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# Re-visiting National Dairy Policy in the Light of Indian Dairy Sector

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**Abstract**

Deficiency to sufficiency' has been the much touted slogan in Indian dairying since it decided to traverse a path of organized development during the plan periods. With meager resources in terms of holding of land and livestock assets and other endowment, the milk producers have demonstrated their capabilities to accelerate milk production under a favourable policy regime. Today, India is the largest producer of milk in the World. Nearly two-thirds of India's population derives their livelihoods from livestock and specifically from dairying directly and indirectly.

Policy changes in the 1990s favouring liberalisation and globalization was aimed at effecting structural transformation in the national economy. The challenge is now that how could we make strategy, preferring a short-term reactive approach over a more coherent long term sustainable approach towards inclusive *growth,* a laid out policy framework in our planned development. The challenge is also that how could India plan to re-boot its economic growth model by moving from an external market-led approach to one with internal consumerism with a new focus on developing service industries to foster growth and development. India's urbanization has been driving growth without risking social security, shifting to more market-based interest rate and currency systems, reining in the state-owned enterprises that could impede innovation and making noise about curbing pollution. It could open up to foreign capital inflows for developing back end infrastructure facilities without harming the dairy cooperatives, which are striving to expand and strengthen their network to protect the interests of small dairy farmers for sustainable inclusive growth. It must open up completely too foreign capital inflows for developing the back end infrastructure facility creation instead to enjoy or break the old age Dairy Cooperatives motto, which need to expand and strengthen their network to protect the interests of small dairy farmers. It must do so on an *ex-post* basis that can be justified with legitimate national interest arguments rather than on an *ex-ante* basis that prevents flow of fund from coming into the extent it can and wants to.

**Keywords:** Globalization; Livestock; Urbanization; Consumerism.

## Introduction

Dairying is an important activity in Indian economy contributing about 27 per cent of the agricultural gross domestic product (GDP), which is around 4.35 per cent of the national GDP. The total milk production has increased from 48.40 million

tonnes in 1988-89 to 132.4 million tonnes in 2012-13 (DAHDF, 2013-14). Dairying in India is more inclusive compared to crop production in the sense that it involves a majority of the vulnerable segments of the society for livelihoods. There are about 70 million families, who rear bovines in rural India, of which majority belongs to marginal and small operational land holding group. About 60 million families (41 percent of total rural households) keep female bovines, which are reared for milk production. Because of low cost of maintenance and multidimensional utility of animal resources, the bovine resource is far more equitably distributed compared to land, which has skewed ownership pattern. Therefore, from the perspective of income supporting economic avenue, encouragement of this sector has greater welfare footprint and ensuring social equity in the asset ownership (Shah & Datta, 2012)., (Singh & Datta ,2013 )., (Kumar and Singh, 2008), (Birthal *et* al., 2002)

As per the latest available statistics from NSSO (2003-04), around 70 per cent of dairy animals were reared by the smallholders and they owned about 52 per cent of landholdings. Increase in agricultural holdings and their continuous subdivision among the family siblings seemed to be affecting the consolidation of milch animal holdings. But dairy sector in India has shown a strong growth in the face of price rise in dairy products. Dairy sector has been recognized to play a strategic role in promoting rural growth and reducing rural poverty in India (Singh & Datta, 2013).

The major challenges is how to organize sustained production and procurement from large numbers of small farmers, how to ensure adoption of the right technology and practices to generate quantity and quality output at a reasonable cost, how to obtain capital for ensuring good processing technology and meeting the high working capital requirements in a fluctuating business, how to deliver strong marketing efforts to compete and open nascent markets, and how to ensure effective ownership, management and control to ensure performance for its main stakeholders of producers, consumers and investors.

Promoting growth and increasing efficiency in production and marketing of dairy products have been the overarching concerns of Government of India. The establishment of an efficient value chain is more important for milk, which requires immediate transportation from farm to consumption centres or storage or conversion into less perishable forms. Further, value chain approaches can play a significant role in characterizing the complex networks, relationships and incentives that exist in the dairy sector. For past one & half decade, India has retained its position as the largest producer of milk in the world. Milk is now the largest agricultural commodity in physical as well as value terms.

The transition from deficiency to sufficiency has been achieved by a series of policy interventions by the government. It has been found that in the first phase of 'Operation Flood', growth rate of value-added products was 0.93 per cent per annum, but in the third phase, it became 9.10 per cent per annum. Further growth in the value added in dairy products will compel organized dairy industry to reinforce the upstream linkages in supply chain to secure additional quality of milk.

