



Changing Growth Trend and Competitiveness in The Trade of Livestock Products in India

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Introduction

Global trade in livestock products is expanding rapidly and significantly due to increase in consumer demands linked to growing educational and awareness of consumer, internationalisation of tastes and habits, developments in science and technology and improvements in communication and transportation. Sustained economic growth and rising incomes during the past two decades have been fuelling rapid growth in the demand for livestock products in India. Consequently, the livestock sector has emerged as one of the important drivers of agricultural growth and diversification in India. The 12th Five Year Plan (2012-2017) and the National Agricultural Policy (2000) gave much focus on livestock sector to achieve the target growth rate of 4% in the agricultural sector. The rising global demand for livestock products, various global trade negotiations and domestic reforms in India, have improved the access to international markets substantially, particularly during the post-WTO period. Such developments offer an opportunity to India to increase its exports, especially for livestock products like bovine meat, whose domestic demand is low. However, at the same time, apprehensions are being raised about the ability of Indian livestock farmers, a majority of whom are small and marginal, in taking the advantage of emerging opportunities, under the liberalized trade scenario. Thus, a deeper understanding of the changing growth trend and export competitiveness in the trade of livestock products in India would contribute towards the development strategy of this sector. Similar studies were carried out by Anand and Varalaxmi, 2011 as they evaluated the trade performance of principal commodities from India during 2004 to 2010. Export of livestock products from India have gained a considerable momentum since the early nineties chiefly because of liberalization of trade and several trade policy changes coupled with surge in international prices of many livestock based products (Bairwa *et al.* 2013).

Role of Livestock Sector in Agricultural Economy:

The livestock sector could play an important role in the process of socio-economic development of India. India is rich in livestock genetic resource. The total Bovine population (Cattle, Buffalo, Mithun and Yak) is 299.9 million numbers in 2012. The

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number of milch animals (in-milk and dry) in cows and buffaloes has increased from 111.09 million to 118.59 million, an increase of 6.75%. The number of animals in milk in cows and buffaloes has increased from 77.04 million to 80.52 million showing a growth of 4.51%. India possess 512.1 million livestock and 729.2 million poultry birds. The country occupies first position in milk production despite the fact that the production system is predominantly based on agro-by-products and crop residues, third in egg and fifth in broiler production in the world. Livestock sector has maintained a steady growth particularly, the dairy and poultry sectors. Investments in the livestock sector can significantly contribute to economic growth, poverty reduction and the attainment of the Millennium Development Goals in India. India's livestock sector has been booming. India has become the leading exporter of buffalo meat and it has turned from a milk-deficient nation into the world's largest dairy producer in the world. While the contribution of agriculture to the country's GDP continues to fall with industrialization, the contribution of the livestock sector to India's agricultural output only continues to increase. Livestock now contribute 28% of the output of the agricultural sector and the sub-sector is growing at a rate of 4.3% a year while that for the agricultural sector as a whole is growing at just 2.8% a year. Last year, India's livestock sector output value was estimated to be over USD40 billion—more than all grains combined. Livestock sector are a prime force in this country's economy and the well-being of hundreds of millions of its people. Livestock sector stand as a central pillar for India's economic development. The present contribution of livestock to the national economy is estimates to 18,000 crores mainly from milk and milk products (70%), meat and meat products (11.5%), poultry (8.8%) and dung for fuel (7.8%). In addition the value of other animal products as eggs, wool, leather goods etc. make the total 18,000 cores.

Data Base and Objectives of the Study:

The data used in this study were collected from various secondary sources. Time series data for twenty year (1991 – 2011) on export and imports (quantity as well as in value terms) of various livestock products for the world and India were collected from Food and Agricultural Organization (FAO) of the United Nations, FAO trade statistics and FAO commodity Review and outlook. The data on top exporting and importing countries were collected from Agricultural and Processed food products Export Development Authority (APEDA), Ministry of Commerce and Industry, Government of India. The reference period for the analysis is from 2007-08 to 2012-13.

