IMPACT OF SKILLS DEVELOPMENT TRAINING ON EMPLOYEE MOTIVATION PERCEPTION OF ORGANIZATIONAL DYNAMICS AND INDIVIDUAL PERFORMANCE

DR RANJANA SINHA

CHAUDHARY CHARAN SINGH UNIVERSITY

INTRODUCTION

The Indian economy, being primarily agricultural, has been the exclusive source of livelihood for more than 58 percent of the population. India is the second largest producer of food next to China and the focus of Agricultural policy in India across decades has been on self-sufficiency and self-reliance in food grains production. With the given policy initiative the country has been successful in increasing the food grains production from 52 million tonnes in 1951-52 to 277.48 million tonnes in 2010-2011[1]. It will not be enough to produce more, it is equally important to save each grain produced by reducing wastages. Such strategy would also be essential to meet the twin national objectives of 'inclusive growth' and 'food security'[2]. But, the share of Agriculture in real GDP has fallen given its lower growth rate relative to industry and services[3]. Poor competitiveness, lack of supply chain management, absence of an effective food processing matrix has denied a synchronous relationship between agriculture and industry and also between agriculture, market and consumers amidst technological spread and innovations.

A progressive and vibrant food processing industry shall fetch more remunerative price for farmers and reduce waste. Availability of raw materials for Food processing industry is a major strength of India[4] . If the linkage between the agriculture sector with industry is strengthened, it may help to reduce waste of agricultural raw material, improve the values of agricultural produce by increasing shelf- life and increase the nutritive capacity of food products. Also, Food processing industry in India is increasingly seen as a potential source for driving the rural economy as it brings about synergy between the consumer, industry and agriculture. A well developed food processing industry will reduce wastages, ensure value addition, generate additional employment opportunities as well as export earnings and thus lead to better socio-economic conditions of millions of farm families.

The importance of the Food processing sector to India's economy becomes all the more relevant, considering the fact that this sector continued to perform well, despite fall in GDP number and poor performance by many other industries, during recession in 2008-09[5]. The Indian food industry is the largest in the world and is set to grow at a rate of 40 percent of the current market size by 2015, to touch USD 300 billion by 2015 according to a leading industry body. The target can be achieved only if the challenges faced by the sector are fully addressed. One of the major bottlenecks hampering the growth of the sector is the availability of skilled manpower in various roles within the food industry. The Food processing industry has significant potential for employment generation, not only directly, but across the supply chain in production of raw materials, storage of produce and finished products and distribution of food products. The employment intensive nature of the industry will create job opportunities for largest part of workforce. Presently, the sector employs people of different backgrounds and of different education level. The sector also needs highly skilled people for the growth of the sector and the skill requirement shall be different for different segments of the sector.

The Food processing industry can act as a food safety net for each and every citizen of India and can act as a major driver of the economy by fulfilling the national objectives of inclusive growth, ensuring food security, innovation, enterprise promotion and food safety & quality. The industry can bridge the gap between the rural population, by addressing the employment needs of the burgeoning rural youth and the food industry, by providing it a large pool of skilled workers.

The NSS 61st Round result shows that among persons of age 15-29 years only about 2% are reported to have received formal vocations training and another 8% reported to have received non-formal vocational training indicating that very few young person actually enter the world of work with any kind of formal vocational training[6]. In India, at the beginning of the 11th Plan only 3 percent students were enrolled in vocational courses at the secondary level[7]. Only around 15-20 percent of the vocational graduates are employable at the completion of their academic programmes[8].

1.1 History of Technology and Food Processing

That *"Nothing is new under the sun"* is a Biblical proverb. However, its amplification extends to almost all fields of human activity. Since man came, one or the other form of food preservation must have been discovered due to inclemency of weather and uncertainty of tomorrow amidst vagaries of nature. However, it was the ushering in of the Industrial Revolution that heralded new techniques in almost all fields and food preservation was no exception to it.

17th and 18th centuries witnessed increasing application of Science and Technology in agriculture and manufacturing as the creation of a world economy was a major paradigmatic shift. The leap from a marginal successful economy to a highly complex industrial economy and concomitant transformations in various institutions paved way for numerous changes in the ways people thought, earned their living and spent their time. History and human mind unfolded themselves together and new modes of human survival now entered a comfort zone.

