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Revisiting the Amul Model of Social Development

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ABSTRACT

To achieve sustainable development, the main cause of such development should be inherent to that society itself. This paper examines the developmental philosophies of a successful model which had an important social impact and revolutionised India's milk production. The project was the vision and brainchild of Dr. Verghese Kurien, a dairy engineer by profession. The milk obtained from rural cattle is usually used for subsistence consumption in India with huge unmarketable surplus. The central problem in this case was to supply the perishable commodity obtained from villages to the cities after processing and preservation in a hot tropical country. A cooperative was formed which was democratic in structure and was controlled by the farmers. The cooperatives catered major social objectives as barriers of caste, creed, landholdings and religion were broken down with the common economic objective.

Dr. Kurien and his team proposed indigenous technology suitable for Indian conditions. Small producers fed and took care of their milch animals in ways which suits them best. Operation flood did not tamper with the production process of milk. Dr. Kurien is also known for his fight to liberate the cooperatives from archaic legislation to ensure that the producers have the right to control the resources they create. The controls of cooperatives were kept away from the clutches of the bureaucrats or technocrats. The major thrust of Operation Flood program had been to set up a national milk grid which links the rural milk producers to the urban consumers through milk tankers, chilling stations and feeder balancing dairies. The hallmarks of the white revolution are scale, speed and spectacle. Lal Bahadur Sastri, the former Prime Minister of India, had observed that along with developing milk, the project has developed the society in true sense and urged the whole country to replicate the model.

1. Introduction

The capacity of storing empirical knowledge, developing it through scientific research and applying it through technology has enabled the human race to proceed far beyond other living organisms and change or develop planet earth. Change or development occurs only due to the inner contradictions in a particular person, society or country. The social forces of every society are different with different perceptions, aspirations and goals. Development can be done fruitfully only by the interaction of the social forces present in that particular society. Injection of a particular model of social development that was successful in one country does not necessarily guarantee positive results in other countries. Externally assisted projects with their funds brings along a degree of dependence on their advocated technology, their managerial interference together with their personal ambitions or expectations from the project. Thus to achieve sustainable development, the main cause of such development should be inherent to that society itself.

Since independence, many models of social development have been implemented by the government. Most of these models are based on experiences of success in some developed country. The basic problem of replication lies in the short sightedness of the bureaucrats and their failure to understand the local problems and sentiments which are unique and different in multi-dimensional country like India. The past experiences show that the situation has rarely improved by any substantial extent by government endeavour.

Today, all economies are interrelated and no economy can remain in isolation. The policy makers and the government have liberalised Indian economy gradually. In spite of all the relaxations, the development of an economy is dependent on its inner contradictions and Foreign Direct Investment (FDI) in every sector can not be the solution to all existing problems. The external factors like FDI might act as a catalysing agent for some economies and a retarding agent for others.

The framers of the Constitution had a socialistic view for the Indian Republic but proposals of FDI in retail/agriculture and schemes of contract farming bring forth the haunted memories of the Indigo Movement. In this backdrop, this paper examines the developmental philosophies of a successful model which revolutionised India's milk production within two decades of its implementation and transformed India into the largest producer of milk.

All developmental projects have important social impact. The dairy movement commonly known as 'Operation Flood' or the 'White Revolution' has provided constantly increasing sustainable production of milk and milk products of improved quality to consumers at a fair price in most urban areas of India. The project was the vision and brainchild of Dr. Verghese Kurien, a dairy engineer by profession (who was posted on a government job in Anand being compelled by the terms of the scholarship offered by Government of India for studying dairy engineering in the US) with the active help and support of Tribhuvandas Patel, a leader of the farmers. The salient features of the Amul Pattern are highlighted here to be replicated successfully in other areas of perishable agricultural commodities.

2. The Central Problem

Dr. Kurien assessed the conditions of dairy industry of contemporary times and found that milk and its by-products were supplied by the developed countries at a nominal cost.

