

UP LIFTMENT OF RAJASTHAN THROUGH LIVESTOCK FARMING

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ABSTRACT

Livestock sector is an integral part of India's agriculture and an important part of the whole economy with reference to employment, income and earning of foreign exchange for the country and is also a highly potential sector contributing a lot in state economy, especially of rural economy. The potential of crop production depends upon huge investment and weather and meteorological conditions while Animal husbandry and livestock is more stable and requires lesser investments. Livestock and poultry have proved to be life savior in many distress conditions, especially in the arid and semi-arid regions of the Rajasthan.

INTRODUCTION

Development of livestock sector has a significant beneficial impact in generating employment and reducing poverty in rural areas. Livestock contributes a large portion of draft power for agriculture, with approximately half the cattle population and 25 percent of the buffalo population being used for cultivation. In addition that, Livestock production in Rajasthan is pre-dominantly the endeavour of small holders. Almost 90 per cent of the rural households keep livestock of one species or the other. Livestock farming is practiced traditionally mostly for agricultural operations. There are hardly any commercial livestock farms in the rural areas; though few commercial dairy farms exist in the periphery of the cities.

The aim of this paper is to examine the various issues related to livestock production vis-à-vis the development of animal husbandry sector in Rajasthan, and to identify the constraints and strategies to be adopted for better growth and development of livestock production and productivity in Rajasthan.

RESEARCH METHODOLOGY

Livestock Resources

Livestock in the state is highly livelihood-oriented and is generally owned by small and marginal farmers and landless agricultural labourers. The livestock is basically a component of

production system, contributing to sustainable agricultural systems. The livestock population in the state is very large in numbers but its productivity is very low as compared to other parts of the country. As per the livestock census 2007, there are 579.00 lacs livestock (which include Cattle, buffalo, Sheep, Goat, Pig, Camel, Horse and donkey) and more than 50.12 lacs. Poultry in the State Rajasthan has about 7% of country's cattle population and contributes over 10% of total milk production, 30% of mutton and 40% wool produced in the country. Rajasthan is first in Wool production while third in milk production. Animal Husbandry contributes about 13% in the G.D.P. of the State. This sector has a great potential for rural self-employment at lowest possible investment per unit. Therefore, livestock development is a critical pathway to rural prosperity. Table showed the detailed pattern of growth of livestock population in Rajasthan. (As per the Livestock census 2007).

Rajasthan does not have any economically important breeds of livestock except the indigenous bullock on which most of the agricultural operations depend. The indigenous cows are of poor reproductive efficiency. Almost all the breeds of livestock are native to Rajasthan. The State of Rajasthan has proud possession of 9 cattle breeds, 8 sheep breeds, 6 goat breeds, 4 camel breed and also endowed with thorough bred horses. The important breeds of cattle traded in the State are Rathi, Kankrej, Nagour, Tharparkar, Haryana, Malvi,

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Gir, Sanchori and Mehwati. Regarding buffalo breed, Murrah buffalo is the only preferred breed found in Rajasthan. Sheep also occupy an important place in animal husbandry sector of the State. The important breeds of sheep are, Nali, Magra, Chokla or Shekkavati, Marwadi, Jaisalmeri, Malpuri, Sonari

or Chanother, Pugal and Bagdi. The important goat breeds in the State are Jamnapari, Badwari, Alwari and Sirohi breeds, which are reared for milk and meat; Lohi, and Jhalwadi breeds are mainly for meat purpose.

