

Scope of Development of Food Processing Industry in the Developing Nations

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Abstract — In developing nations people majority of the people stay in rural area, as they are dependent on agriculture sector for their livelihood. Hence the growth of the economy is dependent on the development of the agriculture sector and the agriculture related sector. When the income levels of the people in the primary sector increases, the demand for the secondary sector goods also increases and this later will lead to the growth of the secondary sector. In the current scenario there is a huge scope for the development of the agro-processing industries. Within the agro-processing sector the scope of development is seen in food processing industry. Further the scope of growth in the food processing industry is shifting from the developed nations to the developing nations. The demand for the processed food is increasing in the high-income countries as compared to the lower-income countries.

Keywords— Food Processing industry, fruits and vegetables, developing countries, per capita income, potential.

I. WORLD SCENARIO

The availability of land for agriculture is more or less fixed. In the developing nations agriculture sector has played a vital role in providing employment openings. But as the availability land is limited, it has become a constraint in providing further new jobs in the agriculture sector. On one side the land as a resource is limited and on the other side the population is increasing continuously. With the continuous increase in the population, the demand for food is also increasing. By 2050 the world's population is expected to increase to 9.1 billion. This will be 34 percent more than today. Majority of the increase in the population will be seen in the developing nations. By the same period about 70 percent of the world's population would be living in the urban areas, which is about 49 percent today [FAO, 2009].

In a report published by FAO for a period 2005 to 2050 the growth rate in the GDP of the developing countries would be much higher than that of the developed countries. The growth rate of GDP will be 1.6 percent in the developed countries as against 5.2 percent in the developing nations and hence the gap between the ratio of per capita GDP between the developed countries and the developing countries will reduce [3]. Growth rate in the population of the developing countries have slowed down and hence the growth in the demand for food grains has also slowed down. Income level in the developing nations is also increasing and so the dietary patterns are also changing in the world. The growth in the demand for cereal in developing nations is declining. It has declined from 2.3% from 1974-97 to 1.3% 1997-2020 [6]. The decline in the food grains can be because of the change in the consumption pattern of the people in the developing nations.

In the developing nations the percentage of people depending on the primary sector is very high as compared to the developed nations, which needs to be reduced. The scope of secondary sector to absorb the surplus labour is limited, hence more and more employment is needed to be generated in the non-agriculture sector. Though theoretically to achieve higher growth rate, we try to develop the secondary and then tertiary sector more and agriculture sector always take a back seat [1]. This is to generate money at a faster rate in the initial stages of development. Because when we concentrate on the secondary sector it reduces wastages of resources and gives opportunities to generate income. Secondary sector has larger