He was of the view that free availability was a form of dumping that would depress the prices for milk producers, adversely affecting their ability to produce, and worsening India's dependence on imports in the long run.

With the proportion of population graduating into middle and higher income groups continuing to increase as development proceeds, the demand for milk and other animal products will increase at a faster rate. Demand for a product should be fulfilled by internal production (if feasible/possible) for optimum results in the long run.

In India, small and marginal farmers as well as agricultural labourers usually own a few milch animals and these animals are usually kept for subsistence use. After consuming a part of the milk, the remaining has few takers in the villages. The vast majority of demand lies in the towns and cities. The central problem in this case is the supply of the perishable commodity obtained from villages in a hot tropical country and supplying it to the cities after processing and preservation. The solution lies in development of a logistical chain to produce and deliver nutritious and hygienic milk round the year at fair prices. The hallmarks of the white revolution are scale, speed and spectacle.

3. Philosophy of the project

Dr. Kurien strongly believed that land reforms can not be the only answer to rural poverty. According to him, the best feasible alternative is to concentrate on lesser resources which are easy to acquire but yet form an economically viable mode of production. His dream for India comprised of a future with a just and economic order where the rural people have as much access in the country's development as their urban counterparts.

The basic ideology of this project was to help the poor and reduce their poverty by supplying their unused surplus milk to the urban consumers. A blueprint of dairy cooperative marketing structure was drawn to link millions of milk producers with urban consumers. A missing chain was thus planned to link the urban demand with the rural supply.

The western model of dairying is based on grain and oilcake feeding and is not likely to be suitable in its entirety for developing countries. Dr. Kurien was of the view that modern technology needs to be reviewed constantly for ideas that favour the Indian situation. The project, Operation Flood did not tamper with the production process of milk. Small producers fed and took care of their milch animals in ways which suits them best. There was no evidence of intensive feeding of concentrates in the milk sheds.

4. Cooperative Structure

In the developing countries, one of the biggest obstacles is that the ordinary people do not have any power. Dr. Kurien had a deep conviction of being dedicated to the cause of farmers. To bring about economic and social developments in rural areas, he asserted his faith in the democratic structure of farmer controlled cooperatives. Throughout his career, Dr. Kurien maintained that he is just an ordinary employee appointed by the farmers and is being paid salary like any other employee.

The cooperative was formed with active support of Tribhuvandas Patel, who was elected as the chairman; and the farmers whose elected representatives were directors in the board. Dr. Kurien was appointed as the general manager of the cooperative and he had an independent charge and decision making authority.

The National Development Dairy Board (NDDB) started from the scratch with no help and support from the government. It was formed by the farmers who contributed the funds, provided their land for the establishment and even gave the manual labour needed at the initial stages.

5. Source of raw materials

The system of dairying was labour intensive and the use of manpower was preferred wherever possible. The system was dependent on agricultural residues and crop by products. It was a true symbiosis of crop and animal system.

Buffalo was the primary milch animal in this project. The villagers collected the milk at their houses and brought them to the village collecting centres. There the milk was measured and collected and then sent for further processing. Small farmers and agricultural labourers were spared from the long and hectic troubles they otherwise would have to take to sell their milk. Thus, they could pursue their primary job of farming with a ready and convenient source to supply their milk products.

Since the project was dependent on supply from the village farmers, the cooperatives were spared from the troubles of buying and maintaining huge amount of cattle stock. This enabled them to focus fully on developing the logistical chain of supply besides improving the chilling and preserving technology. The cooperatives assisted the farmers with vet care for the animals and improved knowledge for their maintenance.

6. Technology

The primary problem with a perishable commodity in a tropical country relates to its preservation. To solve this problem for milk, pasteurisation and chilling facilities are needed. Dr. Kurien depended on imported technology for this purpose. The technical aspects were handled by H. M. Dallaya, a friend of Kurien, from the Michigan State University. Chilling plants were imported along with milk tankers to suit long distance transportation. Special care was given to the packaging technology for better preservation for a longer duration.

