CHAPTER I
INTRODUCTION

1.1. Background
Crop production and animal husbandry are inseparable parts of Indian agriculture, practiced since time immemorial. During 2002-03, livestock sector contributed about 6 per cent of total GDP and 20 per cent of agricultural GDP. Livestock supports millions of rural people in India. It provides employment and generates additional income to resource poor landless, marginal and small farmers throughout the year. Livestock products like milk, meat, eggs etc. have potential to provide food and nutritional security to millions of poor. Even in the era of mechanization, animal power still forms major source of farm power in many parts of the country. However, animal husbandry in India is considered as a subsidiary to crop production without any commercial importance. Livestock are fed crop residues or farm wastes and with a little purchased inputs from the market. Nevertheless, livestock as an asset has greater role to play in the alleviation of rural poverty.

The worldwide experience shows that livestock sector is growing much faster than any other sub sector of agriculture. Delgado et al (1999) predicted that livestock production would account for more than half of total global agricultural output by 2020, the so called “livestock revolution”. The undergoing changes in the sub sectoral growth of agriculture reveals that India will be an important contributor of this global livestock revolution. With the steady rise in per capita income, the demand for and the production of livestock products is expected to continue to increase. A study conducted by Rao et al (2004) shows that
in the year 2010, the demand for milk will be about 112 million tonnes and is likely to increase to 156 million tonnes by 2020. Similarly, the demand for meat and eggs is likely to be 7 and 2 million tonnes in 2010 and will increase to 10 and 4 million tonnes, respectively, in 2020. Further, the productions of these livestock products showed increasing trend overtime when compared to the staple crops. During 1980-81 to 2001-02, the compound annual growth in production of milk, meat and eggs was 5, 4 and 6 percent, respectively, while growth in two important food grains, rice and wheat were only 3 per cent during the same period.

Among various animal husbandry activities, dairying occupies an important place in the complementary relation that exists between crop cultivation and livestock rearing. Besides satisfying the household requirement, the sale proceeds from the milk helps to meet the immediate daily cash needs of the family. The income from sale of milk and young calf also helps the farmers significantly to purchase the crop inputs like seeds, fertilizers etc. Dairy production engages the available family labour very effectively and ensures higher family nutritional standards. Further, the milch animals convert the crop residues into nutrient rich manure, which enhances the fertility of the soil. On the other hand, crop husbandry makes available feeds and fodder to milch cattle for increasing milk production. Since, dairy animals forms one of the major assets of landless, marginal and small farmers, the dairy development in India was seen from the perspective of socio-economic development of rural poor.

India was the net importer of milk products till early seventies. However, India has achieved tremendous growth in milk production since then. The milk production during 1970-71 was about 22 million
tonnes increased to 88 million tonnes in 2002-03 with the compound growth rate of about 4.7 per cent per annum. India now ranks first in milk production in the world. This could be achieved with the government intervention through both internal and external regulations. Dairy cooperatives were seen as the vehicle for enhancing milk production in the country. The “Operation Flood” programme in conjunction with other dairy developmental programmes made India self-sufficient in milk production. With quantum jump in milk production due to effective intervention in the input as well as output market, the per capita availability of milk also increased over the period of time. The per capita availability of milk was 176 gms/day during 1990-91 increased to 230 gms/day during 2002-03 in India. Infact, the per capita availability of milk at all India level has surpassed the nutritional requirement of 220gms/day recommended by the Nutritional Advisory Committee of the Indian Council of Medical Research (ICMR). With increase in per capita income and change in lifestyle, the demand for value added dairy products is expected to increase manifold in future. Further, the milk sector contributes a significant share of agricultural and livestock GDP. Milk is the largest farm commodity in terms of value contribution to the gross national product. The per cent share of milk in total value agricultural output was 13 per cent in 1980-81 increased to 20 per cent in 2002-03. The milk group is the predominant component of total livestock output and constitutes about 68 per cent followed by meat with 17 per cent and dung with 7 per cent in recent times.

