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RESEARCH ARTICLE

MANAGEMENT OF DECLINING SOYMEAL TRADE FROM INDIA: AN ANTHROPOCENE PROTEIN SUPPLEMENT.

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Abstract

The soybean meal is one of the major foreign exchange earners in the export basket for India due to growth in demand for feeds of bovines, poultry, aqua and swine in Asia and Europe. Currently soybean meal export from India has been declined due to growth in domestic demand, the absence of export orders from traditional buyers, high production cost, intense competition and supply of cheaper soy meal by South America. The macro and micro aspects of the soy meal trade are investigated in the present study. Curative measures to augment the export have been discussed. An attempt has been made to disclose the ground truth that India should focus on the issue of non-GMO and high protein factors for marketing the products in overseas markets like Japan, Korea, Iran, France and Belgium. The countries like Pakistan and Bangladesh, Vietnam have started importing soy seed from India to support domestic processing sector. Exporters from India need to market soy meal products through competitive pricing. The present study envisages the analysis of the soybean meal export keeping the yield, production and export factors into consideration. The study also examines the setup of Soybean meal exports from India and to analyze the factors affecting the Soybean exports and their implications. The study is directed to suggest measures to improve the export of soybean meal that would definitely contribute to the Indian economy.

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Introduction:-

Soybean, the *Glycine max* L. (Merrill), the crop of the century is a plant from Papilionaceae family and an important grain legume. Nine oilseed crops including seven edible oilseeds i.e. Groundnut, Rapeseed/ Mustard, Soybean, Sunflower, Sesame, Safflower, Niger and two non-edible oilseeds Castor and Linseed grow in assorted agro-ecological conditions in India as per Ministry of Agriculture, Times of India dated (22.08.2015).

The groundnut, mustard and soybean comprise 80% of aggregated cultivated oilseed out of which Soybean is contributing nearly 30% of the total production. The crushing of soy seed results in Soybean oil (18% by weight) and Soy Meal (residue after oil extraction) / De Oiled Cake (DOC) (80% by weight) by economical solvent

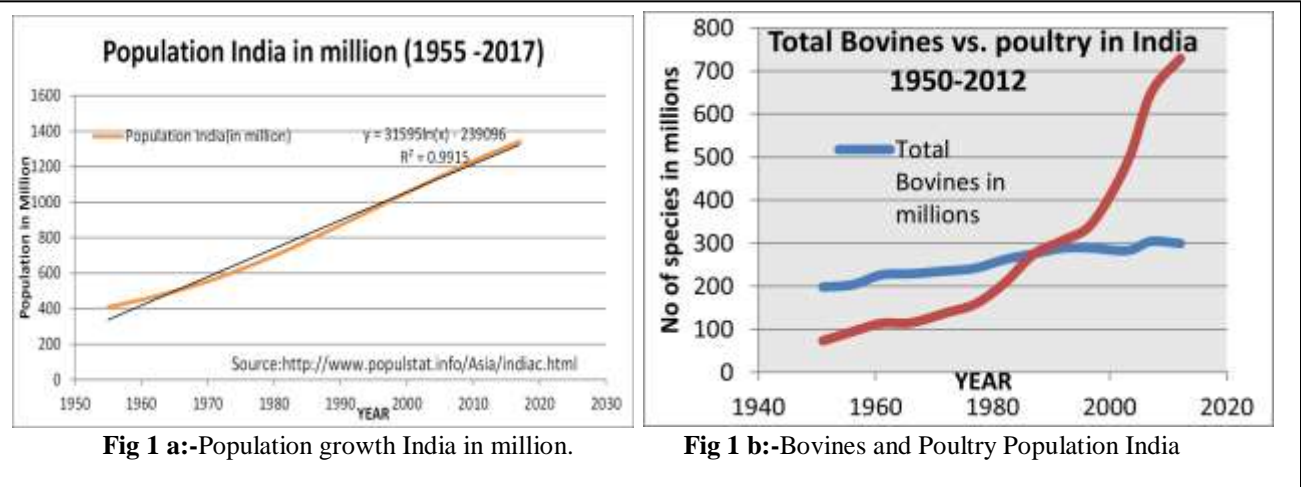
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extraction method rather than traditional pressing method. The soybean meal is rich in protein (about 48-50%) and low in fiber and the end users are live stocks, poultry, aqua and shrimp culture. Soybean meal competes with meals of rape/canola, sunflower, palm kernel as vegetable products and fish, meat and bone meal in animal protein. (Source: Soymeal, Soybean Processors Association of India, Indore).

Soy meal is fibrous, probiotic, low in fats (Cardio friendly omega-3), rich in Ca, Mg, Fe, Vitamin-12 and Se, containing iso-flavones which reduces risks of various cancers, heart diseases and Osteoporosis <http://www.agrifarming.in/soybean-farming-information>. The nutritive stuff is used for bovines, pets, cattle and poultry as feed. Soybean is high yielding in central peninsular India. The USA and Latin America have patronized soybean on a big scale and so it has become world’s favorite oilseed since last two decades **Mehta B.V. (2008)**^[1].

Indian Soybean meal is non-genetically modified organisms (non-GMO) and internationally popular due to high protein content. The challenges before oilseeds sectors are cheap edible oil import, stagnant and depleted yield, and failure of minimum support price (MSP) to spur growth, phyto-sanitary on health restrictions. The dwindling and under-utilized processing sector has created an imbalance among stakeholders such as protecting producers’ v/s seed processors. The consumption and cropping pattern is also influenced by customs duties and differential prices among different oils **Reddy et. al., (2009)**^[2].



India is on a journey from ‘food security’ to ‘nutrition security’ against its exponential population growth. Soybean is gaining importance as vegetable protein diet among the middle class and the soymeal where the end users are the livestock, poultry and aqua fauna. The exponential growth in population as well as poultry has accelerated demand for soybean meal Fig 1(a) and (b). The growth in soy industry would help in boosting export turnover and reduce dependency on imported edible oil resulting in saving precious foreign exchange. The country has a certain competitive advantage in the soy meal export markets like higher protein content, non- GMO produces, logistics and proximity to end-user market. India has achieved export total growth in export (quality and quantity) except for the last few decades. The export of soybean meal occupies a prominent position in the export basket of Agro-Commodities as evident from the Table: 1

Table 1:-Share of Soy Meal Export in Country’s Total Agri- Export, (Source: indexmundi.com & SOPA Indore)

Year	Agro Exports USD in Million	Soymeal Exports in million USD	% Soy Meal export of Total
2000-01	6256	384.09	6.138
2001-02	6146	363.78	5.92
2002-03	6962	395.2	5.68
2003-04	7889	761.53	9.65
2004-05	8809	643.27	7.30
2005-06	10549	106.75	1.0
2006-07	13030	1307	10.03
2007-08	16202	2325.23	14.35
2008-09	17768	1355.49	7.51
2009-10	17963	1652.65	9.20
2010-11	24448	2218.67	9.07
2011-12	37618	2075.45	5.51
2012-13	41017	2860.25	6.97
2013-14	43133	1180.72	2.74
2014-15	39357	436.60	1.11
2015-16	24521	200	0.81
2016-17	24698	343	1.38

The relevance of the Study:-

India has an ambitious target for increasing the export doubled after five years as per the Foreign Trade Policy. The oil meals exports had registered a rising trend in both value and quantity from 2005 to 2012. Soybean production stipulated to rise during to 348.44 MMT 2017 against 351.44 MMT in 2016 globally whereas India shall have a fall of 9.1 MMT (2017) against 11.5 MMT in 2016 respectively (IIFL). The decline is expected to fall by 21%. <http://businessworld.in/article/India-s-Soybean-Output-May-Fall-22-On-Planting-Area-Cut-Dry-Weather/11-09-2017-125896/> The low demand from Iranian buyers from India is aggravating the trade vulnerability. Indian exporters are presently quoting ≈\$405 Soya meal/MT on free-on-board basis whereas, the competitors, Argentina and Brazil are charging nearly \$100 less than India. The problem shall further aggravate due to lack of growth in planting area, seed production and productivity, lack of crush margin, underutilized processing capacity and bottlenecks related to transportation, storage and ports facilities.

The present study envisages the analysis of the soybean meal export keeping the yield, production and export factors into consideration. The study also examines the setup of Soybean meal exports from India and to analyze the factors affecting the Soymeal exports and their implications. The study is directed to suggest measures to improve the export of soybean meal that would definitely contribute to the Indian economy. The study aims at providing useful insight into the problem areas and providing probable solutions to the drowning industry.

Review of literature:-

Plato et al., (2004)^[3] reported the impact of increased soybean production in states of South America and controls soya trade in Argentina and Brazil. He has concluded that 1% increase in South America production reduces the US soybean price by 0.26%. **Dwi S. (2005)**^[4] reported that there is growth in export and production of Soybean oil and meal in the countries like Brazil and Argentina has increased since the 1970s. The export taxes and quotas promote to dampen internal prices and encourage domestic processing, while high tariffs and import controls on agricultural

inputs **Schnepf et al., (2001)**^[5]. **Pick et. al, (1991)**^[6] stated that characteristics of international trade in Soybean and Soybean meal are competitive. **Deodhar et. al., (1997)**^[7] opined that Soya meal export market is competitive. **Srinivasan (2004)**^[8] observed that the India oil seed sector is suffering from large unutilized capacity in soybean, lack in the economy of scale and liberal import, the gap between demand and supply and negligence of govt. interest.

