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**DIRECTORATE OF ANIMAL HEALTH & EXTENSION
SERVICES**

LIVESTOCK & DAIRY DEVELOPMENT DEPARTMENT

GOVERNMENT OF BALOCHISTAN

S.NO	CONTENT	Page	
1	Crimean Congo hemorrhagic Fever (CCHF)		
2	Establishment of One Health Molecular laboratory		
3	Capacity building training NIH, ADRS info		
4	Sibi mela		
5	Meat & wool sector strategy development		
6	Livestock progress review meeting 2024		
7	PhD doctors meeting with honourable Minister for future policy development		
8	Minister visits (Development Projects)		
9	Functioning of OT, Labs at CVH, Quetta		
10	Establishment of Conference Room at DG Animal Health Office		
11	FAO activities:		
A)	Representative in Pakistan, handed over veterinary supplies kits to the Livestock Department of Balochistan.		
B)	Establishment of Emergency Preparedness Workshop, organized by FAO, Pakistan		
12	Procurement and Distribution of Bikes CD 70 cc for staff		
13	Vaccination & treatment campaign different Districts		
14	Meeting with Asian Development Bank delegation		
15	Joint External Evaluation (JEE) of International Health Regulations (2005)		
16	Distribution of Medicines and furniture to different Districts		
17	Animal sale points on Eid-UL-Azha		
18	Installation of Solar panels by ITC GRASP		
19	Master trainers training of field staff		
20	Strengthening of Districts labs by ABM		

CRIMEAN CONGO HEMORRHAGIC FEVER

Pakistan is an agricultural country, and most of the rural community engages in rearing livestock. Due to poverty and lack of education, most of the time, livestock do not undergo regular health examinations by veterinary doctors or receive animal vaccines, letting the infection remain unchecked. Moreover, during Eid-ul-Azha, the increased demand for animals further leads to infection outbreaks due to the mishandling of animals and their remains. Nomadic tribes, moving from place to place with their cattle, are also a source of spreading the infection to a broader population leading to sporadic cases reported outside the endemic regions of the country.

Role of Livestock and Dairy Development Department Balochistan

Every year, Livestock and Dairy Development Department (LDDD) Balochistan perform tick control measures among livestock to control and prevent CCHF in the province. This includes spraying and dipping of livestock, spraying animal sheds and livestock markets (mawashi mundi), and awareness campaign among livestock farmers and butchers. The team will oversee the funeral arrangements for the deceased and provide education to the community and relatives regarding measures to prevent the spread of CCHF.









REVIEW: CRIMEAN-CONGO HEMORRHAGIC FEVER (CCHF)

Etiology and Epidemiology of Crimean-Congo Hemorrhagic Fever in Animals

- Crimean-Congo haemorrhagic fever (CCHF) is a zoonotic disease caused by a primarily tick-borne CCHF virus (CCHFV) of the genus *Orthonairovirus* of the family *Nairoviridae*, order *Bunyavirales*.
- The virus from an outbreak of “Crimean haemorrhagic fever” in the Crimean Peninsula in 1944 was not isolated or characterized until 1967. “Congo haemorrhagic fever” virus, isolated from a patient in the former Zaire (now Democratic Republic of the Congo) in 1956, was shown in 1969 to be the same virus. As a consequence the names of both countries have been used in combination to describe the disease. Distribution of the virus reflects the broad distribution of *Hyalomma* ticks, the predominant vector of the CCHF virus. The virus has been reported in a wide area including South Africa, southern Europe, Eurasia, and parts of western China.
- The virus is principally associated with ticks of the genus *Hyalomma*, although it has also been isolated from other genera of *Ixodid* ticks. The global distribution of the virus roughly approximates that of *Hyalomma* spp ticks.
- Recent analyses of the genome of the virus suggest that there is appreciable genetic diversity somewhat correlating with geographic origin of the virus. However, anomalies to this pattern suggest that dispersal of host ticks by migratory wildlife such as birds or by the movement of production animals (by people) may alter the expected resultant geographic distribution of CCHF virus subpopulations.

