DEFFRENTS LIVESTOCK REARING MANAGEMENTAL PATTERN IN INDIA: A REVIEW

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ABSTRACT
In India majority (70-80%) of the livestock produce is contributed by the poor landless, marginal and small farmers, which indicates its high potential of generating employment and income, especially to the poor and unemployed youths and women. An official records and statistics often undermine the overall contribution by animals, as they overlook the multi-purpose role that animal resource has in agricultural production. The basic principles of livestock management practices are feeding, breeding, housing and health care are major elements in increasing dairy animal production. Livestock has immense role to meet the nutritional gap and play a major role in overcoming seasonal income variability and availability. In India, incomes from livestock farming account for 15–40% of total farm household earnings. Supporting the economically weak and specially women to properly raise animals can have a good impact on their income, social status and the local environment. A mixed crop-livestock system is a dominant form of agricultural production in India where livestock provides food for household consumption, draught power, manure and fuel. Livestock in return are generally provided with crop residues and by-products for their sustenance. Livestock also act as store of wealth, insurance to agriculture crisis and a tool for socio-economic development particularly for the small holders and landless.

KEY WORDS: Socioeconomics, Livestock, feeding, breeding, health.

INTRODUCTION
Dairying is a crucial component of Indian livestock sector and milk being a valuable agricultural produce. Overall development, sustained income growth and rapidly growing urban population have fueled rapid growth in demand for milk and milk products (Kumar et al., 2011). Milk is the main output of livestock sector accounting for 66.7% of the total value of output of livestock. The basic principles of livestock management practices are feeding, breeding, housing and health care are major elements in increasing dairy animal production. The India inefficiency in milk production is the rule rather than exception (Rajendran and Mohanty et al., 2005; Delgado et al., 2008). Annual milk production could increase more rapidly if milch animals were only properly fed and given better health care that has been evidenced in co-operative dairy network under Operation Flood. Majorities (80%) of the dairy farmers are small, marginal and landless laborers who produce 70% of India’s total milk produce (Kumar, 2012). In India majority (70-80%) of the livestock produce is contributed by the poor landless, marginal and small farmers (Walli et al., 2012), which indicates its high potential of generating employment and income, especially to the poor and unemployed youths and women. An official records and statistics often undermine the overall contribution by animals, as they overlook the multi-purpose role that animal resource have in agricultural production (Sansoucy et al., 1995).

Socioeconomics profile of different livestock farmers Personal
Socio-economic profile of dairy farmers may influence the adoption and scientific management practices for dairy cattle rearing. Information regarding socio-economic profiles of dairy farmers like age, sex, education, landholding, etc., and their relation with dairy management practices has been reported by various authors summarized as follows:

The majority of the livestock farmers were in the age group of 40-50 years to the findings of (Gurav et al., 2014; Raut et al., 2014) in Kolhapur district. (Shinde et al., 2011) who also reported majority of 89% of male respondent in comparison to female were only 11% in Solapur district. (Thombre et al., 2010; Mande et al., 2008), who also reported that majority of dairy owners, had agriculture as primary occupation to get income. (Desai et al., 2012) in Satara and (Gurav et al., 2014) in Kolhapur district of Maharashtra were reported that dairy owners had a family size of 5.38 ±0.50. The (Gurav et al., 2014) reported in Khoalpur area that only 55% farmers have secondary education in this district of Maharashtra.

Land holding
(Pushpa, 2006) were reported that in western Maharashtra farmers have irrigation source, mainly river, tube well and upon applying conversion factor of one acre of irrigated land is equivalent to 2.5 acres of dry land, and so dairy farming is most developed in this area of state. (Desai et al., 2012) in Satara area above 4 hectare land holding big farmers was 89%. (Raut et al., 2014) who reported that maximum farmers in semi medium landholding capacity its 2- 4 hectare in Maharashtra. (Gurav et al., 2014), who reported an average landholding of 0.51-0.80 acre/ family in Kolhapur district of Maharashtra. (Shinde et al., 2011) reported that was 28% of livestock owner have 3-5 herd size in Solapur area. Majority of dairy farmers had medium herd size a finding was reported by (Kale et al.,
Livestock rearing management pattern in India

Existing livestock rearing practices among the farmers

Housing management practices

Basic concept of housing is that it should normally buffer the extremes of climatic condition to lower peak stress on animal. It should also create a microenvironment inside the animal house, which protects the animal from stressful environment. Due to huge diversity in Indian climatic and topographic condition, housing need of the animals is different (Thomas and Sastry, 1991) in different areas. Housing requirement of animals in India is given least care and importance.

