



Introducing a triple-helix good governance model for the developing countries:

# Livestock Technoparks

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**Prof M Subhan Qureshi**

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Dairy Science Park, 23-A, Royal Dairies, Industrial Estate, Hayatabad, Peshawar-25000, Pakistan  
Email: [drmsqureshi@gmail.com](mailto:drmsqureshi@gmail.com); WhatsApp +92 300 587 7933  
Website: <https://dairysciencepark.org/>

## Introduction

The delegates of the Fourth International Conference and Industrial Exhibition on Dairy Science Park (DSP) visited Konya Teknokent on the third day of the conference, under supervision of Dr Mithat Direk, Conference Chair, Faculty of Agricultural Economics, Selcuk University, Konya, Turkey and Prof M Subhn Qureshi, President DSP. The delegates, more than fifty from Pakistan and others from 20 countries, visited Konya Teknokent on 3 November, were excited to know about the achievements made at the Teknokent. We were given a presentation by Mr Mehmet.

It was recommended that a TechnoPark will be established at Mardan (TPM), Pakistan with the leading role of Women University Mardan, DSP, KP Chamber of Commerce and Industries and SDGs Task Force. Similar TechnoPark will be established at Quetta (TPQ), which has already been agreed by BRSP, BCCI, SMEDA, BU, BUITMS and SBKWU. Mission of the two TechnoParks will be utilization of indigenous human and natural resources for welfare of the people through academia – industry linkage, with focus on entrepreneurship development and hygienic food production for local consumption and export. .

An MoU was signed with Konya Teknokent for collaboration through sustainable entrepreneurship collaboration through academia-industry linkages focused at transformation of indigenous resources into useful services for the Society. Peshawar Technopark, Mardan-Technopark and Quetta-Technopark were agreed to be established. Konya Teknokent and Dairy Science Park will collaborate in Smart Energy programs, sharing success stories in food processing, quality control and marketing and sharing ARGE activities in Information Technologies, Agricultural Technologies, Biotechnology, Design Technologies, Environment and Energy Technologies and Defense Industries.

## Livestock Technopark Peshawar

Food and Agriculture Organization of the United Nations engaged Prof M Subhan Qureshi, President DSP as National Consultant Livestock with the mutually agreed TORs requiring development of the Action Plan with estimated budget for Livestock Sector Development and Transformation, based on KP Livestock Policy; covering regulatory issues, value chain development, private sector engagement and overall required capacity at provincial and district levels; to elaborate on roles and responsibilities of various stakeholders focused on institutional reforms; review the current policy/strategies/program and align livestock sector priorities.

Stakeholders of livestock sector comprising: i) 5 public sector organizations (PSOs) including Livestock and Dairy Development Department (Extension and Research Wings), Local Government, Election and Rural Development Department, Directorate General Fisheries, Food Safety and Halal Food Authority; ii) 7 public sector Universities (AWKUM, WUM, GU, SBBU-S, UOS, UAP, KMU); iv) private sector bodies namely KP Livestock Farmers Welfare Association, Livestock Markets and SlaughterHouses, Unemployed veterinarians and KP Chamber of Commerce and Industries, were consulted to explore their potential for participation in the development process. Involvement of Women in Livestock Value Chain, Policy Implementation

and Regulatory Issues, Market Oriented Production Strategy, Business Incubation and Facilitation of Agribusiness Linkages for developing Entrepreneurship Network, were our focus areas.

For achieving the targets of transformation of the sector on commercial lines, development and replication of entrepreneurship models across the livestock value chain, all the participants except representatives of the DG LDD Ext agreed on establishment of an autonomous body. However, representatives of the LDD Ext did not agree with the opinion that LDD Ext can do all these jobs itself and they have been the sole organization processing the KP Livestock Policy 2018, Livestock Strategy 2019, Livestock Action Plan 2019 and legislative process to resolve the various issues. Approach of LDD Ext seemed to be dominated by conflict of interests as they are the major department possessing a network of veterinary hospitals, Artificial Insemination Centers, State Livestock Farms and current plus development budget. They did not agree on sharing the resources and development activities with their fellow organizations.

