

# CRISIS OF DAIRY FARMING IN RUHUNA-AN OVERVIEW

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## INTRODUCTION

When modern development progresses, traditional economic activities run into crisis. Dairying which has been a traditional economic activity in Ruhuna, has recently run into a serious crisis. The present study is an attempt to examine the crisis of Ruhunu dairying with a view to identifying its background and nature, and to suggest guidelines for possible solutions.

## METHODOLOGY

This study is based on the results of a survey which was conducted in the Magampattuwa or Magampura (Eastern part of the Hambantota District) which was the centre of the ancient Ruhuna kingdom<sup>1</sup> (Fig. 1). This survey involved a review of the relevant documents and records available in the Hambantota District Secretary's Office, the office of the Hambantota Integrated Rural Development Project (IRDP) and the Veterinary Office at Hambantota, informal discussions with key informants, group discussions, informal interviews, site visits and observations. Discussions were also held with 24 randomly selected dairymen and 5 curd vendors.

## STUDY AREA

Magampura lies in the South eastern Arid Zone of Sri Lanka where intense heat and dryness are the main characteristics of the climate. The mean annual rainfall is 1000 mm. of which 760. mm. fall in the wet season (*Maha*: October—March) and 240 mm. in the dry season (*Yala*: April—September). The mean monthly temperature ranges from 26 c to 28 c. Most of the area is flat or gently undulating. The rivers that flow through this area show high seasonal fluctuation in water level. During the wet season, water level of some rivers rises, sometimes causing floods but they dry out during the dry season. The climatic condition prevailing in this area restricts the growth of forest, so the thorny scrubland is the dominant type of natural vegetation.

Because of the insufficient and erratic rainfall, paddy cultivation is virtually impossible without irrigation. Therefore, the early settlers who

migrated from the northern part of the island to Ruhuna, developed a widespread irrigation network in this area. Apart from the large scale irrigation tanks which were built up by constructing embankments across the rivers (i. e. Tissa Wewa, Yodha Wewa, and Debara Wewa) hundreds of small scale village irrigation tanks were also built up in order to store rain water. All human activities were centered around these large and small scale irrigation tanks. When the Ruhunu kingdom began to decline in prosperity by end of the 12th century, these irrigation systems were ruined. The present progress of this area commenced in the mid-20th century with the restoration of ancient irrigation tanks and the construction of new irrigation projects and colonization schemes. At present, as it was in the past, all human activities are centered around irrigation tanks. In every village, while paddy is cultivated in the lowland area below the tank, shifting cultivation is practised in upland unirrigable lands. Domestic animals, mainly cattle and buffaloes are fed on free fodder available in the jungle in the catchment area of the village tank and upper tank bed during the cultivation period and on the paddy residues available in the harvested paddy fields during the fallow period.

## RESULTS AND DISCUSSIONS

### Historical Background of the Crisis:

Under the traditional system of dairy farming, cattle and buffaloes were kept for milk as well as for draught power. Ownership of animals was confined to a few in every village, and the herd size of an individual was as large as 400-1500 heads. While lactating cows and calves were kept within the village throughout the year, non-lactating cows and male animals were allowed to live in jungles except the period during which they were used for paddy land preparation. At the end of the land preparation, all male animals and non-lactating cows were driven deep into the jungles. They returned only after the paddy was harvested. For the use of lactating cows and calves, every herdsman used to maintain a cow-pen. Cow-pens were generally located behind the village irrigation tank somewhere between the upper store-level of the tank and the jungle which was preserved in the catchment area of the tank. Every evening calves were locked in the cow-pen and cows were driven into the jungle for grazing. After night grazing, cows returned to the cow-pen at dawn. Milking was done every morning and both cows and calves were released to graze in the open spaces around the tank store levels during the day time. While men did the milking and herd management, women produced and marketed curd. The produced curd was sold to the local consumers or to the middlemen who collected

and transported curd to the urban markets. Along with animal husbandry some dairy families did chena and paddy cultivation. Since animal husbandry and crop cultivation was interrelated and mutually benefited there was no tension between the crop cultivators and dairymen.