It was observed on separately keeping dairy animals up to 89% by (Sasane et al., 2012) in Palus taluka of Sangli district. (Sinha et al., 2009b) reported that 63.33% dairy owners in rural area of Bareilly provided bovine shelter that was part of the residence of the owner. Singh et al. (2015) observed that the shed were with Kachha floor and thatched roof is 75% in Jharkhand. (Roy and Nagpaul, 2007) who reported majority of cattle sheds to be with no walls, probably due to difference in place and periods of study. (Shinde et al., 2011) who reported that in Solapur area, buffaloes were mainly reared for family milk and fuel requirement. (Sasane et al., 2012) reported that the 61.22% of animal sheds in rural areas of Kolhapur district were provided optimum floor space to the animals housed. (Deoras et al., 2004) observed that higher number (98%) of animal shed had mud floor in rural areas of Rajnandgaon city of Chhattisgarh. But in urban areas only 47.1% of animals shed had mud floor, significantly higher number of (47.1%) of sheds had concrete floor and 5.5% had brick floor. They also found that the majority of animal sheds in rural areas had improper drainage, whereas, in urban areas 17.2% were using two row system. (Grewal et al., 1982) reported the lower growth in buffalo calves reared on dirt or kuccha floor against brick paved floor.

(Malik et al., 2005) reported in Uttar Pradesh that sizeable number of landless agricultural labour category were sharing their family accommodation with animals and bore well or hand pump was the main source of drinking water for animals.

Feeding management practices

Dairy industry in India faces acute shortage of feed supplies which causes low productivity and deficiency in animals. Inadequate nutrition is the single largest factor responsible for low milk production. Scarcity in concentrate feeds, green fodder and dry fodder in country limits the exploitation of the genetic potential of the animals, causing low production. Unscientific feeding practices, lack of knowledge of balanced ration etc., is a great obstacle in path of achieving optimum production (Bidwe et al., 2009) who also reported that 42.33% of the dairy farmers in Buldhana district of Maharashtra were provided green fodder to their animals throughout the year. (Biswa, 2014; Verma et al., 2007) who reported that both desi and crossbred cattle were fed on a basal diet mainly of rice straw throughout the year in Gangetic plains of West Bengal. (Kale et al., 2011) stated that majority (90%) of dairy farmers in Kolhapur area farmers fed concentrate regularly to their animal’s individual, majority fed compounded concentrate mixture and Feeding on milk yield was the major criteria for concentrate allowance to the lactating animals. (Shinde et al., 2011), who stated that only milking, cows and bullocks were provided with half to one kilogram of concentrate in Solapur district. (Sasane et al., 2012), who reported majority 100% of farmers in Palus thasil of Sangli district to feed the conc. mixture, farmers feed mineral-vitamin supplements for few days just after parturition or erratically as and when the milk production went down (Shinde et al., 2011) reported that in Solapur district, of availability of green fodder is 41.00%. And low availability of green fodder. (Kale et al., 2011; Sinnha, 2006) who reported that ingredients like oil cakes, broken grains, mineral mixture etc., were often farm produced or were bought from market. (Malik et al., 2005) revealed that milk production was the major criteria adopted by most of the respondents for feeding their animals. Availability of feeds and fodder.