Transmission and Pathogenesis of Crimean-Congo Hemorrhagic Fever in Animals

- The CCHF virus replicates in the host tick as it passes from larval through adult stages (trans-tadial transmission), and it can also be transmitted from one generation to the next (trans-ovarial transmission). Thus, the tick not only is a vector but also can be a reservoir of the virus via vertical transmission. Small rodents, lagomorphs, and birds have all been incriminated as sources of infection of immature stages of the tick; whereas most *Hyalomma* spp ticks are multi-host and use larger vertebrates as the host for the adult stage of their life cycle.
- The natural cycle of CCHFV includes trans-ovarial and trans-stadial transmission among ticks and a tick-vertebrate tick cycle involving a variety of wild and domestic

animals. Infection can also be transferred between infected and uninfected ticks during co-feeding on a host; so called 'non-viraemic transmission' phenomenon. Hyalomma ticks feed on a variety of domestic ruminants (sheep, goats, and cattle), and wild herbivores, hares, hedgehogs, and certain rodents.

- An experimental infection of wild animals and livestock with CCHFV was reviewed although animal infections are generally subclinical, the associated viraemia levels are sufficient to enable virus transmission to uninfected ticks. Many birds are resistant to infection, but ostriches appear to be more susceptible than other bird species. Although they do not appear to become viraemic, ground feeding birds may act as a vehicle for spread of CCHFV infected ticks.
- **Transmission** to humans; Bite of ticks, squeezing infected ticks from animals body (common practice among farmers), direct contact with infected animals skin, blood, visceral organs during slaughter or short period after slaughtering, Human to human, dead body of infected animal or human, hospital acquired infections (nosocomial infections).

Population at risk of CCHF

1. Those who are in contact with Livestock;
 - Farmers
 - Veterinarians
 - Agriculture Workers
 - Butchers
 - Slaughter house workers
 - Animal handlers including exposed family member **especially** house wives in endemic areas because the transmission of Crimean-Congo hemorrhagic fever (CCHF) among spouses is reported. Sexual contact may represent a real risk of CCHF virus transmission. Transmission through sexual contact is possible from the end of the incubation period. Transmission through sexual contact may lead to a more severe course of CCHF.
 - Health care professionals in endemic areas.

Clinical Manifestation of Crimean-Congo Hemorrhagic Fever in Human Population

- Hemorrhagic disease in humans is the most common clinical sign of concern. The severity of CCHF in humans highlights the impact of this zoonotic disease on public health. Although CCHFV has no economic impact on livestock animal production.
- Humans acquire infection directly from tick bites then incubation period is 1-3 days maximum 8 days or from contact with infected blood or tissues from livestock or human patients then incubation period is 5-6 days maximum 13 days.
- After incubation humans can develop a severe disease with a pre-haemorrhagic phase, a haemorrhagic phase, and a convalescence period. Haemorrhagic manifestations can range from petechiae to large haematomas. Bleeding can be observed in the nose, gastrointestinal system, uterus and urinary tract, and the respiratory tract, with a case fatality rate ranging from 5 to 80%.

Control and Prevention

- Farmers, slaughterhouse workers, veterinarians, stockmen and others involved with the livestock industry should be made aware of the disease.
- They should take practical steps to limit or avoid exposure of naked skin to fresh blood and other animal tissues, and to avoid tick bites and handling ticks.
- Experiences from South Africa demonstrated that the use of repellents on animals before slaughter could reduce the numbers of infected slaughterhouse workers.
- The treatment of livestock in general can reduce the tick density among these animals and thus reduce the risk of tick bite in animal handlers. Such tick control by the use of acaricides is possible to some extent, but may be difficult to implement under extensive farming conditions.
- Infectivity of CCHFV is destroyed by boiling or autoclaving and low concentrations of formalin or betapropiolactone.
- **Meat itself is not the source of infection** because the virus is inactivated after few hours by the post slaughtering acidification of the tissues.
- CCHF virus does not **survive cooking** because the virus is sensitive to heat and is inactivated at 56⁰C within 30 minutes.
- The virus is sensitive to lipid solvents. It is labile in infected tissues after death, presumably due to a fall in pH but infectivity is retained for a few days at ambient temperature in serum, and for up to 3 weeks at 4°C. Infectivity is stable at temperatures below –60°C.