Dwi S. (2006)^[4] adopted the New Empirical Industrial Organization (developed by Breshahan T. F. (1982)^[9] and lau L. J. (1982)^[10] methodology based on estimates of market power indices and hypothesis tests have reported that the price elastic Soybean and Soybean export markets are deemed competitive and rather than behaving as the cournot duopoly. **Reddy D. (2008)**^[11] investigating the Soybean meal (SBM) trade globally by using Growth rate analysis, Markov chain analysis, Auto Regressive Integrated Moving Average Analysis and Co-Integration analysis opined that Growth rate analysis revealed highly significant growth rate. **Shurtleff et al 2007**^[12]. **Jadav et al., 2009**^[13] reported that Soybean was cultivated during 664 BC in China but the cultivation was tried in OSA and India in the year 1963-64 <https://www.vantagepointsoftware.com/trading/soybean-meal/>. Indian soybean meal is exported to countries like Vietnam, Japan, Indonesia, Korea, Thailand and China. Indonesia is the growing market for soybean meal whereas Vietnam and Japan shows stability in export. Factors like demand from export market especially Southeast Asian countries, foreign trade policy and monsoon pattern determine soya prices. Whereas the soya oil prices are mainly influenced by production and supply of soybean oil by Argentina, Brazil, prevailing Chicago Board of Trade (CBOT) price and FOB (Freight On Board) prices of Malaysia and Indonesia (European commission 2017) <https://ec.europa.eu/agri-culture/sites/agriculture/files/cereals/presentations/cereals-oilseeds/market-situation-oilseeds>.

White et al., (2008)^[14] have mentioned export of beef, broilers and pork by the US but is retrospective and indirect export of corn and soybean meals. **Regunaga M. (2009)**^[15] studied the soybean chain in Argentina and found that agricultural revolution headed by soy industry has created a favorable climate for economic growth and investment. **Reddy (2009)**^[2] had observed that the oilseeds yield in India has stagnated for the last two decades because of decline in cultivation area, inefficient and underutilized processing vis a vis increase in edible oil import due to a commitment to WTO. **Sun Wei et al., (2009)**^[16] reported that that effect of changes in livestock production are stronger on Soybean meal demand than they are on Soybean demand. **Rao et al., (2010)**^[17] stated that the factors affecting the Soya yield are farmers' holdings, lack of quality consciousness, frequent attack by pests and diseases, marginal environmental land, lack of irrigation, low and uncertain rainfall by Yu Wei in **China daily the USA, (2013)**, http://usa.chinadaily.com.cn/epaper/2013-08/02/content_16865591.htm reported that the US is the main soybean producer and China is the largest soybean importer (50% international demand). The long run equilibrium shows that the international soybean prices depend negatively on the Yuan vs. Dollar exchange rate and positively on real economic growth of China. The soybean matrix of India and China have deteriorated in spite of developing economies are due to Dollar weakness. **Abhuri (2010)**^[18] mentioned about the price linkages between United States and Indian Soybean Markets has significant price relationship between USA and Indian market. **Wang Yonggang (2010)**^[19] observed that there are surplus units in traditional vegetable oil growing areas South Eastern coastal provinces of China with fierce competition. **Uri et al., (1993)**^[20], **(1994)**^[21], **(2011)**^[22] reported that 1% increase/decrease in the price of soybeans, meals or oil in the long run results in more than a one percent decrease (increase) in the quantity of soybeans, soybean meal or soybean oil exported".

Tejeda et al., (2014)^[23] reported that the present and predicted the cost of soybean meal and live cattle have two significant different dynamic correlations. Present Soya meal price is 351.75, down from 352.00 USD/mt in May-2017 and was 434.00 in 2016 as per World Bank https://ycharts.com/indicators/soybean_meal_price_any_origin. Akin Oyedele 2016 reported that soybean exports from the USA, spikes in winter after the fall harvest and further smoothened these rise through seasonal adjustment by the Census Bureau, USA. Soybean meal export downsized by 86% in 2017 as per Newspaper "Hindu" (<http://www.thehindubusinessline.com/economy/indian-soybean-meal-exports-hit-historical-low-down-by-86>). Financial Express, 7th Sept 2016 reported that Soymeal export of India has declined by 74% from previous year and in 2014-15 it was 387297tons, <http://www.Financial-express.com/market/commodities/soybean-meal-exports>. The exports of Soymeal from India dropped by 85% in 7 years: as per the Associated Chambers of Commerce and Industry of India (ASSOCHAM) <http://www.business-standard.com/article/markets/soyameal-exports-decline>. Oilseed market prices are always above MSP, except for mustard in the year 2002-03, when the GOI intervened to purchase around 19% of total mustard seed production (Mehta B.V. 2008)^[11]. Soy seeds planted in 11.63 MHa in 2015-16 but about 10.5 MHa cultivated in India in the year 2016-17 (10% decline) Reuters May 24th, 2016.

Methods and methodology:-

The researches undertaken by various scholars, publications, presentations and committee reports on soybean meal were referred. The influence of various market forces including demand supply management, pricing, and consumption on exports of soymeal were investigated. Studies were conducted on exports to specific countries, markets, time periods and comparative analysis of some of the segments. Field visits were conducted to interact with growers, processors, traders, exporters and service providers. The volume of existing research works comment on various factors such as market forces, pricing, competition, government policy, foreign exchange fluxes etc. Exports are not enough to ameliorate the strategy. The demand and supply and consumption and trade data of various oilseeds indicates that Soya seeds are gaining importance in the oilseed basket compared to other oil seeds.

The data of soy seed production, the output of soybean meal, domestic consumption and export of soybean meal from India for about 50 years (1964-2016) were analyzed (Fig. 2). The commodity soy seeds and its derivative products soybean meal made their entry in Indian market between the years 1963-64. But there is significant growth in the production of soy seeds and consumption of soybean meal in the country during 2004-05 to 2013-14. But the trend in the export depleted from 2015 onwards whereas the domestic consumption of soybean meal registered steady growth. There are limited studies on these commercial aspects of the process of export at present which forced to have a rigorous ground level review.

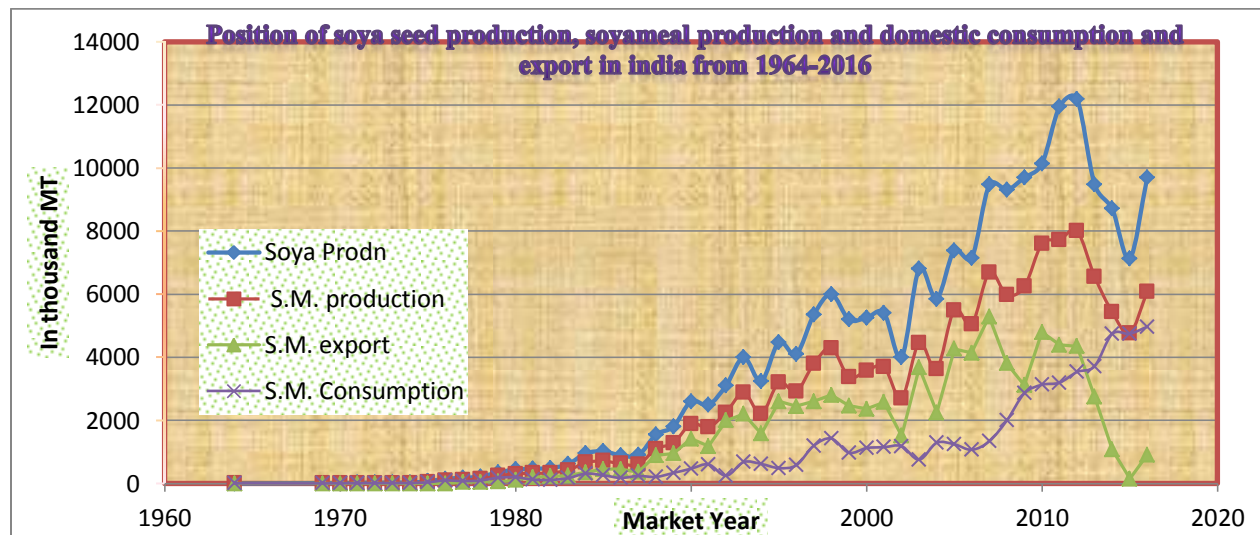


Fig 2:-Status of Soya seed production, soymeal production and domestic consumption and export in India From 1964-2016 (Source: Index Mundi.com)

Soy Production India:-

Soy bean is stable Kharif tropical crop of temperate, moist climates, well drained loose and loamy soil as in India with rough and tough care. It needs a temperature 15.50C to germinate and 20 to 25⁰C to grow. Since the climate and soil of MP, Jharkhand and east Gujarat are favourable (Fig 1 C), Soya bean was tried as an alien crop from 1964 and found high yielding. But for last 4 to 5years there is a decline in yield/ export has been considered as a threat to Soya trade. From the Rainfall data of east and west MP it is found that there is a continuous dry spell East and west MP from 2014 onwards. The dry spell, infestation of pest and reduction in cultivated area may be the reasons to have a shortfall in yield, production, processing vis-a-vis export of Soya meal (Fig 3)

