Chief Patron Dairy Science Park, The University of Agriculture, Peshawar and representatives of Higher Education Department, Women University Mardan and Higher Education, Achieves and Libraries Department.

Preparations were reviewed for holding the Fourth International Conference and Industrial Exhibition on Dairy Science Park at Selcuk University, Konya, Turkey on November 1-5, 2017. Mr Arif Yousaf led a delegation of fifty persons from various Universities, government and private sector. In addition delegates from about twenty countries, spread over five days and nine technical sessions. The event was covered by Turkish and Pakistani newspapers like Business Recorder, Dawn, Haberler and Milliyet.

A visit was made by the delegates to Konya Teknokent, an autonomous organization providing an academia-industry linkages for entrepreneurship developing through applied research and legislation to patent novel and high value products and services. Detailed discussion was held with them and bilateral MoUs will be signed shortly between Dairy Science Park - Konya Teknokent.

It was recommended that an autonomous TechnoPark, to be registered as Society under Societies' Registration Act XXI of 1860, will be established at Mardan (TPM), with leading role of Women University Mardan, Dairy Science Park, KP Chamber of Commerce and Industries/SMEDA and Government of Khyber Pakhtunkhwa. Similar TechnoPark will be established at Quetta (TPQ), which has already been agreed by BRSP, BCCI, SMEDA, BU, BUITMS and SBK WU and endorsed by Governor Balochistan.

#### **Mission**

Utilization of indigenous human and natural resources for welfare of the people through academia – industry linkage, with focus on entrepreneurship development, Halal/hygienic food production, smart energy, biorisk management, information technology and production of quality-certified products for local consumption and export.

#### **Vision**

Effective use of the Information Technologies, Agricultural Technologies, Biotechnology, Design Technologies, Environment and Energy Technologies available at

the universities/R&D organizations in the country and abroad, ensuring support to the provincial economy.

### **Strategy**

MTP will assist the young graduates to establish their entrepreneurship models and to promote the existing business models into internationally accepted corporate companies. The individuals and firms would be supported in utilization of their assets in the best possible manner. The universities would be facilitated to transfer their salable research and innovation packages for industrialization focused at development of a knowledge-based economy.

### **Implementation mechanism**

MTP may be overseen by the Task Force on Dairy Science Park (TF-DSP) already approved by the Chief Minister Khyber Pakhtunkhwa vide No.1813 dated 2-8-2007 on a Note of the Senior Minister, Local Government, Election and Rural Development, Government of KP.

### **Board of Governors**

The Board of Governors would be having full administrative, legislative and financial powers to achieve the goals and objectives set under mission, vision and strategy given above.

- |                  |  |
|------------------|--|
| 14. Chairman:    | Mr Arif Yousaf, Special Assistant to Chief Minister On Law, GoKP |
| 15. Co-Chairman: | Prof M Subhan Qureshi, Ex-Dean FAHVS UAP/Chief Patron DSP        |
| 16. Member       | Prof Ghazala Yasmeen, Vice Chancellor Women University, Mardan   |
| 17. Member       | Mr Muhammad Luqman Khattak, DG SDU, P&DD, GoKP                   |
| 18. Member       | Representative, Higher Education Department, GoKP                |
| 19. Member       | Representative of Secretary, Local Government E&RD, GoKP         |
| 20. Member       | Representative of Secretary Agriculture GoKP                     |
| 21. Member       | Representative of Secretary Finance, GoKP                        |
| 22. Member       | Representative, KPCCI/SMEDA KP                                   |
| 23. Member       | Mrs Nighat Jawaaid, Food Industry                                |
| 24. Member       | Mr Khanzada Ahmad Kamal, Agriculture Farmer                      |
| 25. Member       | Mr Kamran Khan, Farming Innovations                              |
| 26. Secretary    | Director ORCI, Women University Mardan                           |

### **Project Director**

Project Director will be appointed by Board of Governors at appropriate salary package, with PhD in relevant disciplines and demonstrated services at national and international level. He will be assisted by an Executive Committee and essential staff to be approved by the Board of Governors MTP and he will report progress as per TORs.