Recommendations

1. Notification of the CCHF Outbreak

- “Single positive case of CCHF is considered as an outbreak and notified to all relevant authorities”

2. Adaptation of SOP's in Hospitals (Starting with suspected Case Definition)

- Case Definition; suspected *CCHF* case as a patient with sudden onset of illness with a high-grade fever over 38.5 °C for more than 72 h and less than 10 days, especially in a CCHF endemic area and among those in contact with sheep or other livestock (farmers, butchers, and animal handlers).
- Suspected case received during the months of May-October must be confirmed and if found positive, notified as an outbreak.

3. Preparation of Surveillance Plan for CCHF and Implementation

A. Challenges

- There is no accurate data available on disease burden and identification of hot-spot areas.
- Current knowledge gaps that are hindering effective control interventions.
- Lack of research and resources.
- Lack of awareness regarding CCHF control and preventive measures.
- Lack of isolation wards and trained health care professionals.
- Lack of ticks control program.
- Lack of diagnostic facilities in the province.

B. Actions

- Notification of Public Health Emergency.
- Improvement of current joint response mechanism.
- Sustain the current surveillance systems and shifting towards more active surveillance with adaptation of One-Health approach.
- Improving multi-sectoral collaboration at provincial level.
- Plan Epidemiological studies in both sectors (livestock & health) for CCHF.
- Plan and devise Tick-control project (five-year) for livestock population.
- Health education and awareness raising campaigns.

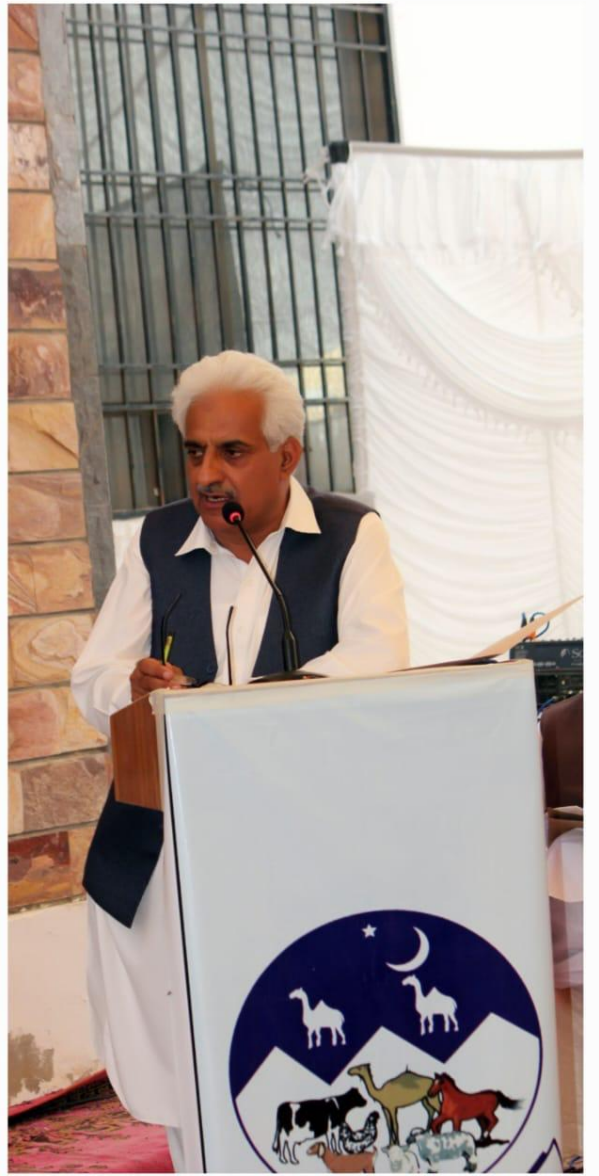
- Local government should regulate the Cattle markets. Local government should implement anti and post mortem procedures and quarantine animals before slaughtering. Slaughtering outside the slaughter houses/illegal should be banned. Infect no standard slaughter house in the province. A Cattle Market Management Company should be formed like in other provinces.
- Finalization and Implementation of Animal Health and Slaughter Act by the Provincial government.
- Lack of coordination between Animal Quarantine Department (AQD) (animal quarantine is federal subject), there is potential threat of spreading trans-boundary animal diseases because of illegal cross border animal movement and there is no establishment of animal quarantine centers in the province by the federal animal quarantine department.