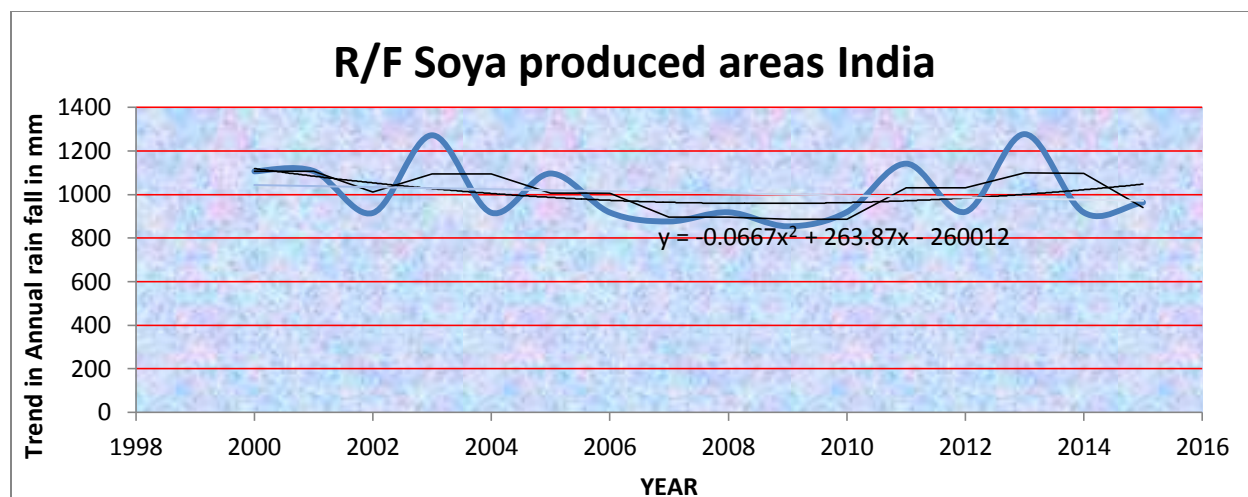


Fig 3:- The spatial distribution of rainfall in the soyabean producing areas in India (Source:gov nic. in)

Global Soy Trade:-

As per U.S. department of Agriculture report the soybeans and their derivatives stand as 10% of the total value of global agricultural trade and projected to increase in soybeans by 22 % and in soybean meal by 20%. The factors affecting growth in soy trade are due to growth in population, urbanization, GDP growth, emphasis on nutrition and protein meals for livestock products etc. The domestic policies, tariff and non-tariff barriers, sanitary and phytosanitary restrictions, trade agreements, demand for bio fuel are some of the other factors affecting growth in soy trade at global level.

China is the largest importer of soy seeds (60%) in the world trade. Argentina with estimated production of 54 million tons of soy seeds which is 18%. The largest exporter of soy product is in the world. USA (108MMT) and controls the world soya trade. The volume of export shipments of Brazil and USA was 76.40 MMT and 52.40 MMT by 2025/26. The production of soy crop is growing in Uruguay due to adoption of certified seeds suiting, favorable ecological environment and modern bio-technology producing mainly due to GMO seeds. Uruguay, Bolivia and Ukrain are exporting 3.0 MMT, 3.3MMT and 4.0MMT soy bean contributing to their foreign exchange earnings. The major chunk of soya produced in Canada is exported to Japan, Southeast Asia, Middle East, and Europe. Soy production in Paraguay is about 10.00 MMT which contribute 3% to global soy seed production and have dominated the export market in European Union, Russia, Egypt, Turkey, Mexico and Brazil.

Table 2: The Global Production of Soy Seeds, Soy Meal and Exports of Soy Meal(Qty.: In MMT) (Source: International Grain Council, London and SOPA Indore)

Year	Production (Seed)	Production (Soy Meal)	Exports (Soy Meal)
2005-06	220.80	146.36	52.245
2006-07	236.24	153.76	54.69
2007-08	218.96	158.70	56.06
2008-09	212.06	152.08	52.84
2009-10	260.48	165.26	55.61
2010-11	264.28	174.82	58.54
2011-12	240.55	180.91	58.23
2012-13	268.57	181.20	57.93
2013-14	282.46	189.01	60.20
2014-15	319.78	207.33	64.01
2015-16	313.02	216.47	65.68
2016-17	333.29	226.68	69.40

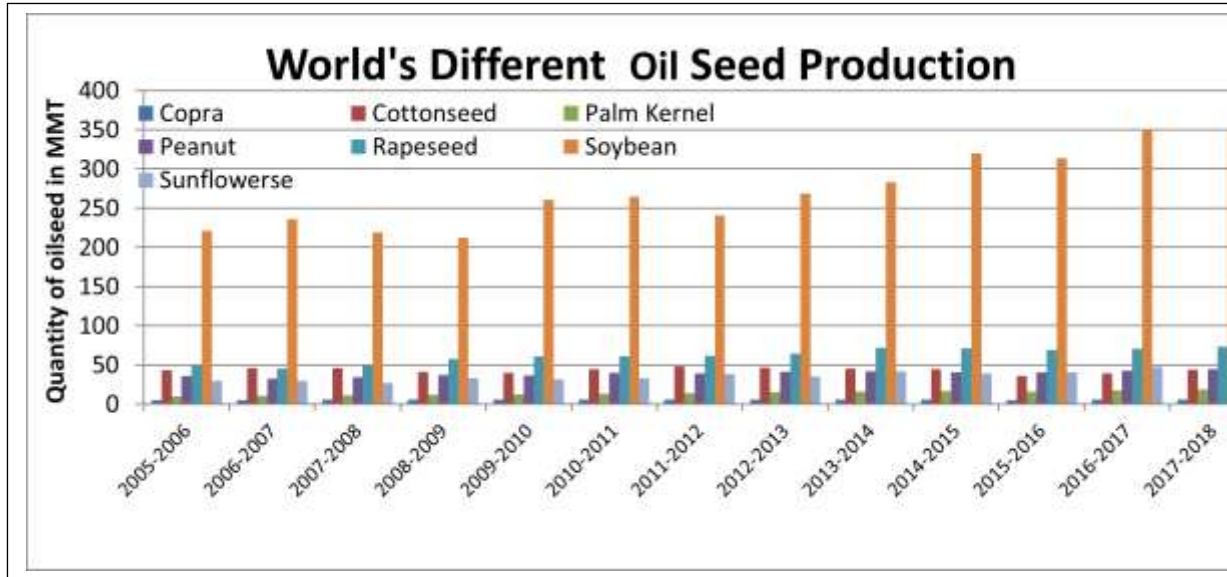


Fig 4: The status of different major oilseeds production around the globe for the year 2005-06 to 2017-18 (Source: International Grain Council, London and SOPA Indore)

Soy Seeds in Indian Context:-

India is the largest producer of non-GMO soy seeds (11MMT) in states M.P., Maharashtra and Rajasthan contributing about 90% of total production.. These artias or commission agents act on behalf of traders, farmers, middle man and other end users for procurement of soy seeds. Foreign matter, the oil content of the seeds decides their purchase and selling prices. The delivery or go-down price is determined based on auction value & taxes with applicable incidentals like gunnies cost, labor charges, transportations, rebate and interest cost. The soya seed prices are linked to demand/supply and other market forces prevailing in domestic and global level. (Table 2 & Fig.- 4)

The share of India in global soybean production in last 3-4 years varies from 3 to 5%. . Present soy seed production is about 11 MMT, producing 9 MMT of Soybean Meal and 2 MMT of Soy Oil. With current capacity utilization is of around 55% the soya sector is facing major concern of underutilization of capacity. Three top processors in India crush nearly 40% of soy seeds available in the market and about 20% Plants run for 300 days indicate underutilization of capacity (Fig -5). (Soybean Processors Association of India, SOPA DIGEST, 2013)