The above was accompanied by various technological changes also under huge impetus of Industrial Revolution first in Britain followed by USA. British Agricultural Revolution, a consequence of Industrial Revolution, freed up workers for engagement in other sectors of the economy. New technologies like Seed drill, the Dutch plough and threshing machine invented during the 18th century affected farming to a great extent. Advancement in farming and animal breeding methods increased productivity in the supply of raw materials like wool for catering the need of the Industry. Industrialisation was accompanied by urbanisation transforming the society and pulling a large segment of the population towards urban centres.

The end of 1980 saw the glimmerings of globalisation wherein state intervention was reduced in United States which also advocated similar policies in other states of the world under the policy of neo-liberalism. W.T.O. replaced GATT although the American ambition that State should reduce/ abolish subsidies on agriculture continues to be a contentious issue being resolved incrementally.

As regards food processing, its adoption and proliferation can be looked from various angles. On one side, it is a marriage between two phases of economic

development agriculture and industry or the traditional and the modern. On the other side, it can be also looked upon as a tool to generate employment in developing countries and make provision for higher income to producers and workers through effective Supply Chain Management. Thirdly, it can also be viewed as a progress in developmental scale wherein consumption of processed food is preferred over previous modes of consumption. In other words, it is an indicator of market- induced development. Notwithstanding, theoretical exposition of all these points, it is pertinent to focus on the Indian scene.

1.2 Scenario of Food Processing in India

On account of diversity of climate, food preservation in India must have been diverse ab initio: the transition from pastoral to agricultural economy would have generated new methods. Drying from sun, preservation with salt and oil appear to be the oldest techniques relevant even today in non-mechanised areas. Local ingredients and traditional formulation with focus on health and availability in time would have further conditioned the preservative mode. Being a land of Ayurvedic medicine, various other sophisticated modalities have been developed and applied. Mechanisation, with modern sense of the term, is a post- British phenomenon when the off shoots of the Industrial Revolution were being transplanted on colonial countries. So, its historical classification can be divided into two parts namely pre-independence and post-independence phase.

1.2.1 Pre-Independence Phase

Importance of agro-processing sector was realised at a time catastrophic in nature i.e. the famine of Bengal in 1870. Two Commissions set up by the British Government namely Famine Commission and Royal Commission in the year 1880 and 1920 respectively recommended development of rural industries and cooperatives[9]. This was the period when agro-processing industries included flour mills, bullock driven *ghanis* and sugarcane crushes. Now, improved machinery from England were brought and demonstrated to peasants for adoption. The origin of food technology in India was not a product of surplus production but rather scarcity and it was this feature that was at the centre of policy deliberation. Thus, food technologies were built to meet four requirements:

1. To ensure availability of perishable products, fruits and vegetables for a longer period.
2. To make food available during the periods of scarcity.
3. To preserve vegetables and fruits in sugar syrups and *murabbas.*
4. To make a large variety of beverages both fermented and unfermented [10]

1.2.2 Post- Independence Phase

The food grains production improved during 1951-52 to 1960-61 with the growth rate of 4.13 percent on average[11]. The reason for this growth was attributed to the expansion in sown area and the increase in crop yield. However, the growth rate of agriculture sector was decelerating during this period[12]. The first five year plan although devoted to agriculture could not make substantial shift in production[13]. With 'socialist' planning India promoted heavy industrialisation in the Second Five Year Plan (1956-57 to 1960-61) and the priority sector for Government's Agriculture policy were institutional reforms mainly land reforms and the promotion of farmers' cooperatives[14]. Thus, during the first half of the 20th century policies were not directed towards agriculture, more focus was laid upon the Industry sector though 48% of India's GDP came from agriculture.

