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AGRO-BASED INDUSTRIES



Develop an e-Model of Logistics Support for Agricultural Products says Prime Minister



The Prime Minister, Shri Narendra Modi chairing the 31st interaction through PRAGATI - the ICT-based, multi-modal platform for Pro-Active Governance and Timely Implementation, in New Delhi on November 06, 2019.

Prime Minister Shri Narendra Modi chaired the 31st interaction through PRAGATI — the ICT based multi-modal platform for Pro-Active Governance and Timely Implementation on 6th November 2019 in New Delhi.

In the previous PRAGATI meetings, a total of 265 projects with a total investment of Rs. 12.15 lakh crore, 47 programmes/schemes and grievances related to 17 sectors (22 subjects) had been reviewed.

The PRAGATI meeting witnessed review of 9 projects worth over Rs. 61,000 crore related to 16 states and the Union Territory of Jammu & Kashmir. Grievances of Indian citizens working abroad along with subjects like National Agriculture Market and Aspirational District Programme were also discussed.

Agriculture & Allied Activities

Prime Minister was informed about the progress in National Agriculture Market platform which has helped in better price discovery. E-payments are now being made directly into the account of farmers. Progress in development of two integrated e-Mandis in Jammu & Kashmir was also reviewed.

Prime Minister directed that based on e-models of demand aggregation, Ministry of Road, Transport & Highways and Ministry of Agriculture & Farmers' Welfare should work together on a new start-up model of logistics support, particularly with regard to transfer of agricultural products from one state to another. He said that all the states must come together and use a common, integrated platform for smooth operation.

On the issue of stubble burning, Prime Minister directed Agriculture Ministry to give priority to the farmers of the states of Uttar Pradesh, Punjab and Haryana in distribution of equipment to prevent such occurrences.

Fulfilling Aspirations

Reviewing the progress of Aspirational District Programme, Prime Minister was informed about dashboard based on 49 performance indicators. Even slow moving indicators like status of nutrition have shown tremendous progress. It was also noted that some districts of Uttar Pradesh have shown impressive growth.

Calling it an act of national service, Prime Minister laid stress on the importance of focussing on education and healthcare of tribal children. He emphasized on the need to decide on timelines to bring the backward districts up to the national average. He also stressed that young officers must be deployed in Aspirational Districts.

Developing Infrastructure Connectivity

Prime Minister reviewed the progress of infrastructure connectivity projects including Katra-Banihal Railway Line. He gave explicit instructions on speedy completion of the project by next year.

Several projects in the north-east like the widening and upgradation of Aizawl-Tuipang highway project was also discussed. To provide faster and safer connectivity between Delhi and Meerut, Prime Minister said that Delhi-Meerut Expressway should be completed by the revised time-line of May 2020.

(Source: PIB)



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Editorial

Agro-based industries are being promoted by the government through several schemes as they play a crucial role in boosting the country's economy. These industries are full of high potential as employment generators especially in the rural India and also perform a number of crucial functions that support development and poverty alleviation. Agro-based industries consist of the processing, preservation and preparation of agricultural production for intermediate and final consumption.

In this issue of Kurukshetra (English), we are presenting different dimensions of agro-industries to our readers to further enlighten them on this very important subject. Development of agro-based industries has the propensity to stabilize and make agriculture acceptable and lucrative. Given the thrust on doubling farmer's income, the government agencies have been playing a key role in promoting agro-based industries across the country through implementation of various schemes and policies ranging from providing collateral-free credit and access to incubation centres to providing better equipment and employment opportunities for entrepreneurs.

The Textile and Clothing Industry has the potential to grow significantly and to contribute to the Government's ambitious target of achieving USD 5 trillion economy by 2024-25 by shifting surplus labour from agriculture sector to more productive industrial activities. Dairy industry in the country that includes milk production, collection, processing and marketing has come a long way over the years and the present government is taking many steps to promote this sector. The National Bamboo Mission (NBM) provides a new impetus and direction to enable the realization of bamboo's considerable potential. With its multidisciplinary and multidimensional approach NBM is trying to promote Bamboo production, handicrafts, marketing, export, and establish a bamboo wholesale and retail market. Similarly, the Indian Jute industry is also expanding fast. The industry supports around 40 lakh farm families and provides direct employment to 2.6 lakh industrial workers and 1.4 lakh in the tertiary sector. It contributes Rs. 1,000 to Rs.1, 200 crore annually to the export earnings of the country.

Turning agro and food-processing industry into a major export industry can also create vast employment opportunities for workers since it is a labour-intensive industry. Agro-food processing industries have the potential to generate directly significant employment in production activities and also indirect employment through its forward and backward linkages. This employment will be in rural areas where these industries have to be located near the source of raw materials, especially perishable agricultural products.

Agro-based industries have high potential as employment generators and foreign exchange earners. To provide a level playing field in the domestic market, sometimes it becomes necessary for the government to intervene so that they don't fall victims to unfair trade practices, such as Dumping or Subsidies, of other countries. The Directorate General of Trade Remedies (DGTR) is a quasi-judicial body that works to protect Indian businesses from such unfair practices by forming laws and policies against such activities.

Agri-based industries provide a competitive advantage both within and outside the country. They absorb surplus rural labour and address the problem of large scale unemployment/disguised employment in rural areas. Agri-based industries provide promotional/profitable occupation and activity diversification in villages that ensures an all-round industrial growth in rural areas. It is high time that the policy makers and industry leaders recognize agriculture in connection with industry as a competitive, value-adding business sector and facilitate the development of agri-based industries.

AGRO-INDUSTRIES TO INCREASE FARMER'S INCOME

Dr. J P Mishra

The agro-industries are getting even more important in view of very impressive growth in high value commodities alongside rising incomes in recent years. It has larger scope for acceleration in future given the thrust on doubling farmer's income. With the corporate sector keen on investing in agribusiness to harness the emerging opportunities in domestic and global markets, time is opportune for reforms that would provide healthy business environment for this sector.

The 68th Round of NSSO survey on employment estimated about 48.9 per cent workers' major livelihood support coming from agriculture. Added to that ~70 per cent of our population lives in rural areas (Census 2011) whose income augmentation should be the number one priority. While price led growth of agriculture, the major rural employer, as a means of enhancing income is not sustainable; the only way is to infuse agro-industrialization in the urban-rural continuum following the cluster approach. It will also address the call of the day of income dimension in agriculture that has taken the driver seat in all agricultural policies and priorities after Prime Minister's call for doubling farmers' income by 2022. Fortunately, the country is miles ahead on the agenda of zero hunger and food security to all from 2.78 to 47.57 times increase in various food items over 1950–51. This is an added feature in Indian Agriculture as the marketed surplus of the commodities has been increasing, demanding more post harvest management and processing to provide adequate shelf life to the produce for negotiating the market on an appropriate time and for fetching good, if not the best, price. Remarkably, our high value commodities production growth is much faster than the staples food items. This is most satisfying for nutritional security point of view, but opens up the challenges for agro-based industries to absorb the additional production that cannot be consumed afresh/raw. Now time is ripe to change our vision and approach of the past which traditionally viewed agriculture and industry as two separate sectors in characteristics and role in the economy and growth was taken as a gradual shift from agriculture to industries with agriculture owning the financing at first stage. Perhaps this needs larger debate as it is easy to distinguish between production and first stage of processing but becomes rather complex afterward. Development of agro processing

Table 1: Changing Scenario of agricultural Production in India

Item	1950-51 Production	2018-19 Production (IV Adv. Estimate)	Times Increase (X)
Food grains	50.83	284.95	5.61
Pulses	8.41	23.40	2.78
Oilseeds	5.16	32.26	6.25
Cotton	0.52	4.88	9.38
Sugarcane	57.05	400.15	7.01
Horticulture	96.56 (1991-92 level)	314.67 [@]	3.26
Milk	17.00	165.40	9.73
Fish [#]	0.75	11.41	15.21
Egg [#]	1830	87050	47.57
Meat [#]	1.9 (1998-99 level)	7.37	3.88

industries should be viewed as industrialization of agriculture and a joint process leading to a new industrial sector. While it is really difficult to clearly demarcate between the industry and agro-based industry, the definition given by Famine Enquiry Commission (India), 1944 holds pretty appropriate. The Commission defined agro-based industry as "those industries which are involved in supplying the farm with agricultural inputs besides handling the product of the farm may be termed as agro-based industry." The International Standard Industrial Classification (ISIC) included agro-industrial production under manufacture of food, beverages and tobacco, textiles, wearing apparels, leather industries, manufacturing of wood and wood products, manufacturing of paper and paper products, printing and publishing, manufacturing of rubber products.

Income and Employment Opportunities

With such a classification, it shows that the agro and agro-based industries (agro processing, textile, sugar, and other allied activities), which have been the major employer close to hinterlands, have to play a much larger role in present context and priority setting for diversification of the source of income in the rural India as the contribution of cropping and animal husbandry in total income of the farm households is only 35 per cent (Table 2) while wages and service contribute more than 50 per cent in the average monthly income of the agri-households.

Table 2: Share of various sources in average monthly household income (per cent)

Source of Income	Per cent income to the average monthly		
	Agri-households	Non-agri households	All households
Cultivation	35	NA	19
Livestock Rearing	8	NA	4
Other enterprise	6	12	8
Govt/Pvt Service	34	54	43
Wage labour	16	32	24
Other sources	1	2	2

Source: NABARD All India Financial Inclusion Survey (NAFIS), 2016-17

Table 3: Characteristics of Agro-Industry Sector in India during 2016-17

Features	No of factories	Total persons engaged (%)
All industries	234865 (100.00)	100.00
Agro-based Industries	96685 (41.16)	34.73
Agro-based food industries	40178 (17.10)	11.36
Agro-based non-food industries	56507 (24.06)	23.37
Non-Agro industries	138180(59.84)	65.27

Figures in parentheses indicate per cent share of the industry sector
Source: Annual Survey of Industries 2016-17

The Economic Survey 2014–15 emphasized a deeper shift in the agricultural sector to address the risk of high level of food inflation, seasonal and short-term price spikes in some commodities like onions, tomatoes, and potatoes, which have become more severe and long lasting causing economic instability in the system. The Survey recommended bringing a new paradigm in the approach towards agriculture for getting more from less. One of the critical areas that can enhance the income of the rural households is to provide higher opportunity in agro-based food and non-food activities. The Annual Industrial Survey, 2016–17 shows that the agro-industries contribute about 36 per cent of the industrial employment (Table 3). Additionally, the substantial employment is generated in production agriculture and the supply chain. These features indicate that these agribusinesses still largely deserve the priority given to them in the national strategy for development and employment.

From 2016–17 onwards, significant emphasis on agriculture through reorientation of Government interventions in the farm and non-farm sectors was laid so as to double the income of the farmers by 2022 by creation of new infrastructure for irrigation and providing value addition and connectivity from farm to markets.

Agro-food processing industries have the potential to generate directly significant employment in production activities and also indirect employment through its forward and backward linkages. This employment will be in rural areas where these industries have to be located near the source of raw materials, especially perishable agricultural products. These industries would help in reducing post-harvest losses and wastes as well as in using by-products more efficiently. This can increase rural income by fetching better prices to producers and also consumer welfare by increasing the availability of agricultural consumer goods. The available vast potential in our country could be sufficiently exploited through: (i) selection of appropriate scale and technology of production; (ii) up gradation of technology of existing units; (iii) establishment of suitable linkages between products and consumers at home and abroad; and (iv) establishment of suitable institutional arrangements.

Small scale has been a major constraint on the growth of this industry and hence on



by-products of main agro-based industries. Due to this wide range of activities, there is a lot of diversity in the nature of problems and issues relating to different agro-food processing industries. It is, therefore, difficult to envisage an overall technology policy framework covering the various agro-food processing industries. They have the potential of creating a substantial impact on the rural economy and improving the income of the rural population.

the diversification by the vast majority of India farmers into high value agriculture. Investment in infrastructure comprising roads, electricity, and communication would reduce agribusiness costs and induce the private sector to invest in agro-processing, cold storage facilities, refrigerated transportation, and retail chains. Institutional arrangements such as contract farming, producers' organizations, and cooperatives that provide farmers easy access to markets, distribute price risks, and reduce marketing and transaction costs can go a long way in pushing high value agriculture.

Food Processing Industry is one of the major employment intensive segments contributing 11.69 per cent of employment generated in all Registered Factory sector in 2012–13. Food is the biggest expense for an urban and rural Indian household constituting near about 39 per cent and 49 per cent of the total consumption expenditure of households, respectively. The food processing industries covers a wide range of activities utilizing farm, animal and forestry based products as raw materials. There are certain traditional agro-based industries such as rice and flour mills, sugar, khandsari and gur, manufacture of edible oils and the processing of plantation crops like tea, coffee and cashew nuts. There are also some relatively modern food processing industries such as dairy products, confectionery, marine products, horticultural and vegetable products as well as meat and poultry products. In addition, there is also a limited extent of processing of agro-wastes and

Though processing necessarily changes the basic characteristics of the raw produce, but policies relating to food processing activities apply differently in the case of different activities depending on the purpose of processing. Some processing refers to necessary processing that must be done before consumption. Cereals sector belongs to this category of processing. While such processing is already being done in the country, introduction of modern technology in this sector is considered to be beneficial in two ways. Firstly, it would improve the efficiency of processing in terms of higher recovery of desired products. Secondly, it would create a number of potentially useful by-products, some of which are not being fully utilized at present or not utilized in optimum way for producing higher value added products. Although most of the technology is readily available in the country, it is not being extensively adopted because economic incentives are often missing, or institutional arrangements for collection, processing and marketing of the by products may be lacking. Since the processing of by products in the cereals sector constitutes introduction of new manufacturing activities, or the expansion of existing ones, such activities would generate additional employment. India's food processing industry employs more than 64 lakh people directly and indirectly.

The next category of agro-based food processing is concerned with processing and packaging in order to provide easy transportability and marketability of some food products. The processing of milk and milk products falls in this category. This would increase the income of farmers, especially small farmers and landless agricultural labourers in the rural areas. It would also promote consumer welfare. The third category relates to processing activities which would help in extending the storage life of seasonal food products. Fruits and vegetables belong to this category. Processing of fruits and vegetables would help in reducing post-harvest losses and would also provide stable income to the growers by eliminating the seasonal fluctuations in income.

The challenges and complexities arise from these constraints on the one hand, and the need for their continued growth with multiple objectives including profitability and contribution to rural and small farmer development on the other, raises the need for innovative approaches and institutional models for the organization of this agribusiness activity in India. Fortunately, several models—individual and cooperatives—have emerged and provide adequate learning to be scaled out. These include the meaningful learning for technology and innovation in production, procurement, quality and efficiency and the ability to invest in the state-of-the-art modern processing technology to produce quality products, also meeting its high fixed capital need.

Food Processing Policy of India

The Ministry of Food Processing Industries brought out Food Processing Policy of India in 2018. The policy, *inter alia*, has also included the best practices across states and the world. The Government has also emphasized to make India Global Food Factory and Global Food Market and thus opened up immense opportunities for food processing sector. Several initiatives have also been announced for ushering into zero post-harvest wastage by creating a national food grid and national cold chain grid. These policies and programmes must be implemented at the earnest to ensure appropriate growth of agro-food industry and provide adequate opportunity for the rural employment. The reforms like allowing 100 per cent FDI in multi-brand retail will have a long lasting impact. Similarly the initiatives for attractive incentives including capital subsidies, tax rebates, and reduced custom and excise duties,

etc., will help attracting more investment in this sector. Increasing focus is also being given to supply-chain related infrastructure, such as cold chains, abattoirs and food parks. The whole idea is to spur greater growth in the food processing sector as well as connect farmers with the value chain to increase their returns. The States need to create an ecosystem to allow single window clearances and other statutory clearances along with showcasing our raw produce and processed food. The Ministry of Food Processing Industries (MoFPI) has been in the process of collating and addressing issues related to the sector, with an aim to facilitate investors and help build their confidence to boost engagement of foreign investors.

Conclusion:

The agro-industries are getting even more important in view of very impressive growth in high value commodities alongside rising incomes in recent years. It has larger scope for acceleration in future given the thrust on doubling farmer's income. While it would be a welcome move, it also demands for a vibrant and robust response from agro-based food and agro-based non-food industries and other stakeholders involved in the cold chain management. The demand for cold storage and quality storage for non-perishables will go up. The recent studies put a gap of 3.28 million tons. The cold storage facilities need to be developed in the major production catchments so that the farmer has the option to store the produce and may hold it back when the market is saturated and sell it when shortages occur. Above all, policies that facilitate the development of agro-processing industry will go a long way towards creating demand at lucrative prices for high value commodities and other non-food agro-produce. Turning agro and food-processing industry into a major export industry can also create vast employment opportunities for workers since it is a labour-intensive industry. With the corporate sector keen on investing in agribusiness to harness the emerging opportunities in domestic and global markets, time is opportune for reforms that would provide healthy business environment for this sector.