### **Terms of Reference**

1. MTP will be hosted by Women University Mardan, initially as a project financed by the Endowment Fund of the TF-DSP, approved by the Chief Minister Khyber Pakhtunkhwa. Later on the project will be registered as Society under Societies' Registration Act XXI of 1860.
2. MTP will utilize the existing farming; processing and marketing channels of livestock based food chain for introduction of quality standards and producing hygienic food/developing employment models.
3. Identification and analysis of the barriers in livestock and poultry production, processing, service delivery and marketing in the province, with special focus on small and medium sized facilities through involvement of stakeholders and the international conference series of DSP.
4. To work with District Administration Peshawar and other relevant authorities to implement the Biorisk Management and pricing mechanism for supporting entrepreneurship.
5. To utilize the Endowment Fund mentioned in clause 1, of Rs.50 million to: i) support business incubation; ii) marketing/investment partnership on the basis of Islamic Financing; iii) entrepreneurship development; iv) establishment of AgriMarts; introduction of SMART Energy for domestic and commercial facilities and Telecommunication system through Academia-Industry Linkages.
6. To generate funds for similar activities through assistance from national and international donors and corporate partners; to formulate financial rules regulations, more focused on performance audit; vii) to hire essential staff on contract or casual basis.
7. To undertake any developmental, welfare or R&D activity in the interest of producers, consumers, service providers or the society in general.
8. To prepare Khyber Pakhtunkhwa TechnoPraks Act in light of the mission, vision, principles, strategic vision and outlines for Endowment Fund developed by Dairy Science Park Society available at <http://dairysciencepark.org.pk/>.
9. MTP will be supported by Dairy Science Park through its panel of experts, corporate partners, development partners, with special focus on TechnoParks of Turkish Universities and the United Nations who have accepted DSP as SDG Action 9.6.1).
10. MTP will be developed as a sustainable development model for academia-industry linkages in the country.

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## THE TEAM

### Board of Governors/Executive Body (17)

1. Chief Patron: Mr Arif Yousaf, Ex-Convener SDGs Task Force/Ex-MPA KP
2. President/CEO: Prof M. Subhan Qureshi
3. Vice President: Khanzada Ahmad Kamal
4. General Secretary: Mr Kamran Khan
5. Joint Secretary: Dr Muhammad Ullah
6. Secretary Information: Dr Anwar Shah
7. Managing Director: Engr Irfan ul Haq Qureshi
8. CTO: Prof Sarzamin Khan
9. CFO: Umer Sadique
10. Member: Prof Ghazala Yasmeen
11. Member: Mr. Zafar Hussain Paracha
12. Member: Mrs Nighat Jawaid
13. Member: Dr Rajwali Khan
14. Member: Muhammad Asif Khan Awan
15. Legal Advisor: Adv Murtaza Qureshi
16. Media Advisor, Mr Fayaz Ali Noor
17. Director Admin: Mrs Samina Naz

### General Body

#### Country Representative (13)

1. S Shafiullah Khan, FP Australia
2. Gang Li, FP China
3. Abdur Rahman Ilyas, FP India
4. Tawheed Ali, FP Afghanistan
5. Nighat Amjad, FP UAE
6. Mithat Direk, FP Turkey
7. Waleed Joyan, FP USA
8. Prof Ibrahim Soliman, FP Egypt
9. Dr Irfan Maqsood, FP Iran
10. Limya .M. Warsma, FP Sudan
11. Syed Ahmed Hasnain, Qatar
12. Olivia Ansenk, FP Netherlands
13. Riaz Hussain, FP Canada

#### Advisory Panel (10)

1. Inayatullah Khan, Ex-Senior Minister LG, KP
2. Syed Sardar Bacha, PaK Youth Org/Adviser Youth Affairs
3. Javed Khattak SMEs' development
4. Mohibullah Khan, Minister for Agriculture KP
5. Khan Bahadur Marwat, Ex-VC SBBU Sheringal
6. Ms Nasreen Khattak Ex-MPA



7. Khalid Khan, Higher Education
8. Sher Muhammad Livestock Extension
9. Muhammad Azam Kakar, Biotechnology
10. Nasir Shah, Higher Education

#### **Working Group (10)**

1. Alladdad Khan, Ext & Comm
2. Engr. Inam Ullah Wali (Solar)
3. Muhammad Muneeb (Food S&T)
4. Engr. Raheem Ullah Khan (Solar)
5. Dr. Naseer Ahmad (Poultry Sci)
6. Dr. Muhammad Bilal Islam (Poultry Sci)
7. Rafiullah Khan (Poultry Sci)
8. Dr. Sher Bahadar Khan (Microbiology)
9. Engr. Samia Subhan Qureshi (Solar)
10. Engr. Zeeshan Saeed Shah (Solar)