The Agriculture sector of British colonial India, especially the crop sector was totally stagnant or even showed negative inclination. In the mid-1960s droughts affected India for two consecutive years and created a severe food problem for the country. India was obliged to import as much as 10 million tons of food (mainly wheat) for two years. While, by the middle of the twentieth century the need to create a self- reliant and diversified industry sector motivated planners to adopt import- substitution strategy, in the early 1960s, the GDP growth was only 3.9% against the expected 5%. Population increased by 2.3% against the expected figure of 1.4%. As a result of this imbalance, India had to import cereals worth 2% of its export earnings in order to address the issue of food security.

Agriculture gained extra attention during the later part of 1960s with the primary objective of attaining self- sufficiency in food grains, providing reasonable prices to the farmers and also affordable prices for the consumers (especially the

poor). Imported seed-fertilisers technology started to disseminate very rapidly in the northern India and two factors played important role, the one being the favourable climatic condition in the northern India for the seeds imported and the second one, the diffusion of private tube-wells which exploited ground water

These technologies mainly for the wheat crop, adopted in the northern region such as Punjab and Haryana, helped India attain food self-sufficiency within a decade except for some drought years. It was called the first 'wave' of the **Green Revolution** in India[15]. The period of 1980s witnessed a very favourable growth rate in the agriculture sector and saw a rapid increase in rice production. This was the second wave of Green Revolution which included almost all the crops including rice and it covered the whole country. The most important factor behind the overall rapid growth was widespread diffusion of private tube-wells contributing to raising rural income and alleviating poverty. The year 1991 witnessed the era of economic liberalisation during which the economic growth rate reached remarkably higher level.

1.3 Modernisation of Food Processing

During the mid of nineteenth century, the number of processing facilities was small. But slowly and gradually it showed considerable growth. India witnessed rapid growth in Food Processing Sector especially during 1980s as a consequence of the success of the first phase of Green Revolution which required post- harvest management. The importance of the sector was realised by the business community leading to diversification from grain trading to processing. Lead was given by rice processing industry and followed closely by wheat milling, paper and pulp industry, milk processing sector, jute industry, sugarcane processing and oil extraction through solvent plants. Although in the areas like fruits and vegetable processing, the Industry has not been able to develop substantially, as the consumer prefers fresh vegetables and fruits.

In India, with the growth in the economy, a shift is also being seen in the food basket from consumption of cereals to a more varied and nutritious diet of fruit and vegetables, milk, fish, meat and poultry products. These changes have brought in their wake the imperatives of an emerging industry of Food Processing

Industries[16]. The Ministry of Food Processing includes under Food Processing Industries, items pertaining to these two processes as:-

(a) Manufactured Processes

If any raw product of agriculture, animal husbandry or fisheries is transformed through a process (involving employees, power, machines or money) in such a way that its original physical properties undergo a change and if the transformed product is edible and has commercial value, then it comes within the domain of Food Processing Industries.

(b) Other Value-added Processes

If there is significant value addition (increased shelf life, shelled and ready for consumption etc.), such produce also comes under food processing, even if it does not undergo manufacturing processes[17].

1.4 Rationalisation of Food Processing

Food processing sector needs to be strengthened to create demand for agricultural produce, cut down or eliminate post- production losses and provide value added products. Investment in food processing, especially in rural areas would lead to a higher realisation to farmers as this would generate additional demand for farm products as well as create employment opportunities in the non- farm sector creating a virtuous cycle in the process[18]. As the Hirschman's linkage hypothesis postulates that the best development path lies in selecting those activities where progress will induce further progress elsewhere, thus the development of food processing sector, which has very high raw material intensity can develop agriculture and can lead to better price realisation for the farmers by creating new demands on agriculture production. The development of agro- based industries can produce a stabilised and profitable enterprise through which more employment opportunities, both at production and marketing stages can be created.

Central Food Technology Research Institute (CFTRI) carried out surveys on traditional food technology and found that there was infrastructural need and also stringent requirement for up-gradation of post-harvest areas of processing, packaging and an efficient transport and marketing system[19]. Traditionally processed

food dominated the market and its up-gradation would lead to the industrial manufacturing of products. In pursuance of the above the Institute is making constant endeavours to popularise and propagate traditional food technologies and these are getting wide acceptance in rural areas on account of being cost effective.