The changes studied in this paper related to variations in:

1. Growth trend in the trade of livestock products in India during the last two decades.
2. Measurement of Competitiveness of Indian Livestock Sector.

Data and Methodology

(i) Compound Growth rate analysis

The growth rate of the trade in livestock products was measured by fitting an exponential time trend of the form (Veena *et al.* 1995 and Pandian *et al.* 2013)

$$Y_t = b_0 (b_1)^t$$

$$\ln Y_t = \ln b_0 + t \ln (b_1)$$

The annual compound growth rate (r) was given by

$$r = \text{Anti-}\ln (b) - 1$$

(ii) Measurement of Competitiveness of Indian Livestock Sector Trade

Nominal Protection Coefficient (NPC) is the most widely used method to measure the competitiveness of the livestock sector (Rakotoarisoa and Gulati, 2006). NPC is defined as the ratio of a commodity's domestic price (p_i^d) to its international reference price (p_i^b) and is computed as follows:

$$NPC_i = \frac{P_i^d}{P_i^b} * ER$$

The NPC basically helps in measuring divergence in domestic prices and thus determines the degree of export competitiveness of a commodity. A ratio of less than unity implies a competitive advantage and of greater than unity conveys lack of competitive advantage.

Results and Discussion:

1. Growth trends in the trade of livestock products:

The compound growth rates have been calculated for export of different livestock products during the both sub-period I (1991-2000) and sub-period II (2001 – 2011) that have exhibited in the table 1 and Fig 1. From the table, the export of certain livestock products has grown in double digits, which indicates that focus on these products can help in earning more foreign exchange and strengthen the position of India in global livestock trade market. The export of dairy products, natural honey and processed meat has declined its growth rate from sub-period I to II.

The export of swine meat showed negative growth rate during sub-period I (-5.12) whereas its growth rate increased well during sub-period II (5.84). These results indicating the growing demand for this meat abroad. The export of poultry meat, sheep & goat meat, meat offals and wool & hair showed tremendous growth rate from sub-period I to sub-period II. Dastagiri, 2010 showed that meat products constituted the largest share in the total exports and he suggested that government should increase its spending to increase livestock production and which in turn will increase livestock export.

The compound growth rates have been calculated for import of different livestock products during the both sub-period I (1991-2000) and sub-period II (2001 – 2011) that have exhibited in the table 2 and Fig 2. The import of dairy products, eggs, swine meat,

poultry meat, natural honey, sheep and goat meat, hides/skin and processed meat has increased its growth rate from sub-period I to II. The globalization of dairy industry has led to paradigm shift of international dairy markets from being supply driven to demand driven. Also, economic growth and changes in dietary preferences have stimulated consumption of livestock products.

TABLE: 1 OVERVIEW OF ACGR FOR EXPORT OF LIVESTOCK PRODUCTS IN INDIA:

(Quantities in tonnes)

Export	Dairy Products	Eggs	Swine meat	Poultry meat	Natural Honey	Sheep and Goat meat	Bovine Meat	Meat Offals	Hides and Skins	Wool and Hair	Processed meat
Sub – period I											
1991	2314	5794	0	215	0	7622	81459	2497	0	1964	191
1992	613	8188	7	139	1	7357	81614	468	0	1421	147
1993	1525	3595	58	212	166	11022	101666	10	0	131	183
1994	8204	6200	742	101	120	10819	116138	76	0	63	192
1995	3633	13175	1117	407	521	8613	159703	53	0	118	476
1996	930	13064	402	520	581	8692	157574	33	0	270	509
1997	1968	9382	252	344	752	7547	176329	95	0	418	240
1998	1067	10885	118	351	1609	8649	153956	32	1	178	242
1999	4627	9950	351	259	1921	12419	167292	62	0	167	1038
2000	9897	11344	3	259	1534	11903	288027	183	49	383	137
ACGR	12.75	8.98	-5.12	7.85	102.21	3.32	12.68	-17.46	-	-12.30	8.08
Sub – period II											
2001	21898	10486	770	58	3210	3494	243356	272	700	224	258
2002	15005	15128	1143	1041	6647	4973	297897	398	547	219	577
2003	7745	42319	640	6918	6964	16821	343817	1158	942	357	1012
2004	38006	48582	540	1822	10354	8885	306971	664	1166	408	257
2005	68128	58744	429	890	16769	7178	459937	730	1938	353	289
2006	41874	49070	1672	1072	8136	5482	494112	399	2077	256	752
2007	59910	67259	2019	1887	12231	7985	482925	833	6766	119	436
2008	52924	52409	931	1589	15588	37113	460031	3290	15564	390	336
2009	29254	44180	1414	1656	13311	52252	484689	6166	4945	1117	476
2010	28755	34861	2069	4313	22649	14313	654624	6952	1292	1434	637
2011	16039	33915	612	10548	28940	10744	945935	10910	1872	2554	598
ACGR	5.19	9.14	5.84	28.86	18.15	15.88	11.35	41.58	19.68	22.06	3.03

