ROLE OF DAIRY INDUSTRY IN RURAL DEVELOPMENT

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ABSTRACT

The advent of dairying has been a boon for dairy farmers and of particular importance to those segments of the society that have been traditionally weak, the small landholders, landless labourers and women. It has provided a year-round source of income for people who previously could only depend on payments from small seasonal crops or from occasional labour. It is estimated that up to 60-65 percent of the income of this group (marginal and small-scale farmers) now comes from dairying. Studies have shown that dairying in rural areas surpassed crop production in terms of profit in marginal, small and medium-sized holdings. For small-scale farmers with irrigated land, dairying and crop production together, were more profitable than crop farming alone. Over the period, dairying has also acquired the contours of a fully-fledged industry in the country and has positively improved the life of those engaged in this business, directly or indirectly, bringing significant socio-economic changes.

The Indian context for Dairy

Indian agriculture is an economic symbiosis of crop and cattle population. Millions of rural smallholder milk producers dominate India’s dairy industry, contributing 62 percent of total milk produced in the country. The milch animals are fed on crop residues and milch animal dung is used as manure for crops.

Livestock plays a vital role in the economy; animal husbandry is the most important economic activity in rural areas. The dairy sector today provides 80 million farm households with the triple benefits of nutritive food, supplementary income and productive employment for family labour, mainly for women. Animal husbandry provides self-employment to millions of households in rural areas. Dairying with crossbred cattle and high-yielding buffaloes has become a lucrative business.
Owed to the easy cash provided by animal husbandry components, small-scale farmers prefer it to crop production. Further dairying provides a support system to milk producers without disturbing their agro-economic systems. Dairying is closely interwoven with the socio-economic fabric of rural people in India. Moreover milk is a cash crop for smallholders, converting low-value agriculture byproducts and crop residues, and using family labour as a value-added market commodity.

**Operation Flood**

Government is actively supporting the dairy sector by implementing various schemes. It all started with the White Revolution under the title Operation Flood (OF) Programme launched in 1970. By promoting Anand Pattern of dairy cooperatives, OF envisaged sustained increase in resource productivity culminating in improved quality of life of milk producers and assured supply of quality of milk and other dairy products to consumers at reasonable price in a free market environment.

Following the cooperative path, market oriented milk production and modernization of dairying, milk production, processing and marketing progressed significantly. The bedrock of Operation Flood has been village milk producers’ cooperatives, which procure milk and provide inputs and services making modern management and technology available to members.

The objectives of Operation Flood included:

- Increased milk production ("a flood of milk")
- Augmenting rural incomes
- Ensuring fair prices for consumers

In OF areas, the country has more than 1 lakh organized primary village dairy cooperatives at present with an aggregate membership of 1.1 crore producers. These primaries are federated into 170 district cooperative milk unions and further to state cooperative dairy federations. The dairy cooperative network is estimated to have collected close to 229 lakh kilograms per day in 2007-08 resulting in the payment of an aggregate amount exceeding Rs.7000 crores to the milk producers during the year.

It is observed that 14 major dairying States viz. Uttar Pradesh, Punjab, Andhra Pradesh, Gujarat, Maharashatra, Madhya Pradesh, Karnataka, Haryana, Tamil Nadu, West Bangal, Bihar, Kerala and Orissa accounts for 92% of India’s milk production, 93% of the rural marketable surplus (i.e. the milk that flows from rural to urban areas, estimated by deducting rural consumption from rural milk production).

**Operation Flood achievements at a glance**

<table>
<thead>
<tr>
<th>Years</th>
<th>DCs (No.)</th>
<th>Farmer members (in '000)</th>
<th>Milk procurement (in '000 kg/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-1981</td>
<td>13,384</td>
<td>1,747</td>
<td>2,562</td>
</tr>
<tr>
<td>1590-1991</td>
<td>63,415</td>
<td>7,482</td>
<td>7,602</td>
</tr>
<tr>
<td>2003-2004</td>
<td>108,574</td>
<td>11,994</td>
<td>17,483</td>
</tr>
<tr>
<td>2004-2005</td>
<td>113,152</td>
<td>12,326</td>
<td>20,070</td>
</tr>
</tbody>
</table>

Village Dairy Cooperative Societies (DCSs)

The basic unit in the Anand Pattern is the milk producers’ cooperative society, a voluntary association of milk producers in a village who wish to market their milk collectively. Every milk producer who has at least one milch animal that is owned can become a member of the cooperative by paying a nominal entrance fee and purchasing at least one share. At a general meeting of all the members, the representatives are elected to form a managing committee, which runs the day-to-day affairs of the cooperative society by setting the policies and appointing necessary staff. Out of nine managing committee members, one member is elected as chairperson.