The study addresses the following issues: What are milk production and processing system in India and how these are going to shape in future? What are the ways and means to integrate the production and processing for smallholder dairy farmers? What kind of policy and institutional changes are necessary so that it may accelerate the inclusive growth process? With this background in nutshell study addresses the issues of milk production and value addition in dairy sector.

*Source of Data*

The study is largely based on the secondary data, available from National Sample Survey Organization (NSSO) unit level data on "Situation Assessment Survey of Farmers" 2003 and Annual Survey of Industries (unit level data of 1994-95, 1999-00 and 2010-11). Descriptive statistical method was used for the data analysis. Also used different studies conducted time to time by the DESM Division of NDRI time to time.

*Structure of Indian Dairy Sector*

In Indian context, dairy has become more inclusive as compared to crop production in the sense that dairying has involved majority of the vulnerable segments of the society for livelihoods. The estimated figures (Table 1) of total farm households in India was around 89 million in the year 2002-03, out of them 68 per cent were engaged in the dairy farming. Nearly 60.66 million households in India have been associated with dairying, and about 89 per cent of them belonged to landless, marginal and small landholders (<2 ha). It is also interesting to observe from Table 1 that about 54 and 16 per cent of milch dairy animals are owned by marginal and small farm households, respectively while they own 51.62 per cent of agricultural resources. Similarly the

households, who were landless also kept about 13 per cent of milch animals. The marginal farmers contribute more than half of national milk production. It is also interesting to note that the distribution of dairy animals was far more even among the farm households than that of farm land suggesting that with efficient input and output support services, dairying can serve as a major economic activity for the small, marginal and landless farmers. The largest contributors of the country's milk production are marginal category households; their share is 52.17 per cent of total Indian milk production. Combined share of landless, marginal and small dairy households in country's milk production is 77.34 per cent. Medium and large category households hold 48.37 per cent of land resources but their contribution in country milk production is only 22.67 per cent vis-à-vis combined landless, marginal and small categories that possess 51.63 per cent land but contribute 77.34 per cent of total milk production.

From this discussion it can be inferred that the future of Indian milk production lies in the hands of smallholder (less than 2 ha) dairy farmers. It is the smallholder dairy farmer that needs to be targeted by policymakers by incentivizing them to increase their milk production for they don't have land to increase their income from agriculture exclusively. The incentives should include a host of input provision, skill provision as well as institutional mechanism. Input provision include timely provision of normal as well as drought-resistant fodder seeds, accessible veterinary services, availability of water as well as electricity etc. Skill provision includes training in clean milk production, artificial insemination, treating minor injuries/wounds, feed/fodder preservation, milk preservation etc. Institutional mechanism include increasing their motivation towards cooperative framework, livestock insurance, securing loans (for housing as well as animals), better connectivity with dairy industry etc.

**Table 1:** Household level distribution pattern of the dairy animals in India

| Particulars | Landless | Marginal | Small | Medium | Large | All |
|---|---|---|---|---|---|---|
| Estimated sample households keeping dairy animals (No. in Millions) | 9.30 | 35.74 | 8.65 | 6.64 | 0.33 | 60.66 |
| Total estimated sample household (No. in Millions) | 17.33 | 53.43 | 10.72 | 7.60 | 0.37 | 89.44 |
| % of household keeping dairy animal | 53.64 | 66.90 | 80.73 | 87.37 | 90.33 | 67.82 |
| % of milch dairy animals owned by the households | 12.76 | 53.65 | 16.32 | 16.08 | 1.18 | 100 |
| % contribution to total milk production | 7.71 | 52.17 | 17.46 | 20.84 | 1.83 | 100 |
| % of land owned by the households | 0.012 | 29.28 | 22.34 | 40.41 | 7.96 | 100 |

Note: Landless: 0 to 0.002 ha., Marginal: 0.0021 to 1.00 ha., Small : 1.01 to 2.00 ha., Medium : 2.01 to 10.00 ha. and Large : e"10.001 ha.

Source: Authors' estimates based on unit level data of NSSO 59th round on Situation Assessment Survey of Farmers.

Till the economic liberalisation in 1991, cooperatives grew in a protective environment without any competition. And this phase made India one of the largest milk producers in the world. Now these cooperatives that we had set up in last 50 years are failing us because politics is overtaking them. Barely 15 per cent of our villages have cooperatives. This will lead to a milk crisis.