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TEXTILE AND CLOTHING INDUSTRY: CHALLENGES AND OPPORTUNITIES

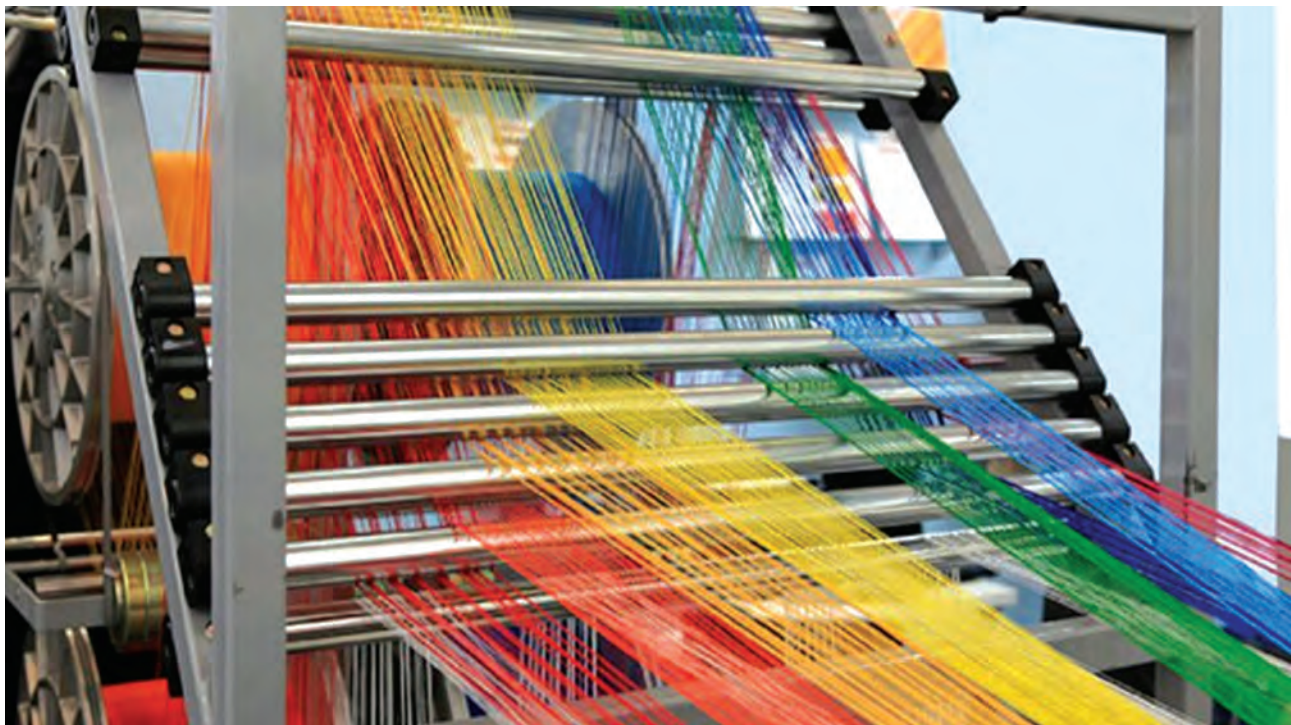
Sudhir Kumar and Dr. Harish Anand

The Textiles & Clothing Industry has potential to grow significantly and to contribute to the Government's ambitious target of achieving USD 5 trillion economy by 2024-25. Though the domestic demand is further likely to accelerate, the stagnancy in exports is a concern. The performance on export front, having about a quarter share in present overall demand, will significantly influence the development path of the industry. The present article explores the growth potential, challenges and opportunities in T&C Sector at present stage of macro-economic and dynamic international trade environment.

The Textiles and Clothing (T&C) Sector contributing about 10 per cent in industrial production, about 12.5 per cent to the export earnings and about 2 per cent in GDP is a key manufacturing segment of the Indian Industry. It is positioned uniquely, linking cotton farmers at one end and as provider of vast direct and indirect employment in the manufacturing value chain spanning from spinning, weaving, processing to finished garments and clothing. The National Household Survey 2017 to assess market for textiles and clothing carried out by the Textiles Committee estimates overall market size of USD 163.70 billion. The domestic household demand in terms of value has been increasing at 7.7 per cent Compound Annual Growth Rate (CAGR) in the last five years. The share of household, non-

household and exports in this overall market size in 2017 was USD 89.88 bn (55 per cent), USD 39.96 bn (24.4 per cent) and, about USD 40 bn (20.7 per cent), respectively.

The T&C Industry has potential to grow significantly and to contribute to the Government's ambitious target of achieving USD 5 trillion economy by 2024-25. Though the domestic demand is further likely to accelerate, the stagnancy in exports is a concern. The performance on export front, having about a quarter share in present overall demand, will significantly influence the development path of the industry. The present article explores the growth potential, challenges and opportunities in T&C Sector at present stage of macro-economic and dynamic international trade environment.



T&C Industry is Uniquely Positioned in Creating Virtuous Cycle: Macro Perspective

The immense contribution made by wage good industry like T&C in accelerating economic growth of nations is well documented in economic literature. In the initial stage of economic development, in the absence of more productive avenues due to manifold reasons, T&C industry is found to be playing a catalytic role in shifting surplus labour from agriculture sector to more productive industrial activities. In this transformation process, T&C industry is mainly driven by export demand as domestic demand is usually limited.

The industry has been instrumental in accelerating growth process of many countries along with creating large pool of industrial workforce, creating culture for more advance manufacturing and other economic activities. One of the main reasons for this ubiquitous characteristic of textile industry is the high proportion of wage component in overall value of output. The wage fund so generated releases significant income in the hands of workforce to create demand for goods and services and accelerate cycle of economic activities in associated areas.

Key Growth Driver in Many Economies

The role of exports in accelerating GDP, and the relation of textile and clothing exports with GDP growth rate and per capita income level of selected economies like South Korea, Hong Kong, China and Vietnam confirms positive contribution made by exports in general and T&C exports in particular. China and Korea, both were able to achieve higher economic growth by promoting exports. China's exports grew by 20 per cent CAGR during 2000–2010. During the same period, China's GDP grew by 11 per cent CAGR. South Korea's exports grew by 14 per cent CAGR during 1980–1990 and during the same period, its GDP grew by 10 per cent CAGR. In case of these two countries, T&C exports and GDP growth rate recorded highest growth in identical time span. China's textile exports grew by 15 per cent CAGR during 2000–10 when China's GDP grew



by 11 per cent CAGR in this period. Similarly, Korea's textile and clothing exports grew by 10 per cent CAGR in 1980–1990, which was the period when Korea achieved highest economic growth of 10 per cent CAGR.

Industry Primarily Driven by Cost Comparative Advantages

Further, T&C industry, fundamentally driven by cost comparative advantages, continues to relocate towards more competitive manufacturing locations globally. South Korea experienced high growth in exports, especially T&C exports, during 1980–1990 when its per capita income increased from USD 1,709 to USD 6,500. In subsequent years, when the per capita income increased from USD 6,500 in 1990 to USD 11,854 in 2000, the textiles and clothing exports grew by 2 per cent only. The clothing exports recorded negative growth while textile, being of high value and technology oriented continued to grow at 8 per cent CAGR in 1990–2000. Similarly in the case of China that has lower per capita income than South Korea and Hong Kong though rising during the period of 2000–2010, helped Chinese industry to increase its T&C exports by about 15 per cent CAGR and overall merchandise exports by 20 per cent CAGR during the same period. Thereafter, the competition from low per capita income countries like Vietnam slowed down the growth rate of China's textile and clothing exports. Bangladesh's rising exports, which is also a low per capita income and low wage economy, garner significant share in world trade in clothing.



Thus, the international experience shows that the window for growth of textiles and clothing industry is opened till per capita income reaches a threshold level and beyond that industry relocates out of such high cost location. Keeping in view, the present per capita income of India, which is Rs. 1,26,406 in 2018-19 (about USD 1800), the window for high growth of textile and clothing exports is open for next about 15-20 years.

Growth Potential of T&C Industry

India is well poised to gain from world trade in textile and clothing. A part of the gain may come from relocation of textile industry especially cloth manufacturing outside China in sync with China's increasing per capita income (USD 9,771 in 2018). Growth experience of Japan, Korea and Hong Kong shows that with rising per capita income, it is quite possible that about USD 120-140 bn or more textile and clothing exports may shift out of China to other competing nations including India. Also, the increasing practice of reducing sourcing bases by global retailers/buying houses may also benefit to integrated suppliers mainly in Asia chiefly outside China.

Another way to assess the growth potential of industry is by way of its correlation with fiber consumption. India's textile fiber consumption has recorded growth rate of about 5 per cent CAGR during 1990–2017, 2000–2010 and 2010–2017. China's fiber consumption has shown growth rate of about 7-8 per cent CAGR during 1990–2017. The determined efforts can see textile fiber consumption

growth in India by 7 per cent CAGR in next 12–15 years to reach at about 32 mn tons from about 12 mn tons presently. This scenario corresponds to achieving about 10 per cent share in world trade of textile and clothing by 2032. In such a scenario, the market size of the textile industry may grow from about USD 120-130 bn (depends on segments included) at present to USD 350 bn by 2030-32 and would be able to create about 90 lacs to 1.1 crore jobs directly.

Initiatives to Realize Growth Potential

The majority of the T&C units are Small and Medium Enterprises. Ministry of Textiles presently provides support to T&C sector under different schemes: for technology up-gradation, infrastructure, R&D, Technical Textiles and Capacity Building. Briefly the areas of concerns are as follows:

- Technology Up-gradation Fund Scheme (TUF) – a credit linked subsidy scheme was introduced in 1999 to catalyze capital investments for technology up-gradation and modernization of the textile industry. The present scheme is known as Amended TUFS (ATUFS) which was launched in January, 2016. More than USD 50 bn worth projects have been sanctioned in last 18–20 years under this scheme, which has also brought some desirable results in some segments chiefly spinning, weaving and fabric processing. Still, the modernization of weaving and processing segments continues to be an area of concern.
- Fabric Sector: The high productivity shuttle less loom population in China was about 8.35 lacs against India's 72,000 only in 2017, which greatly explained the weak global competitiveness in terms of quality, scale and price of fabric segment of India's textile value chain.
- Infrastructure and Logistics: The Scheme for Integrated Textile Parks (SITP) was launched in 2005 to neutralize the weakness of fragmentation in the various sub-sectors of textiles value chain, and the non-availability of quality infrastructure. This again continues to be an area of concern.
- Cotton Sector: The Technology Mission of Cotton (TMC) by 2012 achieved reduction in trash

content in Indian cotton from high levels of 4–8 per cent during the pre-TMC period to 1.5–3 per cent post modernization under Mini Mission-IV of TMC. Cotton fiber production, productivity and quality need focused attention.

- Environmental Concerns: The major challenges faced by the textiles processing are availability of water, effluent treatment and disposal of the treated water and solid effluents. These concerns need to be factored and addressed for sustainable growth.
- The high growth potential of Technical Textiles remains to be tapped.
- Low FDI in T&C Sector
- Lack of commensurate growth in textile machinery sector in India

Policies Matter

Being critical for the domestic employment, T&C trade has attracted high attention of policy makers especially in the field of international trade, which is visible in the form of special trading arrangements pertaining to this sector in pre and post WTO era as well as in various bilateral and multilateral trading agreements. Further, domestic fiscal and trade policies have been tailored to make textile and clothing manufacturing more cost competitive. This way, the policy measures have significantly impacted the relocation of textile and clothing manufacturing in last few decades. China's textile and clothing export of USD 268 bn (2017), which is about 34 per cent share of world textile and clothing trade demonstrate influence of government policies on export performance.

The T&C export performance of China, South Korea and Vietnam indicates that Tail-Head model i.e. integration through finished product only, does not hold water for large economy having presence in complete textile value chain. In such economies, the labour arbitrage, in the absence of integrated textile value chain, acts against such economies. In such situation, R&D capability, technical knowhow, capacity to innovate new designs, patterns, which happen mainly at fiber, yarn and fabric stages give strength to the textile and clothing industry. Korea and China textile and clothing export composition reveals this phenomenon unambiguously. Korea, which lost natural cost advantage in labour intensive

industry, continues to export textile products worth USD10 bn while its clothing exports have fallen from USD 8 bn in 1990 to about USD 2 bn in 2017. China's textile share in textile and clothing exports also increased from 31 per cent (USD 16 bn in 2000) to 41 per cent (USD 109 bn) in 2017.

Further, facilitated by globalization forces under WTO, reduction in import tariffs and easy movement of capital and intermediate goods, a very high level of cross border integration across each segment of the textile value chain has emerged. This makes it necessary for each segment of the textile value chain from fiber, natural and manmade both, yarn, fabric, made-ups and garment to be globally competitive. Such an approach become more relevant due to the fact that global value chains are becoming more knowledge intensive, and therefore, the advantages created at the end product exclusively through various policy supports and other means have been found to be proving ineffective.

Changing Global Retailers' Sourcing Pattern

The change in the global retailers' sourcing pattern from large numbers of small suppliers to small number of large suppliers is also putting integrated global suppliers in advantageous position. This is happening through 'nomination business model' in which garment manufacturing may take place anywhere but textile intermediates like yarn and fabric have to be sourced from nominated suppliers. In such a situation, if a nation fails to offer competitive textile products like yarn and fabric, it is less likely to win garment orders, which may go to competitive suppliers or some other country having bigger advantage in garment manufacturing cost. Therefore, an integrated and holistic approach for the growth of complete textile value chain will be sine-qua-non from policy perspective to gain from growth of world trade in textile and clothing.

Some of the areas, which need immediate attention are mentioned below:

- **Cotton Continues To Be Fiber of Privilege Especially in Wearable Segments:** Despite of the fact that cotton share in world fiber consumption is reducing with varied use of manmade fibers, the importing trends of textile and clothing products in USA clearly shows that cotton textiles account

for about 40 per cent–45 per cent of imports, even in blended textile/clothing products for wearable segment, cotton has significant presence. The experience of other developed countries and newly industrialized countries is also not likely to be very different from USA and as such cotton will continue to be product of choice in wearable category and its demand would not recede in coming years. This calls for focused efforts to increase the cotton productivity, cotton quality and even branding of Indian cotton to fetch premium. In turns, such a move would increase the cotton farmers' income manifold.

- **High Energy Cost Burdened with Cross Subsidy:** The electricity prices for industry, with cross subsidy burden of about 15 per cent to 20 per cent and other factors, compare unfavorably in India. The electricity prices in India for industry are about 20 per cent higher in comparison to China (IEA, 2017). Given the fact that power cost accounts for somewhere about 13–15 per cent of the sale value of textile products, incidence of cross subsidy works out to be about 2.5 per cent–3 per cent of export value of textile products. All such costs need to be identified and neutralized through WTO compatible mechanism.
- On the export front, the relatively higher tariff rates faced by Indian exporters in most major markets vis a vis exports from competing exports from Bangladesh, Vietnam and similarly positioned countries calls for further cost competitiveness, if the same is not addressed by trade policy measures. The challenge in this direction is to further simplify the ease of doing business and to remove disadvantage on account of input factors including logistics. Further, the World Trade Organization (WTO) ruling (dt. 31 October, 2019) against India in a crucial trade dispute with the US, ordering all export promotion schemes to be stopped within the next four months has thrown a challenge to expeditiously come out with WTO consistent measures at the earliest.
- The export performance of textile and clothing products in major importing market especially with which India has preferential trade arrangement reveals discouraging performance. A partial explanation of such a scenario may lie with absence of competitive manufacturing capacities capable of delivering world class quality at desired scale and speed. Other contributing

factors are tariff or non-tariff barriers placed by importing countries.

- The range of challenges for achieving cost competitiveness by the Man Made Fiber (MMF) downstream industry is also varied. Growth of MMF in India is must to increase global share in T&C exports. The way the MMF industry develops in near term will be strongly influencing the overall T&C industry and exports. This requires initiatives by industry, investments and required policy measures to facilitate its integration with textile value chain.

Looking Forward:

The next 15 years can prove to be transformative for Indian textile industry. An invigorated textile and clothing industry is best suited and can give Indian economy necessary impetus to shift to more value added industrial activities and achieve higher per capita income level.

India needs to work with an approach of holistic development of the complete textile value chain acknowledging its integration with global value chain at each stage. It is established that global cost competitiveness is the key to attract textile and clothing manufacturing in India. Some of the prominent reasons of high cost structure, which inhibited growth in the past and still persist need to be addressed on priority. Therefore, focus on global cost competitiveness of each segment to benefit from textile and clothing manufacturing relocation wave taking place in Asia due to economic fundamentals and regional integration, is must. Achieving 10-15 per cent share in world textile and clothing trade and thereby channelizing trickle down impact towards rural sector through cotton connection and shifting of disguised unemployed workforce in agriculture and allied sectors towards more productive usages in industrial activities, should be the utmost priority.

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AGRO-BASED INDUSTRIES IN INDIA: AN OVERVIEW

Dr. K. K. Tripathy

Indian planners and policy makers have always encouraged rural and agri-industrialisation. The inherent advantages of agri-industries are optimal utilization of local agri-resources, mobilization of investment on a large scale, creation of job opportunity, prevention of distress rural-urban migration and reduction of disparity across sectors and regions. These industries have the capability of offering a wide, reliable and sustainable model for promotional/profitable occupation and activity diversification in villages.

Economic policies of developing nations have always advocated enhancing farmers' income through product and productivity growth and by systemic value addition in agri-products through processing and manufacturing. India's 54.6 per cent population is still engaged in agriculture and allied activities. Indian farmers are largely unorganized. They rely on external agencies for disposal of their marketable surplus. Lack of capital asset endowments in rural areas compels them to sell their produce at throwaway prices to the middlemen/commission agents. Low income from the primary farm produce and lack of investment in the processing and agri-value chain has caused rapid reduction in farm profits and the farm occupation has now come under severe pressure.

Industry Scenario in Rural and Urban India

The industrial statistics of organized manufacturing units as reported in the Annual Survey of Industries of Central Statistical Organization [Table 1] indicates that there was less number of factories in rural areas vis-à-vis urban areas in 2017-18. However, their contributions towards total output and net value addition in the sector were somewhat identical. This shows that establishment of more rural industrial units would go a long way in not only absorbing surplus labour but also contributing largely to the total industrial output and value addition.

Table 1: Rural-Urban Break-up of Industries in India [2017-2018]

(Value Figures in Rs. Lakh & Others in Number)

Sector	Factories	Workers	Total Persons Engaged	Total Output	Net Value Added
1	2	3	4	5	6
Rural	98,177	55,55,120	69,82,408	40,34,65,937	6,20,03,250
Urban	1,39,507	66,69,282	86,32,189	40,47,01,178	6,18,09,605
% Rural to Total	41	45	45	50	50
Total	2,37,684	1,22,24,402	1,56,14,598	80,81,67,115	12,38,12,856

Source: Annual Survey of Industries, Central Statistical Organisation, 2017-18 (Provisional)



Agro-based Industry – Definition & Types

Development of agro-based industries has the propensity to stabilize and make agriculture acceptable and lucrative. An omnibus expression – 'agro-industry' covers a variety of industrial, processing and manufacturing activities based on agricultural raw materials and also those activities and services that come back to agriculture as inputs. Agriculture provides inputs to the industry and industrial outputs are used in agriculture to expand its production and productivity base. Thus, agro-industry encompasses not only the activities that utilize raw materials sourced from agriculture, but also those that provide inputs for modern agronomic practices.