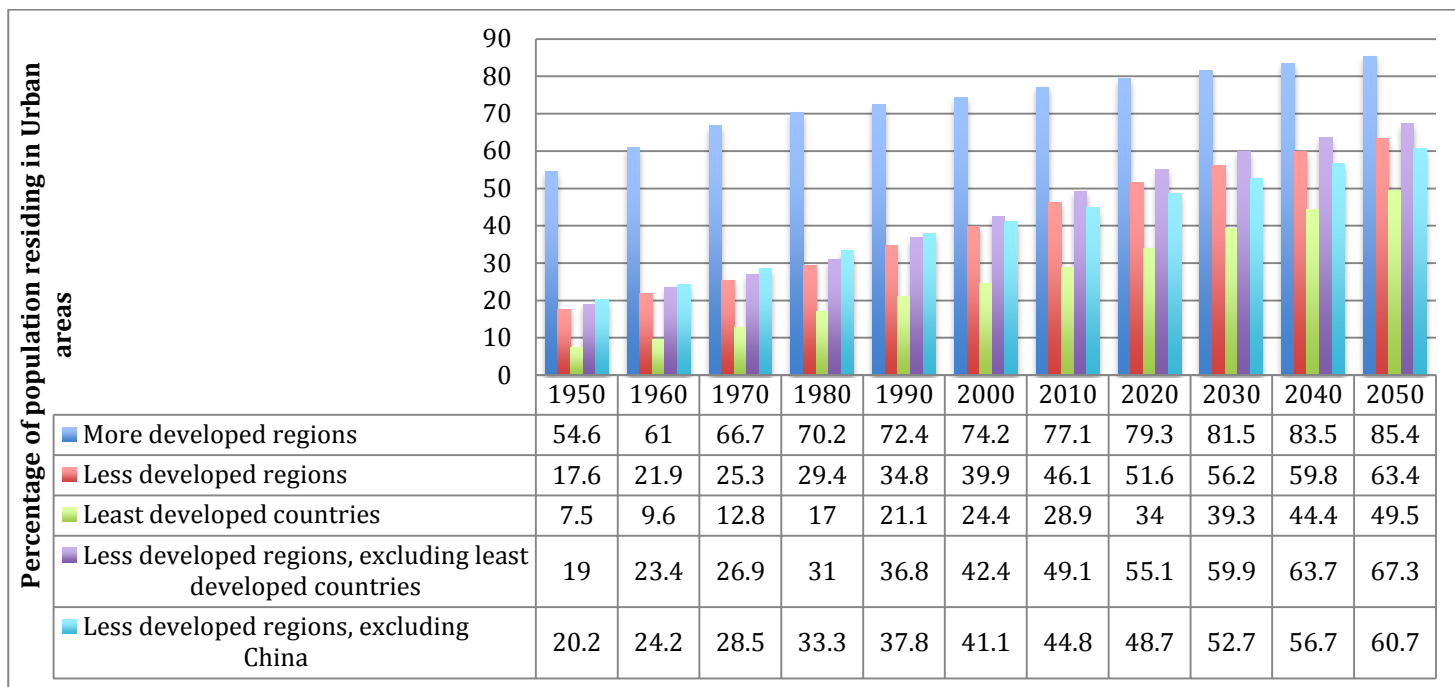


Fig. 1- Percentage of population in mid-year residing in urban areas, 1950-2050
 Source: United Nations, Population Division, Department of Economics and Social Affairs

The criteria given for the above table:

- (1) More developed regions include Europe, North America, Australia/New Zealand and Japan
- (2) Less developed regions include all regions of Africa, Asia (excluding Japan), Latin America and the Caribbean plus Melanesia, Micronesia and Polynesia
- (3) The least developed countries are 49 countries, 34 in Africa, 9 in Asia, 5 in Oceania plus one in Latin America and the Caribbean.
- (4) Other less developed countries include the less developed regions excluding the least developed countries.

scope of value addition. This ultimately helps to generate more employment [11]. In India more than 50 percent of the people earn their livelihood from the agriculture sector, hence they become the biggest market for the demand of manufactured goods. It accounts almost 55 percent of the demand for the fast moving consumer goods (FMCG). In short we can say that the development of the secondary sector to a greater extent depends upon the development of agriculture sector in India. With the increase in the earning capacities of the people in the agriculture sector will lead an increase in the demand for the products produced in the secondary sector.

But as more and more people start relying on the secondary and the tertiary sector a very little connection of theirs is left with the land or farms or the rural areas, which is a must. Hence until we are a part of the sector we are unable to understand the challenges of the sector. As the pressure of population is increasing and the demand for the type of food has also become specific. There is a need to give thought to

the type/quality of food that is to be provided and how to provide it is also a matter of concern [17].

A. Food Processing Industries in the developing countries

It is very clearly shown in fig.1 that the rate of increase of urbanization is comparatively more in all the four categories other than the more developed regions (it is the first category in the criteria given for the above table). The maximum rate of increase is, in the least developed regions (it is the third category in the criteria given for the above table). The countries are mainly from Africa and Asia.