#### **Experts Panel – General (10)**

1. Mufti Naeem Bukhari Sharia
2. Khalid M Shouq, Media
3. Iris Shurdhi, Biorisk Mngt
4. Naila Chand, Poultry Science
5. S Murad Khan, Small Rum
6. Asad Sultan Poultry Nutrition
7. Zubair Mughal, Islamic Financing
8. Farhan Anwar Khan, Pathology
9. Farooq Shah NIM/PARD/HRD
10. Amjad Usman, Entomology

#### **Experts Panel – Business Incubation (10)**

1. Arshad Hashmi, Business Incubation
2. Rashid Aman, Entrepreneurship
3. Sadia Qureshi, Halal Food
4. Shakir Ullah, Sheep Entrepreneurship
5. Peter Wynn, Australia
6. Shakoor Ahmad, QC
7. Nazir Ahmad, Feed Industry
8. Shoaib Sultan, Feed Tech
9. Sania Qureshi, QC
10. Asghar Khan, Dubai

### **Experts Panel – One Health (10)**

1. KB Mirbahar, SBBUVAS Sakrand
2. Mirza Ali Khan, L&DD, Livestock Research
3. Zafar Iqbal, UAF, Veterinary Science
4. Niaz Ali, KMU, Public Health
5. Melissa Finley, SNL, Biorisk Management
6. Arshad Zahoor, Public Health
7. Zahoor ul Hassan, Pathology
8. Dr Alamdar Hussain Malik, One Health and Policies
9. M H Andrabi, PARC, Biotechnology
10. Tariq Ali Khattak, Microbiology

### **Experts Panel – Farming Innovation (25)**

1. Fazal Amin, Solar Technology
2. SM Sohail, Animal Breeding and Genetics
3. Nadar Khan, Forages
4. Dr Ihsanullah, Dairy Production
5. Mr Iftikhar Ahmad, Dairy Tech
6. Sontakke Umesh Balaji, Animal Nutrition
7. Munibullah Yousafzai, PMAS-UA, Epidemiology
8. Zubia Masood, Fish, Karachi
9. Muhammad Ovais Omer, UVAS Lahore
10. Fawad ur Rehman, Health Biotechnology
11. MS Tufail, Fodders
12. Mushtaq Memon, WSU USA
13. Asim Ijaz, Farming Innovation
14. Nazir Ahmad Khan, Animal Nutrition
15. Prof Abdur Rahman, Meat Sci
16. Zahidullah Shinwari KPCCI
17. Sadeeq ur Rahman, Microbiology (AWKUM)
18. Syed Jawad Hussain Kazmi, LEAP
19. Abdul Qadoos Khan, Business Recorder
20. Tahir Usman, Animal Breeding and Genetics (AWKUM)
21. Saadia Hanif, Farm Dynamics Pakistan
22. Maryam Hussain, Meat Production
23. Sajidullah Khan, Remote Sensing, Diagnostic Imaging (CECOS Univ)
24. Dr Z Fatima Rizvi, Innovations and Women Development
25. Qasim Ali, IT

## FUNDING STATUS

The Society has occupied head office at 401-A, City Towers, University Road Peshawar and the rent and maintenance of office are sponsored by the Chief Executive and Executive Director. The Chief Executive is also financing website of the DSP, registration of the Society and contacts with potential partners for registration and linkages with the national and international partners. The International Workshop series is sponsored through HEC grants, industrial exhibition of private companies and registration. The tours to Amsterdam and Dubai, for formulating Biorisk Management Initiative are sponsored by Sandia National Laboratory USA. The Senior Minister LGE&RD has approved proposal of the DSP for establishing a model slaughter house valuing Rs.200 million at Peshawar. The DSP Academic Component and DSP Authority valuing Rs.500 million were agreed in principle by the Senior Minister KP. Other development partners and international agencies are supporting the activities of the Dairy Science Park on case to case basis and the Society is looking for more partnership to achieve the greater goals of generating self employment for the youth and hygienic food production for the people of the Region in partnership with the United Nations' SDGs.