Based on the input-output linkages and the interdependence between agriculture and industry, agro-industries can be of two types – (a) processing industries or agro-based industries and (b) input supply industries or agro-industries. The agencies supporting agriculture by way of designing and manufacturing inputs for production and productivity growth of the primary

sector are termed as agro industries whereas agro-based industries process and add value to such agri-resources which contain ground and tree crops, fruits and vegetables, etc., as well as livestock for their day-to-day operations. As per the International Standard Industrial Classification (ISIC) framework, agro-based industry consists of the manufacturing/processing of food and beverages, textile, footwear and apparel, leather, rubber, paper and wood and tobacco products.

Why Promote Agro-Based Industries?

India has the world's 10th largest arable land, 20 agro-climatic regions and 15 major climates. Census data indicates that the total number of cultivators in the country has decreased from 127.3 million in 2001 to 118.8 million in 2011. This may be due to excessive product orientation of Indian agriculture with inadequate focus on value addition, wastage reduction and incremental income through agri-processing and manufacturing.

Central Institute of Post-Harvest Engineering and Technology (CIPHET) of Indian Council of Agricultural Research (ICAR) has reported, in its 2015 Report entitled "Assessment of Quantitative Harvest and Post-Harvest Losses of Major Crops and Commodities in India", that the harvest & post-harvest losses for agriculture commodities range from 4.65–5.99 per cent for cereals, 6.36–8.41 per cent for pulses, 3.08–9.96 per cent for oilseeds, 6.7–

15.88 per cent for fruits and 4.58–12.44 per cent for vegetables. The total estimated economic value of quantitative loss was found to be Rs. 92651 crore at average annual prices of 2014. Thus, to reducing the extent of losses, promoting and adopting modern agro-processing technology and setting up of more numbers of agro-industries in rural areas are the need of the hour.

There is opportunity of an overall growth of agricultural economy as only 2 to 3 per cent of agri-commodities are processed. Considering the extant depressed price discovery scenario in the Indian agriculture, it is necessary to amply invest in rural areas so as to develop suitable processing and manufacturing infrastructure and to attract private public partnerships for setting up of modern agro-based industries in and around rural areas.

Agro-Based Industry: Characteristics

In India, the agro-based industries can be grouped under three categories viz. (a) Agri-processing units covering fruit and vegetable processing units, dairy plants, rice mills, dal mills, etc.; (b) Agri-manufacturing units covering sugar, dairy, bakery, solvent extraction, textile units, etc.; (c) Agri-input manufacturing units covering mechanization of agriculture, agriculture implements, seed industries, irrigation equipment, fertilizer, pesticides, etc. **Table 2** shows, from the review of available literature, the complex and diversified nature of India's agro-based industries.

Table 2: Category of Agro-based Select Industry and Finished Output

S.N	Category of Industry	Finished Product
1	Cereals	Wheat Flour; Biscuit Manufacturing; Confectionary and Bakery; Rice (puffed and flaked); Rice Bran and Rice Bran Oil; Corn flakes; Canned Baby Corn; Starch Material etc.
2	Pulses	Gram Flour (Basen); Namkeens (ready to eat snacks); Papad; Whole or Split Dal etc.
3	Oilseed	Edible Oil; Animal Feed; Processed Seed (Sesame) etc.
4	Fruits & Vegetables	Frozen fruits & Vegetables; Chips & Wafers (Ready to Eat snacks); French Fries (Ready to Eat snacks); Dehydrated Vegetables; Ketchups, Purees & Concentrates; Juices; Pickles etc.
5	Spices	Pastes & Powders; Oleoresins; Aromatic Extractions etc.
6	Dairy	Skimmed Milk Powder, Ghee, Curd ,etc
7	Floriculture	Fresh & Dried Flowers etc.
8	Fisheries	Fish Processing; Fish meal; Fish / Prawn Pickle etc.
9	Livestock & Poultry	Processed Poultry Products; Meat Gravy Concentrates; Mutton & Lamb Processing etc.
10	Medicinal Herbs	Medicinal Products
11	Cotton & Jute	Fibres
12	Sugarcane	Jaggery, Confectionary & Bakery Products
13	Plantation Crops	Tea Powder; Coffee Powder etc.
14	Others	Honey; Mushrooms etc.

Rural and agro-based industries help create employment opportunity at production, distribution, manufacturing and marketing stages. **Table 3** examines few principal characteristics of select agro-industries. Around 45.3 per cent of agro based industries in 2017–18 shared only 24.1 per cent of the total net value addition even though 44.2 per cent of total workers were engaged in this sector. This shows that the agri-based industrial scenario has not fully capitalized the benefits of the local available resources and the efforts of the government through various subsidy-oriented central schemes. There were a total of 1.07 lakh agri-based units in 2017–18. The manufacturer of food products and beverages accounts for 38 per cent of the total number of agri-

industries and shares 36.8 per cent of the total net value added. There lies a great potential to make agro-based industries more visible and remunerative by identifying and resolving impending issues in a time bound manner.

Review of Select Government Initiatives

(a) Food Processing & Beverages: The Ministry of Food Processing Industries implements various Central Sector Schemes to boost food processing industries and value addition activities. It has recently re-structured its schemes under the new Central Sector Scheme – Pradhan Mantri Kisan Sampada Yojana (PMKSY) with an allocation of Rs. 6,000 crore for the period 2016–20. The

Table 3 : Principal Characteristics of Select Agro Based Industries in 2017-2018

SN	Category of Industries	Factories (No.)	Total Persons Engaged (No.)	Net Value Added (in Lakh INR)
1	2	3	4	5
1	Food Products	37,833 (15.9)	17,72,399 (11.4)	93,71,285 (7.6)
2	Textiles	17,957 (7.6)	16,78,561 (10.7)	5669257 (4.6)
3	Rubber & Plastic Products	14,193 (6.0)	7,12,872 (4.6)	43,23,694 (3.5)
4	Wearing Apparel	10,498 (4.4)	11,89,520 (7.6)	32,38,377 (2.6)
5	Paper & Paper Products	7,109 (3.0)	2,84,057 (1.8)	17,41,060 (1.4)
6	Tobacco Products	3,591 (1.5)	4,61,335 (3.0)	16,39,755 (1.3)
7	Beverages	2,329 (1.0)	1,61,065 (1.0)	16,27,362 (1.3)
8	Leather and Related Products	4,617 (1.9)	3,87,134 (2.5)	10,91,491 (0.9)
9	Cotton Ginning, Cleaning, Bailing, seed processing etc.	3,316 (1.4)	79,471 (0.5)	4,18,527 (0.3)
10	Wood and Wood Products except Furniture	4,565 (1.9)	98,653 (0.6)	3,68,650 (0.3)
11	Manufacture of Furniture	1,755 (0.7)	81,465 (0.5)	3,56,103 (0.3)
12	Total Agro-Based Industries	1,07,763 (45.3)	69,06,532 (44.2)	2,98,45,561 (24.1)
13	Others	1,29,921 (54.7)	87,08,066 (55.8)	9,39,67,295 (75.9)
All India		2,37,684 (100.0)	1,56,14,598 (100.0)	12,38,12,856 (100.0)

Source: Annual Survey of Industries, Central Statistical Organisation, 2017-18 (Provisional)

Note: Figures in the parentheses are % to Total in the respective columns



scheme components include setting up of (a) Mega Food Parks (b) Integrated Cold Chain and Value Addition Infrastructure (c) Food Safety and Quality Assurance Infrastructure (d) Human Resources Development and Institutions. PMKSY encompasses three new schemes namely: Infrastructure for Agro-Processing Clusters, Creation of Forward and Backward Linkages and Creation/Expansion of Food Processing & Preservation Capacities focusing on creating robust modern infrastructure for food processing/preservation units. The PMKSY is very crucial in reducing the harvest and post-harvest losses of the agricultural produces and ensuring remunerative income and adequate employment in rural non-farm sector.

(b) Textiles Industry: The textile industry is known for its employment intensity. It employs 4.5 crore people directly and another 6 crore people in allied sectors, including a large number of women and rural population. Indian Cotton Textile Industry is largely unorganized and suffers from high production and labour costs. Other vital issues of the industry are – ageing machinery, quality of raw material and absence of level playing field for value added cotton products in domestic and international markets. With a view to make Textile Industry globally competitive, boost exports and facilitate modernization, the Government has rolled out a number of initiatives: Scheme for Integrated Textile Park, Integrated Processing Development Scheme, Group Workshed

Scheme, Common Facility Centre and Amended Technology Up-gradation Fund Scheme, Scheme for the Development of the Powerloom Sector (Power-Tex), SAMARTH - The Scheme for Capacity Building in Textile Sector (SCBTS), Comprehensive Handloom Cluster Development Scheme (CHCDS), Rebate of State and Centre Taxes and Levies (ROSCTL) etc.

(c) Jute Industry: Jute Industry in India has an installed capacity of 16.5 lakh MT out of which 11.5 lakh MTs of Jute goods are

produced. The excess capacity is due to marketing and labour related issues. The Govt. has attempted to modernize the Jute mills by increasing their productivity and bringing in modern technology and equipment. National Jute Board's schematic interventions, inter alia, provide capital subsidy to jute mills to address their issues and challenges at hand.

(d) Khadi & Village Industry: Ministry of MSME's Khadi and Village Industries Commission (KVIC) promotes setting up of various post-harvest agro and food based micro industries like processing of pulses & cereals, fruits & vegetables, village oil industry, bread baking, etc. in the country. Through Prime Minister's Employment Generation Programme (PMEGP), KVIC tries to generate self-employment opportunities through establishment of micro-enterprises in the non-farm sector which, inter alia, covers (i) Agro-based and Food Processing Industry (ii) Forest Based Industry (iii) Handmade Paper and (iv) Fibre/Textiles Industry.

(e) Animal Husbandry, Dairying and Fisheries: Considering the employment and income generation potential, the government implements variety of schemes viz. Dairy Entrepreneurship Development Scheme, Dairy Processing and Infrastructure Development Fund, Supporting Dairy Cooperatives and Farmer Producer Organizations engaged in dairy activities, Integrated Development and Management

of Fisheries and Fisheries and Aquaculture Infrastructure Development Fund to promote agro-based industries in this sub-sector.

Agro-Based Industries: Review of Issues and Problems

Agro-based industrial sector, in spite of its high potentiality to ensure equitable income and employment opportunities in rural areas, has remained underdeveloped. Review of available literature indicates that the agro-based units have to address impending issues viz. finance, industrial policy, research and development, infrastructure facilities, marketing, production and human resource related concerns. **Table 4** maps major issues with the types of problems faced by Agro-Based Industries in India.

Table 4: Issues and Types of Problems faced by Agro-Based Industries in India

Sr. No.	Issue	Types of Problems
1.	Financing agro-based units	<ul style="list-style-type: none"> Underfinancing/Inadequate/non-availability of bank finance Inappropriate project appraisal Delay in getting bank finance Cost overrun due to high interest rates and project completion delay
2	Industrial Policy, Research & Development	<ul style="list-style-type: none"> Lack of implementation of Industrial Policy Stringent regulatory provisions, environmental, Tax, Labour policy/act/rules Lack of Industrial Research and Development Non-availability of right consultancy Lack of accredited research laboratory for quality control
3	Infrastructure	<ul style="list-style-type: none"> Lack of warehouse, cold-chain facilities Expensive Logistic support Location disadvantages Wastage management Distance from warehouse, cold-chain facilities
4	Marketing	<ul style="list-style-type: none"> Lack of national/international market access with inappropriate market research Competition with Multi-National Companies

Sr. No.	Issue	Types of Problems
		<ul style="list-style-type: none"> Dependence on government subsidy and other support Inconsistent quality of processed products Weak and non-existent market development
5	Production	<ul style="list-style-type: none"> Backward forward linkage issues Inappropriate and obsolete processing and ancillary equipment Underutilization of capacity Shortage or inconsistent raw materials supply Seasonality of crops
6	Human Resources	<ul style="list-style-type: none"> Labour shortages in rural areas Unskilled labour Low investment in skill-set up-gradation

Concluding Remarks

Indian planners and policy makers have always encouraged rural and agri-industrialisation. The inherent advantages of agri-industries are optimal utilization of local agri-resources, mobilization of investment on a large scale, creation of job opportunity, prevention of distress rural-urban migration and reduction of disparity across sectors and regions. These industries have the capability of offering a wide, reliable and sustainable model for promotional/profitable occupation and activity diversification in villages. These industries are not free from issues and challenges. Government, through various central schemes and under Make in India, Start-up India, etc., attempts to ensure robust modern agri-industrial infrastructure.

Agri-based industries conform to the notion of competitive advantage both within and outside the country. They can play a role of a safety valve to absorb surplus rural labour and can address the problem of large scale unemployment/disguised employment in rural areas. The real challenge here is how effectively the government implements its schemes and policy interventions so as to ensure an all-round industrial growth in rural areas without undermining the identity of village, its socio-economic structure, agri-production systems and the basic agri-manufacturing characteristics.

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PROMOTING AGRO-INDUSTRIES

Manjula Wadhwa

Agro-industry consists of the processing, preservation and preparation of agricultural production for intermediate and final consumption. It performs a number of crucial functions that support development and poverty alleviation. Policy makers and industry leaders should recognize agriculture in connection with industry as a competitive, value-adding business sector that has a positive development impact and significant contribution to economic growth.

Before discussing the role of Government Agencies in promoting agro-based industries and products in India, it would be pertinent to understand the concept itself. Agro-industry consists of the processing, preservation and preparation of agricultural production for intermediate and final consumption. It performs a number of crucial functions that support development and poverty alleviation. So, it is high time that rather than focusing on agricultural production and productivity alone, the policy makers and industry leaders recognize agriculture in connection with industry as a competitive, value-adding business sector that has a positive development impact and significant contribution to economic growth. A comprehensive approach could include supporting small agro-producers and SMEs, enabling market access and developing a supportive institutional environment.

The omnibus expression, 'Agro-based industry' is involved in supplying the farm with agricultural inputs besides handling the products of the farm. Textiles, sugar, vegetable oil and plantation industries

derive their raw materials from agriculture, therefore are called agro-based industries. Today, however, the impact of innovation processes and new technologies suggest a widening of the range of agro-industry inputs that could be considered, including biotechnological and synthetic products, for example. This implies that currently, the agro-industry continues to process simple agricultural goods while also transforming highly sophisticated industrial inputs that are often the result of considerable investments in research, technology and innovation. Broadly the agro-industries are classified as food and non-food industries. According to the International Standard Industrial Classification (ISIC) agro-industry consists of: Food and beverages; Tobacco products; Paper and wood products; Textiles, footwear and apparel; Leather products; Rubber products, etc. If we look at the data from the annual survey of industries, it shows that 46 per cent of all factories in India are agro industrial and they contribute almost 22 per cent of the manufacturing value added and nearly 43 per



cent of manufacturing industry employment. Agro-industry, on an average, generates employment for 14 persons per investment of Rs.100000 versus 3 per cent per Rs.100000 for others. This shows that although the share of agriculture in India's GDP has been declining, it is still a highly important economic sector in India's agrarian economy and plays a very significant role in the all round economic development of our country. It can further play a strategic role in pro-poor growth strategies, particularly in developing countries like ours where even after the passage of 72 years of independence, around 65 per cent of the poor live in rural areas. As possibilities for income generation are restricted in rural areas, rural non-farm earnings from trading, agro-processing, manufacturing, commercial, and service activities constitute about 30 to 45 per cent of rural household income. The importance of agro industry for employment is further emphasized by high and increasing levels of female involvement, especially in the non-traditional, high-value agro-chains (i.e. horticulture, fruits and fish products).

In addition, strong synergies exist between agro-industry, agriculture and poverty alleviation. Agro-industry provides capital and services to farmers (e.g. seeds and equipment, training, production and market information), promotes entrepreneurship, raises demand for agricultural products and connects farmers with markets through the handling, processing, marketing and distribution of agricultural products. As a result, productivity and quality of agricultural production, farm returns and economic stability for rural households, food security, and innovation throughout the value chain can be enhanced. Efficient agro-industry can therefore spur agricultural growth, and—accompanied by a strong link with small holders—reduce rural poverty, thus, essentially acting as a launching pad for the integration of our developing economy into global markets.

While casting a glance at the history, it is found, during pre-independence period, the Swadeshi movement was directed to undermine the demand for cheap and imported machine-made consumer goods on one hand and to mobilize rural support for the struggle for India's political independence, on the other. Post-independence, the Third Five-Year Plan onwards, however, the state has continued to provide support to traditional rural industries especially the Khadi and village industries. Virtually,

Agro-industries received impetus at two distinctively different phases. One, during the seventies when, as a consequence of the Green Revolution, State Agro-Industries Corporations were established to provide modern agricultural inputs and two, during the eighties, when the role of foreign direct investment and technology in the food processing sector was emphasized.

The requirement of today is a fresh and comprehensive approach, integrating the development of villages with agro-industries, with larger involvement of farmers in processing their own produce. In our democratic set-up, one cannot ignore development of the majority of the people or keep them on subsidies. The fact also remains that Indian population is so distributed that migration from agriculture to industry or from rural to urban centres or from densely populated areas to scarcely populated ones is not an easy and sustainable alternative. Besides the physical dimensions involved, the very characteristics of the population are such that there are clear linguistic barriers, which limit large scale migrations. Gainful employment to the rural people has to be provided in their own locale. Viewed in this perspective, agro-industries as a concept, has to be dealt with very differently from the past approaches, policies and programmes or other industries. The potential for agro-industrial development in India is largely linked to the relative abundance of agricultural raw materials and availability of low-cost labour, making them particularly suitable for Indian circumstances.