#### **Beginning of the Crisis:**

This traditional dairy farming system has under gone severe major changes since the mid-20th century. When tractors were introduced, bulls and buffaloes were in less demand for paddy land preparation. Therefore, there were large stock sales of male animals for meat mostly demanded by the urban consumers, rapidly depleting the male animal population. Such a herd reduction was also induced by the rapid dwindling of grazing lands following the development of large scale irrigation and settlement projects, rehabilitation of existing ancient tanks, and other human activities brought about by various development programmes. In response to these changes, the dairymen made at least three different adjustments — Jungle Based Dairying, Village Based Dairying and both Jungle and Village Based Dairying.

- (1) **Jungle Based Dairying:** Some dairymen, leaving the families in the village, moved with their cattle herds into the jungles and remained in far away localities. They, having built up cow-pens (*gāla*) and temporary huts (*wādiya*) near the abandoned tanks which they found in the jungle, started to feed their herds in the jungle in the same way as they did in the village. Such dairying can be found in the upper catchment area of the Lunugamvehera reservoir, Kadawarawewa, Amarawewa, Bundala and Yala sanctuaries. However, due to the absence of female family labour in the new grazing locations, they are unable to produce curd. Hence, they sell fresh milk to other curd producers or to the Milk Collecting Centres.
- (2) **Village Based Dairying:** Some dairymen who were unable to leave their families, immovable properties and other gainful activities in their villages, reduced the size of their herds, to the extent that they could feed with the resources available within the village. In this case, in order to prevent the animals from damaging the crops, the grazing animals have to be kept under the supervision of herdsmen during the day time and confine the animals to pens during the night. Those farmers who resort to this practice are able to produce curd, using the available family labour.
- (3) **Jaungle and Village Based Dairying:** Some dairymen, in response to the increasing shortage of grazing land, adopted the practice of seasonal migration. During the wet season they feed their herds in

the jungles of distant locations, and during the dry season when paddy fields are in fallow they migrate to the paddy farming areas to feed the animals on paddy residues. Animals are kept at night in the temporary cow-pens put up in the village. These migrating dairymen too do not normally produce curd due to the absence of female family labour.

### **The Crisis:**

The present crisis of dairy farming has two dimensions. One is the reduction of grazing lands due to a wide range of development activities. The other is the increasing threat of the cultivators to village cattle damaging the fields which are poorly enclosed. These issues are mutually inclusive. The mass clearing of jungles and scrublands which were traditionally the grazing grounds, to develop irrigation and settlement projects such as Uda Walawe, Chandrika Wewa, and Kirindi Oya Irrigation and Settlement Project has drastically reduced grazing lands. Under the Kirindi Oya Irrigation and Settlement Project alone more than 5000 ha of jungles and scrublands were cleared. It seems that the project planners have failed to identify the importance of these jungles as grazing lands for the very existence of Ruhunu dairying. They have neither consulted the dairymen who used these jungle areas nor have made any attempt to integrate dairying with crop farming in the newly developed irrigation and settlement projects.

As the population pressure on land increased, more and more people became marginal or landless compelling them to encroach on remaining jungles and scrublands. The district administration committed to enhance local food production and employment, appeared to have ignored the spreading unauthorized chena cultivation. As a result, chena extents expanded haphazardly in the already limited extents of jungles and scrublands left for grazing. These chenas are generally not protected with strong fences to keep roaming cattle out. Even though these chenas were unauthorized cultivations the chena cultivators could claim compensation for crop damage from the cattle owners. The district administration again loaded the dice in favour of the crop growers when compensation was demanded from the cattle owners.

In the past, farmers were considered to be responsible for erecting fences around their farms to protect their crops from the trespassing cattle and buffaloes. This was the accepted practice because the very same farmers are often the individual users of cattle in the village cattle herd. To protect both cattle and crop the best compromise has been the protection of cultivated plots with strong fences erected around them. This tradition has now changed (Tennakoon, 1986). Now, the

cattle and buffalo owners are considered to be responsible to keep their animals away from the crops regardless of the fact that the crops are fenced or not. But it is extremely difficult in a situation where there is not strict enforcement by law to properly fence the unauthorized chenas widespread in the jungles and scrublands which have traditionally been used by the local dairymen for grazing their animals. The prevailing law being in favour of the crop growers compensation for crop damage has become a major cost item in dairying in the area. It is also evident that there is no proper method or accepted regulations to estimate the value of crop damage in case of such a claim. In some cases, the crop damage is estimated by the *Grāma Niladhari*<sup>2</sup>, in some other cases it is done by the head of the local police station or the chairman of the local Peace Committee whose personal judgements are often prejudicated by the ubiquitous "grow more food" slogans.