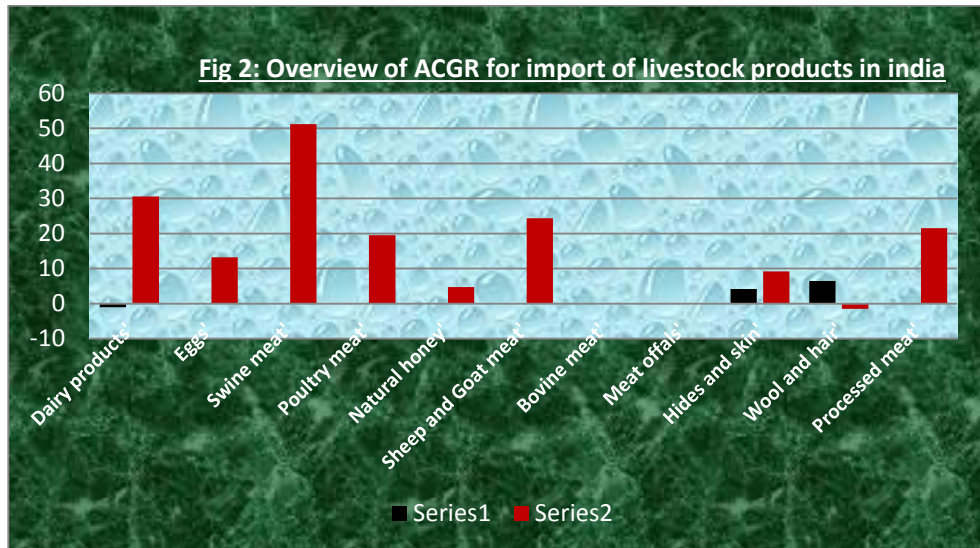
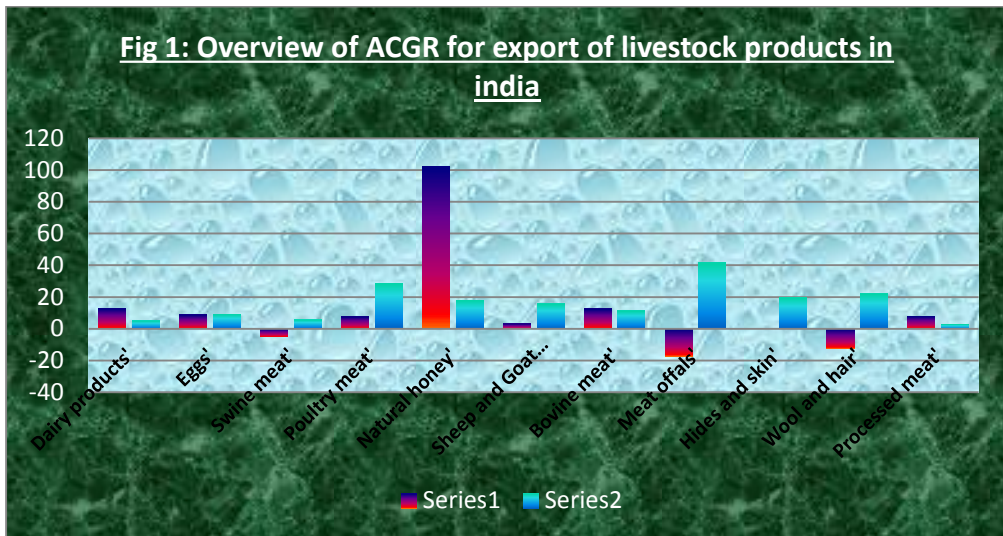
Also, with increasing income levels in urban centres, the demand for processed dairy products has gone up leaving little surpluses for exports. India needs to diversify