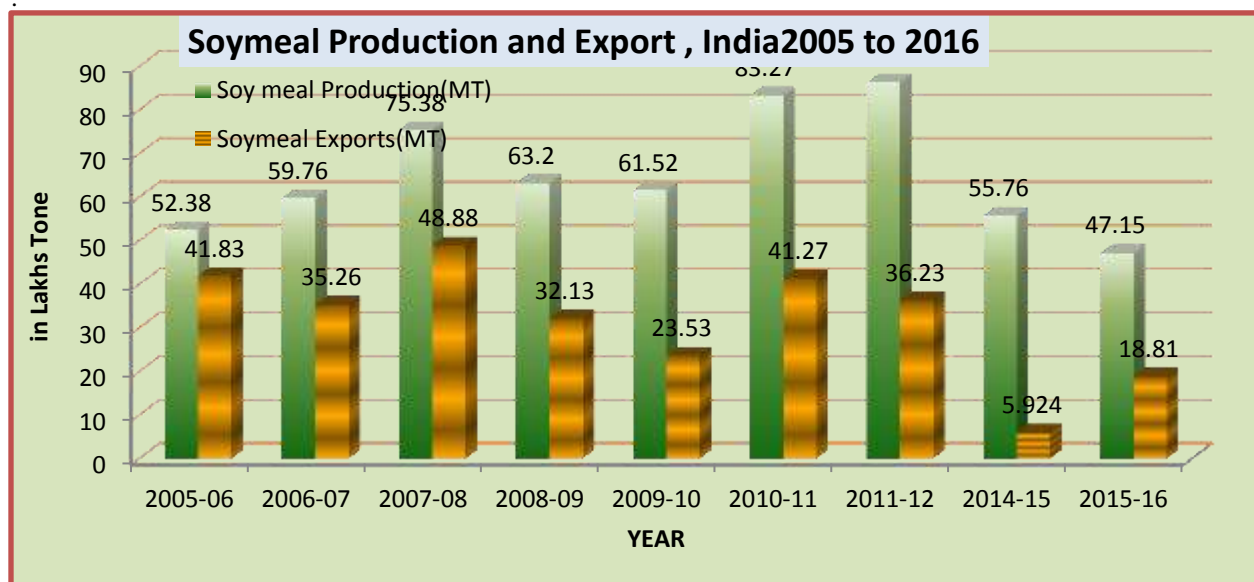


Fig 5:-India Soybean Production vs export (2005-06 to 2015-16) (Source: Ministry of Agri., Govt. of India Website)

The Minimum Selling Price (MSP) of soybean has been increased in INR from 900/ quintal to 2560/ quintal (about 190%) in the last decade, the influencing factors in the growth in the production of soya seeds. In last few years the MSP is either ruling over the international price of soy meal or close to the globally traded level. This indicates India is totally out priced in the global market in case of soybean meal which is derived from processing soy seeds (Fig -6).

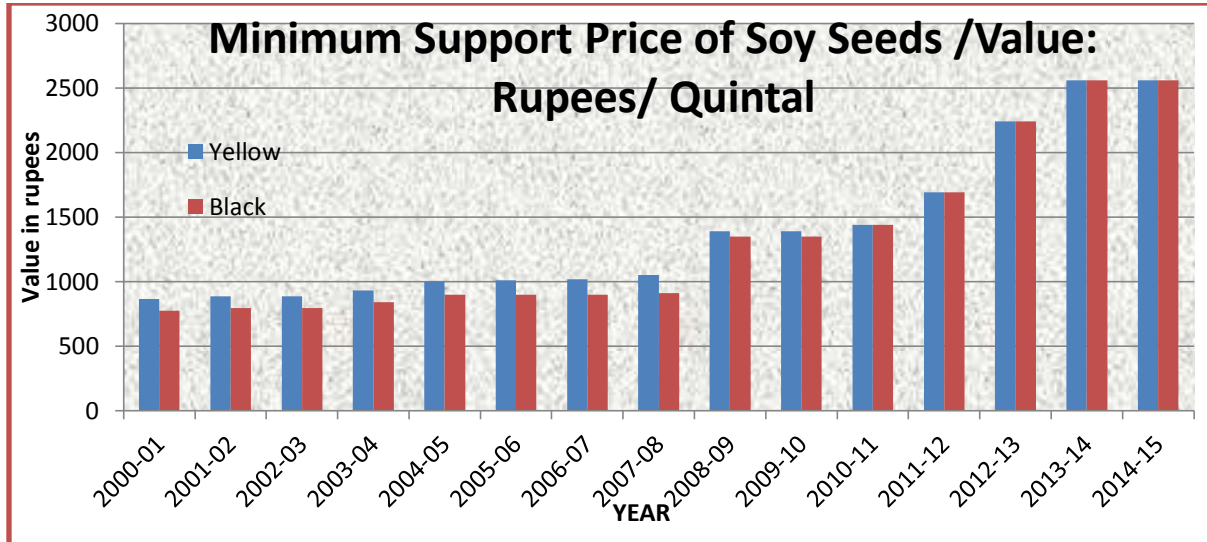


Fig 6:-Minimum Support Price of Soy Seeds: Source: Ministry of Agriculture, GOI.

The monthly average price trend of yellow soybean is ruling over the MSP price during off season. Especially the level of export prices were increased during April-Sept. in the financial year 2011-12 to 2013-14. The export growth is attributed to demand of meal from the Iranian buyer and Indian exporters earning a premium in Iran export transactions (Fig 7) (Source: SOPA & SEA)

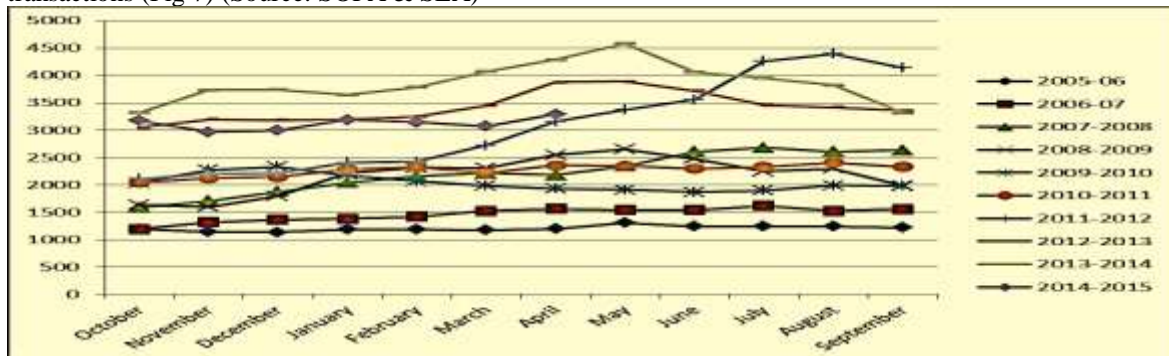


Fig 7:-Monthly average price trend of Yellow Soybean / (Mandi rates) from 2005 to 2015. Source: Soybean Processors Association of India (SOPA)

Monthly FOB and CBOT prices variation in India:-

Mehta (2008) reported that domestic prices of traded oil meals are linked to world prices and domestic seasonal factors, although some meals are often priced below world levels. is depicting the Free Along Side (FAS) and Free on Board (FOB) monthly average rate for Soybean meal at an Indian port. The peak price of USD 531.30 during August 2012 of Chicago Board of Trade (CBOT) matches with highest FOB price USD 734.60 at the same time. The declining trend in the CBOT and FOB prices except the months June-13 and March to June 2014 are due to lack of demand from Iranian buyers from Iran, other domestic and global market conditions (Fig 8).

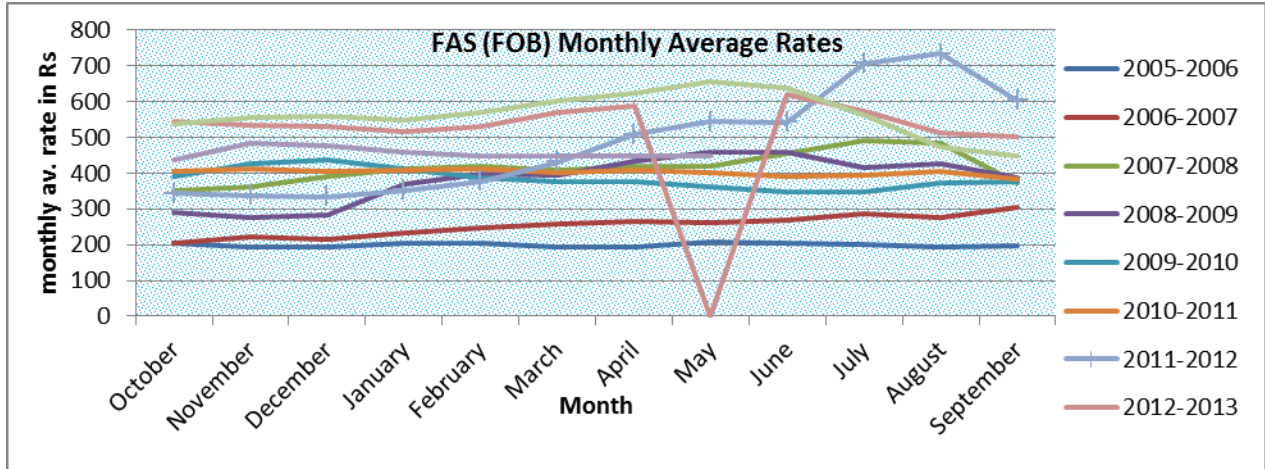


Fig 8:-FAS (FOB) Monthly Average Rates For Soybean Meal (2005-2006 To 2014-2015): Source: Soybean Processors Association of India (SOPA)

The recent upward global trend in soybean meal trade is due to demand for animal protein, soya oil, demand from Chinese processing units, the decline in USD, bio-diesel and more financial institutions entering global soya market. The institutional investors invest in commodity market which has sharp rise as in prices of soya products despite no major change in supply and demand in market fundamentals. (Source: USDA Report). The demand for bio fuel in developed countries especially in countries like the USA has resulted in the diversion of agro-crop, such as, sugarcane, ethanol, corn, soybean and wheat for production of energy.