Prior to the development of modern irrigation and settlement projects, there was a network of small irrigation tanks which enabled the domestic animals to find water within a rather short distance. Small village tanks and canals provided ideal water bodies for buffaloes to wallow. When modern large scale irrigation systems were developed, most of the small village tanks and associated canals which were within the command of the newly constructed large irrigation reservoirs, were destroyed, levelled and developed for paddy fields. Evidence for this can be widely found within the Kirindi Oya Irrigation and Settlement Project. When the new irrigation system was designed and constructed, the planners have failed to identify the requirement of water for the existing cattle and wallowing sites for the buffalo population within the project areas. Canals were also constructed across the traditional cattle paths (*harak mannila*). Consequently the roaming cattle and buffaloes have become another problem because they cause heavy damage to the canals when they get into and get out of the canals. The administration's solution was to order the dairymen to remove their animals from the project area or to pay compensation for the damages caused to the canals by the animals. It would have been better if the administration decided to allocate alternative lands outside the projects for grazing and other dairy farming herds.

As mentioned earlier, the dairymen who had evacuated their animals from the project areas migrated into jungles and scrublands left outside the projects. They put up cow-pens near some abandoned small tanks since water was essential for dairy animals. However, as unauthorized chena lands spread upon the catchment areas of these tanks, siltation in the tanks increased which resulted in reduced water holding capacity. The consequence is that most of the remaining small tanks completely dry out during the long dry season. In some cases, though a little amount of water remains in the tank bottoms during a dry season, it

gets polluted with the concentrated organic matter, and becomes unsuitable for consumption. The cattle being unable to drink such polluted water often resort to walk long distances in the hot sun in search of water causing weight loss and milk reduction of animals.

Though the planners failed to identify the consequences of the mass destruction of the habitat of dairy animals, they hurry to identify the possible consequences of the destruction of the habitat of wildlife. In addition to the existing wildlife sanctuaries in Yala and Bundala, the upper catchment area of the Lunugamvehera reservoir has been declared as a wildlife sanctuary. This has been used as a grazing land by hundreds of dairymen who evacuated their animals from the Kirindi Oya Irrigation and Settlement Project Area. This area is located away from the cultivated areas, has good pasture and several abandoned tanks which can be used as water holes capable of quenching the thirst of the cattle. In fact, some tanks have been renovated by dairymen to hold drinking water for animals. Nevertheless the Department of Wild Life Conservation sees that the dairymen vacate the vicinities of these water holes leaving them for the benefit of wild animals. This causes a serious threat to dairying.

Though curd and milk requirements of most people are being met by these dairymen, as these roaming cattle and buffaloes cause a threat to cultivation practices, dairymen are being increasingly accused of not maintaining satisfactory vigilance over their animals. Public resentment of dairying is well demonstrated in the increasing complaints made at the local police station. Farmers, irrigation and administrative officials connected with the large scale irrigation projects, general public and motorists, complain against the roaming cattle and buffaloes. When achievements fall short of development targets the plan implementors try to make dairymen the cause of such failures. Once, a crop failure in a certain irrigation and settlement project in this area was attributed to the roaming cattle and buffaloes! Often the creators of the problem, use their own creation to cover their failures. Dairymen are being increasingly harassed by the police as well. This has been reported from some areas as the main reason for the abandonment of dairying by large number of dairymen.

#### **Quest for a Solution:**

The current predicament of the dairy farmers amply demonstrates the likelihood of dairy farming in Ruhuna disappearing in the near future. Some thoughtful and workable solutions have to be soon found out to prevent the collapse of this activity. It is very necessary to determine: a) sustainable feeding system, d) herd size and quality, and c) integrating dairy and cropping system. The use of free fodder under

the grazing in jungles and scrublands is no more practicable in this area. Therefore, a new and alternative feeding system has to be introduced. Such an alternative system should be in consistent with the changing land use pattern, cropping system and socio-economic conditions in the area. In the past when large extent of communal grazing lands were available, large herds were manageable but keeping such large herds is not practicable under the present situation. Hence, the herd size should also be reduced to the level which the dairymen could manage with their own resources. At the same time, quality of herd should be improved if the income from dairy farming is to be maintained at a satisfactory level. Any reduction in herd size without quality improvement of animals would substantially reduce the herd income. A crop-livestock integrated farming system is necessary to diffuse the tension between farmers and dairymen and to enhance their income.