Now let us discuss the initiatives taken by the Government of India in promoting agro industries. The erstwhile Ministry of Agro & Rural Industries has been re-designated as Ministry of Micro, Small and Medium Industries (MSME) to coordinate the programmes with various ministries/agencies engaged in similar programmes. It designs and implements the policies through its field organizations for promotion and growth of small and tiny enterprises, including the coir industries. The implementation of policies and various programmes/schemes for providing infrastructure and support services to small enterprises is undertaken through its attached office, the Small Industry Development Organization (SIDO), statutory bodies/other organizations such as Khadi and Village Industries Commission, Coir Board, National Small Industries Corporation (NSIC), etc.

Government Policy for Agro-Based Industries

The Ministry of Food Processing Industries has been implementing several schemes for the development of food processing in India, which are as follows:

- Scheme for Infrastructure Development;
- Scheme for Technology Up-gradation/Establishment /Modernization of Food Processing Industries;
- Scheme for Quality Assurance, Codex Standards and Research & Development;
- Scheme for Human Resource Development;
- Scheme for Strengthening of Nodal Agencies; and
- Scheme for Backward and Forward Integration and other Promotional Activities.

During the Eleventh Five-Year Plan, programmes started earlier were restructured with appropriate management/implementation arrangements in Public Private Partnership mode, with strong Project Implementation capabilities. Also the Scheme for Technology Up-gradation has been decentralized and now it operates through Nodal Banks in place of State Nodal Agencies to provide back-ended credit linked subsidy. The new integrated approach not only addresses issue of financial assistance but also Skill Development Entrepreneurship Investment, institutional development and providing a policy environment which stimulates growth. Core elements of the strategy are: Better project selection, development and implementation; decentralized cluster-based development, particularly for creation of infrastructure and fostering linkages to retail outlets; industry-led capacity building and up-gradation of standards; an integrated food law and science-based food standards; and strategic intervention with redesigned schemes and strong implementation.

Latest Developments

The Finance Minister, while presenting Budget 2019 focused on reviving traditional industries, with a cluster-based approach, through the Scheme of Fund for Regeneration of Traditional Industries (SFURTI), for development of khadi, village industries, and coir clusters by providing them with improved

equipment, common facilities centres, business development services, training, capacity building and design, and marketing support, etc. A total of 34,791 artisans have benefitted under the scheme with an assistance of Rs 143.15 crore during 2018–19. Further, A Scheme for Promoting Innovation, Rural Industry & Entrepreneurship (ASPIRE) has been launched with an aim to create new jobs and reduce unemployment, promote entrepreneurship culture in India, boost grassroots economic development at the district level, facilitate innovative business solutions for unmet social needs, and promote innovation to further strengthen the competitiveness of the MSME sector. This is done by implementing incubation and commercialization of business ideas through technical/research institutes, including those in the field of agro-based industry. These would be designated as Knowledge Partners and would incubate new/existing technologies for their commercialization. The Budget 2019 proposed that 80 livelihood business incubators and 20 technology business incubators will be set up in 2019–20 under it with intent to develop and train 75,000 skilled entrepreneurs in agro-rural industries.

Credit Linked Capital Subsidy Scheme (CLCSS) is again a facilitator of technology upgradation of small scale industries, including khadi, village, coir and other agro-industrial units, by providing 15 per cent upfront capital subsidy (limited to a maximum of Rs.15 lakh) with the objective to upgrade plant and machinery of small enterprises with state-of-the-art technology and also for new MSMEs, which have set up their facilities with appropriate, eligible and proven technology duly approved under scheme guidelines. Since inception in 2000-01 till date, a total of 62,827 MSME units have been assisted, availing subsidy of Rs 3888.13 crore.

Prime Minister's Employment Generation Programme (PMEGP) started in 2008 as a credit-linked subsidy programme with an aim to generate self-employment opportunities through establishment of micro-enterprises in various sectors, including agro-based industries. It is implemented by KVIC that is functioning as the nodal agency at the national level. A total of 5.45 lakh micro enterprises have been assisted with a margin-money subsidy of Rs 12,074.04 crore, providing employment opportunities to an estimated 45.22 lakh persons till March 31, 2019. Around, 17.44 per cent of the total units of agro-based food processing industries were

assisted under PMEGP during the last three years; the status is given in Table 1.

(Table 1)

Year	Total No. of project assisted	Project assisted under ABFPI	Percentage of ABFPI units out of total units
2016-17	52912	8944	16.90%
2017-18	48398	8386	17.33%
2018-19 (Provisional)	73427	11901	16.21%

(Source: mofpi.nic.in)

The latest milestone is Government of India-approved Pradhan Mantri Kisan SAMPADA Yojana (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) with an allocation of Rs 6,000 crore for the period 2016–20. It is a comprehensive package which will result in creation of modern infrastructure with efficient supply chain management from farm gate to retail outlets. It will not only provide a big boost to the growth of food processing sector in the country but also help in providing better returns to farmers and is a big step towards doubling of farmers' income, creating huge employment opportunities especially in rural areas, reducing wastage of agricultural produce,

increasing the processing level and enhancing the export of processed foods. It is expected to leverage investment of Rs 31,400 crore for handling of 334 lakh MT agro-produce valued at Rs 1,04,125 crore, benefitting about 20 lakh farmers and generating 5,30,500 direct/indirect employment by 2019–20. The Centre has so far sanctioned 42 mega food parks and 234 cold chain projects with 139 lakh tonnes of preserving and processing capacity of agro-produce worth Rs 35000 crore.

Apart from Government of India, Small Industries Development Bank of India (SIDBI), National Bank for Agriculture and Rural Development (NABARD), Khadi & Village Industries Commission (KVIC), National Agricultural Cooperative Marketing Federation of India



Ltd (NAFED) are the major promoting agencies in the sphere. The Development of food processing industry being accorded top priority by Government of India, as it is one of the most critical links in the agri-value chain, the Finance Ministry, in 2014, announced setting up of a Special Fund of Rs 2,000 crore in NABARD with the objective of providing impetus to its development on a cluster basis. Under



this, direct term loans at affordable rates of interest are provided to Designated Food Parks (DFPs) and food processing units in the DFPs.

As on September 30, 2019, a Term Loan of Rs 549 crore has already been sanctioned while more than 349 cr. out of it has been disbursed by NABARD for the above purposes.

Another market player is NAFED established in 1958, with an objective to organize, promote and develop marketing, processing and storage of agricultural, horticultural and forest produce; distribution of agricultural machinery, implements and other inputs; undertaking of inter-state, import and export trade; and to establish food processing units. SIDBI also has been playing an important role by providing support to National Small Industries Corporation (NSICs) for providing leasing, hire-purchase, and marketing support to industrial units in the SSI and also extends financial support to State Small Industries Development Corporation (SSIDCs) for providing them source raw materials and marketing their end products.



Although, there is a vast scope for development of agro industries, the constraints being faced in tapping it, are varied and mainly time-dependent. Generally, the production of fruits and vegetables in different regions of India, is highly seasonal, resulting in large variation as a result of different climate, altitude, distance from the coast and latitude from north to south of the country, which do not always favour large-scale processing industries since the volume of a particular variety of fruit, for example, required for the market may be strictly limited. The processing plant required for small-scale capacity may not meet the minimum economies of scale, and/or the plant may require constant modification to accommodate the different mix of varieties offered by producers. The costs of production of raw materials on the farm are also generally high, usually due to low productivity. This may lead to harvesting over a wider catchment area, higher transport distances, more producers involved and the result is higher delivery costs at the factory gate. In addition, the growth of food processing industry may be hampered by (a) inadequate infrastructure such as



stores, power and water services, communications and similar; (b) limited government support; (c) poor location; and (d) lack of appropriate technologies. The lack of post-harvest facilities for drying, sorting, grading and packing at point of production adds to the woes and results in a loss of raw materials. Competition from global players, loss of trained manpower to other industries and other professions due to better working conditions prevailing there, may lead to further shortage of manpower. Rapid developments in contemporary and requirements of the industry may further lead to fast obsolescence.

The Road Ahead

With a view to reduce waste and cut back on transport and handling costs, primary processing of all foods and processing of perishable foods needs to be undertaken in, or adjacent to, the point of production. Even, the disposal of by-products and wastes at point of production becomes more cost-effective. It is high time that the national plan for improvement and extension of agro-processing technology at farm, traditional small industry and modern industry levels is prepared, while taking into account the diversity in resources and needs of different regions in the country. Thrust areas for research and development need to be identified and met with. More financial incentives and support need to be provided to promote the modernization of agro-processing industry and for establishing new such industries in production catchments. Arrangements to supply market information to the farmer and agro-processor need to be put in place through the sincere and close involvement and of course, out of the box thinking of all the stakeholders.

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ROLE OF AGRICULTURE SCIENTISTS IS VITAL IN FARMERS' WELFARE AND COUNTRY'S PROGRESS: AGRICULTURE MINISTER

Laying the foundation stone for the new office building of Agricultural Scientists Recruitment Board (ASRB) at the Pusa Campus in New Delhi on 4th November 2019, Union Minister for Agriculture Shri Narendra Singh Tomar said that the revamped ASRB will play a greater role in ensuring availability of capable and qualified Agriculture Scientists through a transparent and streamlined process. The Minister said Agriculture is important to the country and Government's aim is for the betterment of agricultural economy by ensuring increase in agricultural production, farmers' income and agricultural exports. This aim requires hard working farmers, proper training of farmers, availability of high quality seeds, better equipments, awareness of farmers for judicious use of fertilizers etc. But along with all these, the valuable contribution by the agricultural scientist is also significant in fulfilling this aim. To ensure this aim ASRB has its important role in providing ample, able, qualified agriculture scientists at proper time ensuring their proper recruitment process and promotion.



The Union Minister for Agriculture & Farmers Welfare, Rural Development and Panchayati Raj, Shri Narendra Singh Tomar addressing at the foundation stone laying ceremony of the office building of ASRB (Agricultural Scientists Recruitment Board), in New Delhi on November 04, 2019.

Shri Tomar said that Government's understanding of the importance of ASRB has given an autonomous status to it through Union Cabinet decision under the able leadership of Prime Minister Shri Narendra Modi in August 2018. This brought in reorganization with updated recruitment rules and streamlined selection process of Scientists ensuring seamless intake of Scientists to various institutes across the country. In its 45 years after inception, the recruitment process of ASRB has been modified several times as and when required, intake has been increased, administrative changes has been made showing the importance given by Government to agricultural research. In order to ensure the transparency and quality of the selection process the Minister asked the officials not to hold back in utilizing necessary requirements like modern technology if required. This shall ensure a better recruitment process which will further improve the research and pave the way for improvement of farming sector making a prosperous and strong nation.

Speaking at the event, DG ICAR & Secretary DARE, Shri Trilochan Mohapatra appreciated the efforts of ASRB which has recruited over 6000 scientists to ICAR and other institutes till date. He also hoped that the streamlining of recruitment process after discussions for last two years shall enhance selection of able candidates and ensure no dearth of agricultural Scientists.

Chairman ASRB, Shri A K Mishra said that the focus of recruitment shall be ensuring a 360° evaluation keeping in mind the two major objectives, scientific acumen and research aptitude. He also added that the digitization of recruitment process is being done effectively and already a system is in place for online application.

The proposed building will be in a land of 2.05 acres which shall have Ground plus three floors with a built-up area of 4900 sqm and a Green Area of 2730 sqm. Considering the stress on eco-friendly and energy saving measures stipulated for new constructions, the building shall comply with the GRIHA-5 star ratings for Green buildings. The building has been designed in such a way that maximum natural illumination is availed thereby reducing energy requirements.

(Source: PIB)

AGRO-BASED INDUSTRIES: UNFAIR TRADE PRACTICES AND REMEDIES

Dr. Ishita G.Tripathy

Agro-based industries are vital to the growth of the economy. Given that most agro-based industries are in micro, small or medium enterprises and may not have the wherewithal to stand competition from cheaper or subsidized imports, the role of Government becomes all the more important. The Government needs to ensure a level playing field to agro-based industries vis-à-vis unfair trade practices adopted by exporters of other countries.

Introduction

Agro-based industries are a perfect example of mutually beneficial dependence between the primary and secondary sectors of an economy. It is well-established that in India agro-based industries address important issues of poverty and unemployment by utilizing local resources. The competitive edge of these industries is, however, eroded by cheap and often low quality imports. These industries are also subjected to trade barriers in destination countries. This article discusses a few trade-related issues faced by these industries.

Profile of Agro-based Industries

As the name suggests, agro-based industries are those industries which derive their inputs from

agriculture. Such industries span across a myriad of sectors which inter alia include processed food, products of rubber, jute, cotton, textiles, paper, tobacco, wood, etc. Ministry of Statistics and Programme Implementation's Annual Survey of Industries (ASI) indicates that there are a number of units in such industries and these employ a fairly large number of people (see Table-1). As per the publication, as much as 43.6 per cent of factories are agro-based industries. Almost a similar proportion (42.7 per cent) of persons engaged is accounted for by agro-based industries. As evident from Table-1, these industries do not account for a very high share of either fixed capital or that of total emoluments. Within these industries, food products, textiles and rubber products account for the largest number of factories. As far as employment is concerned, food

Table-1: Principal Characteristics by Major Industry Group in ASI 2017-2018(P)

(Figures in Rs. Lakh & Others in Numbers)

Description	Factories	Fixed Capital	Total Persons Engaged	Total Emoluments
1	2	3	4	5
Food Products	37,833	2,11,19,573	17,72,399	34,21,585
Textiles	17,957	1,66,68,852	16,78,561	31,31,708
Rubber Products*	14,193	95,92,433	7,12,872	18,01,918
Wearing Apparel	10,498	28,57,883	11,89,520	20,99,762
Paper and Paper Products	7,109	58,59,566	2,84,057	6,81,274
Tobacco Products	3,591	6,08,951	4,61,335	2,94,121
Leather and Related Products	4,617	11,23,972	3,87,134	6,84,473
Cotton Ginning, Cleaning and Bailing; Seed Processing for Propagation	3,316	4,73,207	79,471	1,16,224
Wood and Products of Wood and Cork, except furniture	4,565	6,88,936	98,653	1,63,465
Sub-total	1,03,679 (43.6%)	5,89,93,373 (17.9%)	66,64,002 (42.7%)	1,23,94,530 (29.6%)
ALL INDIA	2,37,684	32,93,41,000	1,56,14,598	4,18,35,726

(Source: Annual Survey of Industries, 2017-18, Ministry of Statistics & Programme, Government of India)

Note: Figures in parentheses indicate proportion of total.

* Includes plastic products



Government Intervention

Agro-based industries have high potential as employment generators and foreign exchange earners. Undoubtedly, their importance cannot be undermined. To provide a level playing field to them to compete in the domestic market, sometimes it becomes necessary for the government to intervene. These initiatives, inter alia, include organizing these industries into clusters; interventions for skill and technology upgradation; support for availing financial assistance; overcoming marketing challenges; renovation of marketing outlets;

products, textiles and wearing apparel are relatively bigger employers.

Data collected from Directorate General of Commercial Intelligence & Statistics (DGCI&S) points to the fact that micro, small and medium-scale agro-based industries have been contributing to about one-fifth of India's total exports, with exports remaining in the range of US\$ 56,000 to 59,000 million in the past four years (see Table-2). These are primarily exports of textiles, ready-made apparel, etc.

showcasing products of artisans; organizing exhibitions; assisting in participation in international exhibitions/fairs, etc. Another vital area which merits focus of the Government is how to ensure that these industries do not become victims of unfair trade practices of exporters from other countries.

Unfair Trade Practices

Agro-based industries lose their competitive edge due to unfair trade practices adopted by

Table-2: Exports of Agro-bases MSMEs

(Figures in US\$ million)

Sub-Sector	2014-15	2015-16	2016-17	2017-18
Animal Or Vegetable Fats And Oil And Their Products	973	877	893	1,264
Prepared Food Stuffs, Beverages, Spirits And Vinegar, Tobacco And Manufactured Tobacco Substitutes	5,918	5,837	6,010	6,205
Rubber And Articles Thereof*	7,808	7,619	7,787	9,311
Raw Hides And Skins, Leather, Fur skins & Articles Thereof; Saddlery And Harness; Travel Goods, Handbags And Similar Containers; Articles Of Animal Gut (Other Than Silk-Worm Gut)	3,872	3,442	3,244	3,312
Wood And Articles Of Wood; Wood Charcoal; Cork And Articles Of Cork; Manufactures Of Straw, Of Esparto Or Of Other Plaiting Materials; Basketware And Wickerwork.	353	456	415	428
Pulp Of Wood Or Of Other Fibrous Cellulosic Material; Recovered (Waste And Scrap) Paper Or Paperboard; Paper And Paperboard & Articles Thereof	1,430	1,447	1,464	1,702
Textiles & Textile Articles	37,654	36,728	36,477	36,738
Sub-Total	58,009	56,405	56,290	58,959
India's Total Exports	3,10,338	2,62,291	2,75,852	3,03,376
Agro-based MSME Exports as a proportion of India's total Exports (%)	18.7	21.5	20.4	19.4

(Sources: 1. DGCI&S; 2. Ministry of Micro, Small & Medium Enterprises)

* Includes plastic products

exporters of other countries. Such practices manifest in the following two forms:

- i. **Dumping-** It is observed that exporters from other countries often dump their products in Indian markets at rates cheaper than those at which they sell their products in their domestic markets.
- ii. **Subsidies-** Governments of those countries from where imports are sourced by India, are observed to be providing subsidies to their exporters.

In both cases, the competitive scenario is distorted and the domestic industry is at a loss. The World Trade Organization (WTO) categorizes these cases under unfair trade practices in the Anti-Dumping Agreement and in the Agreement on Subsidies and Counter-vailing Measures Agreement. WTO member countries which are at the receiving end of such practices may impose anti-dumping duties (ADD) and countervailing duties (CVD), respectively, if dumping and subsidies cause injury to their domestic industry. ADD or CVD make the imports costlier and to that extent the domestic industry is provided a level playing field.