1.5 Processed food scenario with respect to specific sub-sectors

Food processing is one of the largest sectors of Indian economy and is very important for development as it provides linkages and synergies between three pillars of Indian economy- agriculture, manufacturing and services. The Indian Food processing industry stands at $135 billion and is estimated to grow with a Compound Annual Growth Rate of 10 percent to reach $300 billion by 2015 [20].The industry contributes approximately 7 percent to India's GDP and employs 13 million workers directly and about 35 million people indirectly[21]. The Food processing industry in India is highly fragmented with thousands of processing units in the unorganised sector. However, the growth impetus and industry structure is attracting the organised players to invest and grow in this sector. The Indian government has also initiated steps to formulate a comprehensive food processing policy in order to double India's share of the rapidly growing global food trade to 2% by 2015. The primary aim of the policy is to tap the huge potential arising from India's enormous production of vegetables, fruits, food grains, milk, fish and poultry. The national policy aims to increase the level of food processing from the present 2% to 10% by 2010 and 25% by 2025[22].

The major segments in the Food processing sector comprise of fruits and vegetables, dairy, edible oils, meat and poultry, non- alcoholic beverages, grain-based products, marine, sugar and sugar based products, alcoholic beverages, pulses, aerated beverages, malted beverages, spices and salt. In India, the level of processing is the highest in the dairy sector (35%) i.e. 13% in the organised and 22% in the unorganised sector, followed by meat processing sector (21%), marine fisheries (10.7%) and poultry (6%)[23].

The various sub-sectors in the Food processing industry, as categorised by the Annual Survey of Industry in India, 2009-2010 are described as follows:

1.5.1 Processing of Meat

India ranks 4th in broiler and meat production (29 lakh tonnes) in the world. India is third in egg production after USA and China. South Indian states in India account for more than 45% of total domestic poultry output. Only about 1-2 percent of the total production is converted into value added products, the rest is purchased raw and consumed at home. Poultry processing is growing at a healthy rate over the last decade. Per capita meat consumption in India is relatively lower or less than 5 kg/year as compared to other developing countries such as China (38.6 kg) and Brazil (58.6 kg). The forecasted beef and buffalo production in India is set to rise by 9.8% and 4% in 2015 to 3.8 and 4 million respectively[24]. The major portion of the production and processing of meat and meat products is done in the unorganised sector. Increasing consumption levels are expected to drive demand for processed meat and poultry. Meat production is estimated at 6.5 MT during 2007-08, which is around 2% of world meat production. Some of the organised players like, Godrej, Venkateshwara Hatcheries, Suguna Poultry, Alkabeer and Hind Agro etc have accelerated the growth of this industry segment[25]. Further, preference for fresh meat in the domestic market and demand for high-value frozen foods in the export markets will drive growth.

1.5.2 Processing of Fish

India is the third largest fish producer in the world and is the second in inland fish production. Though the country has rich fishery resources and has vast potential for both inland and marine fishes but, its substantial fishery resources are under-utilised. This sector has tremendous potential for growth and the organised sector has entered to grab this opportunity. Marine processing units are located in coastal regions of West Bengal, Andhra Pradesh, Kerala and Maharastra. Previously the fish processing units were largely small scale proprietary/ partnership firms or fisherman co-operatives with lower productivity. Marine products export is the single largest constituent of the total exports of processed foods contributing over 40% of the total processed food exports. The export of marine products has steadily grown over the years from a mere Rs. 3.92 crore in 1961-62 to Rs. 8607.94 crore in 2008-09. Marine products account for approximately 1.1% of the total exports from India[26]. The dietary habits of the people all over the globe are changing fast and India is

gearing up to produce and supply value added products in tinned packs by adopting the latest technologies and by tapping the unexploited and under exploited fishery resources.