Thus, it is clear that India emerged from the state of chronic deficit to self-sufficient in milk production. India also started commercial export of milk products since nineties. However, the important question here is what made India successful? Is it the
presence of large number of dairy cattle and buffalo? or is it the availability of cheap feed and fodder, labour etc. or is it the government policies followed in this sector to enhance milk production in an organized manner particularly from the start of Operation Flood in 1970. These are the issues that need to be explored in depth to understand the success of “White Revolution”. Nevertheless, the government exercised various policy regulations to develop this sector under a protected environment. For the first time in 1957, the commercial import of milk powder was completely prohibited. National Dairy Development Board (NDDB) was created to canalize the export and import of milk and milk products. Based on the success of dairy cooperative societies in Gujarat, the government realized that cooperatives are the best path for dairy development in an organized way. Consequently, the dairy industry was reserved for cooperatives and protected against competition till nineties. The milk procurement, processing and distribution were largely regulated through licensing system. The NDDB utilized the dairy aid received from European Community to organize cooperatives for milk procurement, set up milk processing plants, establish distribution network etc. in major milksheds of the country. In fact, the successful implementation of “Operation Flood” using commodity aid to build huge infrastructural facilities helped the country to achieve self-sufficiency in milk production.

However, two major happenings in the nineties reduced the interventionist role of government in this sector. Firstly, to overcome the fiscal crisis of economy, the economic reforms were introduced in 1991. The reforms started with industrial sector and then agricultural commodities were brought in. The dairy industry was not an exception to these changes. In fact, it was delicensed in 1991 to allow private
investment, flow of foreign capital and new technology. However, the government regulations were soon brought back to maintain production and quality of milk and milk products in the form of Milk and Milk Products Order during 1992. With the trade reforms motive, the import and export of milk products, which were earlier canalized through NDDB, was liberalized in 1994. These developments would certainly have impacted the incentive structure that prevailed before nineties. Secondly, being a signatory to WTO, it became mandatory for India to open the dairy sector to the world market. Consequently, the import barriers were reduced considerably. But, the international dairy markets have been highly distorted by the protectionist policies of developed countries. Dairy is, in fact, the most highly protected agricultural sectors in OECD countries (Andrews, 2001). The European Union maintain domestic prices at higher level through various policy support programmes and provides huge amount of export subsidies for export of dairy products. The continued pursuit of trade distortionist policies by the developed countries even after the expiry of GATT implementation period counters the objective of GATT/WTO agreements. Under these circumstances, the exports of developing countries like India are placed in a disadvantageous position.

1.2. Scope of the Study
The available literature on Indian dairy sector largely focus on the farm management aspect of milk production in the country. They also sought to explain the attempts made to achieve higher growth in milk production. A few studies dealt with competitiveness of dairy products under the context of trade liberalization (Sharma and Sharma, 2002; Sharma and Gulati, 2003). But these studies are not so comprehensive and covers partly the issues discussed above. More over, their methodology to measure the efficiency of Indian dairy products is very
ambiguous. However, it is important to study the relative incentive structure of various dairy products in detail to assess their implications on resources allocations. The incentive structure *per se* does not give any policy directions for resource reallocation, unless comparative advantage of products under consideration is known, which in turn depends on the factor productivity or technical efficiency of the activity. Thus, to address all the issues discussed above, the present study aims at the following specific objectives.

1. To study the structure and growth of dairy industry
2. To analyse the domestic and trade policies of India with special reference to dairy sector
3. To compute the protection indicators of major dairy products
4. To measure the comparative advantage of major dairy products
5. To examine the relationship between trade liberalization and productivity growth in Indian dairy industry

Keeping in view the objectives of the study and the issues discussed, the following hypotheses have been formulated for empirical verification.

1. That there are no structural changes in dairy industry overtime
2. That despite trade liberalization and WTO agreements, the Indian dairy industry is protected against the influences of international trade
3. That India has revealed comparative advantage in the export of dairy products
4. That there is technological change in Indian dairy products industries and they are technically efficient
5. That there is a positive relationship between trade liberalization and productivity growth in Indian dairy industry

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1.3. Framework of Analysis

Following Anderson and Hayami (1986), the protectionism of dairy industry has been analyzed under the simple political market framework. Under this, individuals and groups who expect to gain from a particular policy press for its adoption by lobbying and propagandizing until they perceive the net benefits from further expenditure to be zero. Similarly, those opposed to the policy lobby against it, until the perceived marginal net return is zero. From this, it is possible to conceptualize a political market for policies in which the potential beneficiaries are those who demand for the policy and the political leadership or the government is the supplier. With this framework, on the basis of their own study for East Asia and other cross sectional studies, Anderson and Hayami tested a set of hypotheses for agricultural protection. That as the economies grow, they tend to assist or protect agriculture relative to other sectors. This happens when the high economic growth is accompanied by decline in its agricultural comparative advantage. Whereas in poor agrarian economies, the distortionary price and trade policies are biased against agriculture and at the same time manufacturing is protected from import competition.