

# Living on local cattle in Kerala

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In Kerala in southern India, crossbreeding of local cattle with temperate breeds has been taking place for the last two decades as part of the "White Revolution" or "Operation Flood" programmes funded by various European countries. This could lead to the near extinction of indigenous breeds of cattle.

The crossbreeding programme does not have uniform coverage all over the state. Because of the lower rate of success in northern Kerala, some villages there still depend on local cattle. Case examples are given here of two farmers in Palakkad District in this region.

## A poor farmer

Mr Velu has 5 cows and 3 calves. The cows produce on average 3 litres of milk per day. The cattle eat the rice straw produced in his one-acre paddy field and food wastes, including water used for cooking rice for the family. In addition, the animals graze for about 3-4 hours daily beside irrigation canals and on nearby uncultivated land.

Rice straw (45 \$US), food wastes, herding (36 \$US) and husbandry labour (36 \$US) together cost a family annually 117 \$US. Earnings consist of milk sold (110 \$US), milk consumed (55 \$US), cowdung sold (75 \$US), cowdung used on farm (45 \$US) and surplus animals sold (30 \$US), amounting to an annual total of 315 \$US. The net profit is thus 198 \$US. No money is spent for breeding, as cows mate with local bulls during grazing. Except pasture, no off-farm inputs are used. The cost of the rice straw eaten by the cattle equals the cost of dung used for paddy production. Most villagers of this part of Kerala depend on organic manure for rice growing and use little chemical fertiliser.

Female family members wash and milk the cows as part of their housework.

Herding is the task of an old and disabled family member who is unable to do hard cultivation work. Thus, the old man can play a useful role in supplementing the income needed for family subsistence.

The dung produced by Mr Velu's cattle is more than enough for his paddy field. The surplus is sold to other farmers, fetching \$75 per year. By selling milk in the neighbourhood, the family generates an annual cash income of \$110. In addition, the family of 8 adults and 3 children consumes a total of one litre of milk per day.

Because of the reliance on natural mating and the low number of bulls in the neighbourhood, the herd grows very slowly: a cow conceives only once in 2.5-3 years. The family occasionally sells either an old cow or a young male calf for slaughtering. (In Kerala, unlike other parts of India, beef eating is common.) Sometimes they may sell a young cow to another farmer; this brings about the same income as an animal sold for slaughtering. The family earns \$30 by selling one animal per year.

The cattle thus provide the family with milk and organic manure as well as an annual cash income of \$215. This is slightly higher than the average annual income of a farm labourer in India. Accounting for the labour cost of the woman and old man who care for the animals (on the basis of the wage rates in Kerala for similar part-time services), the net profit gained by the family from keeping this small herd of local cattle comes to \$198.

## A middle-class farmer

Mr Bhaskaran has a relatively large holding of 5 ha in the same village. However, he keeps only one cow and a calf, mainly to produce milk for his family, and two bulls for ploughing. A small additional income from milk sales is not very attractive to this farmer. As in the previous case, the cattle consume rice straw, food wastes and cooking water. The straw harvested from

a 4-acre field is eaten solely by these animals, the bulls taking the major share. The animals depend fully on on-farm resources. They are allowed to graze only on the family land.

The cow yields an average of 1.5 litres of milk per day for about 9-10 months of one year, while the following year is a lean period because of delayed conception. During lactation, the cow is fed with gruel made of 300 g rice per day plus about 100 g coconut cake (remains of coconut after extracting oil) to improve the protein content. Thus, home-grown products like rice (carbohydrate) and coconut cake (protein) are converted into milk to improve family nutrition. When she is dry, the cow is given only food wastes, cooking water and a small share of rice straw.

## Draught at no extra cost

Bulls provide draught power by consuming on-farm materials which cannot be consumed by the family. A money value needs to be put only to the rice straw eaten by the bulls. This cost (about \$50 per year) roughly equals the value of the dung produced by the bulls.

The extent to which animal draught is used in an area depends on many factors like intensity of farming, availability of family labour, cultivation practices etc. Tractors are widely used in paddy fields, but Mr Bhaskaran uses the bulls to plough his upland fields, where farming is done with relatively low intensity and the work can be scheduled according to the availability of family labour. Farming operations are not confined to short seasons, and many combinations of perennial and seasonal crops are cultivated on these lands.

## A case for crossbreds?

These two cases of farmers in different wealth classes show that their animal husbandry practices are very much integrated into family life. Each family, in its own way, is making good use of local natural (including human) resources. Introduction of crossbred animals, without an understanding of the existing socioeconomic functions of the animals and the roles of different family members, could lead to unwanted effects.

The primary aim of this article is not to compare the economics of local and crossbred cattle. However, comparing the practices involved in keeping them (Table 1) gives some food for thought, particularly with respect to the use of local and external inputs and the dependencies to which farmers could be subjected.

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	Local	Crossbred
Mating	Natural while grazing	Artificial insemination/breeding with selected bulls
Pregnancy care	Family care/herbal medicines	Modern drugs & vet care
Food	Rice straw/natural pasture/water used in cooking/food wastes	Need purchased fodder & concentrates, sown good-quality fodder, hay
Milking	Female family members	Paid skilled labour
Washing/daily care	Women/elderly members	Bigger size of crossbreds makes them difficult for women to handle/time of male member or hired labour needed
Use of milk	Domestic consumption/sales to neighbours	Need centralised marketing and dairying facilities

Table 1: Practices in keeping local vs crossbred cattle