A large number of agro-based industries have been found to be injured by unfair trade practices of exporters of other countries. The adverse impact on these industries can be in the form of loss of market share, increase in unsold stocks, reduction in return on capital employed, reduction in profits, increase in losses, increase in unemployment, closure of manufacturing units, etc. Another related issue is that sometimes the cheap imports are found to be of low quality, thereby adding to environmental problems and hygiene related issues.

Trade Remedies

India's Customs Tariff Act, 1975 and related Anti-Dumping Rules and CVD Rules, 1995 provide



the legal backing for Government of India to protect the domestic manufacturer against unfair trade practices of exporters of other countries. The Directorate General of Trade Remedies (DGTR) under Government of India's Department of Commerce is a quasi-judicial body. It recommends ADD or CVD when investigations point out that the domestic industry has indeed suffered or is likely to suffer because of unfair trade practices of exporters of other countries. On the recommendation of DGTR, the enhanced duties are put into place by Government of India's Department of Revenue.

Table-3 presents sector-wise trade remedial measures imposed by India since 1995 to protect domestic agro-based industries. Textiles and textile articles attracted the highest number of ADD measures between 1st January, 1995 and 31st December, 2018. There were no CVD measures imposed during the same period as far as agro-based industries are concerned. In fact, India has used CVD measures sparingly. WTO reports only two CVD measures imposed by India from 1st January, 1995 to 31st December, 2018, but neither of those measures is related to the agro-based industries.

WTO reports that the largest number of all ADD measures, including agro-based products, which have been imposed by India since 1995 have been on China, EU, Korea, Taiwan, Thailand and USA, in that order. In the past couple of years, India has initiated some investigations against exporters from

Table-3: Number of ADD Measures imposed by India between 1st January, 1995 and 31st December, 2018

Sub-Sector	ADD Imposed
Rubber And Articles Thereof*	96
Textile & Textile Articles	74
Wood And Articles Of Wood; Wood Charcoal; Cork And Articles Of Cork; Manufactures Of Straw, Of Esparto Or Of Other Plaiting Materials; Basketware And Wickerwork.	14
Pulp Of Wood Or Of Other Fibrous Cellulosic Material; Recovered (Waste And Scrap) Paper Or Paperboard; Paper And Paperboard & Articles Thereof	12
Sub-Total	196
India's Total ADD Measures	693
Agro-based ADD imposed as a proportion of total ADD imposed by India (%)	28.3
<i>(Source: World Trade Organization)</i>	
<i>* Includes plastic products</i>	

Bangladesh and Nepal on agro-based products like jute. Investigations were also initiated in some other agro-based products like non-woven fabrics imported from China, Indonesia, Malaysia, Saudi Arabia and Thailand and viscose filament yarn and silk fabric imported from China.

To elucidate how trade remedies are adopted by the Government of India for the protection of agro-based industries, the case of jute industry is presented here. DGTR's website states that in 2017, on the recommendation of DGTR [the then Directorate General of Anti-Dumping], Department of Revenue had levied ADD on the imports of Jute Products, viz. Jute Yarn/ Twine (multiple folded/cabled and single), Hessian fabric, and Jute Sacking Bags from Bangladesh. However, in 2018, DGTR received another petition which stated that exporters were circumventing the ADD by exporting Jute Sacking Cloth to India from Bangladesh, which was the penultimate stage of a Jute Sacking Bag on which ADD was in place. On investigating the case, DGTR found that imports of Jute Sacking Cloth had increased after ADD was levied on Jute Sacking Bag. Further, it was noticed that the value addition in converting Jute Sacking Cloth to Jute Sacking Bag was much less than the prescribed threshold in India's Anti-Dumping Rules. DGTR calculated the dumping margins as the difference between the price at which the exporters sold Jute Sacking Cloth in India and the price at which they sold the product in their domestic market. It was observed that the import of Jute Sacking Cloth had effectively undermined the remedial effect of the existing ADD measure on Jute Sacking Bag and consequently Indian producers were suffering. Therefore, in March, 2019, DGTR recommended extending the existing ADD on Jute Sacking Bags to Jute Sacking Cloth as well.

The above case is indicative of how agro-based industries can approach DGTR to redress their grievances in cases where exports of other countries have materially injured them or are likely to injure them in the absence of any trade remedial measure. An investigation against unfair trade practice is usually initiated by the DGTR when a petition is filed by the domestic industry, although a *suo moto* initiation is also possible.

Another trade remedial measure distinct from an ADD or a CVD, is a safeguard measure which may



be resorted to by a government when there is a surge in imports of any commodity due to which serious injury is caused to the domestic industry. In such a case, the affected country can impose a safeguard duty. The DGTR website enlists the initiation of a bilateral safeguard investigation concerning imports of 'Refined Bleached Deodorised Palmolein and Refined Bleached Deodorised Palm Oil' into India from Malaysia under India-Malaysia Comprehensive Economic Cooperation Agreement (Bilateral Safeguard Measures) Rules, 2017 as recently as on 14th August, 2019.

Indian exporters too may require assistance in presenting their cases when other countries initiate investigations of unfair trade practices against them. In those cases too, DGTR comes into the picture.

Concluding Remarks

Agro-based industries are vital to the growth of the economy. Given that most agro-based industries are in micro, small or medium enterprises and may not have the wherewithal to stand competition from cheaper or subsidized imports, the role of Government becomes all the more important. The Government needs to ensure a level playing field to agro-based industries vis-à-vis unfair trade practices adopted by exporters of other countries. To assist the domestic industry, DGTR has recently set-up a Help Desk & Facilitation Centre on 23rd September, 2019. Awareness generation amongst agro-based industries becomes a key ingredient in successful utilization of available trade remedies and to protect them from unfair trade practices of exporters of other countries.

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PERSPECTIVES OF DAIRY INDUSTRY IN INDIA

Dr. Jagdeep Saxena

Milk production in India has come a long way over the years from a low volume of 55.6 million tons in 1991–92 to 176.3 million tons in 2017–18, at an average annual growth rate of 4.5 per cent. Indian dairy sector is uniquely characterised more by 'production by masses' rather than 'mass production'. Dairying provides a remunerative outlet for family labour, so farmers' families are encouraged to take up dairying as an occupation subsidiary to agriculture. Other than income generation and livelihood security, dairying also ensures nutritional security for the family addressing issues like malnutrition.

Indian dairy sector, that includes milk production, collection, processing, distribution and marketing, plays a seminal role in rural economy, second only to agriculture. Contrary to many developed countries, dairying in India is more than a business activity; it has broader social and economic dimensions. Over 71 million of 147 million households in the country depend on dairy for their livelihood. Out of these households, nearly 75 per cent are small, marginal and landless farmers with the average herd size of 2–8 animals. Livestock sector contributes nearly 26 per cent to rural income in case of poorest households and about 12 per cent in case of overall rural income. Dairying provides a remunerative outlet for family labour, so farmers' families are encouraged to take up dairying as an occupation subsidiary to agriculture. Other than income generation and livelihood security, dairying also ensures nutritional security for the

family addressing issues like malnutrition. Studies show that households owning milk animals in rural areas consume almost three times more milk than the families which are not into dairying. Indian dairy sector is uniquely characterised more by 'production by masses' rather than 'mass production'. Contrary to leading milk producing countries in the world, nearly 95 per cent of milk producers in the country hold only one to five animals per household.

The Scenario

Milk production in India has come a long way over the years from a low volume of 55.6 million tons in 1991–92 to 176.3 million tons in 2017–18, at an average annual growth rate of 4.5 per cent. But, due to various socio-economic factors, there exists wide inter-state variability in milk production. While the per capita availability of milk is 375



grams per day at all-India level, it varies between 71 grams per day in Assam to 1120 grams per day in Punjab. With record production and 1.3 billion population, India is the world's largest producer and consumer of milk accounting for nearly 19 per cent of the world milk production. Most of the milk production comes from over 125 million milch animals (in-milk and dry cows and buffaloes) that are generally reared under poor conditions lacking scientific requirements. No wonder, Indian dairy sector is struggling with low productivity of animals which is estimated as 1806 kg per year, as against the world average of 2310 kg. But, the vast diverse population of cattle and buffaloes offers great prospects for increasing the milk production. India is blessed with a huge biodiversity of 43 indigenous cattle breeds and 13 buffalo breeds which have survived over last hundreds of years. Hence, a strategy is under implementation to enhance the average productivity of select breeds.

At consumption level, about 48 per cent of total milk produced in India is either consumed at the producer level or supplied to non-producers in the nearby rural areas. The remaining 52 per cent milk is marketable surplus available for sale to consumers in urban areas. Out of this surplus quantity, it is estimated that nearly 40 per cent of the milk sold is handled by the organized sector (20 per cent each by co-operatives and private sector dairies); whereas remaining 60 per cent handled by unorganized sector.

The Projected Demand for Milk in India

Year	Per capita demand (grams/day)	Population (million)	Demand (million tonnes)
2015-16 (actual)	333	1280.2	156
2020-21	409	1366.8	204
2021-22	417	1384.1	211
2025-26	456	1447.9	241
2028-29	502	1497.6	274
2032-33	571	1566.5	327
2033-34	590	1584.3	341

We need to improve this situation by bringing more and more dairy farmers under the fold of dairy co-operatives. Studies have indicated that intervention of dairy co-operatives has

increased farmers' income, created employment opportunities, eased availability of credit to poor farmers, led to empowerment of women, enhanced nutritional security, and also increased flow of new technology. Sustained efforts at institutional level have brought 16.6 million farmers under the ambit of over 1,86,000 village level dairy societies up to March 2018. There are 210 Dairy Co-operative Milk Unions and five major Milk Producer Companies that produce about 442 lakh kilogram milk per day. Women members of the dairy co-operative societies are also being encouraged to assume leadership roles. As a result, the total number of women in co-operative across the country was 4.9 million in nearly 33,000 women dairy co-operatives which is 29.5 per cent of total dairy farmers (as on 31 March, 2018). Despite immense utility and impact, dairy co-operatives are facing several constraints and challenges mainly due to state co-operative laws. Hence, Government of India launched a central sector scheme in 2016-17 to support state co-operative dairy federations in providing a stable market access to farmers. A corpus fund of Rs. 300 crore has been kept in perpetuity with National Dairy Development Board (NDDB) to provide soft loan as working capital to dairy federations. Moving further, formation of Farmer Producer Companies in dairy sector has mobilized farmers to enhance their capacity as producers and marketing professionals. Producer companies help in creating sustainable rural employment through dairying for small and marginal farmers and landless labourers.

Investment in Infrastructure

Milk is a highly perishable commodity, hence, handling of raw milk is the most critical activity of entire dairy value chain. If raw milk is not handled properly at production stage the quality of milk deteriorates quickly jeopardizing safety of processed milk and milk products. Therefore, it is imperative to maintain a cold chain from the time of milk collection till it reaches the processing facility. In case of organised sector, raw milk from individual farmers is collected at the village dairy co-operative society or milk pooling point in either cans or poured directly in bulk milk cooler. The chilled milk collected is thereafter transported in insulated tankers directly to a dairy plant for processing and distribution. In cases where bulk milk cooler is not available at local level, milk is delivered to chilling centre in insulated tankers, but this situation is not a

(BOX – 1)

Organic Dairies: Opportunities Galore with Challenges

Thanks to enhanced health awareness, more and more Indian urbanites are switching over to organic milk due to its safe contents. Organic milk is free from pesticides, herbicides, antibiotics and growth hormones that are generally present in conventional milk although in residual quantities. But sometimes, these obnoxious chemicals cross the permissible levels posing a danger to well being of the consumer. Hence, people are willingly paying premium prices to overcome the fear of being contaminated. This has spurred a wave of organic dairies specially in and around metros to serve people having greater purchasing power.

Organic dairies are mostly owned and operated by tech-savvy young entrepreneurs who have made significant investments on organic milk production, distribution and marketing. Currently, being at nascent stage, organic dairies account for only one percent market share, but experts see a steady and impressive growth in coming five years making it a sunrise sector. Better business and livelihood opportunities are coming up for dairy farmers, producers, processors, traders and business operators. But, there are challenges as well.

Producing organic farm-fresh milk is an expensive proposition compared to regular milk due to stringent rules and guidelines. Milking animals must be reared using the practices of organic farming and milk must be certified in order to be marketed as organic. As per standards, milking animals may be allowed to graze only on pasture, be fed organic certified feeds and may not be treated with chemical drugs. Use of growth hormones is also prohibited which otherwise makes animal grow faster and produce more milk. Similarly, animals cannot be given antibiotics for treatment, although it is also illegal to withhold drug from a sick animal in order to maintain animal's organic status. Grazing requirement makes milk more costly because it requires a certain acres of posture land which is scarce and because of grazing cow produces less milk than one eating a grain diet optimized for milk production. On legal side, organic certification is a mandatory requirement and yearly process to be executed by an accredited certification body or an inspection authority.

Another challenge is to maintain and preserve quality of milk during entire supply chain. Some companies prefer to pasteurize milk soon after collection, but many of them just chill the milk and distribute it to customers. As a rule, preservatives are not added in the organic milk, so milk gets spoiled within eight hours. So, a quick and reliable distribution system should be in place before starting dairy operations. Additionally, organic milk market needs a fine balancing act between production and supply. Productivity cannot be increased without creating a strong customer base, and on the other hand, it is difficult to acquire more customers due to low productivity in this segment. Hence, entrepreneurs must weigh pros and cons before entering this market. Despite all these odds and challenges, organic dairies have emerged as a new and potential arm of the conventional dairy sector of India.

favoured one. It encourages bacterial growth during transportation that sours milk and deteriorates its quality. Further, milk processing plants mostly operate with old technology. Hence, there is urgent need to create, upgrade and modernise the milk processing infrastructure with co-operatives. In this regard, role of private players is worth mentioning. During liberalized economy era, foreseeing the potential, private players made huge investment in dairy sector creating capacities which surpassed the combined capacity of the dairy co-operatives and the government dairies in past two decades. But, being driven on purely commercial level, private sector companies generally do not pay desired attention to welfare of dairy farmers. Hence, in Indian context, co-operative sector and public sector needs to be strengthened and expanded. Due to increasing

urbanization and changing food habits, milk co-operatives now need to focus on expanding their product basket to include value added products like UHT milk, cheese, ice cream etc. by creating facilities in their dairy processing plants.

In order to boost dairy processing and infrastructure, a special fund (Dairy Processing and Infrastructure Development Fund, DIDF) was created with a total outlay of Rs.10,881 crore during the period from 2017–18 to 2028–29. The project is being implemented by National Dairy Development Board and National Dairy Development Corporation directly through the end borrowers, such as milk unions, state dairy federations, multi-state milk co-operatives, milk producer companies and other eligible stakeholders. The end borrowers are being

disbursed loan at 6.5 per cent per annum with a 10 year period of repayment and initial two years moratorium. This fund is helping build an efficient milk procurement system by setting up chilling infrastructure, modernization of processing infrastructure, and adding manufacturing facilities for value added products for the milk unions and milk producer companies. Concerted efforts are on to benefit 95 lakh dairy farmers across 50,000 villages in different parts of country. The project targets to add additional milk processing capacity of 126 lakh litre per day, milk drying capacity of 210 MT per day, milk chilling capacity of 140 lakh litre per day, installation of 28,000 bulk milk coolers, and manufacturing capacity of 59.78 lakh litre per day of milk equivalent for value added products. As per estimates, direct employment opportunities for about 40,000 people and about two lakh indirect employment opportunities are likely to be created. Besides this fund, additional cold chains and processing infrastructure is being created under Kisan SAMPADA Yojana run by Ministry of Food Processing Industries, Government of India.

Plan for Prosperity

The Union Government, in pursuance to its commitment for doubling farmers' income by 2022, prepared and implemented a holistic "National Action Plan for Dairy Development for 2022" in 2018. The Action Plan is designed with strategies that specifically address key challenges faced by dairy sector in India:

- Low productivity of Indian bovines,
- Imbalanced feeding to animals,
- Limited access of milk producers to organized sector,
- Age old infrastructure operating on absolute technology,
- Lack of organized credit system,
- Lack of manufacturing facilities for value added products,
- Lack of efficient chilling infrastructure at village level,
- Lack of penetration in smaller cities/towns in terms of milk marketing, and
- Lack of efficient cold chain distribution network.

National Action Plan envisions to increase milk production to 254.55 million metric ton by 2021–22 and 300 MMT by 2023–24. To achieve the desired milk production targets, average in-milk animal productivity would be required to grow at the rate

of 4.7 per cent by 2021-22. Genetic improvement of breeds and maintenance of good health of bovine population are the two major pre-requirements for enhancing productivity. To address the first issue, Artificial Insemination (AI) network needs to be expanded to bring more female bovines under the ambit of AI services, along with improving the efficiency of current AI delivery services. We need to extend coverage of AI to about 65 per cent of the total breedable bovines by 2021-22 from present 26 per cent. Recently, Prime Minister has launched 'National Artificial Insemination Program' to cover entire country with quality AI services. Various breed development interventions are being implemented under Union Government schemes, such as National Dairy Plan (Phase – I) and Rashtriya Gokul Mission. Modern technologies like sexing of semen are being taken up to regulate the sex ratio and to produce large number of progenies of only female sex. Female sex sorted semen will be made available to farmers to produce more number of high genetic merit heifers. The sex-sorted semen technology will be standardized for indigenous breeds such as Sahiwal, Hariana, Red Sindhi, Rathi and Gir during initial phases. Further, a National Bovine Genomics Centre for Indigenous Breeds (NBGC-IB) is being set-up to pave way for systematic and fast paced improvement of the precious indigenous animal resources using highly precise gene technology.