1.5.3 Processing of Fruits and Vegetables

India is the second largest producer of fruits and vegetables accounting for 82 million tonnes and 10.9% of global food production, and 47 million tonnes and 8.4% of vegetables production[27]. Although, the fruits and vegetables processing industry is very fragmented where a large number of units are in household and small-scale sector having low capacity utilisation[28]. Out of the total production of fruits and vegetables in the country only 2.2 percent is estimated to be processed. Fruit and vegetable processing in India is dominated largely by the organised segment. The major processed items are fruit pulps and juices, fruit-based ready to serve beverages, canned F&V, jams, squashes, pickles, chutneys and dehydrated vegetables. Over the years, the industry has witnessed rapid growth of ready to eat foods, frozen vegetables, processed mushroom etc. The sector is facing basically two major challenges, i.e. unavailability of infrastructure facility to store produce and the cultural preference for fresh fruits and vegetables.

1.5.4 Manufacturing of Dairy products

India is the largest producer of milk in the world with a production in excess of 100 million tonnes growing at the rate of over 4% annually. In the dairy sector, most of the processing is done by the unorganised sector. The share of organised sector is less than 15 percent and out of the products manufactured by the organised sector, some of the prominent ones are ghee, butter, cheese, ice-creams, milk powders, malted milk food, condensed milk and infant foods. India ranks first in the world in terms of milk. A large number of households and small and marginal farmers are engaged in milk production but only about 35% of the milk is processed. The greater demand for value- added milk based products, such as processed cheese, table butter, sour milk, yoghurt and ice-cream has led to a rise in investment for milk processing. Packaged milk segment in India is projected to grow from INR 46560 to INR 197400 crores by 2030 registered annual growth Rate of 8 %[29]. Milk and milk products account for significant 17% of India's total expenditure on food.

1.5.5 Manufacturing of grains and oilseeds

India will continue to be one of the largest producer of cereals with more than 200 million tonnes of production annually. Growth in processing infrastructure in India may help the industry to optimally leverage its raw material advantage. India produced 257.55 million tonnes of different food grains in 2011-12. Major grains which are produced in India are rice, wheat, barley and maize. Out of these wheat, rice and maize together account for about 80% of the country's total production. It is highly fragmented with maximum units under unorganised category.

1.5.6 Manufacturing of other food products

The Indian snacks market is estimated to be worth Rs. 150 billion and is growing at the rate of 15-20%. Potato chips and potato based products occupy almost 5-85% share of the Indian snack market. The Indian snack food market comprising bakery products, ready to eat mixes, curries, chips, namkeens and other processed foods is large, diverse and dominated by the unorganised sector. The two largest consumed categories of packaged foods are tea and biscuits. Packaged food is dominated by FMCG players at one end and small home grown enterprises who operate at the local level. Some of the new market segments, which will grow are pet food and baby food segment.

1.5.7 Manufacturing of Beverages

The market for carbonated drinks in India is worth US $ 1.5 billion while the juice and juice-based drinks market accounts for US $ 0.25 billion. Since the perception of alcoholic beverages in India has been changing from 'taboo' to 'socially acceptable', it has led to immense internal demand growth, wide range products offerings, the opening up and increasing 'organisation' of distribution channels. The non-alcoholic beverages sector accounts for over one percent of India's GDP and its share in GDP is rising. The performance of this sector is better than in other manufacturing sectors and it is projected to have high double-digit growth for the next 10 years[30].

1.6 Workforce in the Food Processing Industry

The demographic size and structure necessitates coverage of human resource as a major component in skill development & food processing. There is definitely a positive contribution of the Food processing sector for employment and in foreseeable future can add more jobs and become a major employer in the manufacturing, provided the potential is harnessed through policy framework. The employment in Food processing industry, in spite of being of poor quality acts as a safety net and prevents the workers from falling further into poverty[31]. Studies conducted reveal sound potentiality of employment in unorganised sector in this area.

The Indian workforce can broadly be categorised into two segments, organised and unorganised. Unorganised or informal employment consists of workers employed without any employment or social security benefits provided by employers. Both the organised and unorganised sectors can have unorganised workforce which tends to be hugely disadvantaged as compared to their peers in organised sector. In the Indian food industry, the unorganised sector has the ability to generate more employment as compared to organised sector and this trend is likely to continue as the unorganised sector will remain the major contributor. Persons employed under the registered food processing industries have been increasing steadily over the years registering a Compound Annual Growth Rate (CAGR) of 3.6% over a period of five years ending 2010-11. But, the employment in the unorganised food processing industry is on decline. As per NSSO 67th Round Data (July, 2010- June, 2011), in the unorganised Food processing sector 47, 92, 561 persons were employed during the year 2010-11 as against 63 lakh workers in 2005-06. Majority of the unorganised workforce is poorly educated, low paid, delivers low productivity, possess few marketable skills and has rarely participated in any formal skill development process.