its product range to capture the new markets as the food habit patterns is changing rapidly in south and east Asian markets (Ingavale, 2012).

Table: 2 OVERVIEW OF ACGR FOR IMPORT OF LIVESTOCK PRODUCTS IN INDIA:

(Quantities in tonnes)

Import	Dairy Products	Eggs	Swine meat	Poultry meat	Natural honey	Sheep and Goat meat	Bovine meat	Meat offals	Hides and Skins	Wool and Hair	Processed meat
Sub-period II											
1991	2135	0	0	0	0	0	1	0	5281	30437	0
1992	9445	0	0	0	3	0	0	0	6146	44481	1
1993	2583	0	1	0	3	0	0	0	8529	63801	3
1994	998	0	0	0	162	0	0	0	11348	43180	0
1995	5128	0	0	0	185	0	0	0	10759	51679	0
1996	490	14	9	1	80	2	0	0	14270	65633	0
1997	804	11	0	0	0	0	0	0	13479	66145	0
1998	2004	5	1	0	23	0	0	0	16765	60496	1
1999	19193	69	2	0	27	32	2	0	19043	67911	1
2000	1624	23	20	1	1163	6	0	0	18179	59651	1
ACGR	-1.06	-	-	-	-	-	-	-	4.13	6.42	-
Sub-period II											
2001	1567	8	18	65	1098	4	1	6	15276	80849	138
2002	1766	387	59	17	3387	2	0	0	12119	81654	40
2003	12071	43	86	18	155	2	0	0	9288	91511	47
2004	2552	300	108	9	2605	8	84	0	8164	88136	34
2005	2184	366	241	44	502	22	0	0	12627	95193	85
2006	3522	239	331	25	1008	9	2	5	19319	102881	76
2007	2620	294	652	54	2529	18	2	1	20235	95630	198
2008	3773	119	1156	63	2800	19	0	0	21876	67178	263
2009	8719	66	1520	61	1104	39	0	0	27553	69901	217
2010	35539	144	739	148	2405	25	0	0	21601	76562	221
2011	50057	315	1202	124	859	8	0	0	21323	80059	383
ACGR	30.54	13.19	51.19	19.55	4.70	24.39	-	-	9.20	-1.49	21.55



2. Measurement of Competitiveness of Indian Livestock Sector Trade:

India is a potential competitive exporter to Asia and the world. Trade liberalization will help to increase its producer surplus while decreases consumer surplus (Peng and

Cox, 2006). Nominal protection Coefficients (NPC) values for livestock products over two decades were given in the table 3. India has the competitive advantage in production of several livestock products. The NPC value for dairy products was hovered around 1.5 to 2.5. However, these figures do not inspire much confidence for India to record significant export of dairy products under the existing world prices. India can emerge as a significant exporter by subsidizing its exports to compete with other world exporters or should negotiate in the WTO for substantial reduction in subsidies by the major exporters of dairy products. Growth in Indian dairy sector has been impressive and if the existing growth rate can be sustained, India can pursue export of dairy products more vigorously (Kumar *et al.* 2011). The NPC of swine meat was 0.30 in 1993, which rose to 0.88 in 2011. The increasing domestic demand devoid of commensurate supply seems to have fuelled the domestic pork prices. Besides, the international prices of swine meat remained relatively stagnant. These developments may be attributed to the successive erosion in the competitiveness in pig export.