Union Government also implemented a comprehensive National Dairy Plan (Phase – I) with the objective to increase milk production and to reduce spoilage of milk during handling and transportation. The Plan was under implementation during 2011–12 to 2018–19 with an approved outlay of Rs. 2,242 crore. National Dairy Development Board implemented the plan as the nodal agency in the 18 major milk producing states (Uttar Pradesh, Punjab, Haryana, Gujarat, Rajasthan, Madhya Pradesh, Bihar, West Bengal, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Orissa, Jharkhand, Chhattisgarh, Uttarakhand and Kerala) that contribute nearly 90 per cent to the total milk production of the country. More than 360 projects were approved that promised enhancement in milk production, whereas a large number of Bulk Milk Coolers of 5200 litres per day capacity were installed to help in reducing spoilage of milk due to high temperature.

Currently, NADB has initiated talk with the World Bank and concerned government department

(BOX – 2)

Encouragement to Entrepreneurship

To meet the future milk demand of the country along with financial security to dairy farmers, Indian dairy sector needs a transformation in its structure and operations. A dairy farm may be operated as an 'economic unit' and a dairy farmer should adopt a commercial model with a vision of a 'dairy entrepreneur'. In order to facilitate this transformation, Government of India launched an ambitious 'Dairy Entrepreneurship Development Scheme' with the objective to promote entrepreneurship by generating opportunities for self-employment in dairy sector. NABARD is the nodal agency to implement this scheme with financial support from Union Government. NABARD provides financial assistance to commercially feasible and bankable dairy projects for a wider range of dairy associated activities. Some of the recognized activities included establishment of small dairy unit having 1 to 10 milch animals; rearing of heifers (upto 20 calves); purchase of milk machines; establishment of bulk milk chillers (upto 5,000 liters capacity); purchase of milk processing equipments for manufacture of indigenous milk products; setting-up of milk parlours; development of cold chain and processing facilities; and marketing of milk and milk products.

Any individual entrepreneur or dairy farmer, group of farmers, Self Help Groups, Dairy Co-operative Societies, District Milk Unions and Panchayat Raj Institutions are eligible to take advantage of this scheme. A back-ended capital subsidy of 25 per cent of the project cost is provided to beneficiaries of general category and 33.33 per cent of the project to SC & ST beneficiaries. This assistance is purely credit linked and subject to sanction of the project by the eligible financial institutions. A large number of dairy farmers and young entrepreneurs have set-up dairy and associated units across the country by taking benefit of this scheme.

to launch second phase of the Plan. It will have a projected outlay of about Rs.8,000 crore. The second phase will primarily focus on developing milk processing infrastructure and establishment of milk quality testing equipment at critical points of procurement areas. We have 3.20 lakh potential villages with respect to dairy development. NDP - 1 reached to about two lakh villages, hence, phase – 2 will try to reach farmers of the remaining 1.25 lakh villages. It is hoped that NDP – 2 will provide a great boost to milk processing sector and India could even have an exportable surplus production of milk.

Way Forward

At present, the three drivers of demand, that is, population growth, urbanization and income growth are very strongly in operation due to which the demand of milk and milk products is rising steadily. With recent measures and steps taken by the Government, it is hoped that targets of increase in milk production will be achieved but some issues need to be taken into account. We must transform our dairies into a technology driven mode having an organized status. As far as the availability of modern dairy equipments is considered, India's recent progress is remarkable, but we still depend on imports for advanced machinery. Equipments for packaging of butter, cheese, paneer and other

traditional products need attention and necessary action. Further, the fiscal benefits of food processing sector should also be extended to dairying. Experts also demand exemption of income tax for dairy co-operative societies on the pattern of exemption to agricultural income. Further, milk price paid to farmers also need to be raised so as to make dairying a sustainable livelihood option in future. The role of women in dairying is well-known and documented. Women engagement in dairy activities at household level is about 60–70 per cent, but it needs support and strengthening at co-operative societies' level. The involvement of women in cooperatives provides them economic and financial empowerment. At institutional level also various studies have indicated that co-operatives managed by the women are generally better performers.

At present, India's share in global dairy trade is just one per cent, which needs to be enhanced by technology infusion and quality management. We need exclusive and dedicated efforts to transform Indian dairying into a globally competitive enterprise with welfare of farmers at the core.

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JUTE INDUSTRY: SCENARIO AND OPPORTUNITIES

Dr. Sanjoy Debnath

Jute industry is one of the oldest textile industries involving directly or indirectly a large number of people. This industry supports around 40 lakh farm families and provides direct employment to 2.6 lakh industrial workers and 1.4 lakh in the tertiary sector. Government should make efforts in R&D to strengthen the industry and implement newer technologies, diversified products and improved machinery through intensive modernization.

Abstract:

Among the different industries, Jute industry is one of the oldest textile industries involving directly or indirectly a large number of people. Today, sustainability of this industry is being questioned in different forums. Possible facts which are responsible to sustain this industry have been discussed elaborately. It also covers different segments of this industry wherein, their present scenario and future requirements for sustainability and opportunities are explained. A study been made to cover product manufacturing, machine manufacturing and marketing industries associated with this industries. Diversification of process and product are the important aspects for self-sustenance of this industry.

1. Introduction: History and Present Scenario of Jute Industry—An overview

Among several natural fibres, Jute is next to cotton as per availability is concerned. It is second to flax origins in Mediterranean region and later it came to India. Based on the records, jute was known as '*patta*' in 800 BC. It has been popular for more than a century for its industrial applications mainly as packaging material in different sectors,

agricultural and geotextile application and carpet backing (Debnath et al. 2009). Since 17th to 20th century, the jute industry in India was delegated by the British East India Company, which was the first jute trader. Palit and Kajaria, 2007 documented several historical events which were evidences for the growth of the jute industry. In 1854, the first jute mill/factory in India was established at Rishira, which is about 20 km north of Calcutta (Debnath 2017a). The jute industry made tremendous progress in the later part of the 19th century. Later during the 19th century, the manufacturing of jute has started in other countries like in France, America, Italy, Austria, Russia, Belgium and Germany. Most of the Jute tycoons had started to quit India, leaving the set up of jute mills during Independence after which the Indian businessmen owned most of the jute mills.

In recent days, jute textile industry is one of the major industries catering the eastern part of India, particularly in West Bengal. This industry supports around 40 lakh farm families and provides direct employment to 2.6 lakh industrial workers and 1.4 lakh in the tertiary sector. The production process in the Jute Industry passes through a variety of actions, which begins with cultivation of raw jute, processing



of jute fibres, spinning, weaving, bleaching, dyeing, finishing and marketing of both, the raw jute and its finished products. As such its labour-output ratio is also high in spite of various difficulties being faced by the industry. Capacity utilization of the industry is around 75 per cent. Jute industry contributes to the export earnings in the range of Rs. 1,000 to Rs. 1, 200 crore annually.

After independence (1947), most of the jute cultivated lands remained in Bangladesh and the jute industries were left in India. This caused import of jute from neighboring country, Bangladesh. However, with the intervention of science and technology, today India is self-sufficient to produce the jute required for jute industries in our country. Though, the quality of Bangladeshi jute is much superior to Jute grown in India which is due to availability of more quantity of free flowing water. Jute cultivation is confined to West Bengal, Eastern Bihar, Assam, Orissa, Tripura and Andhra Pradesh where mostly Mesta (jute like fibre and coarser than jute) is grown. Out of these states, West Bengal, Bihar and Assam contribute about 80 per cent of the total production. Again, these three states may be further classified quality-wise in five principal jute growing areas, i.e., South Bengal, Semi-Northern, Northern, Assam and Junglee (Purnea region). The places of origin, i.e. Mokam was the basic guiding factor in the old system of grading, whereas in the new grading system introduced by BIS in 1975, six characteristics viz. strength, defects, root content, color, fineness and bulk density have been considered for grading Tossa and White jute. The raw jute has been classified into eight grades, starting from TD1/W1 (most superior) to TD8/W8 (most inferior). As per the recent CACP (Commission for Agricultural Costs and Prices) the modified jute grading is TDN-1 to TDN-5 (total five grades) for Tossa (*Corchorusolitorius*) and WDN-1 to WDN-5 (total five grades) for white jute (*Corchoruscapsularis*). However, in the new grading system, 'bulk density' parameter was not considered as it has less significance in quality of jute grading compared to other five parameters (strength, defects, root content, color, fineness). With the intervention of new grading system, total



grades have been reduced and farmers get more benefits compared to previous grading system.

2. Problems Associated in Jute Industries

In India, jute industry suffered a serious setback in 1947 due to the partition of the subcontinent (Anonymous, 2016b). After partition about 80 per cent of the jute growing areas went to East Pakistan (Bangladesh), while nearly 90 per cent jute mills remained in India. In 1959, the international demand of jute products decreased substantially as a result of which 112 jute factories were closed down. At present there are only 60 jute producing mills in India. Most of these mills are along the Hooghly River, especially to the north of Kolkata (Debnath 2017a).

Since the establishment of this industry, most of the jute industries till today are being producing the age old products like jute sacking and hessian as packaging material and some extent carpet backing. These products in total account around 95 per cent of the total production of the industry. Only countable industries are involved in diversified product development process for commercial purposes. These products are mostly laminated jute fabric, geotextile, industrial textiles, etc.

This specific industry is also using the age-old machinery to produce jute yarns and fabrics (except 2-3 countable industry). Due to use of very old primitive machinery, the efficiency of the machines is not up to the mark (in an average within 80 per cent). Due to frequent breakdowns, defective and inferior quality products are being made. No modernization has been made in machinery development and

automation. This in total requires more manpower with the cost of production is increasing day-by-day which proves to be a challenge for the industry. Apart from these, there is stiff competition with the synthetic industry for similar packaging material, as the synthetic material are much cheaper in nature.

According to the Jute Packaging Norms and Legal Protection to Jute Cultivators the Parliament of India had enacted the JPM (Jute Packaging Mandatory) Act, 1987 with an objective to protect the Jute industry. As per this act, the food grain and sugar produced is reserved and mandatorily packed in jute bags manufactured every year. The Government of India, recently found that the jute industry could not match demands in 2011 – 12 for supply of 13 lakh bales or 4.33 lakh tons of gunny bags for Rabi crop supply of 2012 – 13. Government said that with 10 mills remaining closed the jute industry is short in capacity by 1.5 lakh ton. Presently, it can produce 11 lakh tons of jute sacks / gunny bags. Its installed capacity however is 15.02 lakh tons and assuming a 83 per cent utilization its stated capacity is 12.47 lakh tons. The industry earns a business of around Rs. 10,000 crore by selling its entire produce to FCI (Food Corporation of India), sugar mills, co-operatives and in the Indian market apart from the export. FCI makes a bulk purchase of almost 35 – 40 per cent of jute mills' produce. In 2012–13 FCI is expected to purchase 6.34 lakh tons and 4.33 lakh jute/ gunny bags.

Apart from the above problems, in India, jute industry suffers lot from different political interference, labour problem, shortage of jute fibre supply due to low rainfall among other issues leading to challenge the sustainability of the jute industry (Kundu et. al. 1959).

3. Sustainability and Opportunities in Jute Industry

Today with the advent of science, lot of diversified products has been developed from jute and jute-based material, which has more cost-benefit ratio. The Indian Jute industry has been expanding really fast spanning from a wide range of life style consumer products, courtesy to the versatility of Jute. Innovative ways of bleaching, dyeing and finished goods processes - the jute industry now provides finished jute products that are softer and have luster with aesthetic appeal. Today Jute has been defined as eco-friendly natural fiber

with utmost versatility ranging from low value geotextiles to high value carpets, decorative, apparels, composites, upholstery furnishings, etc. In the same line of development, Sengupta and Debnath, 2010 and 2012, documented jute-based products for upholstery application. They also made study wherein, comparable with commercial non-jute similar products have been made. Debnath et al., 2007a and 2007b, developed jute and hollow-polyester blended bulked yarn for warm fabrics like knitted sweater, jacket, etc. They found that the bulkiness of the jute-polyester bulked yarn is superior to jute yarn (Debnath et al. 2017b, 2019).

One can look into the important properties of jute fibre since it has huge diversifying potentiality. Advantages of jute include good insulating and antistatic properties, as well as having low thermal conductivity and a moderate moisture regain. It include acoustic insulating properties and manufacture with no skin irritations. Jute has the ability to be blended with other fibres, both synthetic and natural, and accepts cellulosic dye classes such as natural, basic, vat, sulfur, reactive, and pigment dyes. While relatively cheap synthetic materials in many uses are replacing jute, but jute's biodegradable nature is suitable for the storage of food materials, where synthetics would be unsuitable.

4. Conclusions and Impending

Application of jute area must be increased. India need to work on quality by adopting new technologies (Debnath 2017a). Jute Research organizations such as ICAR-NINFET, Kolkata, IJIRA, Kolkata, Department of Jute and Fibre Technology, Kolkata, Directorate of Jute Development, National Jute Board, etc., must work together to utilize resources for the betterment of the industry. Government must make efforts in R&D to strengthen the jute industry and implement newer technologies, diversified products and improved machinery through intensive modernization. These will fetch more profit and has less market competition (synthetic counterpart) due to its eco-friendly property which has good prospects in the coming days.

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BAMBOO INDUSTRY: CRAFTING THE LIVELIHOOD OF RURAL PEOPLE

Dr. S.C.Lahiry

Bamboo is an integral part of our life and culture, as it is used in religious ceremonies, art and music. Thus it is a mystical plant that engulfs our daily lives. For tribal and forest dwellers “bamboo for living and living with bamboo” is still norm. This offers an excellent starting point in increasing employment, income generation and improving nutritional status of rural poor. Since bamboo can provide the basis for an expanding small and medium enterprise sector, it offers an effective mechanism for rural poverty alleviation and livelihood securities.

Bamboo is a versatile crop and has recorded 1500 uses including food, as wood substitute, building and construction material, as resource of handicraft, pulp and paper, etc. Around 80 per cent of bamboo forests lie in Asia with India, China and Myanmar having 19.8 million hectares of bamboo. India has one of the richest bamboo resources in the world, second only to China in bamboo production. According to Ministry of Agriculture and Farmer Welfare, Government of India, the annual bamboo production in the country is estimated at 3.23 million tonnes. Though India is the world's second largest grower of bamboo with 136 species, 23 genera, covering 13.96 mill ha area, the country's share in the global bamboo trade and commerce is only 4 per cent (During 2015–16, 2016–17, the export of bamboo and bamboo products was Rs 0.11 cr and Rs 0.32 cr respectively while the import was over Rs 148.63 cr and Rs 213.65 cr hence a net importer of bamboo despite of having growing stock both within and outside forests). Its potential for expanding the area under bamboo cultivation is immense.

According to the Forest Survey of India (2011), more than 50 per cent of bamboo species are found in eastern India, including in states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and West Bengal. Bamboo utensils, fishing nets, jars, vases, and baskets make it a quintessential cultural tradition in the region. Mizoram has the largest bamboo cover in India as compared to the geographical area covered by other states; more than half of Mizoram's land has bamboo forests.

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For tribal and forest dwellers “bamboo for living and living with bamboo” is still norm. This offers an excellent starting point in increasing employment, income generation and improving nutritional status of rural poor. Since bamboo can provide the basis for an expanding small and medium enterprise sector, it offers an effective mechanism for rural poverty alleviation and livelihood securities. A bamboo tree matures in 4 to 5 years whereas a hardwood tree takes almost 60 years to mature. Unlike hardwood trees, bamboo can be harvested without adverse effect on the environment. Bamboo can tolerate both heavy and low rainfall. Every year it gives out 8-10 shoots. Bamboo releases 35 per cent more oxygen than other plants and absorbs 20 per cent carbon dioxide from the environment. Scientific plantation of bamboo could dramatically improve air quality with the release of more oxygen and sequestering more carbon dioxide.

With the rapid socio-economic transformation of our country, bamboo gained importance as a raw material not only for cottage industry but also for large scale industry. Around 25000 bamboo based industries

provide employment to about 20 million people while 2 million people work on bamboo based crafts. With attractive physical and strength properties, bamboo has great potential as construction and structural material. Pulp and paper industry and bamboo craft sector are the two major users of bamboo resources. The consumption of bamboo in different sectors in the country indicates that 24 per cent of bamboo is being utilized in scaffolding, 20 per cent for pulp and paper, 19 per cent for handicrafts and 15 per cent for miscellaneous items. However, its industrial potential in the manufacture of a host of value added products eg laminated board, bamboo fibre cement board, flooring, wood substitutes, medicines, food products, etc., provide opportunities for employment and income generation and at the same time ensures efficient and sustained utilization of available resources. Bamboo based technology has attracted attention of a numbers of entrepreneurs and few industries have already been set up in the country.

Bamboo is amenable to multiple uses and is therefore well suited to value addition activities, generating thereby number of employments in rural sector. Bamboo plays a vital role in rural employment, every hectare of bamboo plantation generates about 160 workdays. An average of 8–10 workdays is needed to harvest one ton of bamboo. Five workdays per tonne are generated by transportation and handling of bamboo. As many as 80 workdays are required for processing of one ton of bamboo and its weaving into usable product. In cottage industry about 600 workdays are required for per ton of bamboo processing. Based on the studies, the summary of employment potential of bamboo economy (below) indicates that bamboo can generate 516.33 million mandays of work per annum.

Summary of Employment Potential of Bamboo use:

Bamboo Use	Estimated capacity/ Quantity	Quantity Mandays (Per annum in million)
Silviculture	25000 ha	75
Bamboo plantations	6 million tons	40
Harvesting	6 million tons	100

Bamboo Use	Estimated capacity/ Quantity	Quantity Mandays (Per annum in million)
Transport/ storage/handling	6 million tons	30
Weaving into products	3 million tons	240
Industrial labour	3.3 million tons	7.33
Cottage industries	40 000 tons	24
Total		516.33

(Source: Committee of Doubling of Farmers' Income Report, Min of Agriculture. GOI, 2018)

Recognizing the potential of bamboo and the fact that it has been subjected to neglect and thus remain disorganised with poor market linkages and sub-optimal level technology applications for manufacture of value added products in the industrial and artisanal sector, the National Mission on Bamboo Technology & Trade Development, 2003 Report has highlighted the need to upgrade bamboo economy by according bamboo development a strategic role in rural economic development, poverty alleviation and bamboo based handicrafts and industrial development. The potential of Bamboo as an economic resource capable of generating employment for the rural people in commercial plantation and other value addition activities has remained largely untapped due to lack of appropriate policy, institutional framework covering plantations, technology upgradation, product and market level. Bamboo has thus tremendous untapped potential in our country for transforming rural economy. There is vast scope for expanding bamboo in the areas outside forest because: a) its management is easier in these lands than in natural forest and b) due to close to user agencies, economic harvesting is possible. Land degradation is a major problem confronting India. According to State of India's Environment 2017, nearly 30 per cent of India's land is degraded. With its unique ability to stitch and repair damaged soils, bamboo is ideal for rehabilitating degraded soil.