## PUBLICATIONS

### Conference Proceedings

1. International Workshop on Dairy Science Park, November 21-23, 2011
2. 2<sup>nd</sup> International Workshop on Dairy Science Park, November 18-20, 2013
3. 3<sup>rd</sup> International Workshop on Dairy Science Park, November 16-18, 2015
4. 4<sup>th</sup> International Workshop on Dairy Science Park, November 16-18, 2017

Journal: Meat Science and Veterinary Public Health

### DSP Newsletters

March 2015	June 2015	September 2015	December 2015
March 2016	June 2016		

### Special Reports

1. Int Workshop on Dairy Science Park, November 21-23, 2011-Recommendations
2. Journal of Animal and Plant Sciences, Vol 22, Supplement No.2 and 3, 2012.
3. 2<sup>nd</sup> Int Workshop on Dairy Science Park, Nov 18-20, 2013-Recommendations
4. 3<sup>rd</sup> Int Workshop on Dairy Science Park, Nov 16-18, 2015-Report
5. Report on Consultative Workshop on Pakistan Biorisk Management Curriculum Development, Dubai, UAE, May 21-25, 2016.
6. Report on Slaughter House, Peshawar Cantt May 2016
7. DSP Profile, July 2016

## MEETINGS

1. 1<sup>st</sup> Meeting Board of Governors, 15<sup>th</sup> July, 2015
2. 2<sup>nd</sup> Meeting Board of Governors, 4<sup>th</sup> January, 2016
3. 3<sup>rd</sup> Meeting Board of Governors, 15<sup>th</sup> July, 2016

### Dairy Science Park Peshawar Past Performance Information

S Nr	Project Title	Theme or Sector	Project Duration	Funding Source	Project Budget (Cost Rs. millions)	Geographical Location	Major Achievements of the Project
1	International Workshop and Industrial Exhibition on Dairy Science Park	Academea Industry Linkages - Conference Theme: Developing a hub of dairy enterprises in the flood affected regions of Khyber Pakhtunkhwa through partnership of academia, government, entrepreneurs & civil society	21 to 23 Nov, 2011	HEC and private sector organizations	1.00	Pakistan	Conference was attended by 500+ participants; spread over three days from Nov 21 to 23; proceedings published as hard copy with ISBN and online at <a href="http://www.dairysciencepark.org.pk/">http://www.dairysciencepark.org.pk/</a> ; 49 papers published in JAPS, an impact factor journal
2	2nd International conference and Industrial exhibition on Dairy Science Park	Academea Industry Linkages - Conference Theme: Developing enterprising capacity of livestock and poultry farmers of Pak-Afghan Region through partnership of academia, government, entrepreneurs, exporters & civil society with special focus on meat production targeted at International Halal Food Market	18 to 20 Nov, 2013	HEC and private sector organizations	1.00	Pakistan	Conference was attended by 500+ participants; spread over three days; proceedings published as hard copy with ISBN and online at <a href="http://www.dairysciencepark.org.pk/">http://www.dairysciencepark.org.pk/</a> ; Livestock Business Facilitation Desk established at KPCCI Peshawar
3	3rd International conference and Industrial exhibition on Dairy Science Park	Academea Industry Linkages - Supporting the war-hit economy of Khyber Pakhtunkhwa through self-employment and hygienic food production for local consumers and International Halal Meat Market	16 to 18 Nov, 2015	HEC and private sector organizations	1.50	Pakistan	Conference was attended by 500+ participants; spread over three days; proceedings published as hard copy with ISBN and online at <a href="http://www.dairysciencepark.org.pk/">http://www.dairysciencepark.org.pk/</a> ; academea industry linkages promoted through establishment of entrepreneurship models
4	4th International conference and Industrial exhibition on Dairy Science Park	Academea Industry Linkages - Achieving Food Security through Entrepreneurship Development and Biorisk Management (BSM)	1 to 5 Nov, 2017	HEC and private sector organizations	15.00	Turkey	Conference was attended by 500+ participants; spread over three days; proceedings published as hard copy with ISBN and online at <a href="http://www.dairysciencepark.org.pk/">http://www.dairysciencepark.org.pk/</a> ; emerging entrepreneurship models provided technical and legal support for survival and expansion of activities