ESTABLISHMENT OF ONE HEALTH MOLECULAR LABORATORY

In collaboration of National Institute of Health Islamabad, Health Department Balochistan and other supporting organizations, Laboratory equipment installations have been started at Disease Investigation Laboratory Quetta, Balochistan. It will be first “one health laboratory” covering the microbiological and molecular diagnosis of maximum number of zoonotic pathogens prevalent in Balochistan. Furthermore, sample storage capacity has been enhanced with installation of latest deep freezers, enhancement in the laboratory bio-safety by installations of bio-safety cabinets, and finally altogether it will increase testing capacity of samples processing up-to 300- 400 samples per day. Moreover, this laboratory will be helpful in support/implementation of disease surveillance program in the province.

















CAPACITY BUILDING TRAINING NIH ADRS *info*



This project is funded by
the European Union



5-Days Capacity Building Workshop on Disease Surveillance and Outbreak Investigation in context of One Health Approach 29th January-2nd February, 2024
Organized by “National Institute of Health, Islamabad “ in collaboration with Livestock & Dairy Development Department Balochistan & ITC-GRASP.

The topics are:

1. Introduction to disease surveillance and One Health
2. Case definitions of priority zoonotic diseases
3. Vector borne diseases and control measures in Pakistan
4. Rapid Response Teams (Structure & Function)
5. Data analysis/reporting mechanism and requirement at National and Global level
6. Multi Sectoral Coordination for zoonotic diseases
7. Zoonotic diseases outbreak investigations
8. Field Investigation Report writing
9. Zoonotic Diseases sample collection and transportation
10. Risk assessment and Risk communication
11. Public Health Emergency management
12. District Health Information System (DHIS-2)
13. Emerging disease in livestock having epidemic potential
14. AMR Surveillance in Pakistan
15. Overview of IDSR/Priority zoonotic diseases in Pakistan



SIBI MELA

The Sibi Mela is a traditional event which was started in Chakar-e-Azam era for animal trade and solution of different traditional issues, after word in British time period in 1884 the event was continued regularly.

This year Livestock and Dairy Development Department arranged the event on 04 to 08 March, 2024 the major part of Sibi Mela was the show of pedigreed animal of different kinds of breed of small and large ruminants for the trade purpose.









MEAT & WOOL SECTOR STRATEGY DEVELOPMENT

Pakistan has a significant wool sector, with a large population of sheep and goats. The country produces around 70,000-80,000 tons of raw wool annually, with a potential value of over \$100 million.

Key Statistics

- Sheep population: 30 million
- Goat population: 50 million
- Raw wool production: 70,000-80,000 tons/year
- Wool exports: 10,000-15,000 tons/year (valued at \$15-20 million)
- Domestic wool consumption: 55,000-60,000 tons/year (textile industry, carpets, and handicrafts)

Challenges

- Low wool quality due to poor breeding and nutrition practices
- Limited access to modern shearing and processing facilities
- Inadequate marketing and trading infrastructure
- Competition from synthetic fibers and imported wool

Opportunities

- Growing demand for natural fibers and sustainable textiles
- Potential for value-added products (yarn, fabric, knitwear)
- Increasing focus on wool-based handicrafts and small-scale industries
- Government initiatives to improve livestock breeding and wool production

Recommendations

- Improve breeding and nutrition practices to enhance wool quality
- Invest in modern shearing and processing infrastructure
- Develop marketing and trading channels for wool exports
- Promote value-added wool products and handicrafts
- Provide training and support for small-scale wool-based industries

Sources

- Pakistan Bureau of Statistics (PBS)
- Ministry of National Food Security and Research (MNFSR)
- Pakistan Central Wool Development Board (PCWDB)

- International Trade Centre (ITC)
- Food and Agriculture Organization (FAO)