Domestic consumption of soybean meal:-

The domestic consumption of soy meal is growing @ 10% to 15%/ year except the year 2003, 2005, 2006 and 2010 with a gradual increase after 2011. It is expected to grow steadily due to demand from food and feed industry in future. The soya processing industry is capable of manufacturing soya meal variants like standard SBM (46% protein), Hypro (48% protein) and Super Hypro (52% Protein). Edible usage of the soy meal is growing @ 25-30% per annum and the projected usage will scale up to 115 Th. Tons by 2015-16 and 180 Th Tons by 2020-21 (Fig -9). The main usages of soy meal are fortification with other flours, TVP, Milk, Tofu and Beverages etc. The total export range between 40-50% of the total domestic production and the balance is available for domestic consumption (SOPA DIGEST July 2012). From exports point of view, India is considered as a capricious source of supply in the foreign market because the exports are thought only when it is surplus, Mehta B.V., (2008)^[1].

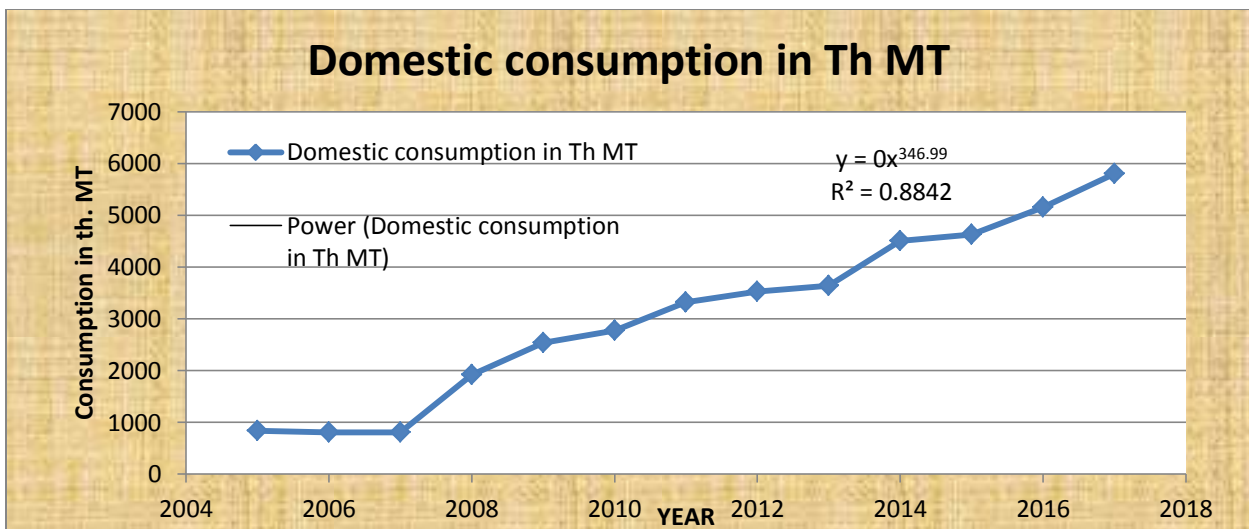


Fig 9:-Domestic Consumption of Soybean Meal (2005-17) (Source: US Dept. of Agriculture)

Global Soybean Meal Trade:-

It is observed that the top 3 exporters are Argentina, Brazil, USA and together they contribute about 70% to 85% of the global exports during the last decade (Tab -2). The growth of export of Soybean and production of Soybean meal and Soybean oil in the countries like Brazil and Argentina has increased substantially since the 1970s. The agricultural sector in Brazil and Argentina were subject to pervasive policy intervention. The share of India in global soy meal exports about 7-11% during 2005-06 to 2008-09. Despite the increase of exports in absolute terms during 2011-12 and 2012-13 the share of India in global exports remains about 8-10% (Table 3) **Dwi Sushanto (2005)^[4]**.

Table 3:-Global Soymeal Exports, Basis: October/September, Quantity in Million Tones (Source: International Grain Council. London)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Argentina	19.9	23.2	24.3	25.2	22.3	23.5	25.8	24	21.8	23	27.6	30
Brazil	14.2	12.9	12.7	12	12.9	12.8	14	14.7	13.2	13.9	14.2	14.5
China	0.6	0.3	0.8	0.6	1	1.1	0.4	0.9	1.3	2	1.9	1.7
EU-27	0.5	0.7	0.5	0.4	0.5	0.5	0.6	0.9	0.5	0.3	0.4	0.4
India	2.6	5	4.4	5.8	4.2	3.5	5	4.9	4.8	3.1	1.7	2
Paraguay	0.8	0.7	1.3	1.3	1.1	1	1.1	0.7	1.5	2.4	2.6	2.9
USA	6.7	7.3	8	8.4	7.7	10.1	8.3	8.8	10	10.4	11.6	10.7
Others	1.5	1.7	1.4	1.5	2	1.5	1.3	1.7	1.8	2.7	2.8	2.9
World	46.8	51.8	53.4	55.2	51.7	54	56.5	56.5	55.1	57.9	62.7	65

Note1. Data for 2013-14 is estimated; data for 2014-15 is Predicted, data for 2015-16 is projected

Argentina, Brazil and USA currently account for about 85% of global aggregate exports of soya meal and oil which is projected to 89% by 2024-25. World global soya meal trade is expected to climb by 11 MMT (17%) to reach 75.8 million tons by 2024-25. European Union (EU) remains the world's largest soya bean meal importer throughout the projections. SE Asia, Latin America, North America and Middle-East shall be the higher importer of soya meal due to increasing demand for livestock feed. Imports by Vietnam, Indonesia, Thailand, the Philippines and Malaysia shall be increased by 4.7 million tons by 2024-25 would account for 43% of the projected increase in world soya meal trade. Argentina's annual soy meal exports shall be projected to reach 38 MMT by 2024-25 (increased by 10MMT). The share of global soybean meal exports will remain in between 22-24% range for Brazil. The US share of world soybean meal exports will decline from the present by 18% (from 2015-16) to about 15% by 2024-25. It is predicted that India's soybean meal exports would decline from around 3.8 million tons in 2015-16 to 1.7 million tons in 2024-25 because of the rise in domestic usages and competition from South-American exporters (USDA Agricultural Projections to 2024 https://www.usda.gov/oce/.../projections/USDA_Agricultural_Projections_to_2024) (Tab -4)

Table 4:-Global Soymeal Imports (2004-2016), Basis: Oct / Sept Qty in MMT (Source: I.G.C. London, data 2013-14 (estimated); 2. data.2014-15 (predicted), 2015-16 (projected))

Country	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Europe	23.1	24.1	23.4	25.7	22.3	22	22.9	20.9	18.6	19.2	20.1	20.7
N&C America	3.8	4.8	5	4.7	4.4	4.1	4.5	4.5	4.2	4.5	4.7	5.1
South America	3.3	3.8	4.3	4	3.4	4.1	4.5	4.5	5.3	6.3	6	6.4
Near East Asia	2.3	2.1	2.5	2.9	3.5	3.9	4.1	4.7	5.3	4.7	5.4	5.7
Far EastAsia	11.1	13.5	14.1	14.1	14.3	15.6	15.6	16.9	16.8	17.8	20.7	21.2
Africa	2.3	2.5	2.9	2.7	2.7	3.1	3.8	3.5	3.8	4.1	4.1	4.5
Oceania	0.5	0.6	0.7	0.8	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8

Others	0.4	0.4	0.6	0.5	0.6	0.5	0.4	0.7	0.4	0.5	0.4	0.5
World	46.8	51.8	53.4	55.3	51.7	54	56.5	56.5	55.1	57.9	62.7	65
Total												

Global Outlook On Soymeal Trade:-

Export tax is a source of revenue generation from agricultural commodities for the country where the producers, the consumers, the end-users, and service providers including the importing country are influenced. During 2002-2015, Argentina imposed heavy export taxes on agricultural commodities and applied export permit system which favored to soya bean production. Other agricultural commodities like corn, wheat and beef were levied higher taxes and no incentive for promoting the product. The soya bean production got a major boost and producers got incentives to produce more soybean. USDA reported that Argentina shall dominate the global soya meal and soya oil export market with 50% share by 2025-26 due to the new policies like the removal of export taxes eliminating its export permit system and lifting its currency control on soya meal and oil.

Brazil would restrict the growth of soy meal exports due to inland rise in poultry and pork sector as per USDA. Brazil's soybean crushing capacity is expected to expand at a slower rate due to strong competition from Argentina. It is projected that the share of Brazil in the world soya meal market likely to remain unchanged at 22-24% during the coming decade. The appreciation of USD would render USA origin soy meal uncompetitive in the global market. The share of the USA towards soymeal export is expected to fall from 16% in 2016-17 to about 13% during 2025-26.

EU is expected that the soymeal imports would hover around 19-20 MMT between the year 2016-17 to 2025-26 due to low demand in soybean oil (The food authority in EU), whether made from GMO crops or not. Due to their bio-technology policies and slow approval of GM soya products delays US soybean and soymeal exports into the EU market.