Every morning and evening the society buys the surplus milk from its producer-members. The producer is paid for milk usually within 12 hours (for morning milk, in the same evening and for evening milk, the next morning). The payment is made on the basis of fat and SNF (solids-not-fat) content of the milk supplied by the individual producer. The district milk union organizes the transport of collected milk twice daily (whenever the dairy society has no bulk coolers) or according to the schedule based on the quantity of the milk collected and the capacity of bulk coolers from all its affiliated member cooperatives.

The producers in this system are not only ensured regular and remunerative payment for their milk, but also have access to the milk production enhancement inputs, support services, to further improve their productivity and income. The micro-level support services such as veterinary first aid are organized by village societies. One of the staff members of the society is trained to carry out these functions. Societies also market the liquid milk locally at the village level. In addition, supply of balanced cattle feed and fodder seeds and milk products are also channelled through societies. In addition to regular payment and support services, members also receive the price difference, dividend and bonus deriving from the net profit of the society’s business as per the provisions of the society’s by-laws.

The Impact on Smallholders and Rural Development

The sustenance of rural livelihoods is currently at stake than ever before, in the face of economic liberalization. Livelihoods options are shrinking in rural areas in general and more so in eco-fragile regions, such as drought, desert prone, hilly areas and other under developed/backward districts. Rapidly growing markets for livestock products in general, and dairy products in particular (owing to rise in per capita incomes) are opening new avenues for enhancing rural incomes. Dairy farming plays significant role in sustaining the rural livelihoods, although the phenomenon of farmers suicides, migration, malnutrition/ill health are widely prevalent in rural India.

However, some of the dairy based drought prone districts made rapid strides in ameliorating poverty by substantially contributing to the District/State agriculture economy. Contribution of agriculture and allied sectors to the national GDP has declined during the past few decades, the contribution of the livestock sector has increased from less than 5 percent in the early 1980s to over 6 percent in the late 1990s. The Operation Flood programme, which was launched during 1970, organizing dairy farmers’ cooperatives in rural areas and linking them with urban consumers created a strong network for procurement, processing, and distribution of milk over a lakh villages in rural India.
Livestock sector provides employment to 18 million people and nearly 70 per cent of them are women. Further, dairy sector is the major source of income for an estimated 27.6 million people. Among these, 65 to 70 per cent are small, marginal farmers and land-less labor. The dairy sector supports around 10 million members/farmers through one lakh cooperative societies existing in the country. Apart from employment generated by rearing of animals, the procurement of milk and its processing also provides substantial employment. For example in Punjab, MILKFED, with its network of over 5,000 village Milk Producers’ Cooperative Societies, supports over 3 lakh Milk Producers. Further, MILKFED and its units have a workforce of about 5,000 employees and gives employment to another 10,000 workers who engaged in milk procurement and technical input supply, etc. Similar number of workforce is employed in almost all the milk federations. Further, under SGSY (Swarnajayanti Gram Swarojgar Yojana), the only self-employment programme for rural areas, about 35 per cent swarojgaris opted for dairy farming as income generating activity. The incremental employment generated was 11 man-days per month and the incremental net income generated was Rs. 865 per month per person (Nationwide Study on SGSY, NIRD, 2005).

Recognizing the importance of dairy farming in its substantial contribution to the agriculture economy and to the livelihoods of resource poor farmers/rural population, high priority is attached in several locations strengthening the milk marketing infrastructure, veterinary services for breed improvement and health care, extension support for capacity
building of farmers, developing entrepreneurship, technical skills and knowledge on scientific
dairy farming practices, etc. several programmes have been launched from time to time by
State/Central Governments for promoting the sector, although the impact of such
programmes varied widely.

**PROGRESS OF DROUGHT PRONE DISTRICTS**

Livestock rearing is a means for sustainable livelihoods in rural India, more so in eco-
fragile regions. As per Indian Meteorological Department (IMD), 15 drought years were
registered during the past 5 decades registering one out of every third year as drought year. It
may be noted that they are 182 DPAP (Drought Prone Areas Programme) and 40 DDP
(Desert Development Programme) districts and 150 are backward districts as of now India. It
may also be noticed that 60 districts are identified both as DPAP/DDP and backward
districts. In all, around 312 districts, out of the 602 Indian districts are either DPAP/DDP or
Backward where livelihoods are under constant stress. Some of the districts in these drought
prone areas made spectacular progress in dairying in terms of contribution to the share of
agriculture economy and in ensuring sustainability of the rural livelihoods of the resource
poor farmers. Dryland agriculture accounts for 68 per cent of the total cultivated area
contributing only 44 per cent of the country’s food requirement and supporting 40 per cent of
human and 60 per cent of the livestock population (National Bureau of Soil Survey and Land
Use Planning, 2001).