It is necessary to invite private sector to build back-end infrastructure in order to procure directly from farmer-producer organisations for aggregation, processing and marketing of the fresh dairy milk/ produce from the rural areas where role of cooperative is insignificant or nil. But the private sector is entering only where cooperatives are established to exploit the existing infrastructure. They are not tapping the potential of other villages and promoting milk production there. When a cooperative organizes producers into a structure, they invest their time and efforts that the private sector is reluctant to do. Interestingly in India, the highest milk producing state like UP where neither the role of cooperative nor the private players are visible to handle the milk. Similarly in West Bengal, where demand for dairy and dairy products are more, the cooperatives cannot act professionally. But acts on behalf of the milk federation as marketing role, including the rights over using its brand . It has effectively converted the established *three-tier cooperative* structure into *a two-tier* arrangement, where the key marketing function is with a company over which farmers have no control. The dairy farmers in turn receive no incentives from this structure. It seems the cooperatives do not pay competitive prices to their milk producers. Their value chains remain fragmented which favour the commission agents much more than the milk producers and the consumers.

*Structural Changes Across the Different Industrial Organization of Dairy Industry in Post-Liberalized Era*

In the new economic reforms post-1990 period, there have been many significant reforms like

Operation Flood-III (1985-96), De-Licensing (1991), Milk and Milk Products Order (1992), Amendment in MMPO (1999) and Abolition of Quantitative Restriction (QR) in Dairy Imports (2001) in Indian dairy sector. The major objective behind the different policy reforms was to create different arrangements (industrial organization) for value addition, favouring ~~of~~ smallholder dairy farmers. To ensure that the private players do not dominate the dairy sector, the government introduced a policy that restricted milk processing and product manufacturing to small firms and cooperatives. Only two private company's existed then- *Nestle* and *Milk food* Limited. Higher import duties on dairy and dairy products and stringent lincencing provisions for private dairy industries created a protected market that helped cooperatives to expand. The MMPO Act of 1992 aimed at bringing out orderly growth of the dairy processing capacities in the milk shed areas. Govt. of India amended MMPO-1992 in 1999 with the objective to infuse more investment in dairy industry. The impact of policy reforms was different on different industrial organization of dairy processing industry. The impact of this reform in the dairy industry was clearly reflected in terms of number of dairy units in organised sector, which rose from 432 in 1990-91 to 1493 in the 2010-11 (CSO, 2011-12). Therefore, it is very important to study structural changes across the different industrial organization in organized dairy industry in the post-reforms period.

Findings of Table 2 are clearly reflected that organized dairy industry has undergone dynamic changes (in terms of fixed asset, labour and GVA) across the different industrial organization. In the initial reform period (1994-95) 'other' type industrial organization (mainly small and medium size dairy plants) had occupied largest share (48.22 %) in terms of fixed asset formation, whereas in the post reform period (2010-11) it was the lowest (8%). This trend reflects that either these organizations have not maintained asset formation in the same pace as other organizations have done. At the same time cooperative organizations have observed small increment in fixed asset formation from 29.86 per cent to 33.58 per cent. Whereas, public and private sector industrial organizations have increased fixed asset formation. In the industrial organizations labour and capital are complementary and competitive to each other. Table 2 shows that proportional labour utilization in different industrial organization set-ups has not changed much vis-à-vis fixed asset formation. Cooperative sector has had maximum labour hiring in comparison of public, private and 'other' industrial organizations. Whereas, in the reform period private sector had increased labour hiring share from 6.11 per cent to 21.12 per cent. But proportional labour hired in 'other' industrial organization decreased from 38.82 per cent to 12.90 per cent. Correlation coefficient between labour and fixed asset increased from 0.28 to 0.64 between 1994-95 to 2010-11. It shows that fixed capital and labour are complementary to each other over the post reform period.

Gross value addition (GVA) is one the important indicators of sectoral profitability. Proportional share in terms of GVA was highest in cooperative sector (43.23%) and lowest (5.58%) in the private sector in the initial period of reform (1994-95). But over the reform period private sector increased GVA significantly, as also the cooperative sector. Whereas, 'other' industrial organization registered lowest share (8.81%) in the post reform period (2010-11). So, overall in the reform period private sector performance has been observed encouraging in terms of fixed asset creation, labour hiring and GVA. However, cooperative sector maintained its predominance in Indian dairy industry even in reform period also.

**Table 2:** Percentage share of fixed asset, labour and gross value addition (GVA) across the organised dairy (2010-11)

| Type of Organization | Fixed Capital (%) | Quantity of Milk used (%) | Gini Coefficient of quantity of milk used | GVA (%) | Fixed Capital (%) |
|---|---|---|---|---|---|
| Public Limited Company | 25.93 | 16.62 | 0.709 | 19.37 | 25.93 |
| Private Limited Company | 32.49 | 22.31 | 0.763 | 21.01 | 32.49 |
| Co-operative Society | 33.58 | 53.04 | 0.789 | 50.80 | 33.58 |
| Others | 8.00 | 8.03 | 0.669 | 8.81 | 8.00 |

**Source:** Authors' estimates based on unit level data of ASI (2010-11). ;**Others:** Individual Proprietorship, Joint family, Partnership, Govt. Departmental Enterprise, Public Corporation by Special act of Parliament/ legislator/PSU, Khadi & village industries commission, Handlooms and Others (incl Trusts, wakf board, etc).