The unorganised sector comprises of enterprises engaged in manufacturing or services which are unincorporated, owned by individuals or households, operated on a proprietary or partnership basis and with less than ten total workers (as defined by NSSO, 67thround)[32]. It is estimated that barely 2.5 percent of unorganised workforce

had undergone formal skill development versus 11 percent in organised sector[33]. 12.5 percent and 10.4 percent of the workforce in unorganised and organised sectors respectively had undergone informal skill development training. This implies that 85 percent of the workforce in unorganised sector has not undergone any form of skill development, formal or informal.

A general survey of workforce scenario shows that a very significant proportion of workforce, especially new entrants, generally has minimum marketable skills. Majority of workers with formal skills have higher secondary or higher education levels whereas those with informal skills have middle or lower education levels. Illiterate workers or workers with low levels of education find it difficult to access formal skill development training due to entry level educational requirements and they also find it difficult to absorb higher skills. The poor economic background of the workers also impedes their ability to access formal skill development training system. But, gender exclusion is lower in informal skill acquisition than in formal skill development. In addition to this, the rural youth is also deprived of any formal skill development training due to lack of skill development facilities in the rural areas. Consequently, they are not able to find employment in organised sector excluding some minor jobs. Kerala, Maharashtra, Tamil Nadu, Himachal Pradesh, Andhra Pradesh and Gujarat are the states having highest proportion of formally skilled youth to total youth population. Thus, in India workers who possess secondary and above educational levels are urban based, above economic threshold and are male having higher probability of undergoing formal skill development.

The Food processing sector has a complex value chain involving several stakeholders. The employment potential in the industry is likely to be in primary processing, secondary processing, sorting, cutting and trimming operations. The sector employs 64.55 lakh workers with a dominant share of employment in unorganised sector with 47.93 lakh workers and 16.62 lakh workers in the organised sector. The FICCI's survey on rising skill demand in the Food processing industry found that the food industry employs a variety of managerial and professional workers. Managers include top executives, who make policy decisions, industrial production managers, who organise, direct and control the operation of the manufacturing plant besides advertising, marketing, promotions, public relations,

and sales they also direct advertising, sales promotion and community relations programme. But the majority of workforce is only minimally educated with an education level of less than class 10. This segment represents the production worker and first line supervisor functional level. A poor education background with limited literacy and numeracy abilities impairs ability of workforce to absorb higher level skill levels.

1.7 Status of Skill Development in Food Processing Industry in India

Skill formation and training of workforce is being argued as the prerequisites to enhancing the quantum and quality of employment in developing countries like India [34].The overall requirement for skilled human resource in the food processing sector is very large in various segments and at various levels in the value chain. Survey conducted by National Skill Development Corporation of India finds that there are gaps in terms of excess of demand over supply in the organised sector at all levels and this gap is prominent for those trained by short-term courses with low educational qualification (below 10^{th}/12^{th} standard). Where there is a demand for about 1 lakh trained persons annually against a supply of over 10,000 persons in the organised sector and requirement of over 5.3 lakh workers in the unorganised sector. The survey also found that the demand for human resource would increase to about 17.8 million persons till 2022. The profile of human resource in the Food processing industry can be viewed in the form of skill pyramid with hierarchy of skill present as stated below[35]:

1. **SKILL LEVEL 4:** Skills which are highly specialised involving research and design. The level would require approximately 2 % of total workforce representing nearly 4 lakh workers.

2. **SKILL LEVEL 3:** Skills which require long drawn preparations as demonstrated by acquisition of degrees, and involve highly technical or commercial operations. This skill level would require approximately 8 % of the total workforce representing nearly 14 lakh workers.