**Contribution to Indian Economy**

Dairying has become an important secondary source of income for millions of rural
families and has assumed a most important role in providing employment and income
generating opportunity. Indian Dairying is unique in more than one ways. Contributing about
5.3 per cent to India’s agricultural GDP, milk is a leading agricultural produce. The value
output from milk at current prices during 2006-07 has been over Rs.144386 crores which is
higher than the output from paddy (Rs.85032 crore) alone and is also higher than the value
output from Wheat (Rs.66721 crore) and sugarcane (Rs.28488 crore), put together. The
unique feature of the system is that about 120 million rural families are engaged in milk
production activities as against big specialized dairy farmers in the west.

During the post independence period, progress made in dairy sector has been
spectacular. Milk production has increased more than four folds from a mere 17 million tones
during 1950-51 to 104.8 million tones in 2007-08. However, the country’s per capita
availability is still lower than the world’s daily average of about 285 gms though it has
doubled from 124 gms in 1950-51 to 256gms per day in 2007-08. This impressive growth
effort speaks volume about the co-coordinated efforts of large number of milk producing
farmers, scientists, planners, NGO’s and industry in achieving self-sufficiency in milk
production.

Dairy industry is of crucial importance to India. The country is the world, largest milk
producer, accounting for more than 13% of world’s total milk production. It is the world’s
largest consumer of dairy products, consuming almost 100% of its own milk production.
Dairy products are a major source of cheap and nutritious food to millions of people in India
and the only acceptable source of animal protein for large vegetarian segment of Indian
population, particularly among the landless, small and marginal farmers and women.
Dairying has been considered as one of the activities aimed at alleviating the poverty and unemployment especially in the rural areas in the rain-fed and drought-prone regions. In India, about three-fourth of the population live in rural areas and about 38% of them are poor. In 1986-87, about 73% of rural households own livestock. Small and marginal farmers account for three-quarters of these households owning livestock, raising 56% of the bovine and 66% of the sheep population. According to the National Sample Survey of 1993-94, livestock sector produces regular employment to about 9.8 million persons in principal status and 8.6 million in subsidiary status, which constitute about 5% of the total work force. The progress in this sector will result in a more balanced development of the rural economy. This impact of Dairy Industry can be categorized into the following:

- Social impact
- Economic impact
- Impact on infrastructure
- Impact on improved food aid security and nutrition.

**Social Impact**

Since membership is open to all, lack of discrimination, in caste, creed, gender and financial status has succeeded in breaking down barriers for those with milch animals. Remarkable new awareness has been developed and observed among the producers.

**Resolving Social Inequity**

This social stigma still exists in many parts of rural India. At all the collection centres of APDCs, morning and evening, hundreds of adults as well as the children of milk producers belonging to all castes come and stand in queue to deliver milk, developing a habit of discipline. The mix of various ethnic and social groups twice a day for a common cause and to their mutual improvement has resulted in reducing social inequity.

**Democracy**

Elected representatives of the members manage the DCSs and are responsible for all the policy decisions. All the members are entitled to cast their respective votes (one each) to elect the management committee members. This annual election of the management committee and its chairperson by members raises the participants’ awareness of the value of their vote and their rights to elect the right person for the right job.

**Hygiene and Cleanliness**

All the producers are frequently kept informed on the importance of observing hygiene and cleanliness of animals and milkers at the time of milking and at the milk collection centre. It has been observed that such learning is carried with them in their daily living habits.
Superstitions

There were prevailing beliefs in most of the rural areas that milk is a holy commodity and is not meant to be sold and that certain contagious diseases such as rudderpost should not be treated because they are a curse of God. Regular income and veterinary aid through cooperatives have helped members leave such superstitions behind.

Health Care

The privilege of collecting the milk from members places an obligation on the cooperatives to provide inputs to increase the milk production. Accordingly, the unions operate elaborate veterinary services at their doorstep to take care of cattle health. Exposure to various modern technologies and their applications by the veterinarians to treat their animals have made farmers more aware of healthcare for their family members as well.

Nutrition

As a part of support services, the cooperative society arranges visits to the cattle feed plant and the sale of balanced cattle-feed at the village dairy society. At the cattle feed plant a nutritionist explains the contents of the feed concentrate, proteins, vitamins and minerals, and why they should be fed to a pregnant cow or buffalo.