*Differential Arrangements to Link Milk Producers with Milk Processing Units*

Most of the milk producers in the country belong to the categories of small and marginal farmers and landless households (Table 1). So, any strategy for increasing milk production as well as forward linkage with dairy factories must aim at benefitting small and marginal holders who are in advantageous position in terms of cost of production and their geographical location. Therefore, it can be assumed beyond any doubt that the future course of growth in the form of value-added products will be completely guided by the small and marginal holders. To link the smallholder milk producers with the organised dairy industry, it is important to visualise the structural changes in the Indian dairy industry. This information is helpful to infer whether industrial dynamics has been in favour of smallholder dairy farming or not. In this regard, Table 3 provides the results for structural changes in Indian dairy sector over the post liberalized period of 1994-95 to 2010-11. The study period can be classified into the two phases i.e. 1994-95/1999-00 is Pre MMPO-1999 and 1999-00/2010-11 Post MMPO-1999. Due to the growing pressure of competition from global players in the dairy sector, the tightening of the WTO Agreements as well as the anomalies in the license structure, the government made an amendment (in the year 1999) in the MMPO in 1992. The amendment allowed the dairy players to setup dairy processing units wherever and whenever they want to. MMPO-1992 was actually introduced in India to protect the interest of the cooperative as well as domestic small and medium size dairy plants. So, this amendment is one of the major policy amendments in the Indian dairy sector from government front in the post liberalized period.

From Table 3 it can be inferred that at the reform time (1994-95), organized dairy industry was mainly dominated by the cooperatives and others (mainly small and medium size dairy plants) in terms of ownership of dairy plant. These two subsectors constituted around 78 and 79 per cent, respectively of the total quantity of milk processed and number of dairy plants in the organized dairy sector. The private sector dairy plants were very less both in terms of numbers as well as milk handled by them. In the Pre MMPO-1999 period their share did not change much. At the same time, cooperative sector increased their share in terms of quantity of milk handled despite the fact that their number reduced drastically. It means that in the Pre MMPO-1999 period, the cooperative sector kept their reliance on consolidation of milk procurement and handling capacities and capabilities as even though they reduced their numbers they continued to increase their share in Indian dairy sector.

In the starting phase of Post MMPO-1999 period, the organized sector was mainly dominated by the cooperatives sector (42.09 per cent in the year 1999-00). Similar trend continued till the end of 2010-11 (Table 3). At the same time, the private sector processed 6.29 per cent of total milk handled in the organized sector with 21.26 per cent of the dairy factories. But at the end of 2010-11, this sector increased their share from 6.29 to 21.98 per cent with almost same proportion of dairy factories. It is estimated that the capacity created by the private dairies in the past 15 years equals the capacities created ~~set~~ by the cooperatives in over 30 years (Rakesh Mohan Joshi, 2011). Some of the big private players in the market today are *Hatsum Agro, Heritage Foods, Tirmula Milk Products, VRS Foods, Sterling Agro Industries, Dynamix Dairy Industries and Bhola Baba Dairy Industries*, each handling more than one million liters of milk per day (J. Sood, 2014). There are also a clutch of smaller private companies, handling 0.5 –I million liquid milk per day. Between 2013-13, Hyderabad- based *Heritage Foods* increased its milk procurement capacity tremendously so that its turn over grew by almost 16% in 2013 (Sood, 2014).

Similar but marginal incremental trend was observed in the public sector operated dairy industry. One important observation from Table 3 is dairy plants operating in the "Others" category, they decreased their numbers but at the same time they drastically lost their share in the milk processing in the organized sector. It may be conjectured that

Table 3: Dynamics of organized dairy Industry with respect of types of ownership (in%)

| Type of Ownership | 1994-95 | | 1999-00 | | 2010-11 | |
|---|---|---|---|---|---|---|
| | Quantity of Milk Processed | No of factories | Quantity of Milk Processed | | Quantity of Milk Processed | No of factories |
| Public | 17.48 | 10.23 | 21.07 | 21.81 | 18.80 | 12.54 |
| Private | 4.62 | 11.13 | 6.29 | 21.26 | 21.98 | 32.16 |
| Co-operative | 45.98 | 33.39 | 42.09 | 12.76 | 50.59 | 28.42 |
| Others | 31.92 | 45.24 | 30.53 | 44.17 | 8.63 | 26.88 |

**Source:** Authors' estimates based on unit level data of ASI (1994-95, 1999-00 and 2010-11).
**Others:** Individual Proprietorship, Joint family, Partnership, Govt. Departmental Enterprise, Public Corporation by Special act of Parliament/ legislator/PSU, Khadi & village industries commission, Handlooms and Others (incl Trusts, wakf board, etc)

private sector owned dairy factories could be providing some kinds of sops to the farmers and they have consolidated their milk handling capacity as there is no proportional increase in number of their dairy factories.