In 1950 about 71 percent of the people were living in the rural areas. It came down to 50 percent in the 2011. It is expected to decline further to 30 percent by the year 2050. With the decline in the population living in the rural area, there is also a need to boost the production capacity of the agriculture sector. The growth rate of population in the

developed nations is much less than that of the developing nations. There are around 5 billion people in the developing nations out of the total population of 6 billion. So the income level in the developing nations is expected to increase by three times the level of 2005 in 2050. This increase will lead to an increase in the demand for the goods in the agriculture sector. And if we say that the PCI is also increasing the type of demand will also change [17].

Over the years the scope for the secondary sector to provide employment to the surplus labour generated by the agriculture sector is also getting reduced. The growth in the secondary sector has reduced. There is a need to push agro-based industries and also push agro-processing industries. Internationally the sales processed food has increased in the high-income countries. The manufacturing in the agro-industry has increased in the developing nations [CABI Report, 2009]. Agro-processing industries can be a solution to the wastages/losses that are created in the supply chain before the product reaches to the consumer. Further in the line of processing, it has been seen that the demand for fresh cut fruits and vegetables has increased all over the world. The demand for fresh cut vegetables has increased in United States, Italy, UK and in the Asian countries too. Fresh cut fruits are becoming popular only in the urban areas of these countries. The shelf-life of these types of food in the developing countries is very less. This reduces the management of the wastes that gets created in the process [18].

There are some facts about the agriculture produce in India that gets wasted/lost in the supply chain every year. There is a shortage of around 10 million tonnes of cold storage capacity because of this every year 30 percent of the agriculture crop gets wasted. Because of bad post-harvesting produce gets spoiled on the fields. Almost 10 percent is eaten facilities and shortage of infrastructure in the cold chain

required in the agriculture sector, more than 20 percent of the away by the rodents. For the objective of optimum utilization of any resource that has been produced includes proper distribution channel, so that it reaches to the consumer and get fully utilized with no wastage in the process. This remains same for any agriculture produce too. In the agriculture sector various post-harvest losses are due to mechanical injury, parasitic diseases or physiological deterioration. All this can be reduced with proper handling and with the provision of ware housing facilities [2] and [3].

Due to higher level of urbanization, the price of labour in high in the developed nations and so the production of the processed food is day by day, becoming costlier in the developed nations. And so the demand for the production of the processed food is increasing in the developing nations. It is favourable to process food in the developing nations as the labour and land both are comparatively cheaper in the developing nations. And on the other side the demand for the processed food is increasing in the developing countries. People in developing countries have become aware about the benefits and its convenience of eating. And so they are looking for diversities, freshness and healthy options in the availability of the goods. Fruits and vegetables have also become an integral part of the human diet. It has vital sources of vitamin, minerals and fiber. Urban based population has also become increasingly verbal about the ill effects of the usage of fertilizers and pesticides, so there is a need for healthy options in ready to eat food, where the developing nations have to improve [12].

II. INDIAN SCENARIO

If we talk about the processing of fruits and vegetables in India, there is a huge scope to grow. Only 2 percent of fruits and vegetables get processed in India and around 12 percent of the agriculture material gets processed [9] and [14]. This percentage is as high as 70% in the developed countries

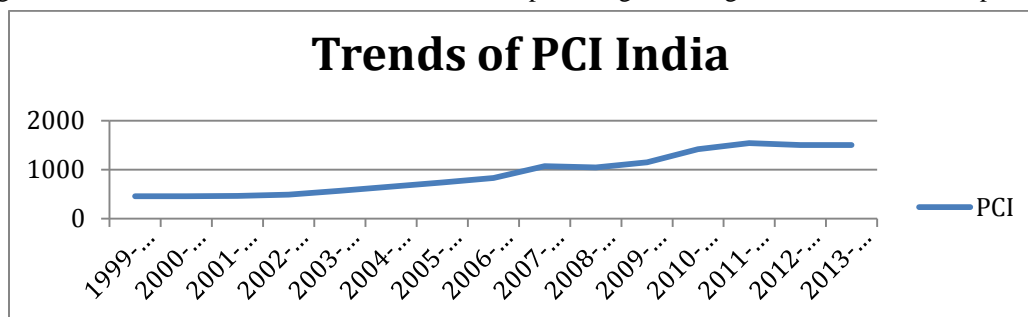


Fig. 2: Trends of Per Capita Income of India

[9]. On the other side the scope of value addition in fruits and vegetable processing industry is up to 133 percent [7]. India is the third largest producer of food products in the world after China and US and the largest producer of fruit and