LIVESTOCK PROGRESS REVIEW MEETING 2024

Provincial Minister for Livestock and Dairy Development Bakht Muhammad Kakar has said that the provincial government is leaving no stone unturned in bringing reforms in the livestock sector and changing the livestock sector from traditional to modern in order to make the sector profitable and productive. He expressed these views while addressing the one-day conference of the Annual Progressive Review Report of Livestock. The Divisional Directors, Deputy Directors and Veterinary Doctors of Animal Affairs Department informed the Provincial Minister Livestock and Dairy Development about the progress of the Livestock Sector, data and presence of employees, functional dispensaries and non-functional dispensaries of CVD and CVH, animal Data, dispensaries buildings and Briefed about mobile relief camps for diagnosis of various diseases in remote areas. In order to provide technical support to farmers including registration at district and division level across Balochistan, the officials of the department also gave recommendations and performance report in their respective reports. In his address to the conference, Secretary Livestock Muhammad Tayyab Lahri said that the officers and staff should pay special attention to their professional performance. they should ensure presence of veterinary doctors at the places of deployment and take measures for the relief of livestock in remote areas. On this occasion, the provincial minister said that we have to turn our weaknesses into strengths and come to initiatives for research and improvement in livestock. There is a need of hour to create awareness among the people that they consider the government offices and institutions as their own and play a role for their welfare and safety. He said that legal action will be taken against all the absent staff and officers and the staff guilty of negligence can also be dismissed. The provincial minister said that the officers and officials at the district and division level should submit the monthly progress review timely so that the efficiency of the department can be further improved. He further said that he will soon visit government poultry farms and government dairy farms and district and division offices across the province. At the end of the program, Provincial Minister Bakht Muhammad Kakar, Secretary Livestock Muhammad Tayyab Lahri and DG Livestock Dr. Farooq Tareen also distributed shields and certificates of appreciation to officers and staff including divisional directors and deputy directors for their outstanding performance.







PhD DOCTORS MEETING WITH HONOURABLE MINISTER FOR FUTURE POLICY DEVELOPMENT

Mr. Bakht Muhammad Kakar (Minister LDDD Balochistan) had chaired the meeting including Secretary Livestock and all three Director Generals at the office of Directorate of Animal Health Quetta. Progress of LDDD Balochistan was discussed. Furthermore, PhD degree holders meeting has been called on 12.07.2028



MINISTER VISITS (DEVELOPMENT PROJECTS)

Honorable Minister livestock Deptt: Bakht Muhammad Kakar sb and respectable Secretary Muhammad Tayyab Sb. Pay visit to Directorate of Research and Directorate of Farms, also visited development scheme. A fruitful and productive discussion/ meeting with all scholars (PhDs) of livestock department for the development of livestock sector and it last about three hours.

During the visit the Honorable Minister and Secretary Sb. reviewed various development schemes and engaged in a productive discussion with scholars. The Minister assured the attendees that all genuine problems would be addressed and emphasized the importance of working towards the welfare of livestock in the region. This visit highlighted the government's commitment to enhancing the livestock sector through extension services, research, development, and community involvement.