Table. Status of Livestock during various years in Rajasthan (In lacs)

Livestock Species	1977	1983	1988	1992	1997	2003	2007
Cattle	128.96 (31.18%)	135.04 (27.20%)	109.21 (26.69%)	116.66 (24.08%)	121.41 (22.37%)	108.54 (22.08%)	121.20 (21.38%)
Buffalo	50.72 (12.26%)	60.43 (12.17%)	63.44 (15.50%)	77.75 (15.98%)	97.70 (17.95%)	104.14 (21.28%)	110.92 (19.58%)
Sheep	99.38 (24.03%)	134.31 (27.05%)	99.32 (24.24%)	124.91 (25.78%)	145.85 (26.33%)	100.54 (20.41%)	111.90 (19.75%)
Goats	123.07 (29.76%)	154.8 (31.18%)	125.78 (30.79%)	152.85 (31.55%)	169.71 (31.16%)	168.09 (34.17%)	215.03 (37.95%)
Camel	7.52 (1.82%)	7.56 (1.52%)	7.19 (1.76%)	7.46 (1.53%)	6.69 (1.22%)	4.98 (1.01%)	4.22 (0.75%)
Pigs	1.30 -	1.79 -	2.07 -	2.53 (0.52%)	3.03 (0.55%)	3.37 (0.68%)	2.09 (0.37%)
Others	2.64 (0.95%)	2.57 (0.88%)	2.16 (1.02%)	2.29 (0.47%)	2.16 (0.39%)	1.70 (0.39%)	1.27 (0.22%)
Total	413.59	496.50	409.17	484.45	546.55	491.36	566.63
Dogs	0	14.33	12.54	15.02	16.74	23.71	12.46
Poultry	15.90	22.13	25.85	30.13	44.06	61.92	50.94
Rabbits	0	0	0	0	0.19	0.23	0.09

Rajasthan has the monopoly in breeding camels, Alwari; Bikaneri, Kachi and Jaisalmeri breeds are considered as the best breeds of camels. According to 1992 census Rajasthan State had 25,000 Horses and ponies and 2 lac donkeys. The Marwadi breed of horses is inhabitant of Badmer, Jalore and Jodhpur districts.

Therefore, efforts are necessary to upgrade the indigenous cattle, goat and pigs through infusion of exotic/Indian breeds of cattle, goat and pigs. The buffaloes in Rajasthan are mostly of swamp type and no river-type buffaloes are found. Swamp buffaloes are poor in milk production and are good source of buffalo meat production but, this has not yet been exploited commercially. Goat is very popular all over the state. It adapts quickly to harsh environment and has high reproductive efficiency, fair milk yield and excellent meat quality. The animal population of the State as per the 1997 census is 546.48 lakh, which gives a ratio of almost 1:1.59 with human population in the State. According to the table the fluctuation in number of cattle may be due to overwhelming increase in human population. The man and animal competition also affected man-

animal ratio.

Livestock Rearing System

By and large, cattle, buffalo, sheep and goat in Rajasthan are reared under traditional system (extensive) of management, i.e. the animals are let loose throughout the day and in the evening they are tied in animal shed made of locally available materials. In contrast to rural areas, around the cities and towns intensive management system is generally practiced particularly for the crossbred cattle meant for milk production. The cows are housed throughout the day and night. The animals are stall-fed with cut grasses and tree leaves along with feeding roughage and concentrates. Community grazing system is rarely seen even in rural areas. The disappearance of at large number of village grazing reserve (VGR) and professional grazing reserve (PGR) due to increasing human population pressure adversely affected the livestock sector.

Feed Resources

(A) The Government shall create an institutional arrangement to undertake the following functions:

- (i) Creating a database on various feed and fodder resources, feeding practices and consumption patterns in various agro-climatic zones/areas, to be updated every two years. This also needs to be linked through input and output profiles of various animal products as cost-benefit studies;
- (ii) Step to be taken to effectively monitor the production and sale of quality cattle feed area specific production of Mineral Mixture as per Mineral Mapping, Calf Starter and Bye-pass Protein feed.
- (iii) Inter-agency coordination in fodder production, fodder seed production, conservation, transport and sponsoring research in these directions;
- (iv) Establishment of fodder banks in private sector, for which appropriate programmes shall be formulated to generate feasible storage technologies for each type of roughage and to facilitate banking with the farmers themselves;
- (v) Identifying potential areas outside the State, from where fodder can be purchased and transported to the deficient areas of the State, through surveys well in advance of the lean period/drought;
- (vi) Creation of regulated feed markets for input marketing and processing and value addition facilities in PPP mode.