SE Asia and Far-east Asia have accelerated use of soy meal application in poultry and pork sector. The augmented demand, the rise in urban population and rising income level, shifting to nutritional food habits have increased their soy export. South Korea and Japan have limited land availability restricting soy production. So they have lowered import duty on soy meal as rule. USDA projected that SE Asia and Far-East Asia would account for about 50% of the projected world soy meal trade. As a result, EU would be no longer the highest soybean meal importers in future and shall be replaced by countries like Indonesia and Vietnam.

As per USDA annual soybean meal imports, North Africa and the Middle East are projected to rise by 2.4 MMT by 2025-26, accounting for 18% of the rise in world soy trade. Russia's policies towards augmenting livestock industry, is driving its soy meal imports, which are expected to grow more than 70% from 0.4 MMT to 0.7 MMT by 2025-26.

Export Scenario From India:-

India exports soy meal to over 65 countries. Recently EU (France, Italy & Greece) and Africa have emerged as a promising market. Countries like China, South Korea, Thailand, Vietnam, Indonesia, Japan, Taiwan in South-East Asia and UAE, Oman, Iran in Middle-East and African countries (SOPA Digests). The export market of Soybean trade is 3.7 to 3.8 MMT including bulk, container and export by road and rail against the domestic consumption of about 2.5 MMT (SOPA DIGEST 2012 & 13). Production, domestic consumption and export of hi pro Soya meal and edible grade soya flour is rising (0.3 MMT). Export figures show a step fall in quantity from year 2012 to 2015. It was stagnant for four years barring 2009-2010, which was a drought year. There is a decline in export volume ($\approx 12\%$ in past one year) though the price of SBM in the domestic market has been quiet. (SOPA DIGEST July 2012)

Soymeal exports constitute about 67% of the total oil meal exports from India in 2004-05 and the quantitatively increased up to 77 % during 2008-9. Similarly the quantitative share of soymeal during 2009-10 was 74% and decreased to 65% during 2013-14. There is an increase of 124% from 2004-05 to 2008-09 in soy meal export (data 2004-05 to 2008-09). There is a decrease in export of rapeseed meal, groundnut meal and no export of sunflower meal and cotton seed meal. In case of rice bran the increase is 96.70% and for rape seeds the increase amounts to 42.80%.

There is an increase of export soy meal (31.5%), rapeseed (21.8%) whereas export of groundnut meal (64.5%) and rice bran (3.2%) was decreased (data F.Y. 2009-10 to 2013-14). Hence soy meal export is the major exchange earner for India. The total export of Soya meal in India is 3.7 to 3.8 MMT when domestic consumption is about 2.5 MMT. Production, domestic consumption and export of hi pro Soya meal and edible grade soya flour is rising (Fig -9)

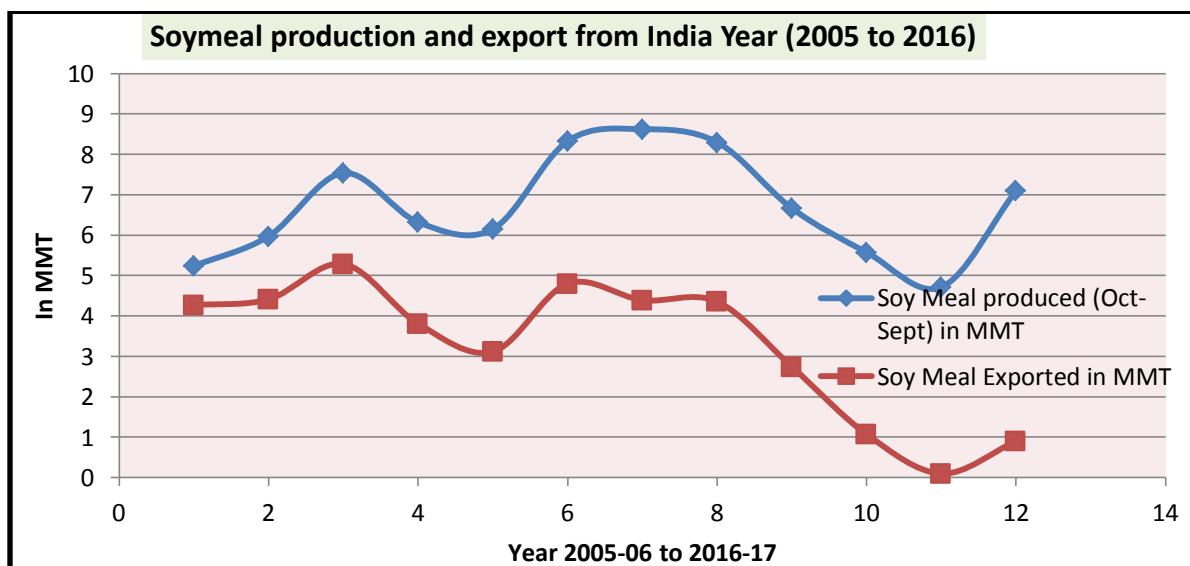


Fig. 10:-Soy meal production and export of Soy meal from India, 2001-02 to 2016-17(May), Source: SOPA India)

The export quantity increased during 2004-05 up to 2008-09 with a decrease in quantity during 2009-10. But the year 2011, 2012 and 2013 was the very good year for soy meal exporters from India with Indian exporters capitalized on the demand from Iran market. The total export of oil meals during April 14 – March 15 has declined by 63% in value terms from Rs. 1150.8 Billion during 2013-14 to Rs 427.8 Billion in 2014-15, but the decline is 44% in quantity (4.382 MMT) from 2013-14 to 2.44 MMT during 2014-15. The total earnings reported US\$ 0.68 Billion in 2014-15 against US\$ 1.88 Billion in 2013-14 (- 64%) ((Solvent Extractors Association of India), SEA).

Preference in export in Soy meal Quality:-

Vietnam is the major market for soybean meal followed by Japan, but, India is losing market share in Korea, Indonesia, and Thailand for India. India is facing competition from Argentina in past but US Soya meal is gaining market due to their competitiveness. However, a discount of Indian meal over US meal is widening on account of quality and perception related issues. The domestic consumption at poultry and meat industry including soybean meal is growing at 10-15%. It is estimated that India's dependence on export will reduce and in few years soya crop may not keep pace with increasing domestic consumption. Despite protein content of 48% in Indian soya meal and logistical advantage, the Argentina meal with 44% protein is preferred due to consistent quality in SE Asia Chaturvedi, (2009)^[24] and SOPA & SEA Website^[25].

Fluctuation in FOB values of soy meal export:-

The Soybean Meal export during 2014-15 was Rs 206.3 billion rupees compared to previous years 962.6 billion during 2013-14 and Rs 1005.0 billion rupees during 2012-13. In quantity terms the export was 6.6MMT, 27.82 MMT and 34.40 MMT during 2014-15, 2013-14 and 2012-13 respectively. In last one year the average price of FOB soybean meal dropped from US\$ 606 in March '14 to US\$ 448 in March '15 (decline about 36%). There was no crushing parity for the processors due to the higher price of soybean in the domestic market and low realization for oil and meal (Fig 11).

The drastic fall in crushing led to drop export of soy meal as India was out priced by cheaper South American soya origin in the global market. India lost market share in major importing countries like Japan, Iran, Thailand, Indonesia, Taiwan and Vietnam from Argentina and China. The traditional importer Vietnam of Indian soy meal opted for cheaper sources. Iran one of the largest buyer of Indian soy meal shifted their trade from the USA on the

wake of the lifting of sanctions. In contrast, Bangladesh and Vietnam are increasingly relying on the domestic crush of imported soybeans to meet growing demand. (USDA Report March 2015)^[26].

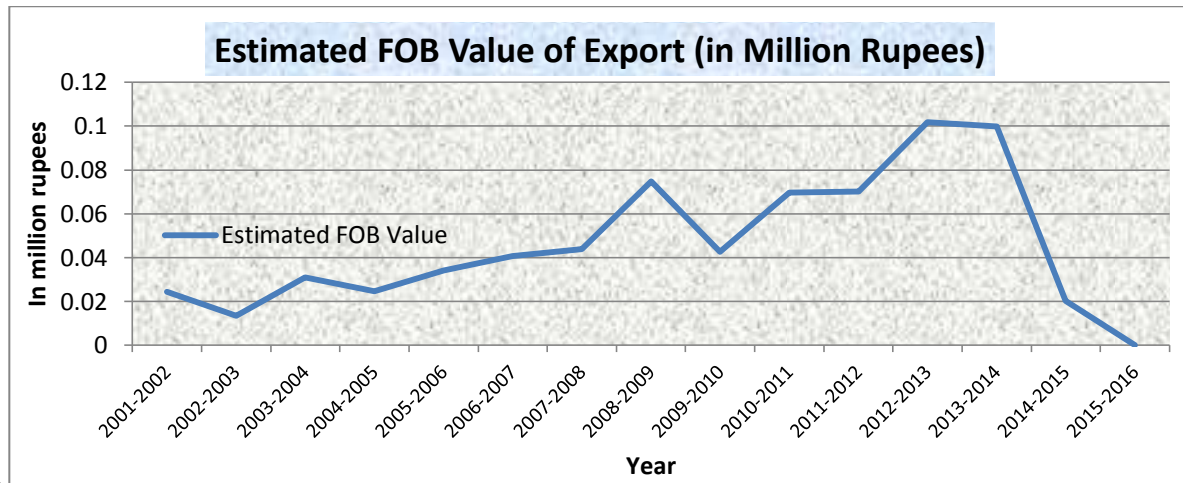


Fig 11:-Estimated FOB Value of Export Soy meal, Source: (SOPA, India)

Export of Soymeal from India:-

Figure 12, 13 & 14 refers the quantum of soybean meal export from India has significantly come down to some of the traditional markets during the last 5 years. India has not exported soybean meal to China one of the largest importers during the last 3 years. Iran imported about 1.2 Million tones soybean meal in 2013-14 and 2014-15 sourced only 20% of the previous year’s purchase.