Dairy sector in India has shown a strong growth in the face of price rise in dairy products. Further growth in the value added in dairy products will compel private milk processor to reinforce the upstream linkages in supply chain to secure additional quality of milk. Private processor needs to seize this opportunity to focus on milk procurements model for the future. The key will be to support farmer-driven dairy farming, with downstream companies/private players/ corporate/ organised processor playing the anchor role to involve service providers such as those supplying feed, genetics, health care and equipments.

Direct sourcing from the farmers is critical for milk processors and will require a dedicated focus to lift the quantity of the milk supplied maintaining quality. Large-scale corporate dairy farming is only likely to develop in the long term. In the meantime, medium-scale corporate dairy farming will be essential to secure sufficient milk supplies. Processors will have to play an anchor role for other stakeholders. This will help create integrated dairy companies in the milk production and in the processing and distribution of dairy products, yielding higher returns in value chain.

The conversion from an unorganised to an organised milk procurement chain will be continuous and a steady process. The National Dairy Development Board focuses on establishing linkage with the organized sector through NDP. Only Cooperatives are involved in this process. Analysis from 14 major state milk federations by Down To Earth shows that only five federations are chaired by elected members, while rest are headed by Government nominated Chairpersons. Nine federations have state government equity; six have over 51% government equity. The price hike of the milk is guided by the by the respective state government's representative as they treat dairy cooperatives as their private institutions because they constitute their vote banks. There have been instances where state governments used subsidies as bait to control these huge conglomerations of milk producers'. Recent hike of subsidy, per liter of milk by the Karnataka Milk Producers Federation Ltd (KMF), where more than 2.2 million dairy farmers are ~~as a~~ members of the state cooperative. Following this move, milk producers in other states like Tamil Nadu, Kerala and Maharashtra are demanding similar subsidies (Sood, 2014). Professionalisation which is core of the cooperatives is losing due to vested interested lobbies within the cooperatives. They are slowly loosing the market competitiveness. They are interested to operate within the same locations/areas where cooperatives established basic infrastructure and all kinds of enabling conditions for smooth operations as those private players realised that institutional building was a difficult task for them.

In order to overcome the issues that the dairy cooperatives face, both institutional and government intervention, it is necessary to organise the existing cooperatives into producer organisation/producer Company transcending the geographical boundaries of taluka or district while maintaining the basic tenets of cooperative principles.

Large-scale dairy farming is still evolving in India, with promising opportunities in the long term, but constrained in the near to medium term. Milk processors need to reduce their dependence on agents and engage directly with dairy farmers to source good quality milk. This includes investment in upstream linkages in the dairy value chain. It also requires processors to become more involved with service providers of feed, nutrition, genetics and animal health care. However, these processors will have difficulties in improving milk supplies without the support of these enablers.

The need to organise farmers, especially the small holders, is a well established fact. The basic purpose of the producers' company is to collectivise small farmers or producers for (a) backward linkage for inputs like feed, genetics, health care and equipments, credit, insurance, knowledge and extension services and (b) forward linkages such as collective marketing and processing,.

Market efficiency is the result of competition policies being implemented across the economy. It is necessary to invite private sector to build back-end infrastructure for aggregation, processing, packing and marketing of the fresh dairy produce in rural areas to procure directly from farmer-producer organisations. Their value chains remain fragmented which favour the commission agents much more than the farmer or consumer. This will create millions of 'off-farm' rural jobs, save on post-harvest losses, and create more efficient value chains giving a better deal to farmers and consumers alike, as also making more competitive. This will bring down food inflation of high value product like dairy & dairy base food products. Nobel laureates Finn Kydland and Edward Prescott show that in the absence of a competitive economy, despite monetary policies to contain

inflation, prices rise as the activities of businessmen are not subject to constraints. The relationship between competition and inflation is negative. With more competition, there is lower inflation. Therefore, the role of government departments in coordinating implementation of policies constraining egregious behaviour of firms is crucial for low inflation and growth.