FUNCTIONING OF OT, LABS AT CVH, QUETTA



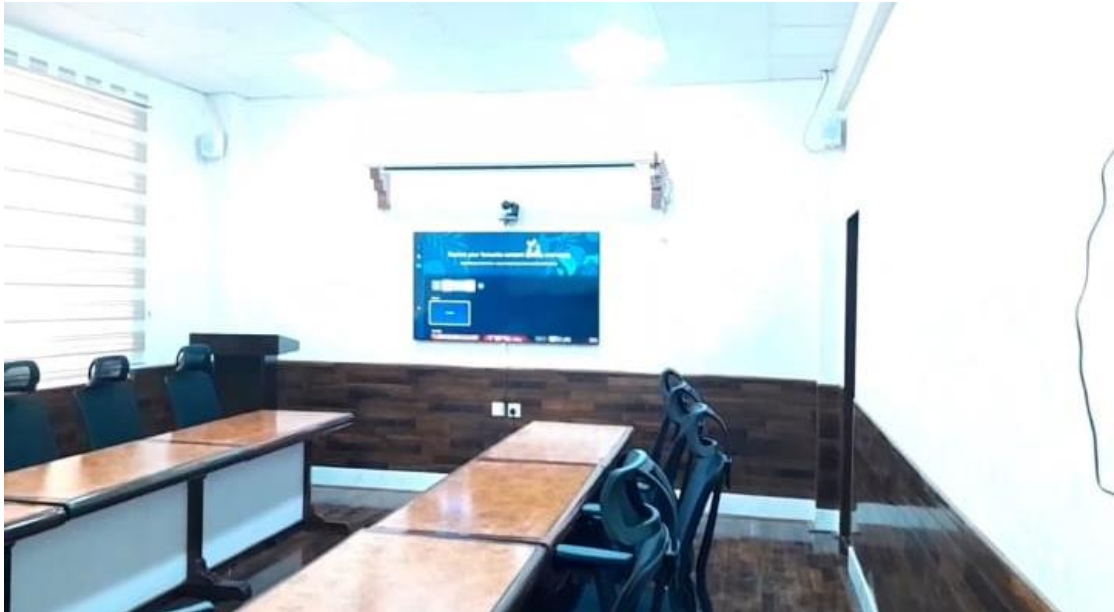




ESTABLISHMENT OF CONFERENCE ROOM AT DG ANIMAL HEALTH OFFICE

Provincial Minister Livestock and Dairy Development Department Mr. Bakht Muhammad Kakar had chaired the meeting including Secretary Livestock and all three Director Generals at conference room established in the office of Directorate of Animal Health Quetta. Progress of LDDD Balochistan was discussed on 10.07.2024.





FAO ACTIVITIES:

On 27, May, 2024 Florence Rolle, FAO Representative in Pakistan, handed over veterinary supplies kits to the Livestock Department of Balochistan, reaffirming FAO's commitment to supporting livelihoods in the region.

These kits include essential items ranging from waterproof leather bags for safe storage to advanced Automatic Metal Vaccinators, Obstetric sets, Surgical sets, Automatic drenchers, and more. Each item addresses critical needs in the Balochistan livestock sector.



Establishment of Emergency Preparedness Workshop, organized by FAO, Pakistan

The workshop for emergency preparedness on 12-13 August, 2024 at Karachi.



PROCUREMENT AND DISTRIBUTION OF BIKES CD 70 CC FOR STAFF

The initiative was started under the Project (Strengthening of Livestock Service Project SLSP, the object is to strengthen the field activities of field staff in terms of animal health services like treatment and vaccination in province.





VACCINATION & TREATMENT CAMPAIGN DIFFERENT DISTRICTS

District Livestock Officers organized the free veterinary mobile camp in different districts of province. Animals were vaccinated against communicable and non-communicable diseases and insecticides were sprayed in the areas.







MEETING WITH ASIAN DEVELOPMENT BANK DELEGATION

Provincial Minister for Livestock and Dairy Development Bakht Mohammad Kakar said that most of the people of Balochistan depend on livestock and cattle rearing. Livestock sector in the province can be further improved due to rainfall range and mountain ranges. In addition to this, there is immense potential for cattle breeding in the sub-regions and green belts of the province. He expressed these views while addressing a one-day seminar in collaboration with the Asian Development Bank and the Government of Balochistan. Provincial Minister Bakht Kakar further said that it is a good and appropriating thing that the Asian Development Bank is taking crucial steps to improve the livestock sector in the province by providing easy loans, improving cattle breeding, providing new breed animals to the farmers, and treating the sick. It will also provide a mapping disease system to overcome diseases in far-flung areas .