Livestock Technopark Peshawar (LTP) was suggested by the Mission, on the basis of FAO's opinion on Good Governance and success stories around the Globe. The LTP would be an autonomous corporate body with legislative, regulatory, financial and administrative powers to support entrepreneurship development and protect interests of the producers, processors, service providers, marketing partners and the consumers. Initially the LTP would be notified as a Task Force and later on it would be established through a legislative act of the provincial assembly or Ordinance of the Governor.

The concept of Livestock Technopark Peshawar (LTP) was in line with the FAO opinion on good governance, to build institutions and mechanisms that provide international norms, standards and data, promote international cooperation, and support an enabling environment for effective collective action to solve problems that cannot be addressed, or as effectively addressed. DSP considers the plan as a Good Governance model to be implemented in letter and spirit. Following are the actions recommended under LTP:

1. Livestock Policy Implementation Cell
2. Farming Innovation and Commercialization Cell
3. Livestock Business Support Cells
4. Special Service Incentives Package
5. Capacity development:
6. Students Internship
7. Biorisk Management Program
8. Laboratories Accreditation Program
9. Vaccine Research and Transformation Program
10. Feeds and Fodders R&E Program
11. Field Veterinary R&D Program
12. Dairy and Meat Technology Centers at Universities
13. Accreditation Program for DVM and postgraduate degrees
14. Joint Venture in Corporate Farming, Livestock Markets, SlaughterHouses



## Expected Impact

1. LTP would have become a beacon of hope for the young men and women.
2. Motivated young graduates in veterinary, engineering, medical, business and social sciences would be joining LTP for their career development and transformation of ideas into actions to serve the society.
3. An enabling environment would be available to generate 25,000 decent employments in i) Dairy Farming; ii) Beef Farming; iii) Mutton Farming; iv) Poultry Farming; v) Fish Farming; vi) Pets Farming; vii) Nontraditional Farming; viii) Vet Clinics; ix) Analytical Labs; x) Inputs Suppliers; xi) Renewal Energy Providers; xii) Legal Advisors; xiii) Innovators; xiv) Meat Shops; xv) Dairy Shops; xvi) Meat Factories; xvii) Dairy Factories.
4. At the end of the year 2021, Khyber Pakhtunkhwa would be able to generate direct decent employment to the tune of 18000, each one earning about Rs.50,000 per month and employing five more persons each. Hygienic, Halal and Organic food would be produced per annum, as: 657.0 million kg milk, 19.2 m kg beef, 32.9 m kg mutton, 45.0 m kg poultry meat and 3.2 m kg fish meat, valuing Rs. 5098 billion. A fraction of 10% may be injected into Halal Meat Export Market, valuing Rs.510 billion.

## Cost Estimate (PKR million\*)

S No	Component	Endowment Fund	Non-lapsable Development Grant	Total
<b>Livestock and Dairy Development Department Extension Wing</b>				
1	Livestock Policy Implementation Cell	100	150	250
2	LBSC Bannu	50	50	100
	<i>Subtotal</i>	<u>150</u>	<u>200</u>	350
<b>Livestock and Dairy Development Department Research Wing</b>				
3	Livestock Technopark Peshawar	340	350	690
4	Laboratory accreditation	0	100	100
5	Vaccine Research and Transformation Program	50	100	150
6	LBSC and Veterinary Research and Diagnostics Center Merged Areas of KP	100	170	270
7	Feeds and Fodders Research and Entrepreneurship	40	0	40
8	Livestock Business Support Center VRI	70	0	70
9	Feed mills leasing	20	0	20
10	Students Internship	50	10	60
11	LBSC Kohat	50	0	50
12	LBSC Abbottabad	50	0	50
	<i>Subtotal</i>	<u>770</u>	<u>730</u>	1500
<b>Directorate General of Fisheries and Local Council Board</b>				
13	Livestock Business Support Center Fisheries	50	100	150
14	LBSC Slaughter House Ring Road, Local Council Board Peshawar	100	100	200
	<i>Subtotal</i>	<u>150</u>	<u>200</u>	350
<b>Universities</b>				
15	Dairy and Meat Technology Center, Women University Mardan	50	50	100
16	Accreditation of degree programs of FAHVS Abdul Wali Khan University Mardan with PVMC	0	50	50
17	Livestock Business Support Center at Abdul Wali Khan University Mardan	50	0	50
18	Gomal Technopark, Gomal University DI Khan	250	100	350
19	Shaheed Benazeer Bhutto University, Sheringal, Dir	10	0	10
20	LBSC, University of Agriculture Peshawar	100	50	150
21	Biorisk Management Center, KMU Peshawar	20	20	40
22	LBSC Swat University Swat	50	0	50
	Subtotal	530	270	800
	Grand Total	1600	1400	3000