vegetables in world. In processing of fruits and vegetables India is under developed. In India 35-40 percent of fruits and vegetables of the total production gets wasted. This is about the total production of Great Britain [8]. The scope of

employment generation from the sector can also be looked upon. India accounts 10 percent of the world's fruit production. Food processing in India accounts 14 percent of the manufacturing sector of the GDP i.e. it accounts employment of 280,000 crore people. Out of this 13 million directly gets employed and 35 million gets employed in an indirect way [11]. Referring to Figure-2 Indian Per Capita Income is increasing. With the increase in the per capita income the similar changes in the dietary patterns and the demand for ready to eat food is also increasing day by day. Similar other market drivers in India are the increase in the urbanization, increased awareness about the health benefits of fruits and vegetables, food industry marketing and liberalized trade policy. There has been a continuous decline in the area under food grains and the beneficiaries are oilseeds, cotton and high valued crops mainly fruits and vegetables [19]

A. Benefits accruing to the economy

The consumption pattern is changing from cereals and pulses to HVCs (High Valued Crops, generally refers to non-staple horticulture crops). CGIAR system (Consultative Group of International Agricultural Research) highlights high valued crops in particular fruits and vegetables at a priority because it generates extra income for the farmer. It is seen that per hectare output of fruits and vegetables is high as compared to food grains, which gives an extra income to the farmer. It also improves the entrepreneurial skill of the farmer automatically and further encourages him for crop diversification [16]. With more and more farmers getting inclined to go into the production of fruits and vegetables can sustain only if the fragmentation of the supply chain is reduced and infrastructural support is available and further processing is possible. In this scenario it will work as a pull from the FPI for the farmers to supply more raw materials rather than pushing the farmers to produce more.

B. Potential for Growth in India

India is one of the largest and the lowest cost producer of the high value agricultural commodities and still its share in the global trade is very small. India produces 10 percent of the world's vegetables and 7.6 percent of the world's fruits [13]. India produces 11 percent of all the vegetables and 15 percent of all the fruits in the world (Singh & Mathur, 2008), which shows that there is an increase in India's share of fruits and vegetables at world level. Yet its share of fruits and vegetables in the world trade is only 1.7 and 0.5 percent respectively [16]. Even though the share of high valued agricultural crop in exports is very limited, it is growing continuously. It is so because the production of HVCs is increasing continuously. The above mentioned figures also show that the production of fruits and vegetables in India has increased over the years. The demands for the processed

products are increasing and the eyes for processing the products are on the developing nations and India has a large potential for the processing industries. To support this India has a large base of the raw material, problem of unemployment, problem of crops getting wasted, high food prices. All the issues can get settled by promoting the growth of food processing industry in India.

C. Problems in the growth of Food Processing Industries

India is weak in both backward linkages, i.e. supply of credit, inputs and other services like R & D that encourage production and forward linkages, i.e. processing and marketing. This is because the agriculture food processing sector is mainly handled by unorganized sector, which leads to too much of wastages of resources in this sector [9]. And as we are aware about the losses in the distribution chain, which is almost the total production of Great Britain [8] The network of the cold chain and information sharing is improper among the intermediates in the market. They work in isolation due to which the efficiency and the productivity of this sector get affected. At the farmer's end all the good and the bad quality goods are mixed up due to which they get poorer returns for their produce. On the other side due to the loss of produce in the distribution chain the price of the raw material to the processor increases resulting into an increase in the production cost. As the cost of production increases, the market price of the good also increases, leading to the decline in the demand for the processed food within the country.

