IMPACT ASSESSMENT OF DAIRY FARMING ON LIVELIHOOD OF POOR RURAL FARMERS

ThangaThamilVanan*

N. Kumaravelu*

B. Nishanth *

P.R. Nisha*

Abstract

Animal husbandry activities have been identified as a tool for the upliftement of the rural poor farmers. In India where the dairy production is mostly from the small dairy farmers who have dairying as a subsidiary to agriculture or main activity, studying the present scenario of the farming systems will show the impact of the dairy farming on the livelihood of the rural poor farmers. Hence this present study was undertaken with the help of World Vision, a non-government organisation and data on various aspects of dairy management were collected and analysed and conclusions were drawn for the upliftement and sustainability of the rural farmers.

Key words – *Animal Husbandry, Management, Rural farmers, Sustainability, Upliftement*.

* Department of Livestock Production and Management, Madras Veterinary College, Chennai, Tamil Nadu

Introduction

Dairying is a livestock enterprise in which small-scale farmers can successfully engage in order to improve and sustain their livelihoods. Regular milk sales also allow them to move from subsistence to a market based income (Johnson, 1985). The milk production in India is largely from small holders farming systems. Dairying under small holders system may be subsidiary or main activity of the family. Studying the present scenario on existing farming systems and benefits will throw light for future development in this sector (Rushton et al. 1999).

Many of the charitable Non-Governmental Organisations (NGOs) has identified animal husbandry activities as a tool for social upliftment of the rural poor. However, the selection of the species, mode of implementation and scientific management practices vary according to the place of operation and the implementing agency. Documentation of the activities undertaken by various agencies and assessment of its impact will help to emulate successful practices and to correct the lacunae in existing cases. Hence the present study was aimed to document the existing husbandry practices and benefits from small scale dairy units.

Materials and methods

The present study was conducted in three villages of Mannargudi block in Cauvery delta agro-climatic zone of Tamil Nadu. A total number of sixty farm house holds maintaining cross-bred cattle were identified. All the dairy farmers were the members of "World Vision" - a non-governmental organisation which provided loans for procurement of dairy cows. The data on various aspects of milch cow management were collected with a structured and pre-tested interview schedule and personal observation. The data collected were subjected to standard statistical procedures to draw meaningful conclusions.

Results and Discussion

Table 1. Family size and Land ownership pattern of dairy farmers

S. No	Family size	Per centage
1	Small families (< 5 numbers)	75 %
2	Large families (> 5 numbers)	25 %
	Land ownership pattern	
1	Landless farmes	55 %
2	Marginal farmers (less than 2.5 acres)	31.66 %
3	Small farmers (2.5 to 5 acres)	15 %

From the study it was found that 75 per cent of dairy farmers had small families (less than 5 members) and 25 per cent had large families (more than 5 members). Out of the total farmers, 55 per cent were landless, 31.66 per cent were marginal farmers and 15 per cent were small farmers. (Table 1)

Dairying was reported to be subsidiary occupation by all the farmers. Livestock ownership pattern in the study group farmers are presented in Table 2.

Table 2. Livestock ownership pattern of farmers in the study group

S. No	Species	Mean herd size	Range
1	Cattle		
	Non-descriptive	1.70 ± 1.55	0 – 5
	Cross bred	2.48 ± 1.13	1 – 6
2	Goat	1.50 ± 2.99	0 – 10
3	Sheep	0.07 ± 0.56	0 – 4
4	Chicken / Poultry	8.86 ± 7.40	0 – 30

From the study it was found that the mean herd strength of non-descriptive cattle was 1.70, mean herd strength of cross bred cattle 2.48, and the mean herd strength of goats, sheep and poultry were 1.50, 0.07 and 8.86 respectively. Similarly the total number of animal species for each household varied considerably. For non-descriptive local cattle the range was from 0 to 5. For cross bred cattle it was 0 to 6, for goats it was 0 to 10, for sheep 0 to 4 and for poultry it was 0 to 30.

Economic contribution of dairy animals to the farmers are presented in Table 3.

