LIVESTOCK FARMING SYSTEM OF BHABAR AND TARAI AGRO - CLIMATIC ZONES OF UTTAR PRADESH

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ABSTRACT

Agro Ecological or agro climatologically zoning is widely used in India (Ghosh, 1991, Mehla et al. 1992, Alagh, 1989, Jain and Dhaka, 1993) to assist extension worker, researchers, administrators and others in the process of identifying zone specific or regional problems and to developed programmes to address zone specific constraints. Participatory Rural Appraisal (PRA) is a methodology that helps in integrating with local communities, understanding them and learning from them. It helps in the process of involvement with local communities for indigenous knowledge-building exercise. The present study was conducted in Bareilly district of Uttar Pradesh The district is consisted of 15 blocks out of them 10 blocks were selected for the study, in tern of village selection 13 villages were selected from these 10 blocks. The required data were collected with the help of interview schedule, Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA) transact walk techniques was applied. Most of the farmers are keeping good quality crossbred animals which could be said as a specialized livestock farming, the buffalo farming system are more dominating in the district. In many cases it is combination of desi cow with buffalo or desi cow with crossbred or buffalo with crossbred or buffalo with desi cow with crossbred cow. Some farmers, majority of them from resource poor as well as socially and economically weaker sections, maintain either goats or pig, independently or in combination and some times in a limited way with cattle or buffalo systems.

Key words : Agro Ecological or agro climatologically zoning, Participatory Rural Appraisal (PRA)

INTRODUCTION :

India accounts for a significant share of world's livestock resource with 52.8 per cent (78.56 million) of world's buffaloes, 20.1 per cent (118 million) of goats, 15.1 per cent (192.7 million) of cattle, 4.0 per cent (44.61 million) of sheep and 1.0 per cent (10.55 million) of pigs. The importance of livestock sub-sector can be gauged from the contribution that it makes to the national economy. The share of livestock products in the gross value of agricultural outputs has increased from 6 per cent in 1970-71 to over 25 per cent in 1992-93.

Uttar Pradesh, the most populous state in India, is also rich in domestic animal diversity. The state is divided into ten Agro-climatic zones based on rainfall pattern, temperature, soil types and existing cropping pattern. The Bhabar and Tarai zones of the state is narrow strip of land at the foot hills of Himalayas covering northern part of Saharanpu, Bijnor, Rampur, Moradabad, Pilibhit, Bareilly, Laskhimpur-Kheri and Plains of Nainital, only Bareilly district was undertaken for the purpose the present study.

The total livestock population in the Bareilly district according to 1993 census was 899198 cattle out of which 16498 are crossbred cattle (9913 males and 6585 females), 290568 local cattle (159071 males and 131497 females) 441578 buffaloes (143827 males and 297751 females), 4927 sheep (257 improved and 4669 local), 116076 goats (56253 male and 38349 female) 29552 pigs (4872 improved and 24680 local). The poultry population (including layer and broiler) was 137392 (99899 local and 37493 improved).(Statistical book, 1995,SPI. of U.P.)

Livestock keeping in Uttar Pradesh and similar other states has multiple objectives and dimensions. The play multiple roles in rural systems and economy and have a strong human dimension, as manifested through socio-cultural link and involvement of women. Besides their well-established role in agriculture livestock have crucial role in food security and as risk aversion mechanism for sustaining family, whenever there is crop failure. Role of livestock in generating employment and income in rural areas is well established, since livestock distribution is less skewed than land. Livestock are a part of nature's chain for recycling nutrients, converting low quality and other agro bye-products into good quality and organic fertilizer.

Technology recommendation for livestock production have to depend on macro situations considering various factors of production such as breed, feed, housing, health, management practices and climatic factors etc. It is therefore necessary that the district is classified in different recommendation domains groups of village with similar situation where a particular recommendations can appropriately applied with passivity results.

Agriculture production point of view, the district is characterized s intensive irrigation farming and livestock based farming system. Rice-wheat and sugarcane production system in agriculture and integrated livestock

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farming system are dominant in the district. In the present study an attempt has been made to describe the various identified livestock farming systems prevailing in the Bareilly district.