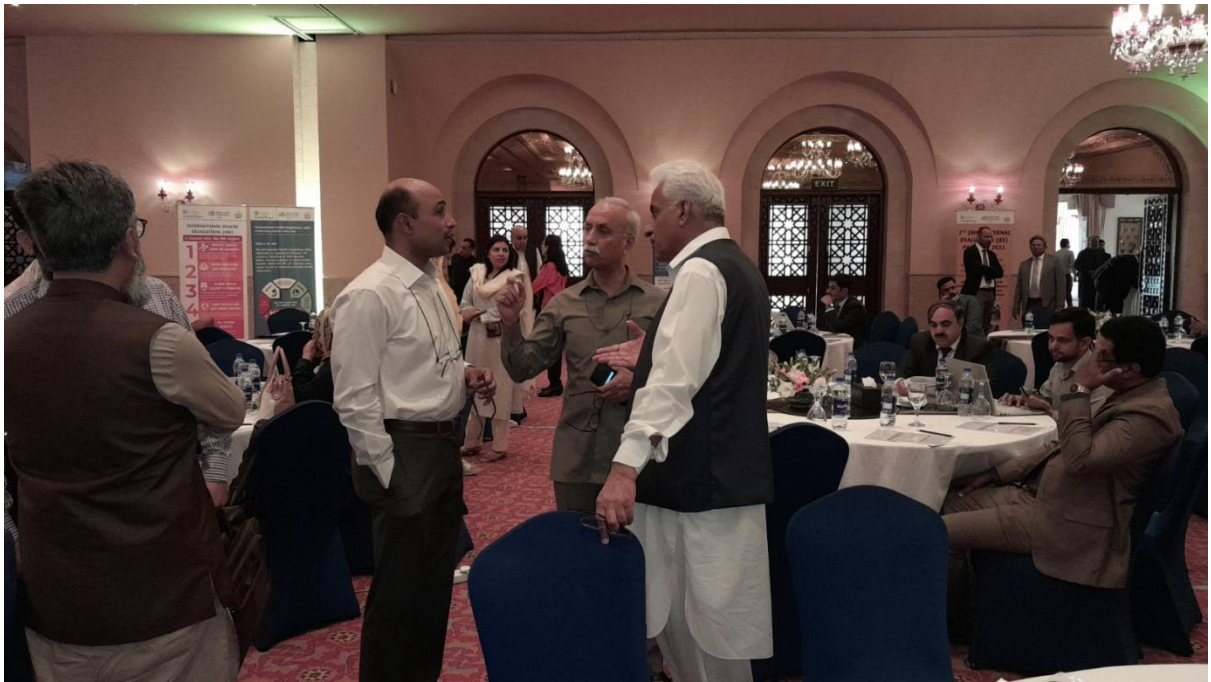
On this occasion, Secretary Livestock Muhammad Tayyab Lahri, DG Livestock Farooq Tareen, Senior Natural Resources Specialist Asian Development Bank Noriko Sato and Banaras Khan, along with a large number of people associated with the livestock sector, participated. In his briefing, Asian Development Bank Senior Natural Resources Specialist Noriko Sato said that 60% of Balochistan's population lives in rural areas and depends on agriculture and livestock. 50% of the total employed population of rural Balochistan is agriculture. , are associated with livestock, forestry and fisheries. He said that 80% of the total working women population of rural Balochistan are engaged in agriculture, livestock, forestry and fisheries. There is no doubt about the fact that livestock sector faces various challenges in Balochistan including low crop productivity, lack of quality seed, market access and market information, fodder shortage including range-land degradation and lack of farmer data base for desired targets. The effects of climate change include floods, droughts, heat stress, etc.



JOINT EXTERNAL EVALUATION (JEE) OF INTERNATIONAL HEALTH REGULATIONS (2005)

This joint mission will assess country's capacity to prevent, detect and respond to public health threats at the Federal and Provincial level and develop a JEE country report.