Table 3

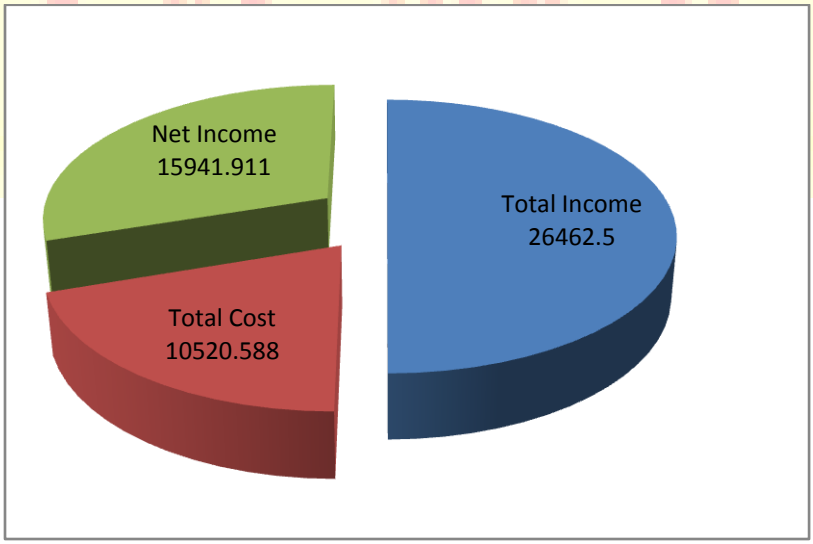
Contribution of livestock and milk per household

S.No.	Livestock Contribution (Mean / household)	In Litres / household	In Rupees / household
1	Milk yield / day	5.76 ± 1.28	-
2	Milk consumption / day	1.5 ± 0.34	-
3	Income from milk/day	-	72.5 ± 19.55

4	Income from milk/month	-	2175 ± 586.72
5	Income from milk/year	-	26462.5 ± 7138.52
6	Feed cost / day	-	28.82 ± 4.80
7	Feed cost / month	-	864.70 ± 142.19
8	Feed cost / year	-	10520.58 ± 1753.07
9	Net income / year	-	15941.91 ± 5840.55
10	Cost of purchase of cow	-	20039.21 ± 1896.95
11	Present value of cow	-	40254.90 ± 3267.06
12	Present value of calf	-	16862.74 ± 3995.09
13	Present livestock contribution	-	73059.56 ± 9426.884

The mean milk yield per day per house hold is 5.74±1.28 lts and the milk consumption is 1.5±0.34 lts per day per house hold. The mean income from milk per day, per month and per year is Rs 72.5±19.55, Rs 2157±586.72, and Rs 26462.5±7138.52 respectively. Similarly the feed cost per day is Rs. 28.82±4.80, per month is Rs. 864.70±142.19 and per year is Rs. 10520.58±1753.07. The mean net income per year is Rs. 15941.91±5840.55. The mean cost of purchase of cow was Rs 20039.21±1896.95. The mean present value of the cow and the mean present value of the calf were found to be Rs 40254.90±3267.06 and Rs 16862.74±3995.09 respectively. The mean present livestock contribution per house hold is found to be Rs. 73059.56±9426.884.

Fig 1. Comparison of Total Income, Total Cost and Net income by Pie chart



The above chart shows that the mean total income per household is Rs. 26462.5. The mean total cost is Rs 10520.58 including the feeding cost and other miscellaneous cost. The net income per house hold per year is found to be Rs. 15941.91