Calf rearing management practices

Calf management practices are important aspect of dairy cattle management as a whole. Calves are considered as future herd. Calf-hood stage is crucial as it has direct effect on the future productive performance of the animal. No immediate gain often leads to negligence in calf rearing by farmers. Proper management and care of animals help to exploit the full potential of the animals at maturity (Sasane et al., 2012; Rathore et al., 2010) reported that all the farmers cared of calf at the time of calving. (Sasane et al., 2012) in Sangli and (Singh, 2015) in MP districts farmers practices were feeding of Colostrum within 2 hours of birth. (Sasane et al., 2012) who reported that the practice of deworming done was 83.63% of the cattle owners in palus thasil of Sangli district. (Singh et al., 2015) in MP 78.33% and (Wani et al., 2009) who reported a higher percent of farmers practicing vaccination of calf. (Thakur et al., 2012) reported that newborn death due to diarrhea was an important health issue in Himachal Pradesh. (Khatik, 1994; Meena et al., 2008) reported that majority of the respondents consulted priest or local quack or self-medication was the main practice for sick animals. A very few of the respondents called Veterinary Doctor or Stockman for the purpose of treatment of their sick animals. (Kokate, 1984) in Maharashtra reported in their study that majority of the tribal respondents did not practice Colostrum feeding, naval cutting and dehorning. (Bagga, 1967), reported in the villages of Hissar district that first suck to the calf was allowed by a majority between 2 and 3 hours after birth. Some respondents did not allow the calf to suckle till the placental membranes were removed. Some allowed the calf to suckle Colostrums believing it to be energy giving. Some extracted some quantity of it before allowing the calf to suckle. (Antony and Thomas, 1997) observed that the farmers left more milk in the udder at the end of milking or allowed the calves more time with the mother cow if the calf was female in Southern Kerela.
(Malik and Nagpal, 1999) found in Haryana that 94.4% of
the respondents attended the newly born calf and only
85.6% followed the practice of ligating/ cutting and
disinfection of navel cord. They also found that buffalo
keepers provided bedding material on floor (91.7%) and
put on jacketing (80.6%) to protect the young calves from
severe cold during winter season. Singh and Singh (2000)
observe in rural Haryana that majority of the respondents
go for suckling practice up to 6 months age of calf.
(Mudgal et al., 2003) observed in Madhya Pradesh that on
the basis of nutrients the most Neglected category was of
calves where 46.7% cow calves and 57.1% of buffalo
calves were not supplied their DM requirement. The DCP
supply was deficient in 80% cow calves and 92.9% of
buffalo calves.

Reproduction
(Singh et al., 2014) was reported that were 48.50% of
dairy farmers confirming their animal in heat on the basis
of bellowing in Madhya Pradesh. (Kumar et al., 2014),
who also reported that majority 94.25% of farmers
practiced natural service in Madhya Pradesh. (Kokate,
1984), reported that majority of the respondents (76.00%)
could identify a cow in heat by observing the symptoms
like bellowing, mounting on other animals and frequent
urination. Further, it could be observed that majority of
tribal cattle owners (66.00%) diagnosed pregnancy in the
advanced stage through external appearance. Major
constrains regarding feeding of dairy animals among tribal
dairy owners of South Gujarat were repeat breeding
(81%), low conception rate through AI (54.5%), belief that
per rectal pregnancy diagnosis leads to harm the pregnant
animals etc., as reported by (Sabapara et al., 2012).

Health management
Sound health is one of the most important factors for
getting optimum production. So, a need in following
modern scientific treatment and preventive measures
needs attention. However traditional/ ethno-veterinary
medicines that are potential and foolproof should be
highlighted and continued. (Kumar, 2014) observed that
HS vaccination was carried out by farmers 26.75% in
Madhya Pradesh and (Sasane et al., 2012) reported that in
Kolhapur only 15.45%. (Kumar et al., 2014) reported in
their study in Madhya Pradesh 30% of farmers to consult
the local assistant first and lastly veterinary doctor.
(Biswas, 2014; Rathore et al., 2010) who reported that
34.32% and 91.75% of farmers in West Bengal and in
Churu district of Rajasthan leave the carcass as such in the
open river/area.

Milking management
India ranks first in milk production with a production of
121.8 million tons (estimated milk production 2010-2011,
BAHS, 2012). About 70% of the milk is produced by
landless laborers, marginal and small-scattered farmers in
rural areas or unorganized sector with poor infrastructure
and accessibility of marketing. Milk being a perishable
commodity requires quick delivery for marketing and
processing. Proper marketing plays important stimulating
role for milk production and growth of dairy industry.
Major portion of the milk marketing is in the hands of
middlemen and unorganized sector while only small
portion is marketed through milk cooperatives in
organized sector. Unorganized marketing leads to flow of
profits of the milk producers into the clutches of the
middlemen and other intermediaries. Betterment and
strengthening of the marketing infrastructure will help the
producers to get remunerative price of their produce
directly.