DISTRIBUTION OF MEDICINES AND FURNITURE TO DIFFERENT DISTRICTS





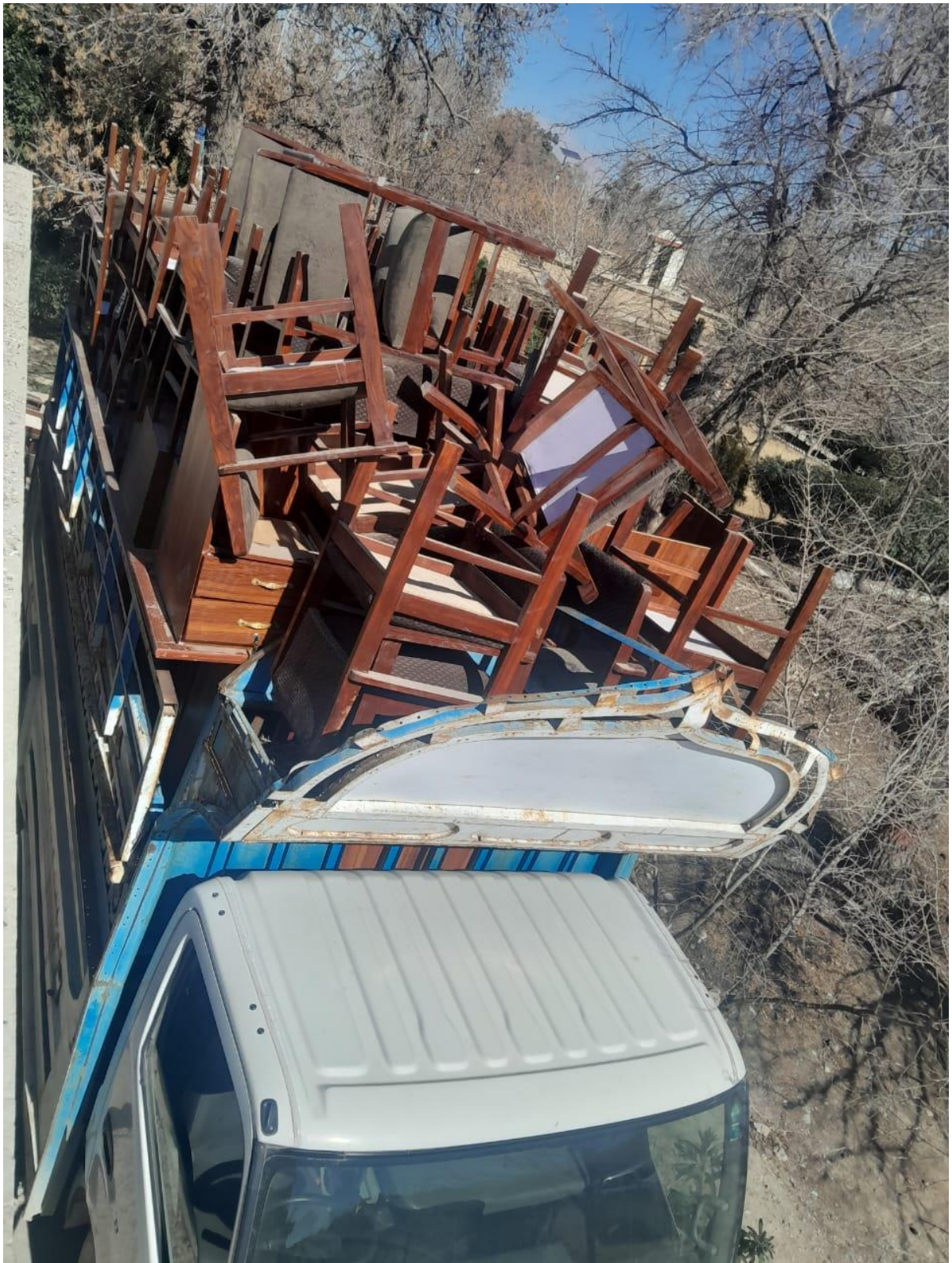
















ANIMAL SALE POINTS ON EID-UL-AZHA

Provincial Minister Bakht Muhammad Kakar sb inaugurated the Animal sale points on the eve of Eid-ul-Azha. The animals free from various diseases will be sold in the market at the rate of - 970 per kg (live). Also, the Director General (Animal Health) Dr. Farooq Tareen sb present with Congo Control Team and the animal Treatment for the convenience of the public all animals markets.



INSTALLATION OF SOLAR PANELS BY ITC GRASP

The Growth for Rural Advancement and Sustainable Progress (GRASP) programme contributes to the reduction of poverty through development of rural SMEs in the Sindh and Balochistan provinces of Pakistan. As such the programme contributes directly to the attainment of the 2030 Agenda for Sustainable Development. GRASP will create gender inclusive employment and income opportunities in the rural areas through targeted support to both the public and private sectors. The programme is part of the focal sector "Rural Development" of the Multiannual Indicative Programme for Pakistan MIP: 2014-20. It will be implemented from 2019-2025.

The International Trade Centre (ITC) in collaboration with GRASP Installed the Solar system at Disease Investigation Laboratory Quetta.





MASTER TRAINERS TRAINING OF FIELD STAFF

5-days ToT Training of Trainers for Government Livestock Department officers on Farmer Field School (FFS), Farmer Business School (FBS), Farmer Business School (FCBS), under Revival of Balochistan Water Resources Program (RBWRP) from (27, May to 31, May 2024).





STRENGTHENING OF DISTRICTS LABORATORIES BY ASSOCIATION FOR BIORISK MANAGEMENT (ABM)

The project initiated by the Association for Biorisk Management to enhancing capabilities of Veterinary Diagnostic and Research laboratories of Livestock and Dairy Development Department Balochistan. They distributed some lab equipment (Compound microscope, Centrifuge Machine, Autoclave, Analytical Balance, Automatic pipette, glassware, Graduated Beakers 250 to 1000ml, needle cutters, stop watch, Analytical Balance, Personal Protection kits, freezers) in the different districts laboratories of the province.