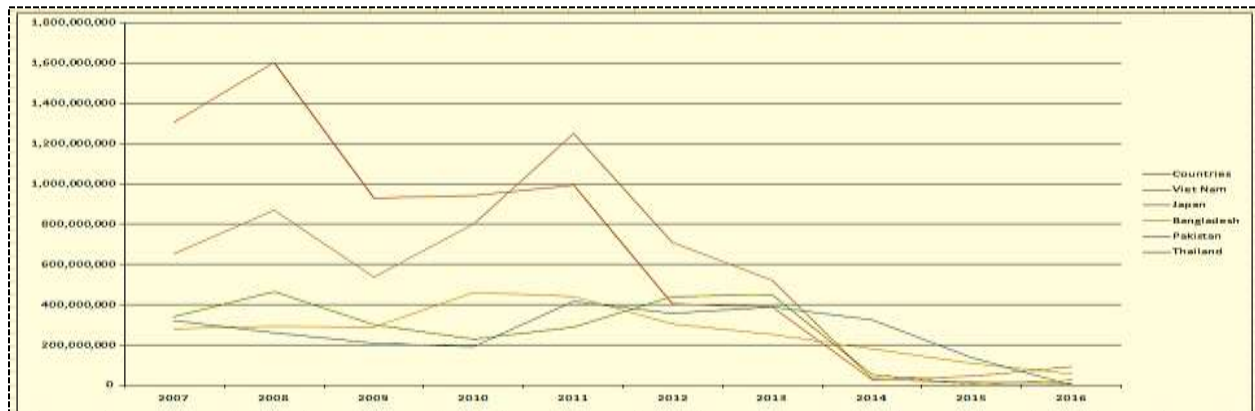


Fig. 12:-Export of soybean meal in kg to top 5 countries, Source: Level A Commodities

Similarly Vietnam imported only 18,000 MT during 2014-15 as compared to 6.77 Lakh MT during 2009-10. The imports have decreased by countries like Japan, South Korea and Thailand indicates India losing significant market share of soybean meal exports. Japan is considered to be one of the largest markets for non-GMO soybean meal importer. There is a decline in export from Indian soybean meal during the current year. They procured from the cheaper sources like USA origins. The significant factors contributing to the slide in export is the sourcing of soy meal by Iranian buyers from origins other than India.

The Associated Chamber of Commerce and Industry of India (ASSOCHAM) in its study (2015) ‘Soybean: Time to regain lost ground’ have stated that the soybean meal exports have dropped drastically by about 85% from the record level of 4.24 million tons during the fiscal year 2008-09 to meager 0.64 million tons during 2014-15. The soy seed production is expected to touch 12 million tons in the wake up normal monsoon. This harvest would put pressure on the domestic market as India is globally uncompetitive and increasing soy oil import into India to bridge the demand supply gap of about 10 million tons between the production of 8 million tones and consumption of 18

million tons. ASSOCHAM study group reported that the slump in soymeal exports from India is due to faulty speculation and unrealistic approach in handling established export markets.

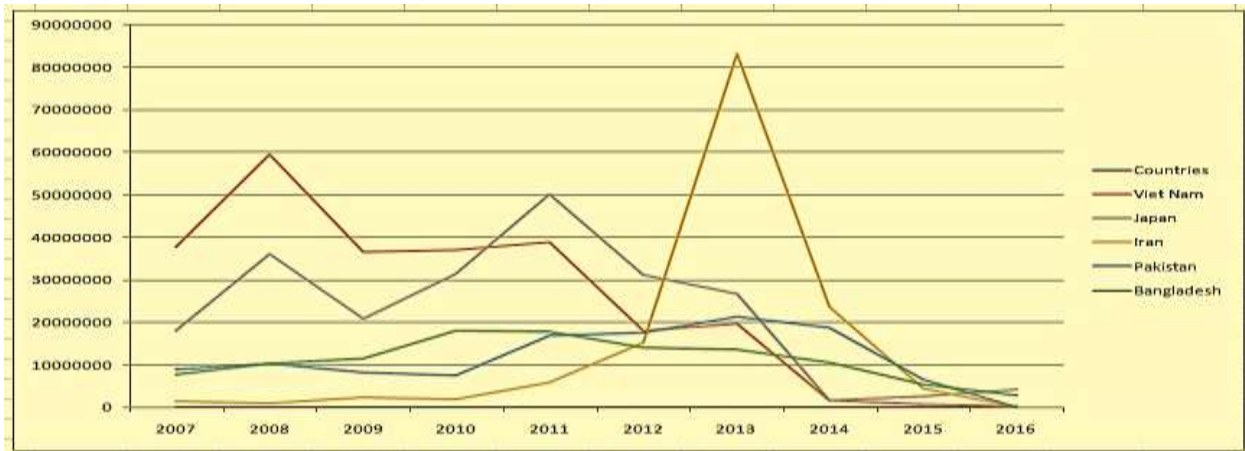


Fig 13:-Export of soybean meal to top 5 countries in USD (Source: Level A Commodities)

The soybean trade in India is currently at cross roads due to erratic production, declining soymeal exports and idling of plants, poor soy oil output while edible oil imports are growing and is about 60% of the total import requirement. M. P. (India) is known as soybean bowl of India accounting for 60% of the country's production followed by Maharashtra (30%) and the remaining share of 10% is by States like Rajasthan, A.P., Karnataka, Chhattisgarh and Gujrat. Edible oil intake in India is currently growing at a compound annual growth rate (CAGR) of 3% thereby placing the burden to import to meet current demand/supply gap of 10MT. (ASSOCHAM)

Rabo Bank in their report "Losing Steam: India's Soymeal Exports are Drying Out (2015)" predicted that the current decline in soy meal exports from India, will dry out soya export within five years by 2020. Simultaneously domestic demand for the feed had increased by 12%/year in last decade which may likely to touch about 7 million tons in 2019-20. The soya seed production is projected to touch 10-12 MMT over the next 5 years equivalent to a yield of 7 MMT of feed. India's export would be 1.2 MMT in the oil seed year beginning from 1st October and may drop to a negligible level by 2020. In that scenario India would be a negligible exporter in the global market as domestic demand is on rising trend and seed production stagnating.

The demand for meat protein is rising in South-East Asia due to rise in per capita income and change in life style. It is estimated the current soya meal of 13.7 MMT (2013-14) shall rise to 20 MMT by 2019-20. Indonesia shall likely to import 4.7 million tons of soya bean meal in 2015-16 followed by Vietnam 4.3 MMT and Thailand 3 MMT. These importing countries would look for supply base in Argentina, Brazil and USA. Argentina, the biggest exporter of soya meal has a shipment of 31 MMT with Brazil and USA ranking second and third in export with 14.5 MMT and 10.7 MMT respectively in 2015-16 (USDA). Currently about 12% of the world's soya meal production originate from conventional soya bean (non-GMO) but the actual availability of non-GMO soya meal is less as the beans are co-mingled and in separable from the supply chain.

Export of soymeal to Iran:-

Fig 14, depicts the export of Soy meal to Iran (both in quantity and value terms). The buyers in Iran exercise a significant influence on the export of Indian soymeal. The abnormal decline in the export to Iran from 1.135 MMT in 2013 to 0.141 MMT during 2014 (90% decline) has worsened the export. The Rupee Dollar parity is hovering (60-63) at present. This is due to Iran has increased purchases from Brazil and Argentina after trade sanctions over Tehran under the disputed nuclear programme in late 2013.

A landmark deal struck in Nov., 2013 eased some of the sanctions on trade with Iran that had slashed. The OPEC member's oil exports and narrowed its options for securing food and agricultural goods to a few countries. The sanctions had forced India to trim oil purchases from Iran, but it remained a loyal and large customer. In 2012 as sanctions stalled dollar payments, it started settling part of its oil debt in rupees and Iran was using those to buy

goods from India. That rupee-trade gave India an edge over other soybean meal suppliers such as Argentina and Brazil, quickly allowing the South Asian country to establish a near-monopoly in exports. **Reuter, Friday, 26th September, (2014)**. Quoting “Reuter, on 15th July 2015”, “How the Iran Nuclear Deal Will Help and Hinder Indian Exporters” stated that exports of soybean meal purchased by Iran from India, could face a setback as the lifting of sanctions to allow Iran to shift to procure soymeal from India other than South American who is supplying at lower prices (**Mehta B.V.^[1], ED, SEA**) But India have the advantage of quick deliveries by small cargoes due to close proximity. The Economic Times: on 15th July 2015, reported that the decline in major exportable items started after indications of the Iran nuclear agreement in November 2013.