\* 1 US\$=150 PKR as per 2019 rates

## Livestock Technopark Quetta

In continuation to national consultancy for FAO-UN, the International Trade Centre - WTO/UN provided Prof M Subhan Qureshi an opportunity as National Consultant, to contribute in reducing the hardships faced by the people of Balochistan, getting benefits from the natural resources available in the form of sheep, camels, goats, poultry, and cattle. ITC is focusing on internationalization of micro, small, and medium enterprises in selected districts of Balochistan under the EU-funded "Growth for Rural Advancement and Sustainable Progress" project.

Four universities and public sector organizations (PSOs) each and Balochistan Chamber of Commerce and Industries (BCCI) were consulted to participate in the process and contribute their regulatory, academic, financial, natural and human resources for transformation of livestock resources into an entrepreneurial network through a triple-helix good governance model of academia- industry- government nexus.

The following public Sector Development Organizations agreed on participating in the program as members of the Board of Governors for establishing their relevant Functional Units (FUs):

1. Vice Chancellor, Balochistan University
2. Secretary, Livestock and Dairy Development Balochistan
3. Secretary, Forest Balochistan
4. Secretary, Local Government Balochistan
5. Secretary, Industries Balochistan
6. Secretary, Women Development Balochistan
7. Director General, Animal Health LDD
8. Dean, Life Sciences, Balochistan University
9. Dean, Veterinary and Animals Sciences, LUAWMS
10. Dean Life Sciences BUIITEMS
11. Dean, Life Sciences, SBKWU
12. President QCCI \*Commercial livestock farmers, dairy/meat processors, stakeholders coops
13. Director CASVAB, University of Balochistan

The consultative process led to recommendation to establish Livestock Technopark Quetta comprising two Centers of Excellence (CE) at universities and nine Livestock Entrepreneurship Development Centers (LEDC) at PSOs. University graduates would be facilitated to establish startups utilizing demonstrated-feasible models. CEs would provide academic and LEDCs would provide land, animals, value addition, services and marketing support for such models. An Endowment Fund (EF) would support the network through an uninterrupted funding and recovery.

The following technological and innovative solutions were suggested:

1. Shifting policy focus from Farming to Entrepreneurship
2. Creating Enabling Environment Entrepreneurship Development
3. Rationalization of Price Capping of products production on the basis of production cost and quality
4. Farmers' and Processors' Empowerment
5. Integrating Sustainable Development Goals

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6. Establishing an Endowment Fund
  7. Establishing Functional Units (FUs) at PSOs
  8. Livestock Entrepreneurship Development Centres (LEDC)
  9. Centre of Excellence for Genetics of Animal Production and Health (CEGAPH)
  10. Centre of Excellence for Biology and Entrepreneurship of Livestock (CEBEL)
  11. SMEs Support Cells
  12. Introducing Good Governance Model - Departmental to Integrated Approach - AIGN
  13. Establishing Livestock Technopark Quetta (LTQ)

Presently, the livestock based value chain (LBVC) is provided services officially and mainly, by the Director General Animal Health, LDD with a handsome current and development budget. It appears that the farmers are served by the regular staff stationed at Civil Veterinary Hospitals and Dispensaries, Livestock Farms, Semen Production Units, livestock, dairy and poultry farms, etc. Management of the LBVC by Directorate General Animal Health may be supplemented with inputs from PSOs through an autonomous LTQ with legislative, regulatory, financial and administrative powers, to boost entrepreneurship development, regulating and facilitating all the FUs at PSOs.