METHODOLOGY :

The present study was conducted in Bareilly district of Uttar Pradesh as a unit was selected purposively for livestock based agro eco systems. The district is consisted of 15 block out of them 10 blocks were selected for the study, in tern of village selection 13 villages were selected from these 10 blocks. The required data were collected with the help of interview schedule, Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA) transact walk techniques was applied. Only two transact east to west and north to south were earmarked. These two transacts coved 10 blocks out of 15 blocks of the district. The researcher moved on these transact and stopped at every about 15 Kilometers and collected various data from primary sources through RRA & PRA tools. The data were collected from 5 point (villages) on east to west and from 8 point (villages) on north to south transact.

RESULTS AND DISCUSSION :

In this study results are presented as farming system prevalent in the district are:

Cattle farming system–It is clearly depicts from the table No.1 that Desi cattle population found at medium density (16-27) in 5 Blocks namely Damkhoda, Kyara, Meerganj, Faridpur and Bhuta while 3 blocks were having High density (28-40), whereas two Blocks (Baheri and Damkhoda) were found high density (31-46). In case of crossbred cattle density range was found 0.3-46 in which the majority of the blocks i.e. five were having low density (0.4-15). In the combination of both desi and crossbred cattle majority of the blocks were in low density (12-24) of animals.

No whereas the district is either purely a desi cattle system or crossbred cattle system. The farmers keep mostly non-descript desi cows and size of operation is very small. These are being maintained mostly religious purpose and for the consuming milk by the family members in a limited way. The milk productivity of desi cows is very low, the finding also supported by the Patel (1991) who reported that productivity of cattle and buffalo varies from region to region. Most of the farmers are keeping few desi cows and opting for crossbreds through artificial insemination. Though exotic base is of Holestein Frieion, Jersey and Brown-Swiss but commonly crossbreds of Holstein Friesian are found in the district. The performance of these crossbred is relatively better then the crossbred of the exotic base.

In many cases desi cows are kept in combination with other livestock species, very few farmers in the district are maintaining exclusive crossbred cattle system. The average numbers of milch crossbred cows is very low. However, in few villages some farmers have crossbred even up to ten. The productivity of crossbred cows at farmers field found to range from 3000 to 3500 liters per lactation. As mostly resource-rich are keeping these animals they are providing green fodder *adlib* and also concentrate round the year.

Buffalo farming system–It is from the table 1 that Density of Desi buffalo found high (104-132) in 2 blocks and low density was found in 6 blocks out of 10 blocks of the district. Majority of the Murrah Buffalo density were found in low density (4-29) in eight blocks, one block have medium as well as one block high murrah buffalo density. In case of combination of desi and murrah buffalo out of ten blocks four had medium and rest six blocks have low and high densities in the study area. Further table disclosed that Meerganj, Fatehgarnj, Faridpur were having High density (125-153) of Combination of Desi and Murrah, whereas cattle and Buffalo combination was found in 5 Blocks (Baheri, Damkhada, Meerganj, Fatehganj, Faridpur).

Buffalo dominates the bovine population of the district. Though desi /local buffalo out numbers Murrah grade/improved buffaloes in many parts of the area studied but simultaneously improved ones can't be neglected owing to their productivity.

In many cases a mixed farming approach practiced which utilized most of the household agricultural and other by-products. Keeping buffalo along with cattle is a common practice of many households. Buffalo are more in numbers in the areas of low fodder availability as they are the good converter of course roughage in to nutrients. Farmers in many parts of the district are maintaining relatively larger buffalo herd, which in turn make it more, specialized or commercial buffalo farming. Buffalo farming is relatively more remunerative than any other milch animals. In urban and sub urban areas it is mostly a commercial farming with large herd size. Whereas in rural areas less number of buffaloes are kept.

Goat production system–It is seen from table 1 that Bahari, Damkhoda, Shergarh, Bhojipura, Kyara, Fatehganj blocks were having low density (17-73) of goats whereas only one block (Faridpur) having High density (131-186) of goats.

Goats are kept as a supplementary enterprise of augment family income. Local and Barbari goat constitute the main chunk of the goat population. The villages with bushy and growing land have high goat population. Apart of goat milk also adds to the milk production of the areas. Those who rear dual-purpose

goats commonly consume milk in the family and rarely it is sold out. They are mostly kept for meat purpose. The goats rearing systems are chiefly subsistence and extensive in nature. It is low capital and labour intensive. In many cases other active family member including farmwomen and children take care of their goats.