(B) The Government shall constitute State level Standing Committee for Fodder Development and District level Fodder Management Committees for ensuring fodder availability. These committees shall:

- (i) Formulate and reorient existing programmes to ensure fodder and pasture grass seed availability;
- (ii) Increase availability of fodder by facilitating cultivation of fodder crops and fodder trees and regeneration of grazing lands as well as CPR through implementation of new programmes to be formulated for this purpose;
- (iii) Increase availability of fodder by facilitating cultivation of fodder crops and fodder trees and regeneration of grazing lands as well as

CPR through implementation of new programmes to be formulated for this purpose;

(C) The National Commission on Cattle has also recommended that in the State of Rajasthan, the emphasis should shift from crops to animal husbandry as a major livelihood option;

- (i) For this purpose, the Government shall launch new schemes for motivating and facilitating incorporation of animal husbandry component in the farming practices of those farmers, who are currently pursuing only crop farming for the purpose of making it more sustainable;
- (ii) Intensified efforts shall be undertaken so that the wasteland are converted into grazing lands by planting grasses and fodder trees with the help of Gram Panchayats. Similarly, vast area of non-forest & forests land shall be utilized for developing good grazing lands;
- (iii) The Government shall make appropriate efforts to utilize land availability with public sector organizations, Goshalas, NGOs etc. for fodder production and pasture development.

Dovetailing of fodder production and pasture development programmes with other programmes related to animal husbandry, agriculture, forest and rural development.

RESULTS AND DISCUSSION

Research & Development efforts:

- (i) Facilities shall be upgraded for Feed and Fodder Analysis, so that quality of marketed feed and fodder can be tested and ensured;
- (ii) Efforts shall be intensified to utilize latest technologies so that crop residues and non-conventional feed and fodder resources can be utilized for feeding animals if converted into energetic feed and oil-meals into proteins, which are usable by animals;
- (iii) Fodder banking technologies shall also be developed and transferred;
- (iv) The Department of Animal Husbandry and Dairying, Agriculture & Forest shall have a special R&D fund to encourage institutions (both in public and private sector) to undertake

result-oriented and time-bound projects in these areas;

- (v) Widespread demonstration of fodder enrichment technologies to the stake holders.

The production of livestock particularly that of ruminants depends on the availability of quality feeds and fodder. Good quality grass/fodder helps in increased production on milk and meat at a cheaper rate. The cultivation of quality grass/fodder is rare and the quantity is inadequate. Because, the smaller land holdings are devoted to cultivation of food crops on first priority and the cultivation of fodder gets lower priority.

Animal productivity

Production of milk, meat, eggs are minimal in Rajasthan. The availability of milk is 395 grams and of meat 20 grams per day and only 18 eggs per person per year in the year 2009-10. The pattern of production during the period 1985-86 to 2009-10, shows an increase in production of 45 per cent, 40 per cent and 40 per cent of milk, eggs and meat respectively. However, the demand for these products is much larger than the production.

The basic reason for such a low production is the absence of good breeds of cattle, buffalo, goat, pigs and poultry coupled with shortage of concentrate feed and green fodder.

Overall constraints of livestock production

1. The effective technology intervention on Artificial Insemination has not been fully put into gear. Except cows, other species of animals have not been covered under A.I programme
2. Absence of quality breeds of animals, all the animals are nondescript types resulting in poor animal productivity
3. Acute shortage of feed concentrate and green fodder is the root cause of the poor performance as the genetic potentiality of an animal cannot be exploited fully in the absence of proper nutrition
4. High animal density is a management deterrent
5. Small land holding size limiting cultivation of fodder. The entire land is put under crop production for human consumption