Womenfolk

Employment of women is an index of their economic and social status in society. They constitute 90 percent of marginal workers with some regional variation. The OF programme recognizes that:

• Dairying at the household level is largely a woman’s domain
• The products and income from dairying can be controlled by women
• Dairying can be practised at a small scale.

Initially when OF was launched, membership in most of the India’s village-level DCSs were heavily dominated by men. Now the picture has gradually changed in favour of women. Presently, some 2 476 all-women dairy cooperative societies are operating in the country. Out of 11 million members, 1.9 million are women, i.e. 17 percent of the total. Even in some of the DCSs, there is female as well as mixed membership; however, women constitute only 3 percent of the total management committee members.

Rural women play a significant role in animal husbandry and are involved in feeding, breeding, management, health care and other operations. Women constitute 71 percent of the labour force in livestock farming; there are 75 million women compared to 15 million men, engaged in dairying.
Impact indicators Observations

1. Participation of weaker sections Over 75% of the DCS membership are landless, marginal and smallholder producers
2. Milk retention at home 47% of the milk produced is retained at home, daily
3. Milk marketed 53% of the milk produced, daily
4. Milk consumption/capita per day 339 grams

Impact on Infrastructure

Participating farmers have become aware of their responsibility to the community. Every year they generously contribute a portion of their cooperative’s profit towards the overall development of the village, such as:

- Improving the village approach road condition
- Providing facilities to youth through establishing village libraries
- Contributing to educational institutions and village primary health centres
- Providing and updating day-to-day knowledge by putting television sets in DCSs
- Providing a telephone facility to members for better and fast communications
- Contributing to establishing the drinking water supply system in the village.
- Cooperative dairying has therefore shown a significant socio-economic impact in rural development.

Impact on Improved Food Aid and Nutrition

Several studies have revealed that India is better-off now in the area of production of food grains, then before. The real problem though, is that even with additional grain availability, malnutrition persists because those in real need have insufficient purchasing power. The milk producers’ organizations (MPOs) do make a contribution towards generating additional income for these poor groups and help build a symbiotic relationship between animal and crop husbandry; income generated from one creates demand for the output of the other, in other words, output of one becomes feed for the other. The primary effect of MPOs are to provide greater income to the participating families. As the per capita expenditure increases, so does the expenditure on food products. In other words, there is a proportionate increase in the consumption of food as spending power increases. Thus, additional income provided by MPOs to families below the poverty line actually helps them increase their food intake.

MPOs provided income at regular intervals; usually on a daily basis, but sometimes also once a week. Given the low purchasing power of rural households, items of essential consumption not produced by the families themselves, such as salt, sugar, vegetable oils, spices, lentils and vegetables, have to be purchased daily. The provision of additional cash income daily or weekly undoubtedly helps the families increase their purchase and consumption of such essential commodities.
CONCLUSION

Apart from cooperatives, the dairy sector is still characterized by small-scale, scattered and unorganized milch animal holders; low productivity; inadequate and inappropriate animal feeding and health care; lack of assured year-round remunerative producer prices for milk; inadequate basic infrastructure for provision of production inputs and services; inadequate basic infrastructure for procurement, transportation, processing and marketing of milk and lack of professional management.

Despite all the problems it faces, the dairy sector holds high promises as a dependable source of livelihood for the vast majority of the rural poor in India. The AMUL model of small-scale dairy production and marketing, as it has evolved and been refined over the last 50 years, also holds high promises for smallholder dairy development in India. Liberalization of world trade in dairy products under the new trade regime of the WTO poses new challenges and has opened up new export opportunities for the dairy industry in India. It needs to enhance competitive economic advantage in dairy products in terms of both quality, cost and its credibility in international markets. Milk yield needs to increase so as to decrease the per litre cost of production, quality needs to be enhanced with the adoption of the latest processing and packaging technology will increase export of dairy products.

REFERENCES

1. Department of Animal Husbandry, Dairying & Fisheries
   http://dahd.nic.in/dahd/division/dairy-development.aspx
3. IUF Dairy Division, Indian Dairy Industry
4. Opportunities And Challenges in The Indian Dairy Industry
   Dr K.G. Karmakar and Dr G.D. Banerjee
5. Opportunities And Challenges in The Indian Dairy Industry
6. Can Indian Dairy Cooperatives Survive in the New Economic Order?
   Bhaskar Goswami
7. Strategies for Sustainable Dairy Production in India
   www.energymanagertraining.com/.../...
8. A Study on Improvement in Rural Livelihoods through Dairy Farming
   www.nird.org.in/NIRD_Docs/ven_finrepo.pdf