

Grazing Hazards Along the Rivers in District Jhang (Pakistan)

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ABSTRACT

A study was conducted to document the different hazards in agro-grazing system faced by the graziers along the rivers in three tehsils of District Jhang i.e., Jhang, Shorkot and Chiniot. A total of 100 respondents were interviewed out of which 36 were in study site Chenab-I, 32 in Chenab-II and 32 in Jhelum-I. The results showed that the major vegetation available for consumption by the herds, containing sheep and goats, were trees (Kikar, Siris, Ber), shrubs (Lai, Kahi) and grasses (Itsit, Dhaman). Maximum and minimum distance traveled by the respondents for grazing their herds was 7 km and 2 km, respectively, which varied from season to season. During the drought period (Dec-Feb) herds were fed with wheat straw in each study site. The average distance traveled by the respondents for selling animals and their by products was 5.3 km in each study site. Major problems faced by graziers in the study area included; less productive animal breeds, inadequate veterinary facilities, poor market facilities, feed for lean period, low financial assistance, etc. The respondents recommended that Government departments should provide assistance to them in the form of grant rather than loans because of higher interest. They desire to get the assistance on supplementary feed and veterinary care for the animals.

Key Words: Grazing hazards; Agro-grazing; Graziers; Drought period

INTRODUCTION

Agro-grazing is a unique phenomenon of two or more farming systems distinctive of a few developing nations where agriculture is not yet fully commercialized such as Pakistan, India, East Africa, South-east Africa and Latin America (Gulzar, 2001; Ahmed, 2002). Animal grazing in this combination is of nominal commercial importance and does not offer any serious threat/competition to crop production. Its major reliance is on its role as scavengers and weed depressors/snubbers. This phenomenon is not noticeable in many countries/regions but is dominant in Pakistan and India (Khan *et al.*, 2005). This is because of vast irrigated farmlands present in these countries, which were formerly grazing lands. These irrigated crop lands have thus allowed and accommodated the existence of grazing herds simultaneously (Ashraf *et al.*, 2001; Khan *et al.*, 2004).

Livestock sector have a vital importance as it renders various services for mankind. Milk meat and fat are essential components of our diet and are very rich sources of proteins, fats and vitamins (Qureshi *et al.*, 1993). Livestock also provides draft power and manure. Livestock occupies a key position in the rural economy of Pakistan for bringing cash income for improving the living standard of small resource poor graziers and other population (Khan *et al.*, 2004). Livestock sector is an integral part of the agriculture based economy of Pakistan having a population of 27.3, 29.6, 26.5, 53.8 and 5.7 million buffaloes, cattle, sheep, goat and other animals, respectively. It accounts for 49% value added in agriculture production and 12% of the G.D.P. (GOP, 2007).

The major sources of feeding for livestock i.e., large and small ruminants, are places along rivers, canals, roads, forests and rangelands. The main problems with livestock grazing include; lack of good quality feed during drought, non-availability of proper veterinary facilities, low income animal breeds, low financial assistance from government departments, non-cooperative attitude of farmers and high prices of concentrates for supplements. If concerned government provide some financial and technical assistance, It often neglects system of livestock production can be made more productive and profitable (Ali, 1993; Wasaya, 1993).

About two third of total area of Pakistan is rangelands. These rangelands are being used by nomads and local graziers providing 40-50% forage to their livestock (Hanjra & Qazi, 1984). In addition to conventional grazing in these rangelands, irrigated crop lands also provide grazing and browsing to livestock kept by landless/small holding grazer living in the villages. This practice of grazing is known as agro-grazing. These graziers allow grazing and browsing their livestock in the cultivated fields especially after crop harvest. In addition to grazing on farm lands, their animals also depend on canal side, road side vegetation and village waste lands. It is need of the time that this important sector of agro-grazing should also be given due importance (Wahid, 1992; Khan *et al.*, 2005). The present study was conducted to look at the status of agro-grazing, problems of graziers in these areas and suggest measures to overcome these problems for enhancing livestock production.

MATERIALS AND METHODS

The study was conducted in three Tehsils namely,

Jhang City, Chiniot and Shorkot of District Jhang along the Rivers Chenab and Jhelum. Map and other relevant information about the district were collected from office of the Deputy Commissioner Jhang. Fifty-four villages were randomly selected out of 100 marked villages in the study area and schedule of survey was planned to collect the required information. Schedule was tested by interviewing 10 respondents of the study area.

