

## Comparison of Farm Animal Welfare in Different Dairy Production Systems in India

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After reading the editorial by Roy, *et al.* 2020, January issue (in press), I decided to write a detailed comment as I have the experience in working at the grassroots level in India for sustainable livestock development. It was a good editorial highlighting different production systems in India and, how we can improve farm animal welfare. Recently as part of my job, I am travelling to different States of India to look at different dairy sector production systems. My comments will reflect my experiences.

India has indeed diverse production systems depending on the region of interest (particularly across States). Five States that dominate the dairy production in India are Uttar Pradesh, Rajasthan, Gujarat, Punjab and Andhra Pradesh. Each of the region in India follow different style of production. I will discuss few examples for different styles of production system, how they are changing with time and new animal welfare issues are emerging with different production systems.

### Type 1

Farmers in Warangal region follow a combined crop-livestock production system where crop income is the main source of income for livelihood. Crop residues from their own field is used by these farmers to feed animals, along with some purchased concentrate feed. Some portion of the cropland is allotted to grow green fodder for the livestock. Recently, many farmers have started growing the improved green fodder like Napier, CO4, CO5, CO29 etc. in this allotted portion. Dung from their own animals is used as fertilizer for the crop production. In this region, contribution of dairy income for the family income is 20-50% depending upon the climatic condition. During the drought period when crop fails, farmers buy more dairy animals and contribution of dairy income may go up to 70%. When there is good rainfall, farmers sell some animals and spent more time in crop production. For the last 3-4 years, the scenario is slowly changing as the farmers realized that dairy income per acre of land is higher than crop income. Therefore, there is increased herd size from 1-2 animals to 3-4 dairy

animals. Dairy cooperatives run by women in this region is helping farmers to get good price for their milk. Some salient features of the type of production in the regions is as follows:

- More than 80% of dairy animals are kept by marginal and small farmers (<2 hectares of land holding and belong to lower caste like BC, SC and ST category)
- In these rural households, animals are taken care by women (70% of the labour), and they consider dairy farming and animal care as a lifestyle rather than a production system.
- The farmers here do not count the feed cost (as they produce fodder in their own field). Therefore, they perceive that they had a good income from dairy animals (crop-livestock system).

Welfare of animals produced under this system is relatively good when we measure according to the Five Freedoms of farm animal Welfare. When family labour is involved in animal husbandry activities, they do not compromise on animal welfare. They take animals along with them when they go to cropland to work and they allow free grazing for 1-2 hours and sometimes they follow loose housing in their premises with long rope.

### Type 2

Another region I work with is the Gujarat region. Here, there is huge transformation of dairy production system taking place due to AMUL cooperative system and great support for extension and technology (feed, breed and animal health). Intensive dairy production is taking over the traditional combined crop-livestock production system.

Recently visit to a dairy production unit in this region showed the following characteristics. The farm owner had 4 acres of land and invested for dairy farm with capacity of 300 cows. All the animals are Holstein Friesen breed cows brought from Punjab. One manager, two supervisors and 5 laborers together manages this farm. The farm supplies the milk to AMUL cooperative every day

(approximately 1000-1200 litres). Some of the other features of the farm are

- This farm buys all inputs from outside (silage, feed, animal health products, breeding associated supplies such as AI).
- Animals are considered as assets which produces the product "milk"
- No women from the family visit this farm as they are from high caste community.
- Facing severe problem of getting enough fodder for the cows, as he have to buy complete feed supply from outside all through the year.

Welfare issues are much higher in this system. Since nobody from family is involved in animal care, standards of animal care and husbandry in farm operations are minimal. Mastitis and lameness are very common. Male calves looked starved and emaciated without much care. Female calves were fed with purchased milk powder than mothers' milk. Animals are grouped according to stage of lactation. Dry animals which are not milking were not provided proper nutrition.

### Type 3

I visited another farm which manages 26 dairy animals in 6 acres of land in the same region as type 2. This farmer has taken dairy farming as his livelihood with passion. He has kept all animals in group with loose housing. His mother comes every morning for monitoring the milking and cleaning work. They have kept one labour to clean and milk the animals. Both male and female calves are taken care equally and his mother says its sin to leave them to die- their calves are attaining first estrus at 12-14 months due to good feeding. No external inputs such as fodder is bought from outside to this farm except concentrate feed. This farmer used his 6 acres land for fodder production and some part of land for his own food production. No mastitis or FMD in his farm for last 5 years.

### Closing remarks

In the type 2 and type 3 farms, we can see the clear difference in welfare status mainly caused by the type of production system followed. When the farm is run as a family livelihood option rather than business entity, animal welfare appears to be better and the production system is more sustainable.

There are no proper guidelines for farm animal welfare in India. There is huge subsidies for larger intensive production system, which can lead to significant risk for welfare to the farm animals.

Alternative small farming system are not promoted enough by the government. Large farms, which are subsidized by government, are not mandated to provide loose housing for cows, which can affect their welfare status. Intensification can be good but can be promoted in a systematic fashion. One way to do it is to promote family based crop-livestock system so the marginal and small farmers can increase their herd size thereby animal welfare will not be compromised. This will also help to alleviate poverty and malnutrition issues in vulnerable communities.

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