Sl. No.	Milch animal desi Cattle/ hundred household	Min-Max (Range)	No. of blocks	Total No. of blocks
1	Desi Cattle	3-40		
	Low Density	3-15	1,6	2
	Medium Density	16-27	2,5,7,9,10	5
	High Density	28-40	3,4,8	3
	Total no of blocks			10
2	Crossbred cattle	0.4-46		
	Low Density	0.4-15	3,4,5,6,9	5
	Medium Density	16-30	-	-
	High Density	31-46	1,2	2
	Total no of blocks			7
3	Desi and C.B. cattle	12-49		
	Low Density	12-24	5,6,7,9,10	5
	Medium Density	25-36	2,3,8	3
	High Density	37-49	1,4	2
	Total no of blocks			10
4	Desi Buffalo	45-132		
	Low Density	45-74	1,3,4,6,7,8	6
	Medium Density	75-103	5,10	2
	High Density	104-132	2,3	2
	Total no of blocks			10
5	Murrah buffalo	4-81		
	Low Density	4-29	2,3,4,5,6,8,9,10	8
	Medium Density	30-55	1	1
	High Density	56-81	7	1
	Total no of blocks			10
6	Desi with murrah buffalo	64-153		
	Low Density	64-93	3,4,6	3
	Medium Density	94-124	1,2,5,10	4
	High Density	125-153	7,8,9	3
	Total no of blocks			10
7	Cattle and buffalo	95-163		
	Low Density	95-117	3,6	2
	Medium Density	118-140	4,5,10	3
	High Density	141-163	1,2,7,8,9	5
	Total no of blocks			10
8	Goat production	17-186		
	Low Density	17-73	1,2,3,4,5,8	6
	Medium Density	74-130	7,10	2
	High Density	131-186	9	1
	Total no of blocks			10
9	Pig production per household	(1.0-10)		
	Low production	1-3	1,3,4,5,6,8	6
	Medium production	4-6	4,7	2
	High production	7-10	2,10	2
	Total no of blocks			10
10	Milk production Per household	1.54-6.06		
	Low production	1.54-3.04	3,4,5,6	4
	Medium production	3.05-4.54	2,7,8,10	4
	High production	4.55-6.06	1,9	2
	Total no of blocks			10
	Milk productivity/ animal	1.63-3.73		
	Low productivity	1.63-2.33	3,6	2
	Medium productivity	2.34-3.04	2,4,5,7,8,10	6
	High productivity	3.05-3.73	1,9	2
	Total no of blocks			10

Pig farming system

Pig population in the study area was low but not negligible because in pig farming very strong social values, norms are occur in most of the part of country. Today pig farming is very hot income generating enterprises and many of big farmers are come forwards to adopt this sunshine farming. In the study area all the blocks having some extent pig population.

Pig faring is being, practiced by relatively less numbers of farmers, mostly they are from socially and economically weaker section. Some of the farmers are keeping sizable numbers of pig that too crossbred, with exotic inheritance mostly from Yorkshire, Landrace. For many landless and agriculture labours this is a highly profitable enterprise. It is low capital-intensive farming. Those how are rearing do not spend much on their feeding. Only few farmers have pig farming as a commercial one. However, now many farmers are venturing for this enterprises. In some areas where sugarcane crushers are more, pig in large numbers are kept in enclosures and mostly fed with fed with it waste (ganna - mait).

Milk production per household–Milk production per household was analyzed for comparison in different parts of the district. The computed figures ranged from 1.54 to 6.06 kg milk production per household, which was then divided in to three categories Viz, 1.54 to 3.04, 3.05 to 4.54 and 4.55 to 6.06 kg. The data have been presented in Table 1, clearly indicated that the district divided into three categories i.e. Low, Medium and high production areas, respectively. The district as such dose not have any specific pattern through the villages and the areas differed very much in respect of milk production. Baheri block has the maximum milk production followed by Faridpur block. These blocks have the maximum concentration of crossbred cattle and buffaloes as compared to other blocks and therefore milk production is high. Damkhoda, Fatehganj, Meerganj and Bhuta blocks have medium milk production. Milk production is low in Shergarh, Bhojipura, Kyara and Alampur- Jafrabad blocks, where mostly desi cattle and desi buffalo are reared and that too in comparatively less numbers.