An endowment fund (EF) may replace the repeated funding to remove the financial burden on the government treasury. Some of the senior officers of LDD were not comfortable with participation of fellow government departments, the universities and the QCCI in the development process. However, without participation of such organizations, the dream of transformation of livestock resources into a network of entrepreneurship models could not be materialized.

## **Expected Impact**

After 3 years, we expect establishment of:

1. 9 LECDs, 2 SME Support Cells and 2 Centers of Excellence under LTQ.
2. A total of 250 farmers would be engaged and 25 meat factories would be established producing 4.5 million kg meat annually, worth US\$ 22.5 m, exceeding the total cost of the project as US\$ 13.52 million.
3. Expected annual exports would be US\$ 2.25 m.
4. Annual entrepreneurship models developed would be 2750, each one supporting 10 decent employments.

## Cost Estimate (PKR million\*)

S No	Component	End Fund	Non-laps Dev Grant	Total
1	Livestock and Dairy Development Department Ext (HHP/SPU/AICs/Camel R&D/LEDC Washuk, Khuzdar, Sibi)	210	260	470
2	CASVAB (Labs Accreditation, Vaccine development and applied research)/UoB (LEDC Kharan and CEGAPH)	210	250	460
3	Department of Forest (Livestock Entrepreneurship Development Centre Turbat)	120	80	200
4	Local Government Dept (LS Market Mashriqi Bypass, E-marketing, LS Community Centres, Students Internship, Postgraduate Research)	70	80	150
5	Dept of Industries (Livestock SMEs Regulatory Support Cell, LSRSC)	80	70	150
6	Livestock Entrepreneurship Development Centre/HMREC Zhob, BUITEMS	70	80	150
7	CoE for Biology & Entrepreneurship of Livestock/CEBEL, LUAWMS	150	100	250
8	Livestock Entrepreneurship Development Centre Nushki, SBKWU	70	30	100
9	QCCI, LS SMEs Support Cell, LSSC	40	30	70
10	Livestock Technopark Quetta	700	300	1000
11	Grand Total	1720	1280	3000

\*US\$ 1=PKR 220 during November 2022



## Key problems addressed

1. Lack of service delivery to the private farm
2. Lack of rational breeding services
3. Low-quality high-cost farm inputs
4. Ungainly loans
5. Price capping of milk and meat and their products
6. Lack of value addition and market access for farm products
7. Lack of coordination among relevant public and private sector organizations
8. Lack of farmers' access to processing factories, academic research and public regulatory services
9. Unexplored genetic potential of livestock for disease resistance and food production

## Factors for Success

The relevant federal/provincial and local governments have to consider the proposal at the higher levels of administration for integrating the relevant public sector organizations, the universities, the Chambers of Commerce and Industries and stakeholders' representative bodies/cooperatives, in the larger interest of the people of the respective country.

## Lessons learnt

Like other developing countries, lack of good governance is the key factor impeding the development process in Pakistan. The public sector organizations need to get transformed from regulators to facilitators, through reforms in their mandates and rules of business. Academia needs to be engaged meaningfully in the issues faced by the stakeholders under field conditions. This will enable delivery of the desired services to the end users without any interruption. The integrated model of Livestock Technoparks would engage the stakeholders to achieve the goals. The models developed for establishing Livestock Technoparks Peshawar and Quetta may be modified for other regions/countries, to accommodate the issues faced by stakeholders.

## International recognition

DSP was established during 2011 for generating decent employment and exportable surpluses across the Food Value Chain. DSP was registered as a Society with the Government of Khyber Pakhtunkhwa, Pakistan and accepted by the United Nations as [#SDGAction40154](#).

International Workshops were held in various countries on [Biorisk Management](#), sponsored by Sandia National Laboratory, USA. Policy makers and representatives from academia, government, civil society, and the corporate sector (105 delegates) were trained. The Pakistan Veterinary Medical Council was engaged in the process and a training package was developed for integration into the DVM degree curriculum. The Fourth International Conference and Industrial Exhibition on Dairy Science Park was held at Selcuk University Konya, Turkey during 2017. Dairy Science Park was accepted as an [FAO-UN Best Practices Model](#) and as a [Case Study](#) of FAO-UN Agrifood Systems Technologies and Innovation for Climate Action .