Multinational retailers who are working at large scale have are buying the agriculture products directly from the farmers and make it available to the consumers at a lower price. Therefore the value addition that could be done by processing the product could not be done. Hence either the product is consumed or it gets spoiled [4]. That also further aggravates the problem of irregular supply to the processing units. He has also supported the fact that the employment generating capacity is higher in agro industries, the value addition capacity is higher over the fixed capital as compared to other industries (on an average the value addition in the agro industries is 51% over the fixed capital and is 39% of other industries). Other difficulties of the development of these processing units are, the government also considers these processed and packed food as luxury goods, due to this the taxes levied on them is also higher, because of which their prices increases their scope of demand gets affected and it becomes a disincentive for the investors. Then there is also lack of finance available for the investors because the banks lend money against the fixed capital, rather than on the working capital. Processing business or the agro-business has more working capital than the fixed capital and hence they get loans at higher interest rates. [10]

Another well-known fact is about the produce that gets rejected in the international market because of the pesticide deposit in grapes, bacteria and metal sediments in fish, usage of prohibited colors in spices and soft drinks etc., this further aggravates the problem. When this contaminated raw material goes to the processor the final good also gets contaminated and hence the scope for further exports of the product will be questioned. It reduces the market for our products in the international market.

Agro food processing industry generates employment for 18-19 percent of the industrial work force, which means 16 lakhs people get employment through this sector. The estimated turnover is rupees 1,44,000 crores of which rupees 1,11,200 crores gets generated from the unorganized sector. Export and expected growth it is ranked fifth [15]. Considering that most of the work in this sector is being done by the unorganized sector, the policies and the concessions available for the sector become less effective. And further the flow of the trends to define the type of food processing industry to be promoted through policies become further more less effective.

III. CONCLUSION

The production levels in all the areas are increasing. The dependence on agriculture for employment needs to be reduced. The alternative needs to be made available in the agriculture related sector. The scope to grow in agro-processing industry is huge. Further going into the finer terms, there is enormous scope to grow in the food processing industry to grow. This type of growth will be a link between the agriculture sector and the industrial sector. This can be a way to go on the sustainable, interlinked and integrated way of development. Till now the development of agriculture sector and the industrial sector has taken place with an asymmetric linkage between the agriculture sector and the industrial sector. The development should be balanced, equitable and demand driven.

There is a need to involve rural poor in the development plan to reduce poverty. Until the rural poor grow the economy cannot be put on the track of growth and development [20]. But if we encourage rural poor and try to encourage labour intensive technique for the development, somewhere we will compromise on the productivity. But in our policies the government has always promoted agro-processing industries. It is because the agro processing industries are the mixture of labour and capital intensive technology.

It was seen that out of all the industries in India 16.69 percent of the industries were agro-based industries that has generated 13.67 percent of employment in 1996-97. It is further seen that 37 percent of the agro-industries are food industries and 63 percent produce non-food products. Out of

these food industries 44 percent of the food related factories are milling (mainly grains), another 13 percent are edible oil, 10 percent are in sugar and 33 percent are in other food (other than grains, edible oil and sugar) which includes higher valued food like jam, tomato ketchup etc. These goods are bought mainly with the increase in the income levels of the people. It was also seen that the growth rate in the food industry before and after liberalization was almost stable at 10 percent.

IV. SUGGESTIONS

There should be proper links between the research and development institutes with farmers, so that the issues of the farmers can be well understood and accordingly the requirements can be fulfilled. The technologies that are provided to the farmers for the improvement in the production and productivity should be cost effective, so that it is well accepted by the farmers.

There is lack of awareness among the consumers, low margins for the producers, seasonality, weak database, poor links between the farmer and the processor, multiplicity of laws, improper packaging, high perishability of the farm goods aggravates the problem.

An integrated forward link should be developed to increase the productivity in the sector. An integrated supply chain of raw material has been done in the field of oilseeds yet much more needs to be done to increase the shelf life in floriculture and horticulture.

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