5	Meeting on Biorisk Management at Netherlands, attended by a 5 members delegation of DSP.	Consultation on Biorisk Management	15 to 18 March, 2015	Sandia National Laboratories USA	1.50	Netherlands	Attended 3rd One Health Congress and devised strategies with Sandia National Lab USA for Biorisk Management
6	Meeting on Biorisk Management at Dubai, UAE, attended by a 9 members delegation of DSP.	Consultation on Biorisk Management	21 to 25 May, 2016	Sandia National Laboratories USA	2.70	Dubai, UAE	Reviewed ongoing life science curricula in Pakistani universities for BRM needs
7	Meeting on Biorisk Management at Bangkok, attended by a 15 members delegation of DSP.	Consultation on Biorisk Management	14 to 18 Nov, 2016	Sandia National Laboratories USA	4.50	Bangkok, Thailand	Involved top management of provincial government, academia and business community in BRM awareness
8	Meeting on Biorisk Management at Phuket, attended by a 16 members delegation of DSP.	Consultation on Biorisk Management	17 to 22 March, 2017	Sandia National Laboratories USA	4.80	Phuket, Thailand	Reviewed ongoing DVM curriculum in Pakistani universities for BRM needs
9	Meeting on Biorisk Management at Colombo, attended by a 19 members delegation of DSP.	Consultation on Biorisk Management	5 to 7 Sep, 2017	Sandia National Laboratories USA	6.00	Colombo, Sri Lanka	Devised a package of BRM contents for integration into the ten semesters
10	Meeting on Biorisk Management in Jordan, attended by a 5 members delegation of DSP.	Consultation on Biorisk Management	29 April to 1 May, 2018	Sandia National Laboratories USA	1.50	Amman and Irbid, Jordan	Trained senior faculty members of leading Pakistani Universities in BRM concepts
Total					89.50		



## Dairy Science Park #SDGAction9671 of the United Nations

### Progress Report 2019

#### Achievements at a glance

DSP has been introduced as a sacred mission for welfare of people of the Region through generation of self employment and hygienic/Halal food production. The Park has been registered as a Society with the Government of KP, Pakistan and accepted by the United Nations as #UNSDGAction9671. In line with the vision of the Higher Education Commission, the business incubation concepts were integrated into postgraduate research ongoing at the Faculty, shaping up the University “Industry linkages. A biennial series of international workshops was initiated and it continued during November, 2011, 2013 and 2015, each by 450+ delegates, with 100+ technical papers and industrial exhibition. The proceedings were published online/printed and in impact factor journals. The 1st workshop focused on post-flood revival of dairy industry, the 2nd on meat potential of the region and the 3rd on entrepreneurship development for the outgoing graduates. The fourth conference was held at Selcuk University Konya, Turkey Nov 1-5, 2017 with the theme, “Achieving Food Security through Entrepreneurship Development and Biorisk Management”.

Karkila has been launched as a display center of Dairy Science Park Peshawar at Room #3, Floor #3, Azam Tower, Arbab Road, University Road, Peshawar-25000, Pakistan. It’s an attempt to promote farming innovations, university-industries linkages and sustainable development under UN SDG Action 9671, with the cooperation of KP Livestock Farmers Association, Higher Education Commission and United Nations, respectively. The road map will cover the following activities across the Food Value Chain: 1) Farm inputs supplies; 2) Quality control and consultancy; 3) Veterinary services; 4) Farming innovations; 5) Solar technology; 6) Biotechnological products; 7) Farm products processing; 8) Marketing linkages and export and; 9) University-industry linkages

#### Challenges faced in implementation (if any)

Chief Minister approved Task Force on DSP to overcome bureaucratic hurdles faced by stakeholders across livestock value chain. Academia Industries Linkages, Entrepreneurship Development, Public Private Partnership, Consumers Preferences, Quality Control for hygienic and Halal status of products and sustainability through Endowment Fund, were the main features of the Terms of Reference. There was a conflict of interests as the farmers and processors are working without any visible support from the public sector organizations. Development funds are provided to



government organizations with no say of the stakeholders. Rates of milk and meat are fixed by district administration at lowest without considering the production cost or quality based grading. So secretary agriculture did not issue relevant Task Force notification. Salary of the Chief Patron, Prof M Subhan Qureshi, University of Agriculture Peshawar was stopped by the Vice Chancellor Prof Noor Pao Khan for a prolonged period of seven months leading to frustration in the family and ultimately death of wife of Prof Qureshi.