Milk productivity per animal–Milk productivity per animal presented in Table 1 indicated that the computed figures ranged from 1.63 to 3.37kg milk production per animal, which was then divided into three categories viz, 1.63to 2.33, 2.34 to 3.04 and 3.05 3.73 kg milk productivity per animals Low, Medium and high respectively. The district as such dose not have any specific pattern through the villages and the areas different very much in the respect of milk productivity. Baheri block has the maximum milk productivity

followed by Faridpur. Baheri block has the maximum numbers of crossbred and maximum concentration of murrah buffaloes as compared to other blocks. This might be the reason of high productivity. Damkhoda, Bhojipura, Meerganj , Fatehganj, Kyara and Bhuta blocks have medium milk productivity. These blocks have less numbers of croobred cattle and buffaloes. Milk productivity is low in Shergarh and Alampur-Jafrabad blocks, where infect dairy animals are less and there is scarcity of green fodder.

CONCLUSION :

North-South transact analysis of Bareilly district was clearly indicate that desi cattle population was higher in middle of the district and low in the north and south while crossbred population was high only in north part of the district and low to very low in the middle and south. Cattle population was more in Baheri and Bhojipura blocks as compared to other blocks.

The east-west transact analysis of Bareilly District the cattle population in the entire district is dominated by local breed and crossbred are very rare. On the other hand, buffalo population was high towards east (Faridpur-Bhuta) and low towards west (Meerganj). However, it is interesting to note that murrah buffaloes are more in Meerganj block. Since the buffalo population is comparatively higher in Faridpur block, milk production and productivity is higher in this area. Goat population was also reported to be comparatively more in Faripur block. Pig population is rare in the villages. However, in Bhuta block the pig population was reported to be comparatively higher.

Milk productivity in Bareilly district was found maximum in Baheri and Faridpur Block and low productivity was in Shergarh and Alampur-Jafrabad block. Whereas milk production per household was found highest in two blocks, one in the north and other in the east part of the district i. e. Baheri and Faridpur. Low production was reported in Shergarh, Bhojipura, Alampur-Jafrabad and Kyara blocks.

The integrated livestock farming system has been found as one of the major production systems prevailing in Bareilly district. The scale of livestock farming found to be low , pt is mostly intensive and practiced by small and marginal farmers, the livestock farming to a little extents is either a specialized or commercial enterprises, some resource poor farmers were found to have either goat or pig farming independently or in combination with other livestock species.

REFERSENCES

1. Alagh, Y.K.(1989). Agro-climatic Regional Planning and overview, National Planning Commission, Govt. of India, new Delhi, India.
2. Ghose , S.P. ed. (1991). Agro-climatic zones specific research Indian Perspective Under NARP. ICAR, New Delhi.
3. Ghose , S.P.(1991). Concept of agro-climatic zones for research and Development. In: (Ed.). Agro-climatic zones specific research: Indian Perspective Under NARP. ICAR, New Delhi, pp 1-20.
4. Jain, D.K. and Dhaka, J.P.(1993). Farm typology in farming systems research. In: Singh, K and J.B. Schiere (Eds). Feeding of ruminant on Fibrous crop Residues: Aspects of treatment, feeding, nutrient evaluation, Research and Extension, proceedings of an International workshop held at the NDRI, Karnal , India, Feb 4-8,1991, pp43-57.
5. Mehla, R.K., Patel, R.K., Chabra A. and Pal, N. (1992). Sustainable milk production system for various agro-ecological region of India . in proceeding for All India dairy husbandry Officer's Workshop, NDRI, Karnal, India.
6. Mukherjee, N.(1995). Participatory Rural Appraisal Methodology and Applications. Concept Publishing Company, New Delhi.
7. Patel, R.K.(1991). Role of livestock production in rainfed agriculture- A comparative study. Technologies for minimizing risk in rainfed agriculture. Indian society of extension education International fund for agricultural development ICAR, New Delhi.
8. Statistical Book, District Bareilly (1995). Office of the economic and statistical office Bareilly, Section of economics and statistics, State Planning Institute, Uttar Pradesh.

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