

challenges for technical cooperation endeavors. Preliminary results suggest that networking of ex-participants as change agents would be an encouraging mechanism for further promotion.

Importance of livestock production in arid regions of Pakistan

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In Pakistan, livestock being a sub sector of agriculture, accounts for 55.1 % of agriculture value addition and 11.6 % of GDP. Foreign exchange earning from this sector is more than 35 billion rupees. Pakistan's 60 to 70% area is under rangelands. Of its four provinces viz. Punjab, Khyber Pakhtunkhwa, Sindh and Baluchistan, the latter two provinces have maximum area of arid regions. Livestock production is the major economic activity in the rain fed areas of the country, where sheep and goats are predominant animal species followed by camels and cattle. Pakistan is endowed with a variety of livestock breeds of various farm animals, well known due to their promising capability to survive and produce in the arid and semi-arid areas. These include: cattle (Dhanni, Cholistani, Thari), sheep (Buchi, Sipli, Thalli, Salt range), goats (Dera Din Panah, Naachi, Kamori) and camels (Brella, Marecha). Among these, small ruminants and camels are the principal animal species. Their productivity is not optimum in these regions. Moreover, the frequent droughts and the recent floods have further depressed the situation, particularly in Sindh and Balochistan for animals as well as for humans in terms of food, water and shelter. In marketing, location and lack of infrastructural support are the major issues. Milk marketing opportunities are quite meager and exploited by traders (*beopari*).

This paper will focus on the productivity index of various livestock genetic resources, various constraints, and role of various organizations in improving the livelihood of the rural communities of the arid regions along with their animals.

Contribution of livestock to the livelihood of local communities at different agro ecological zones in the coastal area of Western Desert in Egypt

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The coastal area of Western Desert of Egypt is a hot dry area with less than 150 mm rain- fall and more than 37°C temperatures in summer. Raising livestock, especially sheep and goats, is historically the main socioeconomic activity for the local communities (Bedouin). The area, however, has witnessed major changes over the last decades; demographic growth, urbanization, tourism development and land reclamation in the East, beside prolonged drought from 1995-2010. Three agro ecological zones are characterized in the region; the rain-fed area with

communal grazing in the West, the newly reclaimed land with irrigated farming in the East, and the desert oases in the South. Field survey was carried out in 2011 with 182 small ruminant breeders to assess the role of livestock in the family net income, and in sustaining their livelihood under the prevailing dry conditions.

Livestock contribution to the total income of the local community in the rain-fed area differed significantly with flock size; being 28.4% for small breeder, 43.7% for the medium ones and 80.0% for the large breeders, mainly from sheep and goats. In the newly reclaimed lands, it was related to farm size 57.6% for small farms (2 acres) to 70% for large farms (>35 acres). Source of income in the desert oasis was very diversified, livestock contributed on average 27% to the total income of the local community there. Off-farm activities contributed significantly to the family income of the oasis community, and to the small holders in the rain-fed area, while it was minor for medium and large breeders, and in the reclaimed area. Crops (mainly cereals) and fruit trees contributed highly to the income of oases communities, and moderately to the small and medium size breeders in the rain-fed and reclaimed land. The breeders' flock contributed significantly to the nutritional status of their families in the three zones, through high domestic consumption for meat and milk.