The sector requires a fundamental paradigm shift in dairy-food system policy supported by institutional change, capacity development and investment, in order to move towards a sustainable production system and consumption patterns. At the heart of this effort is to gain collective bargaining power for small farmers/ producers. The collectives of farmers in the form of producer companies is gaining popularity among the farmers/ producers and among the promoting agencies primarily due to several advantages it carries in comparison to the conventional model of producers cooperatives.

*Scope Indian Dairy Sector in Trade Circle*

As of now, export of dairy commodities in India, constitute less than 1% of national milk production. The GoI provides incentive on export of SMP under Vishesh Krishi and Gram Udyog Yojana (VKGUY) with a Duty Credit Scrip equivalent to 5% of FOB value of export. There is no ban of export of milk products. The VKGUY could be expanded to other value added Indigenous milk Products/Ethnic milk products, for which there is considerable demand from the Indian diaspora. International prices of dairy commodities fluctuate significantly. There is no mechanism in India to hedge against price volatility in international market and currency fluctuations. These are not always advantageous for the domestic exporters. In the advanced exporting countries, these mechanisms exit.

Production of quality dairy products for export is an issue in India. Indian dairy products like SMP are traded at a discount of around 700 to 800 USD per tonne. India needs to invest in production of quality milk and milk products for which cold chain infrastructure for milk and milk products processing and marketing is critical.

As the market opens up, consumption trends associated with these markets will have increasing influence on the world trade. There is a vast potential for the export of dairy products, the cost of milk production in India being the lowest. In the 1990s, India started exporting surplus dairy commodities, such as SMP, WMP, butter and ghee. The Agricultural and Processed Food Products Export Development Authority (APEDA) regulated the export and import of dairy products till early 1990s. However, in the new EXIM Policy announced in April 2000, the Union Government has allowed free import and export of most dairy products.

The major destinations for Indian dairy products are Bangladesh (23.1%), UAE (15.4%), US (15.6%) and Philippines (8.9%). In terms of products, SMP is the most important product accounting for about 63% of total export volume, followed by ghee and butter (11.7%) and WMP. Export figures clearly demonstrate that the Indian dairy export is still in its infancy and the surpluses are occasional. Indigenous milk products and desserts are becoming popular with the ethnic population spread all over the world. Therefore, the export demand for these products will increase and hence, there is a great potential for export. On the other hand, there has been a sharp increase in import of dairy products (especially milk powders) after trade liberalisation. As per the latest report of Foreign Trade Statistics of December 2004, the imports of dairy products (milk and cream) has reached a cumulative total of 22.145 million tonnes for the period April - March 2004, as compared to only 1473 million tonnes for the same period during the previous year. The main reasons for sharp rise in imports are huge export subsidies given by developed countries (mainly the US and EU). India has recently concluded a tariff rate quota to deal with US, EU and Australia on imposing custom duty of 15% on imports of SMP and WMP up to 10,000 tonnes and 60% on imports beyond this level.

India allows imports of milk and milk products without quantitative limitations i.e. under Open General License (OGL), although tariff rate quotas (TRQ) apply and an import permit is required for TRQ. Moreover, Indian dairy import policy changes frequently to adapt to market conditions. In the case of SMP imports, the GoI varies both the quantity allowed under India's TRQ as well as applicable duty when domestic production was insufficient. Presently, the GoI has set the SMP TRQ for Indian Fiscal Year 2012/13 at 15 percent duty for upto 15,000 MT and milk powder imported above this TRQ of 15,000 MT attracts a 60 percent basic duty. It means that anyone can import SMP (HS Code 04021010) at 60% basic duty plus *0% CVD* (data is missing, please put data) (counter veiling duty) plus 4% SAD (special additional duty) which totals to 68.8%. Previous year, SMP imports under TRQ were allowed up to 50,000 MT at zero duty. In case of butter oil, imports under OGL, one has to pay 40% basic duty plus 0% CVD & 4% SAD.

The first important change that the multinational

retailers are likely to introduce is state of the art storage technology that the multinational retailers possess and which is not known to big domestic retailers. This technology is expected to improve the supply chain and prevent wastage in a big way. Estimates of wastage of food grains, fruits and vegetables in the country vary between 20% and 40% of the total produce. It is argued that a significant part of this wastage would be avoided if foreign investors bring in state of the art technology. The primary case being made for FDI in retail is that it will increase efficiency. One source of this is improvements in the supply chain. In particular, this argument is applied to perishable agricultural produce. The claim is that increased investment will reduce wastage. Efficiency gains can potentially lead to gains for producers, intermediaries and consumers. Turning to the recent Indian experience, Walmart and other foreign firms have been involved in the wholesale trade for some years. For example, the Bharti Walmart joint venture works with over 6,000 small farmers across six states. Indian corporations have tried to create retail chains without foreign help. What do these experiences teach us about the potential for transformation? In neither case has there been a huge change in the supply chain. Logically, either FDI in wholesale or domestic retail chains could have made investments to improve the efficiency of the supply chain. There have been small improvements, but no great transformation.