Next steps

N/a

Beneficiaries & Actions

**Who are the beneficiaries?**

Students, researchers, faculty members, NGO representatives, farmers, exporters and importers, processors from Pakistan and other countries would be facilitated in improving their capacities and removal of technical and marketing barriers in implementation of their activities. Main focus would be on supporting students startups for transformation of their academic wisdom into welfare of the people.

**What specific actions have been taken to positively impact beneficiaries?**

- Stakeholders sensitization workshop for sustainable development across livestock based food value chain
- Collaborative activities with local partners for achieving the common objectives of generating decent employment and exportable surpluses
- Fifth International Conference and Industrial Exhibition on Dairy Science Park at Khartoum, Sudan
- Sixth International Conference and Industrial Exhibition on Dairy Science Park at Beni Suef, Egypt

## Pictorial Review: Government of KP/Baluchistan supported DSP activities



Ikramullah Gandapur inaugurated LBF Desk



Minister Agriculture briefed on DSP's potential role



DSP-SNL USA BRM Workshop at Bangkok



Sr Minister LG KP approved Task Force-DSP



DSP 2015 concluding session



Governor Baluchistan briefed on DSP-B



## Entrepreneurship Development under DSP



Farming entrepreneurship evaluated



Farming innovations introduced



University Feed Mill functionalized



Farmers Sausages Companies supported



Peshawar Meat introduced



Royal Dairies Company launched

Biennial series of International Conferences and Industrial Exhibitions



Chief Guest, Minister for Livestock KP,  
Haji Hidayatullah Khan



DSP 2011 – National Anthem



Chief Guest, President KPCCI,  
Mr Zahidullah Shinwari



DSP 2013 – National Anthem



Chief Guest, Senior Minister LG KP,  
Mr Inayatullah Khan



DSP 2015 – Anthem



### DSP-SNL USA Workshops on Biorisk Management



BRM Workshop-I Amsterdam, Netherlands



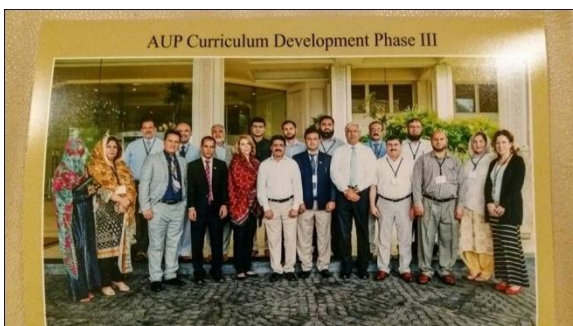
BRM Workshop-II Dubai, UAE



BRM Workshop-III Bangkok, Thailand



BRM Workshop-IV Phuket, Thailand



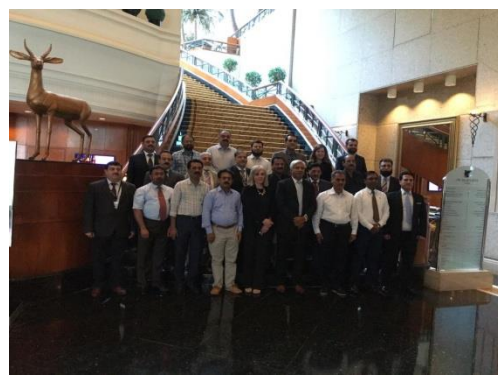
BRM Workshop-V Colombo, Sri Lanka



BRM Workshop-VI Konya, Turkey



BRM Workshop-VII Amman, Jordan



BRM Workshop-VIII Dubai, UAE

### International Collaboration explored



Pakistani Executives welcomed at DSP Konya



DSP 2017 Konya, Turkey



Mayor Konya presenting souvenir to DSP Chief



PARC, WUM, DSP and Mongolian delegates



Director CAAS Beijing presented souvenir



Prof Ibrahim, Egypt presented souvenir



## Institutional Collaboration



MoU signed by HEC, KMU, UAP & DSP



MoU signed by WUM and DSP



MoU signed by SBBU-Sheringal and DSP



MoU signed by Konya Teknokent and DSP



MoU signed by KIVS and DSP



MoU signed by SU Jamshoro and DSP