The study area was divided into three sites named as Chenab-I, Chenab-II and Jhelum-I, 20 villages in site Chenab-I, 18 villages in site Chenab-II and 16 villages in site Jhelum-I were selected keeping in view the agro-grazing trend of the people living the these villages, for the study purpose. About one-third respondents from each selected village were interviewed (36 respondents were interviewed from 20 villages of Chenab-I and 32 respondents were selected each from 18 villages of Chenab-II and 16 villages of Jhelum-I) on a specially designed questionnaire. The objective was to find out the difference in their problems regarding daily distance traveled for grazing, vegetation consumed by their herds (Sheep & goat), feeding during drought period, veterinary facilities, marketing of animals and assistance required from the concerned government departments. The data were put on tally sheets, tabulated and brought in a comparable form.

RESULTS AND DISCUSSION

One hundred respondents were interviewed from 54 villages along the river sides in three study sites categorized as Chenab-I, Chenab-II and Jhelum-I. Their grazing herds consisted of sheep and goats. The results of the study are discussed as under;

Vegetation consumed by herds. The data pertaining to different types of vegetation consumed by the herds in different study sites are given in Table I. The herds consumed trees, shrubs and grasses. Among the trees, Kiker (*Accacia nilotica*) and Siris (*Elbizia lebbek*) were abundant resulting in 100% consumption by the herds, whereas, Ber (*Ziziphus moratiana*) trees were consumed only 25%, 21.87% and 22.22% by the herds in Chenab-I, Chenab-II and Jhelum-I, respectively. Among the shrubs, Lai (*Tamarix dioca*) and Kahi (*Saccharum spontaneum*) were the most abundant. Similarly among the herbs and grasses, the herds depended fully on Itsit and Dhaman (*Cenchrus ciliaris*). No other vegetation type was reported by the respondents in any of the study sites. Gulzar (2001) and Khan *et al.* (2004) reported that among the above mentioned species, the consumption of Kiker, Ber and Siris was greater than shrubs (Lai & Kahi).

Distance traveled for grazing the herds. The data regarding distance traveled daily by the respondents for grazing their herds is given in Table II. It was noted that distance traveled by the graziers varied from season to season. The respondents had to travel 7 km during spring season in all categories whereas in winter they travel

approximately 2 km from their home. The reason of short distance traveled was the cold weather and short day light period. During the drought conditions in winter the respondents covered a distance of 4 to 4.75 km in almost all study areas. Naseem (1991) and Khan *et al.* (2004) reported that the daily distance traveled by the graziers varied from 9-11 km/day to feed their animals through grazing.

Feeding of livestock during the lean period. The study revealed that there were two major factors responsible for feed shortage in the study area i.e., flood in riverain areas and dry weather during the winter season. The duration of lean period was approximately two months (Table III). All the graziers suffered due to drought and fed their herds on wheat straw (Bhoosa) at mangers. These results were in agreement with the findings of Ishaque (1985) and Wasaya (1993).

Veterinary facilities. The data regarding the availability of veterinary facilities to the herders for their livestock are shown in Table IV. It was clear from the results that an average of 73.61% respondents availed veterinary facilities in terms of Doctor's consultation with medicines. On an average 50% respondents approached to nearby hospitals. The availability of medicine was reported by 75%. The condition of medical facilities in these areas was found satisfactory but most of the respondents were unaware of such facilities. However, the medicines supplied by the government were not sufficient according to the necessary requirements. It is, therefore, suggested that doctor consultation without medicine is not sufficient, medicine may also be provided at the spot in chronic or epidemic situation. Ali (1993), Gulzar (2001) and Khan *et al.* (2004) had concluded that there was poor veterinary coverage to livestock herders.

Marketing facilities for livestock. The data revealed that 3.27% animals were sold by the respondents in the villages adjoining to site Chenab-I on annual basis, whereas 20.13% and 14.36% animals were sold in Chenab-II and Jhelum-I, respectively. The total income earned by the respondents from their animals and animal by-products was Rs. 2850/-, Rs. 5980/- and Rs. 3610/- in Chenab-I, Chenab-II and Jhelum-I, respectively (Table V). The reason for this low income was less number of animals per herd per respondent. Average distance traveled by the respondents to sell their animals in the nearest market was 5.3 km for all the study sites; this long distance might be another reason for low income. The business was done in May-June and they had to go to the market twice a day to sell milk in all study sites Qureshi *et al.* (1993), Nasir (1998) had also shown the similar results.