In view of the changing situation, it can be suggested that any alternative feeding system: a) should not exclusively rely on fodder naturally grown in jungles and scrublands, b) should not allow animals to stray in search of fodder and water, c) should rely on locally available, low-cost feeds, d) should be capable of enforcing proper control over health, sanitation and breeding practices, and e) should have a proper feeding system which could feed animals with a balanced diet throughout the year (Ulluwishewa, 1989). It seems that the stall-feeding system which involves animals being kept in sheds and fed with cut-grass, crop residues, tree fodder and concentrates may be appropriate.

However, stall-feeding system involves too much of work viz, cultivation, harvesting and preparation of fodder, supply of water for animals and cleaning of sheds etc. Labour requirements will increase with the size of herds. Hence, maintenance of large herds under the stall-feeding system would not be economically viable and practicable unless the animal productivity and income generating capacity is substantially high. Any programme aimed at the transformation from the traditional feeding system to the stall-feeding system would encounter two major constraints.

- 1) Dairymen will not be prepared to adopt the stall-feeding system due to the heavy labour and capital involved in it because in case of such a shift, the cost is likely to exceed income.
- 2) They will not be prepared to reduce the herd size because any reduction in herd size will drastically reduce the herd income because of the extremely low productivity of animals.

Therefore it seems that the strategy should be the simultaneous action for the promotion of the milk productivity of animals and the reduction of herd size. Such a strategy is necessary to reduce the herd

size without affecting the milk production and the herd income. In any herd, as the number of high-productive animals rises the herdsman can be expected to reduce the herd size disposing the low-productive animals. When the herd size becomes small and the herd income rises, the herdsmen will positively respond to the programmes aimed at the transformation from the traditional free grazing system to the stall-feeding system.

At present, dairying and crop cultivation are being practised independent from each other. There is only little or no integration between crop cultivation and animal husbandry. However, integration is necessary if the total farming system is to be sustainable because such an integration would benefit both enterprises, crop cultivation and animal husbandry and also it would permit the intensive utilization of all locally available resources. To achieve such an integration between crop cultivation and animal husbandry, measures should be taken to re-popularize the use of animal draught power for farm operations, the use of cow-dung as fertilizer, and the use of paddy straw as animal feed. Crop-livestock integration would also contribute to defuse the tension prevailing between crop cultivators and herdsmen.

## CONCLUSION

However, the measures aimed at the reduction of herd size, promotion of herd quality and the integration of crops with livestock produce only long term results. Under the present circumstances, due mainly to the increasing scarcity of grazing lands, dairying in this area is unlikely to exist until these long term measures produce their expected results. Therefore, high priority should be given to take immediate measures to allocate grazing lands, at least as a temporary measure, at suitable locations to sustain the Ruhunu dairying.

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**Foot Notes:**

(1) **Ruhuna:** The kingdom of Ruhuna or Rohana changed its boundaries from time to time. At certain times it was restricted to a small area around Tissamaharama and at other times it extended from Walawe river to Batticaloa. Ruhuna established itself as a kingdom only after King Mahanaga (brother of King Devanampiyatissa) who left Anuradhapura and took up residence at Ruhuna. He laid the foundation for the progress of this region by building a network of irrigation system. He made use of Kirindi Oya to build Tissa Wewa, Yodhawewa, and Debara Wewa and transformed the surrounding area into fertile fields. Consequently, a number of kings such as Dutugemunu (161-37 B. C.), Walagambahu (103 B. C. - 89 B. C.), Vassabha ( 76 - 111 A. D. ) Gajabahu ( 114 - 36 A. D. ) and Parakramabahu I ( 1153 - 86 A. D ) contributed their services to the prosperity of Ruhuna by building a vast network of irrigation reservoirs. The kingdom of Ruhuna began to decline in prosperity by end of 12th century due to internal instability and foreign invasions.

(2) **Grama Niladhari:** Village level officers of the district administration.

Fig:1