The Operation Flood project had also adopted a two pronged strategy to improve the severe shortage of feeds and fodder in India. They were increasing the area under green fodder and also distributing manufactured cattle feed at a subsidised price to the milk producers.

7. Experiments of crossbreeding

Indian buffalo stock is the primary milk animal in India which is deemed to be the best in the world due to its remarkable resistance to pests and insects, a constant problem in the tropical region. Experiences of failure of experiments with improved imported variety validate this point. To solve this problem, genetic improvement of the cattle was advocated to enhance milk production.

The crossbreeding technique was advocated to improve the productivity and productive life span of the cattle. The crossbreeding was designed with European sires and Indian dams and this was done through artificial insemination of frozen semen brought from Europe and the resultant cattle were more productive and could also survive the hot and humid climate.

8. Political Interference

It is an indisputable fact that Dr. Kurien had consistently and with remarkable success defended the milk producers from private firms, powerful multi-national corporations and the bureaucrats. He did so by employing a combination of shrewd political acumen and principled pragmatism in his dealings with powerful actors and agencies, together with a remarkable degree of control over his organisation. Dr. Kurien is also known for his fight to liberate the cooperatives from archaic legislation to ensure that the producers have the right to control the resources they create. According to him, those who are directly concerned with the results of the development should have control over the ends and the means to achieve those ends.

Dr. Kurien was determined to protect his organisation at all costs and thus, the controls of cooperatives were kept away from the clutches of the bureaucrats or technocrats. This is because the leaders usually undermine cooperatives by using them as pawns in their political games, to establish dynastic control and garner political gains in state level electoral politics. This increases corruption but it is to Kurien's credit that he kept the power with the farmers and avoided political intervention. He had long political battles with Union Ministers of Agriculture Rao Birendra Singh and Jagjivan Ram but he never compromised with his vision under any pressure or threat.

9. Social Gains

Poverty reduction was the biggest social gain that Operation Flood brought among the rural masses. The poor villagers developed an inherent self-belief in them as individuals and realised that they can improve their economic and social conditions through cooperative effort; and this led to many replications of the basic structure adopted during the program.

Women empowerment was another huge achievement of Operation Flood. Most women milked their cattle and brought their product to the collection centres. They were made members of the cooperative and were paid as per the prevailing prices. This enhanced their confidence and social status.

The cooperatives served a major social objective and promoted inter caste cooperation. The barriers of caste, creed, landholdings and religion were broken down with the common economic objective. People from all sections of the society brought their produce, watched them being poured into the same container and ultimately enjoyed the economic benefits resulted from their joint production of the end commodity. Lal Bahadur Sastri, the Prime Minister of India, visited Anand in 1964 and deemed its progress to be development in true sense. He observed that along with developing milk, the project has developed the society in true sense and urged the country to replicate the model.

The model thus brought about a social change with far reaching success as the cooperatives became powerful agents of social change in empowering women and in embedding democracy at the grass root level of the country.

10. Allied Developments

Besides milk, the project undertook many other important steps to develop the region and attain economic prosperity. By 2003, there were a diverse range of products manufactured and marketed by Amul. The primary products of Amul which added to its revenue base are Ghee, Butter, Milk Powder, Cheese, Flavoured Milk, Cattle Feed, Chocolates, Nutramul, Baby Food, Ready to eat food and Bread Spread.

Chilling plants were installed at Cambay, Kapdwanj, Balasinor and Khatraj. Village chilling units were installed at various societies to facilitate the preservation of milk.

To train the youngsters specifically in rural management and serve the rural people with dedication and commitment, Institute of Rural Management Anand (IRMA) was set up in 1979. The institute was dedicated to the cause of the rural people and their problems were adequately addressed

11. Concluding Remarks

Dr. Kurien set up high standards that his co-workers regularly met. Under him, Amul, NDDB, GCMMF and IRMA all ran with impressive efficiency and were considered as role models for public sector institutions. Within two decades of launching Operation Flood, India's milk production increased from 21 million ton per annum to 70 million tons making it the world's largest milk producer. The per capita availability of milk also doubled. From being a net importer of milk, India became an exporter. The project gave India its largest food brand (Amul) without upsetting any agricultural balance. The project also improved the quality of life and health of millions of citizens of the poorest segment of India's population and transformed them into productive members of the society.