The second big change that the multinational retailers are likely to bring about is more international trade. A little reflection will convince that the magnitude of international trade depends on the extent to which arbitrage possibilities across countries can be made use of. Making use of arbitrage possibilities, one can buy a commodity in a country where it is cheaper and sell it in another country where it is dear. A company job is to identify the international arbitrage possibilities and trade accordingly to make profits. It stands to reason that a giant multinational trader, with its more elaborate procurement and distribution networks, will do the job more efficiently and extensively than a relatively small domestic retailer. But if that is so, entry of multinational retailers into the Indian market is likely to increase the volume of Indian international trade. In the recent year' different countries like Australia, New Zealand and EU have shown interest to sign the Free Trade Agreement (FTA) with India and in near future India will do it because of international obligations. But this kind of trade arrangement will affect very much to the Indian dairy and food sector. As we know that New Zealand, Australia, USA and EU countries are producing milk in large quantity (with huge subsidies) that not demanded in the country. Therefore in the name of FTA these countries will dump their agriculture produce especially dairy product in Indian market. As Indian dairy industry is mainly dominated by the cooperative sector which connect million of resource poor farmers to the market and still this sector in nascent stage of development. It is important that government keep dairy and food sector away from FTA otherwise this kind of smart move by the developed countries increases the arbitrage possible for dairy and food business for foreign big retailers. But as per FDI bill retailers would have to source 30% of their domestic sales from the domestic market. This would imply that they would have to market some Indian manufactures also, but the bulk of their sales should consist of foreign country primary agricultural goods or processed food products.

The third change refers to the scale of operation of big retail in India. The giant multinationals along with the domestic retailers with whom they are going to form joint ventures are going to have much greater financial power than the domestic big retailers alone. Therefore, in the new set-up, big organized retail is likely to cover a much larger portion of the market than before. There is concern in food and retail sector that some MNCs might use their monopsony power, their ability to access cheap products from domestic and foreign market, and use that monopsony power to give competition to domestic food companies. That's not a good basis for growth. Monopsony is a market similar to a monopoly except that a large buyer, and not seller, controls a large proportion of the market and drives the prices down. It is sometimes referred to as the buyer's monopoly. It will definitely affect the domestic cooperative and private player of Indian dairy sector.

Most of the milk processed in unorganized sector which operated at very low margin in rural area and most of these firms are tiny enterprises and do not fall under small and medium size enterprise. So there is very less scope for any foreign firm to purchase dairy products from tiny size enterprises. But, in organised sector there is scope for foreign firm to purchase dairy products by subcontracting or on some franchising format. This kind of linkages and subcontracts between the foreign firm and organized dairy firm increases the possibility or avenues for huge investment in dairy sector especially at the back end format (because of the conditionality of 50 percent investment in back end infrastructure facility creation).

To protect the small and medium producers, processors as well as the consumers would require

effective regulations. Effectiveness of regulations is a must which mainly depends not only upon the regulations themselves, but also on the regulator-and the environment in which they are implemented. Emergence of regulations can in turn be dependent upon these three. Will and wherewithal on part of the regulator on one hand and public pressure on the other are critical for successful implementation. Equally important, if the regulator does not have the requisite information or is constrained by factors beyond his control, then again, the regulations may not achieve the desired objectives. It essential to transform traditional supply chains from linear, sequential processes into adaptive supply chain networks in which communities of customer- centric, demand-driven, intelligently adapt to changing market conditions, and proactively respond to shorter, less-predictable life cycles.

In the last 15 years, the share of milk producers' share in consumer money has declined from 52% to 38% in USA and from 56% to 36% in UK (IFCN, 2011). As compared to that, Indian milk producers get more than 70% on an average and the milk producers affiliated to co-operatives get more than 80% share of consumers' rupee. The key question is whether the organized retail trade would be able to operate at low margins as practiced by GCMMF and other co-operatives, failing which they would not be able to maintain the farmer's share in consumer price. Neither do our farmers receive fair price for their produce, nor do consumers benefit from low prices. The issue is not just about converting our farmers from price-takers to price-makers (as that would have further complicated the equation among farmers, distribution agents and consumers), but to balance the need of different interest groups by addressing the root causes of anti-competitive practices, which are rampant all over the country.