National Bamboo Mission (NBM) which was commenced in October 2006 is an initiative of the Government of India (GOI) to provide a new impetus and direction to enable the realization of bamboo's considerable potential. It is multidisciplinary

and multidimensional in its approach. The major interventions planned to achieve its broad objectives focus on R&D, plantation on forest and non-forest lands through Joint Forest Management Committees (JFMC) or Village Development Committee (VDCs) and ensuring supply of quality planting materials by establishing centralised and kisan/mahila nurseries, promotion of bamboo handicrafts, marketing, export and establishing bamboo wholesale & retail market.

NBM was started as a Centrally Sponsored Scheme in 2006–07. Since 2006–07, 3,61,791 ha land has been covered with bamboo plantation, out of which 2,36,700 ha under forest area and 1,25,091 ha under non-forest area. An area of 91,715 ha of existing bamboo plantation has been improved for higher productivity. Around 1,466 nurseries have been established to supply quality planting material. In different states, 61,126 farmers and 12,710 field functionaries have been trained in the area of nursery management and bamboo plantation. In addition, 39 Bamboo wholesale & retail markets near villages, 29 Retail outlets and 40 Bamboo bazaars have been established. However, under NBM, during the period 2006–17, new area covered through plantation is around 3.62 lakh ha (including 1.25 lakh ha in non-forest areas) whereas one of the objectives of the Mission among others was to expand area under bamboo plantation by 2 million ha in the Tenth Plan and overall 6 million ha in the Tenth and Eleventh Plan. It is noted that achievement in non-forest area has been much lower than its potential. The Indian Forest Act, 1927 defines bamboo as a tree — a contradiction in the law that has deterred the growth of bamboo plantations particularly in non-forest areas. Bamboo grown outside forests were subjected to regulatory rules of felling and transportation till the end of 2017. It was perceived that the emphasis of NBM has, by and large, been on propagation and cultivation of bamboo, with limited efforts on processing, product development and value addition. This has caused weak linkage between the farmers and the industry. There is need to develop an integrated bamboo industry in the country. A restructured NBM has been approved by Government of India in April 2018 with an investment of Rs 1290 cr in the coming 2 years. It focuses on the development of complete value chain of bamboo sector to link growers with consumers and to support the development of entire value chain starting from planting material,

plantation, creation of facilities for collection, aggregation, processing marketing, micro, small & medium enterprises, skill development and brand building initiative in a cluster approach mode. This will contribute to doubling of farmers' income and also generate more employment opportunities for skilled and unskilled worker especially youths in rural areas.

To facilitate the benefit flow to the farmers, bamboo stock outside forest areas has been excluded from the definition of tree by amending Section 2 (7) of the Indian Forest Act, 1927 by the Government of India in November 2017. Besides, a scheme called SFURTI (Scheme of Fund for Regeneration of Traditional Industries) is being implemented by the Ministry of Micro, Small and Medium (MSME) in order to boost traditional industries and bamboo artisans. Proper understanding of bamboo culture and technical support could unleash a bamboo revolution that has the capacity to uplift the bamboo based industry.

New Initiatives

1. In order to boost bamboo cultivation on a commercial level, the Government of Himachal Pradesh (HP) will constitute a State Level Bamboo Development Agency (SLBDA) along with setting up of bamboo economic zones as per industry requirement. Many areas in the lower parts of HP have immense potential for growing bamboo which is in great demand by industries. As such, the setting up of a board would help farmers to take to bamboo cultivation, specifically in view of heavy demand from industries.
2. The Government of Telangana has decided in June, 2018 to launch a massive bamboo plantations project on 506 hectares (1,250 acres) to provide a source of sustainable income to farmers.
3. Maharashtra State is quite keen on promoting bamboo as a source of income for farmers. In August, 2018 it created the Maharashtra Bamboo Development Board (MBDB) for this purpose. It ensures that village communities have total control over the sale of bamboo and not the Forest Department. It even set up a bamboo research centre funded by the Tata Group.
4. Japanese Government may extend help to Mizoram in the development of its bamboo industry and road construction projects. Along

with this, it may help in alleviating the impact of natural disasters in the area. The push will be towards setting up an industry for the value addition to the state's bamboo resources. It lacks major industry that could harness the potential of its resources.

5. TRIFED, an apex body, under Ministry of Tribal Affairs, Government of India would open establishments to train tribal people in using bamboo optimally with zero waste and make agarbatti, matchboxes and even textiles. This would help in augmenting tribals' income and opening of markets.

The Way Forward

To arrest the pace of land degradation in the country, a national programme of intensive bamboo plantation involving all stakeholders need to be undertaken beyond 2019–20. Following the footsteps of China, Indian Government needs to support rural farmers to establish bamboo plantations in barren lands and slopes. The national housing scheme (PMAY) should utilize bamboo as construction material. Developing bamboo as a load bearing structural element would pave the way for its high value application in construction which can make bamboo cultivation an economically viable way of greening the vast wastelands (Smita Chugh, Bamboo-A Green Option for Housing). Edible bamboo has huge demand in East Asian cuisines and medicine. Bamboo grown in the North East (which is 66 per cent of growing bamboo stock in India) can be exported to East Asian countries like Japan and Taiwan for competitive prices with the Government's support. There is a big market in the agarbatti industry. India imports 35,000 tonnes of round sticks from Vietnam and China. Earlier, square ones were hand made from bamboo, in the North East. But when the technology changed and machines took over, round sticks were preferred. India produces 3,000 tonnes of them. The entire activity can be indigenised by local cultivation of bamboo of a particular variety required by the industry. It is observed that illegal bamboo export to Bangladesh and Myanmar accounts for 13 per cent of usage. As mentioned before that the country imports sizeable bamboo stocks due to shortage, there is an urgent need to stop this illegal trading of bamboo.

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BUSINESS OPPORTUNITIES IN AGRO-BASED INDUSTRY

Shiv Kumar and Chhatra Pal Singh

Around two-third of the population depends on agriculture and agro-based industries. The story of Indian agriculture is mixed in 'green reaction' (characterized by mediocre growth, the stagnation of yields and persistent instability of output) whereas agro-based industries can be looked upon to provide a mass of livelihoods.

Processing operations are applied on agricultural raw materials to add value in order to produce marketable and usable products that bring forth profits and additional income to the producer. The following factors enhanced the importance of agro based industries in Indian context, viz., they are comparatively easy to establish and provide income in the rural areas with less investment; they facilitate an effective and efficient utilization of raw materials; they help in the transmission of industrial culture in rural areas bringing outlook change of farmers; the food processing and food preparations industry have tremendous export potential, and they set up on co-operative basis ensuring participation of the people in the development process.

Linkages Between Agriculture and Agro Based Industries

Around two-third of the population depends on agriculture and agro-based industries. The story of Indian agriculture is mixed in 'green reaction' (characterized by mediocre growth, the stagnation of yields and persistent instability of output) whereas agro-based industries can be looked upon to provide a mass of livelihoods. Agro-forestry in Indian farming system is practiced as complementary and supplementary enterprise to enhance well being of farmers. Since it causes diversification and commercialization of agriculture, it not only enhances the incomes of farmers but also creates food surplus. It is a well



recognized fact across the world, particularly in the context of industrial development that the importance of agro industries is relative to agriculture increases as the economy develops. It should be emphasized that food is not just produce but also encompasses a wide variety of processed products. It is in this sense that the agro-industry is an important and vital part of the manufacturing sector in developing countries and the means for building industrial capacities.

Potential of Agro Based Industries in India

The fluctuating and decelerating agricultural growth, if not arrested, will have serious consequences for the livelihoods of the population that depends on agriculture, particularly manufacturing sector that has strong backward and forward linkages with agriculture. The liberalized food manufacturing sectors, as well as other forms of agribusinesses, could play an important role in stimulating agricultural growth. Amongst various agro-industries, food manufacturing is more material-intensive, and thus possesses a greater potential to revitalize agricultural growth by strengthening forward and backward linkages with farmers, and speed up the process of commercialization and diversification of agricultural production. Further, food processing industries, to reduce their own transaction costs, often tend to be located nearer to the source of raw material, and thus can create income opportunities for the rural people. Hence, accelerating agricultural growth through diversification and development of agro-processing is a major policy challenge.

Unfortunately, economy is yet to realize the full potential of these industries in general and food manufacturing sector in particular. The demand of processed food and other agro based products is increasing due to sustained income growth, increasing urbanization, a fast-growing middle income class, increasing entry of women in work force, nuclearization of families, improvements in literacy and exposure to

western foods. Share of processed food products and beverages in the food basket has shown increasing trend since more than last three decades. Demand for processed foods is more responsive to income and price changes, and will grow faster than any other food item. By 2020, processed food products and beverages are expected to account for about 15 per cent share in the food basket. Rising demand together with improvements in transportation, logistics, communication, technological innovations, adequate legal and regulatory arrangements and other favorable economic policies in food and other agro processing offer an immense scope for the growth of processing industry. The domestic as well as global market is enormous. Only with mass production aided by modern technology and intensive marketing can the domestic market as well as the export market be exploited to the fullest extent. The development of the agro industry can help stabilize and make agriculture more lucrative and create employment opportunities both at the production and marketing stages. The food processing sector in India has the potential of attracting investments and to generate employment. The broad based development of the agro products industry will improve both the social and physical infrastructure of India.

Agribusiness in Agro-Based Industries

Agribusiness denotes the collective business activities that are performed from field to plat. Agribusiness is one of the main generators of employment and income worldwide. Agribusiness is characterized by raw materials that are mostly perishable, variable in quality and not regularly available. The sector is subject to stringent regulatory controls on consumer safety, product quality and environmental protection. Traditional production and distribution methods are being replaced by more closely coordinated and better planned linkages between agribusiness firms, farmers, retailers and others in the supply chains.

Farmer Producer Organization: To overcome the problems of unorganized small farmers who lack access to resources and services, a group action of farmers was needed. This came in the form of innovative institutions viz. contract farming, Farmer Producer Organizations (FPOs), Joint Liability Group, etc. The FPOs have emerged as an interface between small farmers and the external world by providing forward and backward linkages, giving them required voice, market access, bargaining power, economy of

scale and better prices. Structure and organization of FPOs vary from country to country depending upon the legal and policy framework of the country.

A Few Success Stories in Agrobased Industries

FPO in Pune District in Junnar & Ambegaon Taluka: The Krushijeevan Agro Farmers Producer Company Ltd was established on 25th July 2014 to strengthen farmer capacity through best knowledge available in agricultural for enhanced productivity; ensuring access to and usage of quality inputs, information and services for intensive agriculture; enhancing cluster competitiveness; facilitating access to fair and remunerative markets including linking producer groups to marketing opportunities by market aggregators. The FPO worked with 1500 mobilized farmers of this region. The role played by the FPO is procurement of produces and to search market linkages for their production. Moreover, this acquired Direct Marketing Licenses could procure tomatoes directly from the farmers which are involved herein. Also tied-up with traders, exporters and processing industries for forward linkages. Procurement of production will be done through pack houses, collection centres, where all facilities are already available. FPO provided vehicles, reefer van for procurement from farmers and dispersion of produce to retailers and consumers. This group action of farmer could make farmers free from headache of input and output markets and lower down substantial transaction costs besides realizing better price according to quality of the produce. In addition, it has transformed the attitude of farmers towards farming as full time occupation for their livelihood. It has achieved ideal tomato crop management after implementation of modern & high tech technology and introduced Global GAP in target area besides establishment of Farm Machinery Banks for Custom Hiring.

Straw for Income

Burning of paddy straw in surrounding states of Nation Capital Region of Delhi would create a thick haze that would eclipse the sun throughout the day from late October to early November. This problem cropped up chiefly on two counts, firstly after introduction of combined harvester for paddy harvesting which left stubbles on the field. Rice harvested by machines gets Rs 400 to Rs 800 less in the market compared to rice harvested manually. Secondly, narrow window between harvesting of paddy and sowing of next crop. Although using labour to cut paddy straw delays the

process of wheat plantation. Farmers have to clear the field for next sowing crop and found burning the stubble as less costly. Many farmers in Haryana who have started farming mushrooms use paddy straw for preparing the compost needed to grow them. Mushroom farming has created demand for rice straw as a substrate. Estimates show that one hectare of paddy produces 2.5 tons of straw. This waste has now been transformed into wealth for mushroom farmers. The trigger point for this change came from economic perspective as the farmers were earlier using wheat straw for making compost, but that was turning out to be very expensive. Paddy straw from a 0.4 ha paddy farm cost only about Rs 1,000. It was nine times cheaper than wheat straw. A small farm of 0.12 ha needs five tons of paddy straw to grow mushrooms. Wheat straw is expensive because of its demand from brick kilns where it is used as a fuel. People also use it as fodder because it is more nutritious than paddy. Other uses of paddy straw include the fuel pallets for thermal power plants and other biomass processing, cardboard making, etc. Avoiding stubble burning could be a permanent solution through proper policy, institution and technology in place.

Soybean Protein A Booming Business Venture:

India has a unique advantage in meeting the import demand of soybean meal in east and South East Asian countries because these countries require smaller quantities in small-sized vessels, which are not available in the Western world. India can fulfill this requirement. The farmers could increase acreage under the crop provided they are assured of getting the government-assured Minimum Support Price (MSP) in the open market. It all depends upon the growth of oil meal exports and reduction in import of edible oils along with other international factors. The soybean protein for edible purpose is as good as any other better sources of protein in the country. This is one of the cheapest sources of protein. Moreover, Indian soybean protein after processing and extraction is very cheap compared to world price. This abundance of cheap protein could be means to fight with malnutrition and securing nutritional security. This could be possible after establishment of processing plant of modern state of the art technology. Government of India needs to take appropriate actions to promote export of soybean protein and shun its import.

Poppy Seed Business in India: Globally poppy seed business is very lucrative because of its

pharmaceutical uses besides mainstay of illegal trade around the world. India's heavily regulated poppy economy is witnessing a small but intense conflict over decision of the Central Board of Narcotics (CBN) over import in India from exporting countries. The farmers are always worried about such decisions on whether they will get better price of their impending stocks. In India poppy cultivation is regulated by CBN and issues licenses to 25,000 to 30,000 farmers to grow poppy. The latex collected from the plant belongs to the government and farmers get Rs 2000 to Rs 2500 for per kg of latex sold to government. Poppy seeds can be sold in open market and may fetch price up to Rs. 1,00,0000 per quintal. Latex is processed in government sector only. Poppy latex is used to derive alkaloids such as morphine and codeine. Poppy seeds are also used by food and pharmacy companies to extract poppy seed oil. Occasionally, there is news in media that a large number of import permits issued by CBN are cornered by a group of Indian importers (cartels) making advance payments to exporters, several days prior to the CBN's import notification. The other genuine buyers from India are deprived of buying poppy seed because of exhaustion of country limits.

The government could be importing seeds to satisfy WTO statute – which brackets poppy as a 'free-to-import' commodity. The government has put in place restrictions/entry barriers to prevent free import of poppy and other narcotic substances into India. But farmers could be at the receiving end of this policy decision since poppy yields have been around 10 – 14 quintal per hectare in the past few years. The government should allow poppy cultivation on large scale to meet the domestic demand after taking all necessary balance and checks in system of production and regulation of poppy. This would help farmers in realizing enhanced income from poppy farming.

There is need to have a well-planned strategy for an agro-business idea based manufacturing operation. There is huge scope to set up a profitable venture for which there is a comparatively small startup capital to set up such businesses.

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MISSION INDRADHANUSH 2.0: REITERATING INDIA'S COMMITMENT TO VACCINES FOR ALL

The government is poised to launch Intensified Mission Indradhanush (IMI) 2.0 between December 2019 – March 2020 to deliver a programme that is informed by the lessons learnt from the previous phases, and seeks to escalate efforts to achieve the goal of attaining a 90 per cent national immunization coverage across India. The programme will be delivered in 271 districts of 27 states and 652 blocks of Uttar Pradesh and Bihar among hard-to-reach and tribal populations.

The Government of India is dedicated to achieving the highest standards of health and well-being for the nation. Immunization programme is a critical component of our commitment towards Universal Health Coverage. It is integral to India's efforts of reducing the burden of vaccine preventable diseases and achieving universal care for children. Over the years, efforts have been fruitful and proved India's belief in quality, equitable, and affordable health care for all.

The Government had launched 'Expanded Program for Immunization' in 1978, which was later termed as the 'Universal Immunization Program' (UIP) in 1985 aiming to reduce mortality and morbidity among children from vaccine preventable diseases. India's immunization programme is the largest in the world, with annual cohorts of around 26.5 million infants and 29 million pregnant women. Despite steady progress, routine vaccination coverage has been slow to increase. According to the National Family Health Survey-4 (2015-16) (NFHS-4), the full immunization coverage is around 62 per cent. The factors limiting vaccination coverage include the rapid urbanization, presence of a large migrating and isolated populations that are difficult to reach, and low demand from underinformed and unaware populations.

India has achieved ground-breaking success in eradicating / eliminating life-threatening vaccine preventable diseases by systematically implementing vaccination programmes. These include small pox, polio and more recently, maternal and neonatal tetanus. Despite persisting challenges such as a vast population, poor sanitation and hygiene, and a difficult geographical terrain that make containing outbreak of disease and increasing access to vaccines



difficult, the Ministry of Health and Family Welfare has employed an effective approach – such as involving the community, seeking support from other Ministries and partner agencies, establishing an organized surveillance system, and employing mass campaign management strategies to reach every unreached child for vaccination.