Assistance required from the government departments. It was apparent from the results that majority of the respondents (33.62%) demanded assistance from the concerned government departments in the form of grant instead of loan (6.48%). The average amount of grant demanded by the respondents in three sites was Rs. 50,474/. The reason for the low priority towards loan was high

Table I. Vegetation consumption by herds in the study area

Study Site	Trees	Shrubs	Grasses
Respondents from Chenab-I (36)	Kiker (100 %) Siris (100 %) Ber (25 %)	Lai (100 %) Kahi (100 %)	Itsit (100 %) Dhaman (100 %)
Respondents from Chenab-II (32)	Kiker (100 %) Siris (100 %) Ber (21.87 %)	Lai (100 %) Kahi (100 %)	Itsit (100 %) Dhaman (100 %)
Respondents from Jhelum-I (32)	Kiker (100 %) Siris (100 %) Ber (22.22 %)	Lai (100 %) Kahi (100 %)	Itsit (100 %) Dhaman (100 %)

Table II. Distance traveled daily (km) by the respondents for grazing their herds

Study Site	Spring	Summer	Autumn	Winter
Respondents from Chenab-I (36)	7.00	4.75	4.00	2.00
Respondents from Chenab-II (32)	7.00	4.75	4.00	2.00
Respondents from Jhelum-I (32)	7.00	4.75	4.00	2.00

Table III. Feeding of Livestock during the Drought in the Study Area

Study Site	Persons Providing Feed (%)	Type of Feed	Duration	Expected Drought
Respondents from Chenab-I (36)	100	Wheat Straw	2 Months	Flood or Winter season
Respondents from Chenab-II (32)	100	Wheat Straw	2 Months	Flood or Winter season
Respondents from Jhelum-I (32)	100	Wheat Straw	2 Months	Flood or Winter season

Table IV. Availability of veterinary facilities to the herds in the study area

Study Site	Persons Availing Facilities (%)	Hospital/ Dispensary %	Medicine Availability	Distance Traveled (km)
Respondents from Chenab-I (36)	83.33	50	75	4.83
Respondents from Chenab-II (32)	68.75	50	75	3.81
Respondents from Jhelum-I (32)	68.75	50	75	3.81
Average	73.61	50	75	4.15

Table V. Marketing facilities and income from livestock and their by-products

Study Site	Annual sale of animals (%)	Products	Income from animals (Rs)	Distance Traveled (km)	Season
Respondents from Chenab-I (36)	3.27	Milk, wool and leather	2850/-	6	May-June
Respondents from Chenab-II (32)	20.13	Milk, wool and leather	5980/-	5	May-June
Respondents from Jhelum-I (32)	14.36	Milk, wool and leather	4610/-	5	May-June

Table VI. Assistance needed from the government departments

Study Site	Grant %	Loan%	Demand (Rs.)	Water resources %	Seed for Fodder %	Veterinary Care %
Respondents from Chenab-I (36)	80.83	19.44	38611	44.44	97.22	63.44
Respondents from Chenab-II (32)	100.00	--	52500	43.75	93.75	68.75
Respondents from Jhelum-I (32)	100.00	--	60313	43.75	93.75	68.75

interest rates. They feared to take big loans on account of this reason whether they would not be able to return it. They needed the assistance for purchasing the good animal breeds, fodder during the drought period and veterinary medicines. Wasaya 1993), Khan *et al.* (2004) revealed that if Govt. provide some financial and technical assistance for supplementry feed, good animal breeds and veterinary medicines for hygienic cover then such a neglected system of livestock production can be developed into more productive and profitable.

Suggested measures

1. Replacement of less productive animal breeds with highly productive breeds for enhancing income of herders.
2. Provision of appropriate veterinary facilities along

with medicines on nominal/discount rates.

3. Improvement of marketing facilities at nearby places to encourage the herders for better livestock production.

4. Initiate micro-financing schemes in these areas for providing financial assistance to the herders to fulfill their requirements regarding veterinary care, supplement feeding, purchasing good quality animals, etc.

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