Table: 3 NPC values for Livestock products :1991 - 2011

Year	Dairy products	Bovine meat	Sheep and Goat meat	Poultry products	Swine meat
Exportable Hypothesis					
1993	1.98	0.26	0.61	1.47	0.30
1996	1.87	0.49	0.77	1.96	0.44
1999	2.15	0.52	0.88	2.58	0.47
2002	2.59	0.50	0.97	2.71	0.60
2005	2.14	0.47	0.78	2.44	0.67
2008	1.77	0.46	0.95	2.36	0.76
2011	1.52	0.42	0.98	2.18	0.88
Importable Hypothesis					
1993	1.88	0.27	0.60	1.36	0.31
1996	1.79	0.50	0.77	1.82	0.45
1999	2.02	0.51	0.86	2.26	0.47
2002	2.37	0.49	0.94	2.32	0.59
2005	2.03	0.48	0.77	2.17	0.67
2008	1.72	0.49	0.95	2.17	0.77
2011	1.78	0.47	0.94	2.15	0.88

The NPCs for poultry meat indicate that India has protected poultry sub-sector heavily or the international prices have been depressed due to price distortion in the world market. These results suggest that India does not have enough potential to increase poultry export under the existing scenario (Kumar, 2010). Kurup and Baliyan, 2012 observed that the producer prices of goat and sheep in India is competitive

compared to most of the countries. Among major goat producing countries, only Australia and Thailand are more competitive than India in terms of producer prices. In case of sheep, India is more competitive than most countries – the notable exception being Australia, the major sheep producer. The NPC values for bovine meat indicate a high export potential, but these have witnessed an increasing trend, especially after 1993, indicating erosion of its competitiveness. However, it still hovers around 0.50 and India has much leverage to expand its bovine meat export further, though its competitiveness has deteriorated dramatically in recent years. In addition to the competitive pricing of Indian buffalo meat, increasing efforts by the exporters towards addressing of quality and hygiene aspects have also supported the export growth of buffalo meat (Kumar, *et al.* 2012). Over years, the commodity composition of meat export depicted a highly skewed trend towards the bovine meat (Suresh *et al.* 2012).

Conclusion:

The study was used to find out the growth trend in the trade of livestock products in India during the last two decades by fitting an exponential time trend of the form showed that the export of certain livestock products has grown in double digits, which indicates that focus on these products can help in earning more foreign exchange and strengthen the position of India in global livestock trade market. The import of dairy products, eggs, swine meat, poultry meat, natural honey, sheep and goat meat, hides/skin and processed meat has increased its rate from sub-period I to II due to rise in income and changes in dietary preferences have stimulated consumption of livestock products. The study also measured the Competitiveness of Indian Livestock Sector by using Nominal Protection Coefficient (NPC) showed that the NPC value for dairy products and swine meat was hovered around 1.5 to 2.5 and 0.30 to 0.88, respectively. The NPCs for poultry meat indicate that India has protected poultry sub-sector heavily or the international prices have been depressed due to price distortion in the world market. The NPC values for bovine meat indicate a high export potential, but these have witnessed an increasing trend, indicating erosion of its competitiveness. However, it still hovers around 0.50 and India has much leverage to expand its bovine meat export. India lacks access to developed country markets due to their stringent food safety and quality standards. To give a boost to livestock exports, compliance with various SPS measures should be taken up vigorously to ensure international hygiene standards and to harness the untapped potential of exporting to developed countries like USA, EU and Japan. The constraints affecting meat exports as livestock disease situation, abattoir facilities, slaughter house conditions, some social groups against meat exports, lack of grading and inspection system in meat trade and lack of pragmatic slaughter policies (Sachdeva, 2005). The emphasis on FSM is expected to increase further as a result of growing awareness about food safety, emerging diseases and increasing paying capacity of the consumers in both domestic and international markets. However, the domestic market would be the core market for most of the livestock products and in some instances, over-emphasis on trade in livestock products may lead to increased food insecurity for certain groups of people whose livelihoods largely depend on livestock rearing. To reduce the negative externalities of international trade in livestock

products, incentives and support services should be structured to allow subsistence farmers and landless livestock farmers to participate in the livestock trade and reap the benefits of emerging opportunities.

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