It is also reported that Maharashtra state was generates an
about 1.6 crore litres of milk every day, out of which
Kolhapur district of western Maharashtra alone is
producing about 20 lakh litres of milk. As against this,
Vidarba region produces only 80,000 litres of milk per
day (Khode et al., 2009). In Konkan livestock rearing and
fishing are the other flourishing agricultural practices. In
livestock, the concentration is mainly on small animals
Dhangar and Maratha communities rear the Konkan

Age at first breeding of cattle and buffalo were as in case
of buffalo 36.40, (Shinde, 2011) and who reported that
88% of the milk produced in Solapur district is marketed
cooperative in irrigated area. (Sasane et al., 2010) who
reported majority 100% of cattle keepers milked their
animals at the same place after cleaning of teats and udder.
(Sasane et al., 2012) who also reported in Kolhapur
84.55% of dairy owner used clean utensils and 53.64% of
dairy owner required more than 7 minute for milking time.
(Atawade et al., 2005) concluded in rural areas of Akola
district that in the total cost, the variable cost was the
major item of cost, which accounted for 90.4% and the
share of fixed cost was 9.6%. (Bardhan et al., 2005)
observed in Tarai area of Uttaranchal that feed cost
constituted the 66.5% of total maintenance costs and
16.8% of total maintenance cost as labour expenditures.
Besides, these items of costs, veterinary expenditures,
depreciation and interest on fixed capital contributed
3.7%, 5.6% and 7.5% to the total maintenance costs
respectively. The also found that returns occurred mainly
from the sale of milk (97%). Sale of dung contributed
minute amount to total returns from buffalo enterprise
(3.3%). And it concluded in Uttaranchal that present status
of milk production from indigenous cattle is a highly
unprofitable and unviable proposition. They also reported
that, the farmers, in spite of poor genetic potential and low
productivity of the animals, were using various resources
in excess amount, which in turn pushed up the production
cost.

2.3 Milk and their economics
(Khode and Sawarkar, 2009) in their study of Vidarbha
Development Programme Package found that majority of
beneficiaries 65.12% had secured medium awareness of
improved dairy cattle management practices; while 18.60
per cent and 16.28% of beneficiaries had low and high
awareness of improved dairy cattle management practices,
respectively.

The most of milk collected from in rural area farmers by
keeping one or two dairy animals reported by
(Vaidyanathan, 1988). (Kumar, 1995) the 42.5% marginal
farmers have land holding up to 2.5 acre. Majority 45.71%
farmers were having small herd size up to 16 to 22 animals
reported by (Kannan, 2002; Rao et al., 2000; Das, 2010) A
Lactation milk yield for indigenous cattle ranges from
457kg to 1830kg/ per lactation A dairy farming in Assam
reported that average lactation yield of 215.96 ±6.62 liter
in indigenous cattle. (Prakash, 2009) In Haryana reported that avg. lactation length for local cattle was ranged from 7 to 8 month. (Biswas et al., 2014) A Majority of the farmers practiced two times milking with clean used wide mounted milking pails. (Malik et al., 2005) The Most commonly used method of milking was knuckling by 70% were as full hand milking was followed by only 24%. (Biswas et al., 2014; Singh et al., 2013) Majority 62 to 78% of farmers marketed their milk to the middleman or sweetshops. (Sinha et al., 2006), Total milk production cost per liter was 10.3, 10.4, 9.9, 11.1 and 11.8 Rs for landless, marginal, small, medium, and large farmers respectively and a profit per liter milk was Rs. 1.4, 1.1, 2.4, 0.8, and 0.7 for landless, marginal, small, medium, and large farmers respectively.

CONCLUSION
The study will help in identifying the socio-economic characteristics of farmers in the research area apart from the existing livestock rearing practices followed by farmers. The study will identify awareness among respondents about improved livestock rearing practices as well as help in identifying and prioritizing the constraints faced by farmers. This information will helpful for policy makers, government, NGO, concerned professionals, and other agencies working on cattle husbandry and rural development and will help in strengthening of development initiatives by different organizations and departments including government. The study reveals different managemental practices followed by dairy farmers in India and the gaps from the standard practices, the findings give a view of the current scenario of cattle rearing. In the first place, the dairy farmers directly contribute significant economic value to the country in the form of wool, milk, meat and other animal products.

REFERENCES


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