**Conclusions**

Operation Flood Programme emphasis on developing smallholder-based dairy sector in the pre-liberalised era is justified on the ground that it realized the needs of the production base by the masses. The finding of study also indicates that still in India production system is dominated by smallholder dairy farmers. Major concern in this production system is the sustainability as in near future it is going to be more intensified. Therefore, it puts more pressure on feed and fodder resources. For sustainability of production first prerequisite is to increase sectoral profitability.

Value addition in milk is unavoidable if one has to enhance sector profitability, the same does not seem feasible unless the organized sector improves its penetration. Because, it is the involvement of the organized sector that will drive the growth by resorting to value addition in basic product and harnessing the consumer market. The mechanics of the organized sector penetration could be agency-specific as also area-specific. Need of the day is to provide quality of efficient input and output support services as provided by the co-operatives (Amul model at Gujarat, Nandani Milk Federation at Karnataka Model), private sector (Nestlé) and contract dairy farming. In the recent years some new dairy development models have been implemented and scaled up by the co-operative sector like New Generation Cooperatives (Dairy Producer Companies) such as producer companies in Saurashtra and Kutch region in Gujarat as Mahi Producer Company and in Rajasthan as Payas producer company. Whereas, in Punjab group of progressive farmers started Punjab Progressive Dairy Farmers Association. In the liberalised economy, the replication and scaling up of these models largely depends on the governance, institutional support and market forces.

It essential to transform traditional supply chains from linear, sequential processes into adaptive supply chain networks in which communities of customer-centric, demand-driven, intelligently adapt to changing market conditions, and proactively respond to shorter, less-predictable life cycles. In the last 15 years, the share of milk producers' share in consumer money has declined from 52% to 38% in USA and from 56% to 36% in UK (IFCN, 2011). As compared to that, Indian milk producers get more than 70% on an average and the milk producers affiliated to co-operatives get more than 80% share of consumers' rupee. Key question is whether the organized retail trade would be able to operate at low margins as practiced by GCMMF and other co-operatives, failing which they would not be able to maintain the farmer's share in consumer price. Neither do our farmers receive fair price for their produce, nor do consumers benefit from low prices. The issue is not just about converting our farmers from price-takers to price-makers (as that would have further complicated the equation among farmers, distribution agents and consumers), but to balance the need of different interest groups by addressing the root causes of anti-competitive practices, which are rampant all over the country.

In the globalised era food safety laws and their enforcement are important in the sense that without

standardization of products and adherence to quality and hygiene, the basic tenet of value addition would be defeated. It would be feasible only if the dairy industry moves towards accountability and transparency and for this increased involvement of the organized sector is truly unavoidable. Therefore, while creating values from the products manufactured is important, without a regulatory mechanism such a value will be self- defeating. So, there is a need to adopt "Good Manufacturing Practices" from production to processing level. Regulatory constraints on egregious behaviour of businessmen are crucial for welfare. Enforcement of laws, regulations and sanctions under different legislations should be done by in a composite manner. Large capital subsidies for building cold chain infrastructure is also something that needs to be looked at seriously—essentially, the trade-off is between spending money on subsidies that don't reach people and creating infrastructure that benefits everyone.

It is high time that the various stakeholders in the discussions relating to retailing in India start making a serious effort to understand how efficient or inefficient India's retailing infrastructure is today. And then how to make it more efficient for the consumers, the producers of consumer goods, those whose livelihood rests upon the retailing value-chain and, finally, the state and central governments who have to expand their tax revenue base to meet their revenue needs to provide better physical and social infrastructure to India's masses.

The most crucial fact about the retail sector is that it provides the largest employment in India and offers the best hope for employment for tens of millions of Indians in the years to come. Further, this is the only sector where relatively less-skilled or even unskilled workers can make a living. Hence, any threat to this employment-creation potential of this sector—especially when India suffers a major deficit in creating jobs or self-employment opportunities—has to be carefully studied keeping personal ideologies aside.

It is true that India's existing retailing ecosystem is highly inefficient. There is an unacceptable value-loss in both, the manufacturer and consumer prices, thereby depriving the manufacturer of a fair value for his effort while forcing millions of inflation-ravaged, low-income Indians to pay much more at the retail than what they should be paying. This ecosystem is also inefficient for the state governments in particular when it comes to getting their fair share of local taxes, and inefficient for the central government when it comes to getting its share of indirect taxes since many small and medium scale manufacturers can successfully evade the taxation net by using the current distribution channels comprising an abundance of middlemen. The highly fragmented and unorganised retail ecosystem also allows entry of spurious consumer goods in the supply chain; if any evidence is needed, one only has to visit retail outlets catering to relatively lower-income strata in the major cities or those located in the tier-2 or small cities and in rural India.

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