6. Lack of perception of farmers' to real need and poor research focus and planning. Poor linkage between the concerned government department and the agricultural university resulting in poor feedback from the field of veterinary to the university. This has created a void in the research focus and planning
7. Inadequate monitoring of field works, feedback on failure, rate of adoption of the scientific knowhow imported through various trainings
8. There is no compound feed manufacturer in the whole of the Rajasthan. As a result the utilization of non-conventional feed resources could not be maximized
9. Presence of fragmented, unorganized market for all livestock products, which involves chains of middlemen who reap the actual benefit depriving the real producers of their rightful share
10. Inadequate surveillance and monitoring of infectious and contagious diseases

Strategies

1. **Germplasm:** The state is endowed with vast livestock populations having wide genetic diversity suitable for milk, meat and fiber production and draft power. Genetic improvement of the indigenous non-descript animals through crossbreeding with superior germplasm and the subsequent inter-seminating with FIS. Selective breeding of some indigenous breeds of livestock could be an easier option and also conservation of valuable germplasm in state is the need of hours.
2. **Feed resource:** The Government should encourage establishment of compound feed manufactures unit to exploiting of non-conventional feed resources, land to produce economic ration and make the suitable plan and strategy for cultivation of green fodder in the fallow land. Beside that utilization of straws/crop of cereals and food crops with suitable treatment like that urea molasses blocks in rural areas which increase the

nutritive value of feed. In recent decades, growing concern has been expressed about the large and expanding gap between feed and fodder resource availability and demand to be an alarming 50-80% of the requirement. It is difficult to find immediate solutions and therefore, research and development wings need to address this imminent problem urgently.

3. **Animal Health Management:** Another critical constraint is the wide spread presence of a variety of animal diseases and the state's failure to eradicate/control them. This may not only affect livestock/product export, but also results in massive economic losses. Its needs to intensive epidemiological studies of the livestock diseases particularly the infectious diseases should be under taken to plan programme for control and eradication and also done the timely prophylactic measures and emergency of services for treatment of livestock.
4. **Breeding Management:** The state has poor breeding policies; therefore there are needs for upgrading the indigenous buffaloes through improved breeding of animals of Indian origin and also availability of quality breeding animals/birds to the livestock farmers is to be ensured. Beside above facility for A.I and pregnancy diagnosis at farmers door needs to be located through activation of A.H. extension service which is make the farmers familiar with the scientific practices. Exploitation of modern tools for enhancing productive and reproductive performances in cattle through ETT may be taken up in the cattle breeding farm, Barpeta where pure bred jersey cattle are maintained.
5. **Animal Production system:** The state has well-established cattle, buffalo, sheep, goat, camel and poultry productions. Backyard production systems/small holder livestock production farming is also need to special attention. Pig farming needs reintroduction into the state. The research and development support need to be designed in a way that there is blending of the features of advanced input intensive

technologies with traditional production systems.

6. **Livestock Management-Ecological aspect:** For the livestock policy, it makes best sense to help generate alternatives that reduce the pressure on the rural people to pursue livelihood strategies detrimental to their habitat and natural resources; and promote symbiotic and synergistic relationships between local communities and their environment through participatory natural resource management.
7. **Product processing:** HACCPs endorsed by ICMSF are required to be followed particularly in the meat processing industry.

Strategies-Institutional Interventions

- a) Credit availability
- b) Livestock Insurance
- c) Fiscal adjustments

Strategies-Structural adjustments

- a) Vety. & Ani. Husbandry Extension system
- b) Rajasthan Council for Veterinary and Animal Science Education and Research
- c) University of Veterinary and Animal Science in the state.

CONCLUSION

Key to better livestock production is the availability of quality animals, quality feed and fodder and effective disease control measures. There should be a comprehensive policy approach to deal with the above key factors. The fallow land needs to be exploited for cultivation of green fodder and the utilization of non-conventional feed resource may augment the feed supply situation. The coordination and collaboration approach in programme implementation by the State Agricultural University, State Animal Husbandry and Veterinary Department and State Agricultural Department should be a priority activity.

REFERENCES

Government of India. 18th Livestock Census 2007.