According to Dr. Kurien, 'when the tools of development are placed in the hands of the rural people, and when their energy and wisdom is linked with the skills of committed professionals, there is nothing that they can not achieve. This paper presents the dream of a better world and better living for men and women whose toils are largely responsible for most of the world's production of food and fibre. Sustained economic development in any area calls for more than target setting, more than government measure; it calls for a basic change in

the structure of the country's economy as well as in the life and minds of people.

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Annexure – 1: Amul Statistics

	1953-54	2003-04
Turnover	Rs 55.47 lakh.	Rs 54,088 lakh.
Price Difference	0.32 lakh.	1,235 lakh.
Gross Profit	8.78 lakh.	10,698 lakh.
Total mandlies(societies)	64 nos.	1,059 nos.
No. of members	14,441	598,707
Milk procurement	108.63 lakh kg	2,539 lakh kg
Milk procurement price	Rs 7.00 per kg	Rs 200.00 per kg
Artificial Insemination(AI)	1,673 nos.	675,707 nos.
AI centres	6 nos.	915 nos.
Pregnancy diagnosis'	479 nos.	245,967 nos.
Products	Ghee, Butter, Milk Powder, Casein	Ghee, Butter, Milk Powder, Cheese, Flavoured Milk, Cattle Feed, Chocolates, Nutramul, Baby Food, Ready To Eat Food, Bread Spread
		Installed chilling centres at Cambay, Kapdwanj, Balasinor and Khatraj
		Installed village chilling units at various societies
		Mogar Complex consisting of chocolate Plant, Malted Milk Food Plant, Ready To Eat Food Plant, Bread Spread Plant, Cattle Feed Plant
		Khatraj Satellite Dairy
		Manufacturing cheese varieties
		Amul Satellite Dairy at Pune

Annexure 2: National Milk Procurement by Operation Flood, Other Organised and Informal Sectors (Percent)

	1961	1972	1980/81	1988/89	1992/93	1994/95	1995/96	1996/97
Total production of milk(MMT*)	10.40	23.00	31.60	53.70	59.00	64.00	66.10	70.10
Organised sector	0.80 3.68%	1.30 5.55%	3.10 9.93%	5.80 10.88%	n.a. n.a.	6.40 10.10%	n.a. n.a.	n.a. n.a.
Operation flood cooperatives	n.a.	0.24 1.03%	1.01 3.21%	3.58 6.67%	3.85 6.53%	3.75 5.85%	4.00 6.05%	4.40 6.28%
Non-Food organised sector		1.04 4.52%	2.12 6.72%	2.46 4.20%		2.63 4.16%		
Handled by operation flood cooperatives as percentage of organised sector	10.56%		32.33%	61.33%		58.77%		
Handled by the information sector	19.65 26.30%	21.72 94.44%	28.46 90.07%	47.87 89.12%		56.72 89.88%		

MMT: million metric tons

Annexure 3: Physical Targets and Achievements of Operation Flood

Particulars	Operation Flood –I		Operation Flood- II		Operation Flood -III	
	July 1970 - March 1981		April 1981 – March 1985		April 1987 – March 1992	
	Target	Achievement	Target	Achievement	Target	Achievement
No. of milk sheds covered	18	39	155	136	190	170
No. of village dairy societies organised	-	13,270	29,000	34,523	70,000	64,494
Farmer families covered (lakh)	10	17.47	34.8	36.3	67	79.3
Rural milk procurement(LLPD*) Average Peak	-	25.6 33.9	56.9 -	57.9 79	137 183	93.9 113.4
Urban milk marketing (LLPD)	-	27.8	43	50.1	103	83
Rural dairy processing capacity (LLPD)	29.8	35.8	76	87.8	200	152.2

* LLPD: lakh litre per day