Owing to low childhood vaccination coverage, Ministry of Health and Family Welfare launched Mission Indradhanush (MI) in 2014, to target underserved, vulnerable, resistant, and inaccessible populations. These included pregnant women and children who had previously been left out, or had dropped out, of immunization programmes. This contributed to an increase of 6.7 per cent in full immunization coverage after the first two phases of Mission Indradhanush. In October 2017, the Prime Minister of India Shri Narendra Modi launched Intensified Mission Indradhanush (IMI)—an ambitious plan to accelerate progress. It aimed to achieve 90 per cent full immunization coverage (FIC) with focus towards districts and urban areas with persistently low levels. IMI was built on MI, using additional strategies to reach populations at high risk, by involving sectors other than health. It was an effort to shift routine

immunization into a *Jan Andolan*, or a “peoples’ movement”. It aimed to mobilize communities and deal with barriers to seeking vaccines.

Nationally, coordination between health and 12 non-health ministries was facilitated by the Cabinet Secretariat. In the districts, participation was coordinated by the District Magistrate through a District Task Force. In subdistricts, direct interaction between field workers from health and other departments was facilitated.

IMI has contributed to a significant increase in fully immunized children in 190 selected districts in India. IMI showed that cross-sectoral participation can be effective in vaccinating children at the highest risk of infection. However, a number of systemic and practice-related changes, particularly with regards to the communications’ strategy, are needed for this approach to be even more effective. Overall, around 3.39 crore children and 87.18 lakh pregnant women received vaccination under all phases of the programme, and effected a tremendous improvement in the quality of life of thousands of pregnant women and children.

Now the government is poised to launch Intensified Mission Indradhanush (IMI) 2.0 between December 2019 – March 2020 to deliver a programme that is informed by the lessons learnt from the previous phases, and seeks to escalate efforts to achieve the goal of attaining 90 per cent national immunization coverage across India. The programme will be delivered in 271 districts of 27 states and 652 blocks of Uttar Pradesh and Bihar among hard-to-reach and tribal populations. Several ministries, including the Ministry of Women and Child Development, Panchayati Raj, Ministry of Urban Development, Ministry of Youth Affairs, among others, will come together to make the mission a resounding success and support the central government in ensuring the benefits of vaccines reach the last mile.

Salient features:

- Immunization activity will be in four rounds over 7 working days excluding the RI days, Sundays and holidays
- Enhanced immunization session with flexible timing, mobile session and mobilization by other departments
- Enhanced focus on left outs, dropouts, and resistant families and hard to reach areas
- Focus on urban, underserved population and tribal areas



- Inter-ministerial and inter - departmental coordination
- Enhance political, administrative and financial commitment, through advocacy
- Intensified Mission Indradhanush immunization drive, consisting of 4 rounds of immunization will be conducted in the selected districts and urban cities between December 2019–March 2020
- After the completion of the proposed 4 rounds, the states will be expected to undertake measures to sustain the gains from IMI, through activities like inclusion of IMI sessions in routine immunization plans. The sustainability of IMI will be assessed through a survey.

In order to mobilize the identified beneficiaries, there is intensive collaboration with other Ministries/ Department/Agencies for working closely with the community, civil society and the youth. In addition, NGOs, CSOs, NSS, National Cadet Corps (NCC), Nehru Yuva Kendra, MSW will be involved as mobilizers. Development partners such as WHO, UNICEF, UNDP, IPE Global, Rotary International shall be supporting the government efforts, and Technical Support Units (TSUs) will be established in select states as per programme needs.

With the launch of Intensified Mission Indradhanush 2.0, India has the opportunity to achieve further reductions in deaths among children under five years of age, and achieve the Sustainable Development Goal of ending preventable child deaths by 2030. By building on successes of the past, learning from challenges, and consolidating efforts across stakeholder groups, the country can fulfill its aim of attaining a disease-free India. Vaccines are a truly critical intervention in this journey, and are the key to safeguarding our present, and building a healthier tomorrow for our future generations.

(Source: Ministry of Health and Family Welfare)

SWACHH BHARAT MEET

STATES MEET TO STRATEGIZE THE WAY FORWARD FOR SWACHH BHARAT

With all 5.99 lakh villages, 699 districts and 35 states and union territories having declared themselves open defecation free (ODF) under the Swachh Bharat Mission (Grameen) [SBM(G)] as of October 2019, the Department of Drinking Water and Sanitation (DDWS), Ministry of Jal Shakti organised a one-day national workshop on ODF Plus – ODF Sustainability and Solid and Liquid Waste Management, in New Delhi on 9th November. Secretaries in-charge of rural sanitation, Mission Directors and other key state level officials from 12 states attended the workshop.

Opening the workshop, Shri Parameswaran Iyer, Secretary (DDWS), Ministry of Jal Shakti, shared that although tremendous progress had been made under the SBM(G), since the programme's inception in 2014, the work is not yet over, and it is key that all stakeholders continue their efforts to sustain safe sanitation and to ensure that no one is left behind. States were encouraged to take stock of their rural sanitation situation and lay focus on sustaining the gains made under the SBM(G) and ensuring general cleanliness in the villages with solid and liquid waste management (SLWM).

The Secretary also held bilateral meetings between the senior most officials representing the states along with officials from the Ministry, to discuss challenges and strategies on a state-by-state basis.

ODF Plus, SBM(G)'s latest component, consists of two main tracks: ODF Sustainability (ODF-S) and Solid and Liquid Waste Management (SLWM). ODF-S includes sustaining behaviour change for safe sanitation, leaving no one behind and addressing gaps, ensuring community toilets for floating populations, and strengthening the capacity of all grassroots functionaries. As part of SLWM, the Mission is taking up biodegradable waste management, plastic waste management, grey water management, and fecal sludge management.

The workshop included presentation by the participating states on their current status in rural sanitation and their plans going forward. Shri Arun Baroka, Additional Secretary (DDWS), Ministry of Jal Shakti, in his presentation made the overall case for the Department's vision moving forward and reiterated that focus has to be maintained on the sustainability of outcomes gained thus far and on solid and liquid waste management. *(Source: PIB)*

JAL SHAKTI MINISTER REVIEWED JAL JEEVAN MISSION IN SOUTHERN STATES

Union Minister of Jal Shakti, Gajendra Singh Shekhawat has emphasized the urgency to start work on Jal Jeevan Mission as the first six months of the mission are critical for the success of the mission. He was speaking at the regional review of Jal Jeevan Mission at Hyderabad On 11th November 2019. The regional review included states of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana and UTs of Puduchery and Lakhsdweep.

In the review, the preparation and progress on water related schemes in the Southern States was assessed and the way forward was discussed. Parameswaran Iyer, Secretary, Department of Drinking Water and Sanitation, Ministry of Jal Shakti highlighted the steps that are needed to be taken for proper implementation of the programme. He stressed the need for retrofitting the existing schemes to incorporate household tap connections and also for a streamlined system of financial management; and assured the states of a smooth fund flow from the centre. He also advised the States on the steps envisaged for sustaining the gains of the Swachh Bharat Mission. The states were apprised regarding the steps to be taken in the next phase that is ODF Plus to keep the sanitation momentum going.

Announced by the Prime Minister, Narendra Modi on 73rd Independence Day, the Jal Jeevan Mission (JJM) aims at providing Functional Household Tap Connections (FHTCs) in rural areas by 2024. *(Source: PIB)*

REFORMS TO BOOST AGRO-BASED INDUSTRY

Laxmi Devi

Although the government is facilitating agro-based industry through these schemes, the ease of doing business still needs to improve. Land, labour and capital are the basic requirements for setting of up an enterprise. The government is implementing many schemes to encourage agro-based industry. These schemes range from providing collateral-free credit and access to incubation centres to providing better equipment and employment opportunities for entrepreneurs in various corners of India.

It was in 1860s, the agro-based industry in India started with cotton in Ahmadabad, Gujarat. In 20th century, the industrialisation began with cotton in textile sector and then in sugar. These two commodities actually formed the corner stone of agro-processing in the country.

After India's independence in 1947, the cooperative and private sector came up largely in non-food processing products. Sugar and cotton were dominant ones besides jute.

Agro-processing means any industry which utilises the raw materials generated in the agriculture sector. It has got two broad sub-components—food processing and non-food processing.

The adoption of an industrial policy in 1956 was the first important step towards promoting industry in the country. However, there was always some kind of "reservation" for small and medium scale industries till 1991, when the economy was liberalised.

At that time, the area of activities was defined clearly for small, medium and large enterprises. Large and medium enterprises were not allowed to enter the activities permitted for the small scale industry. For example, the matchstick making business was reserved for only the small scale industry.

So the term 'enterprise' was defined as 'small, medium or large' scale by the quantity and amount of money invested in plant and capital. An investment of below Rs 1 crore was treated as small industry, Rs 1–5 crore as medium based, while investment above Rs 5 crore was deemed as large industry.

In 1991, the economic reforms kick started with liberalised investment and trade regime. In one go, 1,800 items were de-reserved and permitted large scale industry to enter into the

small scale economic activities. Till then, food processing was mostly undertaken by small and medium scale enterprises. After de-reservation, big agro-based industry started taking part in small scale enterprises.

The economic reforms began with de-licensing, improving the exchange rate and simplification of registration, which itself brought about a huge change in India.

Earlier, MSME (Micro Small and Medium Enterprise) was part of the Industry and Commerce Ministry. In late 1990s, it was carved out as MSME and the word enterprise was defined for the first time. Enterprise came to include both industry and MSME.

'Enterprise' was a generic term. Many services per evolving into an industry and hence both services and industry were together constituted as 'enterprise', whereas khadi and cottage industry became micro industry.

After independence, Indian economy was influenced by Nehruvian and Gandhian thoughts. The country's first Prime Minister Jawaharlal Nehru believed in capital intensive industry apart from PSUs, while Mahatma Gandhi—a figure instrumental in shaping India's future—emphasised on cottage and small scale industry.

As a result, post independence there was huge investment in capital intensive industry in the government's first and second five year plan while at the same time there were promotional activities for micro enterprises. For example, the All India Khadi and Village Industries Board was set up in 1957, which was later took over by the Khadi and Village Industries Commission (KVIC) in 2006.

Since the village industries were not viable for various reasons, the government started giving them subsidy and it still continues to do so.

One of the economists in the United States had commented on India's draft Third Five Year Plan as "The Missing Middle" stating that there was no policy to promote the 'middle scale industry' as major thrust was given on promoting highly capital intensive industry and the khadi and village industries by giving huge subsidies.

There was a need to promote enterprise in the country that was little bigger than small scale and much less than capital intensive industry with a blend of technology and low capital investment.

Since, India did not promote 'medium scale industry' from the beginning, it was not able to generate adequate employment and compete in the international market.

When China liberalised its economy in December 1978, it first focused on agricultural reforms, which India did not pursue. It followed the principle of "to each according to the need and for each according to capacity".

In agriculture, China focused on both production and marketing of farm products for about 20 years that resulted in increase in farmers' income by 15 per cent. Along with that, China also encouraged town and village industries.

On the contrary, India never focused on agricultural reforms except for land reforms initiated in 1966-1977 and 1980-1984. If at that time land reforms were not undertaken, the country's agriculture would not have reached to the current heights. But other aspects of agriculture reforms were not undertaken. Even when India liberalised its economy in 1991, it started with the industry and did nothing in the agriculture sector.

It was only in 2003 when for the first time reforms in the agriculture marketing were initiated by the former Prime Minister Atal Bihari Vajpayee. However, those agri-reforms were not carried forward.

The first attempt at reforms in agricultural markets was made by the Vajpayee Government by designing a model Agricultural Produce Market Committee (APMC) Act in 2003, which provided for new market channels

other than the APMC market—such as direct purchase, private wholesale markets, and contract farming for farmers and buyers alike. Like many other issues related to agriculture, which is a State subject, this too got caught in a tussle between the Central and State governments.

Later, the Essential Commodities Act was liberalised, but was not carried forward as it was restored.

Schemes to Promote Agro-Based Industry

India was not able to sustain economic growth because farmers' purchasing power has not improved much. If there is no purchasing power, there will be no demand for consumer goods.

The government is implementing many schemes to encourage agro-based industry. These schemes range from providing collateral-free credit and access to incubation centres to providing better equipment and employment opportunities for entrepreneurs in various corners of India.

Foreign Direct Investment (FDI) has been permitted 100 per cent in multi-brand retail. FDI has been put on an automatic route in seed sector, dairy, animal husbandry and controlled atmospheric poly houses.

Pradhan Mantri MUDRA Yojana (PMMY) is a scheme launched on April 8, 2015 for providing loans up to Rs. 10 lakh to the non-corporate, non-farm small/micro enterprises.

The Stand Up India Scheme facilitates bank loans between 10 lakh and 1 crore to at least one Scheduled Caste (SC) or Scheduled Tribe (ST) borrower and at least one woman borrower per bank branch for setting up a greenfield enterprise.



Gramin Bhandaran Yojana aims to meet the requirements of farmers for storing farm produce, processed farm produce and agricultural inputs.

The scheme's objective is to prevent distress sale immediately after harvest by providing the facility of pledge financing and marketing credit by strengthening agricultural marketing infrastructure in the country. It promotes grading, standardization and quality control of agricultural produce to improve their marketability.

The Scheme of Fund for Regeneration of Traditional Industries (SFURTI) aims to organise traditional industries (such as bamboo, khadi and honey) and artisans into clusters to make them competitive and provide support for their long-term sustainability, sustained employment, and enhanced marketability of products.

The Credit Linked Capital Subsidy Scheme (CLCSS) is a facilitator of technology upgradation of small scale industries, including khadi, village and coir industrial units, by providing 15 per cent upfront capital subsidy (limited to a maximum of Rs. 15 lakh).

The Credit Guarantee Scheme for Micro and Small Enterprises (CGTMSE) facilitates credit to MSME units through collateral-free loan up to a limit of Rs. 100 lakh for individual MSMEs on payment of a guarantee fee to the bank by the MSME.

Besides CGTMSE, the government's focus lies on schemes such as Prime Minister's Employment Generation Programme (PMEGP), Pradhan Mantri Kisan Sampada Yojana (PMKSY), scheme of Cold Chain, Value Addition and Preservation Infrastructure, Modernization of Abattoirs scheme, and more.

Challenges To Set Up Agro-Based Industry

Although the government is facilitating agro-based industry through these schemes, the ease of doing business still needs to improve. Land, labour and capital are the basic requirements for setting of up an enterprise. But India ranks at the bottom in all these three parameters.

Capital is costliest in India. With rate of interest as high as 12 per cent, many industries



cannot afford to borrow capital. The Congress-led government made land acquisition very difficult and no industry could come up. It is not possible to set up an industry without land. Employment cannot be generated in the absence of industry. Income cannot be increased without jobs.

On top of it, labour laws in India have remained highly restrictive and inflexible. The current government initiated some minor reforms; however, there is need for more to do.

Earlier, a factory with 100 employees was considered as a registered entity. Such entity could not remove their employee even when there was no work.

World over including Bangladesh follows a 'hire and fire' policy but India does not allowing it. As a result, many textile industries shifted to Vietnam and Bangladesh and not India. Recently, 53 industries shifted out of China, of which, 23 shifted to Vietnam and 12 to Bangladesh and just two came to India. Textile is a season-based industry. In the export market, three factors are important—delivery in time, cost competitiveness and quality.

To deliver an export order on time, more workers are required. But the companies are hesitant to hire as they cannot fire when there is no work because of the government's inflexible labour laws. It is high time to push for more agri-reforms aggressively.

(The author is an expert in agriculture and has been writing about farm and rural development issues for last 18 years. She can be reached at pen2elde@gmail.com)

Assamese version of book 'Courts of India: Past to Present' released

The then Chief Justice of India Justice Ranjan Gogoi released the Assamese version of the book 'Courts of India: Past to Present' in Guwahati on 10 November 2019. The book is a compilation of glimpses into the rich and complex history



of the courts and judicial institutions of India. Releasing the book published by the Publications Division, Justice Gogoi termed it as the architecture of justice. He said, the book fabulously explains the Indian justice system.

The then Chief Justice of India also emphasised that the law students should go through the book. Chief Minister of Assam Sarbananda Sonowal, Current Chief Justice of India Sharad Arvind Bobde along with other dignitaries also attended the event. Addressing the gathering, Chief Minister Sonowal said that the book will be provided to all government libraries in Assam. In his address, Justice Bobde termed the book as one of the finest compilations. Justice Bobde said, he is looking forward to see the book get translated in other languages too.

The event was also attended by the Principal Director General of All India Radio News Ira Joshi. The book earlier released in English has captured the historical developments which took place in the history of nation's courts.

Source: AIR, Reported on 10 Nov 2019

Justice Sharad Arvind Bobde Sworn in as the Chief Justice of India

At a ceremony held on November 18, 2019 in the Durbar Hall at the Rashtrapati Bhavan, Justice Sharad Arvind Bobde was sworn in as the Chief Justice of the Supreme Court of India. He made and subscribed to the oath of office before the President. Earlier, the President had appointed Justice Sharad Arvind Bobde, Judge of the Supreme Court as the next Chief Justice of India with effect from November 18, 2019.

Shri Justice Bobde, born on April 24, 1956, was enrolled as an Advocate on September 13, 1978. He started his practice at the High Court Bench at Nagpur and the District Court at Nagpur and occasionally at the High Court at Bombay and the Supreme Court of India in civil, constitutional, labour, company, election and taxation matters. He specialized in constitutional, administrative, company, environmental and election laws.



The President, Shri Ram Nath Kovind administering the oath of office to Justice Sharad Arvind Bobde, as the Chief Justice of India, at a swearing-in ceremony, at Rashtrapati Bhavan, in New Delhi on November 18, 2019.

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