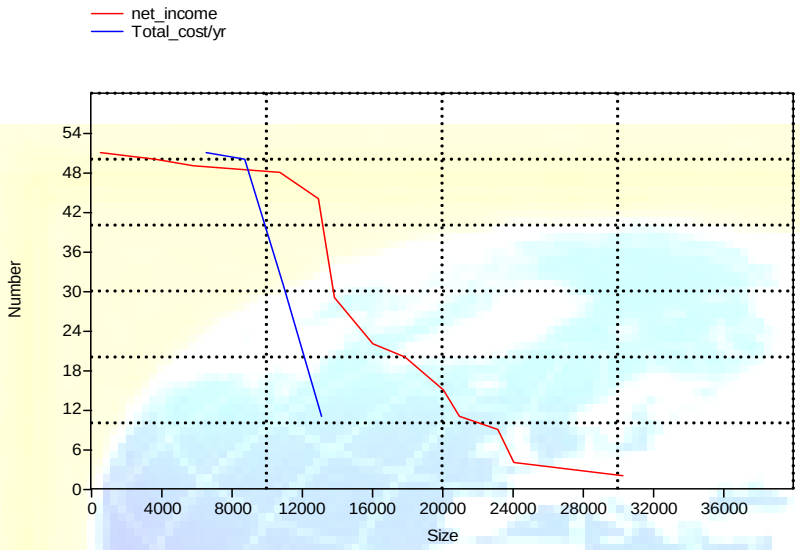


Fig 2. Graph representing the total Diversity profiles of net income and total cost, with a lowest cost high income achievement

The above graph shows the variation between the total cost and net income. While the total cost involved ranges from 8000 to 12000, the net income extends upto 30000 per year.

Small scale rural dairy farmers do have the potential to reduce the cost of milk production to the level of the larger farms. They could thereby achieve an income from dairying that provides higher returns to labour than the prevailing minimum wage rate in the area and fully cover their production costs (Hemme et. al.). Thus small-scale farmers in rural areas theoretically have the potential to run a profitable dairy enterprise, which generates employment for family members, especially women, and significantly improves their living conditions (Somda et al, 2003). In order to manage the production risks faced by rural small-scale dairy farmers and to realize the potential of dairy production as a means to reduce poverty, farm productivity has to be raised (Tabor, 1992). Raising productivity of dairy farms and mitigation of their production risks requires the availability of improved breeding services, targeted preventive animal health care and better feeding strategies (Williams et al, 1999). As long as small dairy producers are not an organized and active interest group, dairy and related sector policies will be driven by other factors which may have conflicting interests. Building the capacity of producers to act on their own behalf is therefore essential for improving poor producers' welfare.

SWOT Analysis

Strengths:

- Availability of family labour
- Nil labour cost
- Net income
- Contribution from livestock

Weakness:

- Non-availability of green fodder
- Absence of scientific management practices
- No knowledge of milk products
- Absence of marketing

Opportunities:

- Preparation of concentrate feeds using locally available ingredients
- Adopting scientific management practices for sustained livestock production

Threats:

- No marketing channels
- Non-availability of basic requirements like water, electricity, transport, banks etc.
- Poor scientific knowledge

Conclusion and Recommendations:

From the above study the following suggestions can be implemented to increase the livelihood of the small holding dairy units

- Home/Community based fodder banks shall be established for providing green fodder throughout the year.
- Farmers shall be trained for preparing home based concentrate feeds by using locally available feed ingredients.
- Importance shall be given to animal insurance
- Scientific management practices shall be implemented for sustained milk production during the hotter months.

- Value addition of milk can be explored.
- Community bio-gas units can be established.
- Organic products like Pancha Kavya, vermicomposting may be explored to increase the revenue.
- Dairy farmers' self help groups may be established.

References:

Hemme, T., O. Garcia., and A. Saha. *A review of Milk production in India with Particular Emphasis on Small-scale Producers*. Pro-Poor Livestock Policy Initiative (PPLPI)

Johnson, D. T., 1985. The Business of Farming: A Guide to Farm Business Management in the Tropics. Macmillian Publishers Ltd, London and Babingstone.

Rushton, J., P. K. Thonton., and M. J. Otte., 1999.Methods of economic impact assessment.The economics of Animal Disease Control, vol. 18 No2. Pp. 315-338.

Somda, J., M. Kamuanga., S. Munstermann., A. Bittaye., 2003. Socio-economic characterisation of smallholder dairy systems in the Gambia: milk production, marketing and consumption. Socio-economic Research Working Paper I. ITC (International Trypanotolerance Centre), Banjul, The Gambia, 61 pp

Tabor, S.R., 1992. Agriculture in transition: In Booth, A. (Ed), The Oil Boom and After: The Indonesian Economy during the 1980s. Cambridge University Press, Cambridge, England.

Williams, T. O., P. Hiernaux, S. R. Fernandez., 1999. Crop-livestock systems in sub-Saharan Africa: Determinants and intensification pathways. International Food Policy Research Institute, Washington, DC, pp. 132-151.