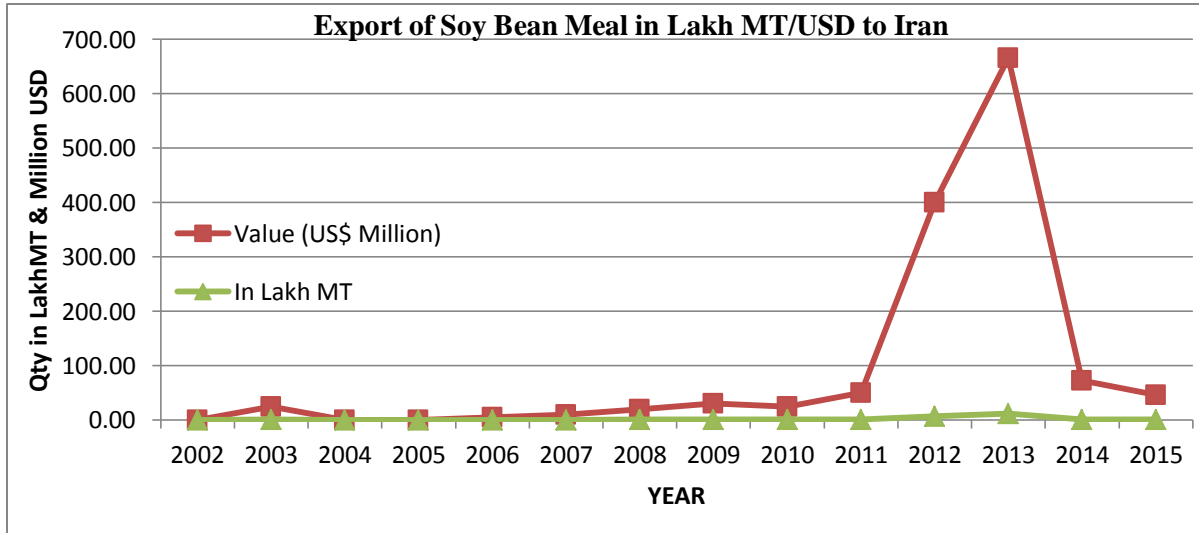


Fig 14:-Export of Soy Meal in MMT/USD to Iran (Min. of Commerce- Export Import databank)

As per the Index Mundi Mumbai, sales are set to drop as much as 29% to 1.5 MMT in the year 2017. Jain Davish, chairman of the Soybean Processors Association of India, have anticipated the soy meal price shall be the lowest since 1992-1993. Supplies from India cost more than global rates. Chicago dropped 30% in the last year on record global harvests. Iran is buying less soy meal from India because an easing of international sanctions means it can get supplies from Brazil and Argentina. The government support price in India is above the world market and farmers haven't been selling beans for processing. It is quoted “India is totally out-priced and the world is really not looking at India as a regular or genuine supplier now,” as per Chaturvedi Atul, a chief executive officer of Adani Wilmar Ltd.. As per Jain Davish, a decline in freight rates because of the slump in oil prices made supplies from Latin America cheaper.

Port-Wise Export Of Soybean Meal:-

Fig-15 provides details port-wise export of Soybean meal from West Coast and East Coast. It can be concluded that ports like Kandla and Mumbai/JNPT handle the bulk of export cargo with private ports like Mundra and Hazira coming second in export cargo handling. But the volume of exports from ports like Bedi, Bhavnagar, Pipava and Porbunder in the West Coast and Vizag and Kakinada in the East Coast is not very significant for the last few years (Fig 15).

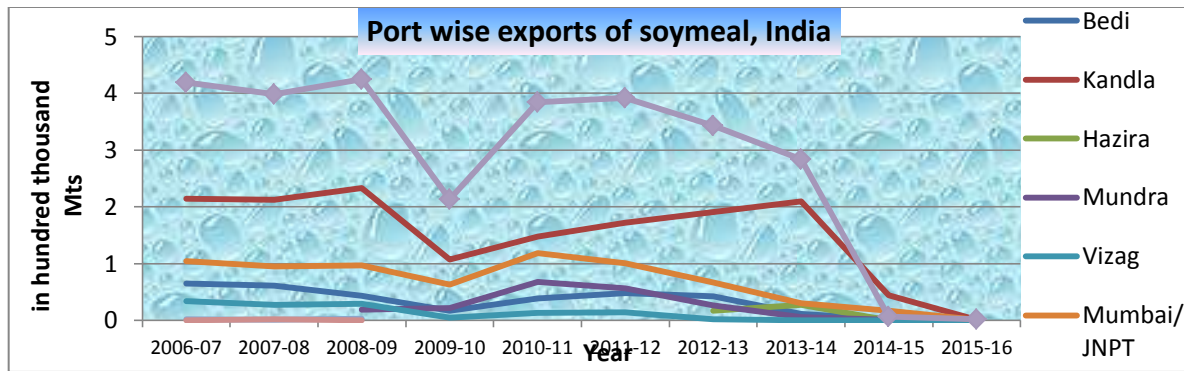


Fig.15:-Port wise exports of soy meal, India, Source: SOPA & SEA website

Submissions By Traders To Increase Export of Soybean Meal:-

The following are the ameliorative steps to Soya meal export downfall of India:-

1. Rationalization/proper classification of HS codes in respect of Soybean Meal (Solvent Extracted and Hipro Soymeal is highly essential.
2. Discouraging import of finished products instead of raw materials (crude oils) through tariff alignments is needed.
3. Soybean Meal and its value added product exporters should be charged with low interest rates against export credit to provide level playing field as current interest is high.
4. Indian processors find shortage of raw materials for manufacturing 100TMT of non GMO soya seeds annually for export. For larger interest export of soybean seed should be prohibited.
5. Since enough SBM is available to meet the total domestic requirement of Poultry, Aqua fauna, Fisheries, permitting import of SBM is really unjustified. Genetically Modified Soybean Meal should not be exported as Non GMO, which shall lose its credential as non GMO exporter.
6. Looking to the worldwide interest reduction in past 3 years, interest subvention in export credit should be granted to soymeal of India.
7. Soy processors need to embrace new technology and enhance cost effective operational efficiency to be shifted to domestic business and move to Value Added Products at a lower Tariff rate.
8. Long terms contracts with the processors directly will help in better quality products and timely supplies. Stress on the need to pay a higher price for the better quality product shall ultimately result in cost saving.

Conclusion:-

India is facing the problem of low yield, low cropping area, unscientific crop practices, excess processing capacity, and infrastructural bottlenecks. The soy industry demands restructuring, modern technology infusion, high-yield and disease-resistant seeds, mechanization and improved crop practices, the building of infrastructure, investment in R&D in soymeal sector. Export activities require relation and coordination involved like production, procurement, quality control, infrastructure, transportation, the linkage between growing region and port area, port facilities, banking service, berthing and loading of vessels etc.

The farmers of MP, Gujarat and Rajasthan are below the minimum support price for the Soybean Seed. The Trade Associations have urged the Govt. to step in to resolve the matter so that farmers should get adequate returns to keep them in soya cultivation and trade. In the fluctuating market there should be an inbuilt system where the producers are guaranteed an adequate return and simultaneously the processors are assured of a steady supply of oil seeds for crushing. The proposal of importing Soya seeds for processing (preferably non-GMO) as being done by some countries like Vietnam, Indonesia, Bangladesh and Pakistan can be worked out. The imported quantity would meet the shortfall and utilize the unutilized processing capacity and ensure supply of Soybean meal round the year.

India can achieve large scale increase both production and processing of Soya seeds by applying modern technology to deliver consistent quality cargo as per buyer's requirement and improved farm practices in other states like Odisha, Bihar and Chhattisgarh.

The entire process of storage, transportation and handling/loading of export cargo is to mechanized and scientific. Imposition is to be made to eliminate contamination and other spurious matters in the shipped cargo.

It is evident from falling level of export turn over in the last few years that India is out priced by South American countries in Global market. To recapture the market share Govt. should intervene immediately and provide a subsidy to support the exporters in regaining the traditional market.

Iran has considerable influence over Indian exporters of Soy meal as they source from India due to Western sanctions. After easing of sanctions Iran buyers are sourcing their requirement from cheaper origins. India should immediately take corrective steps and supply Hipro material to gain the confidence of Iranian buyers.

The buyers in traditional markets viz., Japan, Korea, Vietnam, Thailand and Indonesia to be cultivated about the superior quality of Soybean meal which is non-GMO especially the Japan and Korean market, India has to focus as they emphasize on the non-GMO Soybean meal.

Apart from Govt. intervention, the trade bodies, The Soybean Processor Association (SOPA) and the Solvent Extractors Association (SEA) can devise a strategy for the transparent and free flow of market information among the members for working out export transactions for the common benefit. The further intensive study is needed to rejuvenate the soy sector for the overall development of the national economy.

These trade bodies can take up the issue of anomalies in present GST structure where the Centre has exempted de-oiled cakes under GST but there are issues of claiming full credit for the input tax paid on the oilseeds by the solvent extraction units. These anomalies may result in a rise in domestic prices of soy meal and ultimately affecting already declining volume of exports. (Source: Business Line dated 13.07.2017)

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