3. **SKILL LEVEL 2:** Skills which require technical training inputs, knowledge of complex operations and machinery, skills of supervision. This would require 10 % of total sector workforce representing 18 lakh workers.

4. **SKILL LEVEL 1:** Skills which can be acquired with a short/modular and focused intervention and thereby enhancing employability of those with minimal education. This level would require approximately 80 % of total sector workforce representing nearly 142 lakh workers by 2022.

The demand for skilled workforce is found to be highest in the skill level 1 which can be source of employment generation in large scale. This skill level would require workers with Class 10/ less education or with sub-optimal literary and numeracy abilities.

1.8 Skill Development Systems for Food processing in India

As the food industry in India has advanced and adopted various levels of automation, demand for skilled manpower in the food processing industry has increased. But, still there is a huge mismatch between the demand for specific skills and available supply and nevertheless this shortage of skilled, semi-skilled and un-skilled workers has emerged as a critical factor impacting the competitiveness of the Indian food industry. The human resource development is the most important aspect in the growth of the Food processing industry and the human resource strategy of the Government aims to train the present workforce to work in the upgraded technology and retain their jobs. FICCI's survey on 'Challenges in Food processing sector' identified availability of trained manpower as one of the top five challenges faced by the industry. During the survey it was observed that a major percentage of organisations are dissatisfied with the skills and knowledge of the available trained manpower. They were also dissatisfied with employees' inability to use appropriate and modern tools, equipment and technologies specific to their jobs.

In India, the skill development system is large, multi-faceted and provides skill development to an extremely heterogeneous and varied population. The formal skill development system was built in India for creating a workforce for factory system of production after the Government's policy of rapid industrialisation post-

independence period. The public sector dominates the vocational training system, although the private sector has recently entered into the system through the Public Private Partnership (PPP) model by the Government. Private training institutes are mostly focused on service sector trade and are very reluctant to enter into rural and remote backward areas. Whereas public sector institutes offer courses that are multi-dimensional ranging from short term (from few days to few weeks) to multi-year courses (2-4 years). These public training institutes have also the responsibility of training the rural population and they focus on both simple manual skills for basic employment/ self entrepreneurship and comprehensive skill development for enhanced employment. Along with this, some Civil Society Organisations and NGOs are also engaged in vocational training focusing on basic employability and self-employment skills.

Skill development occurs through two broad institutional structures in India, namely- formal and informal. Formal training includes higher technical education in colleges, vocational education in post-secondary schools, technical skilling in specialised institutions and apprenticeship training. Recently Government of India has started several schemes to provide skill development a part of its social development agenda. Workers with elementary education (Class 1-8) are workers without any specific skills and those with higher secondary education may go into vocational secondary education programmes. The students possessing senior secondary certificate can opt for three years diploma courses in polytechnics whereas students aspiring for higher education may pursue engineering degree and can get 1-2 years craftsman training by Director General of Education & Training and also apprenticeship 2-4 years course. For the students in higher education categories vocational training is provided by various advanced training institutions. Then there are varieties of jobs like technicians, engineers, technologists as well as scientists. Informal training includes the skills acquired by the workers while doing the job.

The Eleventh Five Year Plan reported that only two percent of the workforce aged between 15-20 years receives formal technical training while another eight percent receives non-formal training.

1.9 Classification of Vocational skill

Skill development in India can be broadly divided into vocational education and vocational training[36].

1.9.1 Vocational education

The Ministry of Human Resource Development is the nodal agency for vocational education. A three tiered vocational education model is currently deployed in India. These are:

1. **Lower School**- Initiated in 1993-94, it imparts simple marketable skills at secondary levels and fosters interest in vocational skills.

2. **10+2 level**- It was initiated in 1988 which provides employability training to youth as an alternative. It is implemented in both formal and informal centres. Here are 9,500 schools with a capacity of 10 lakh students per annum. There are 150 courses in various traits providing vocational education.

3. **Specialised**- These are multi-year diploma level courses in multiple sectors, conducted and awarded by Polytechnics after higher secondary education.

In order to bring integration between vocational education/training with general education, MHRD has established the National Vocational Education Qualification Framework (NVEQF) implemented in polytechnics, engineering colleges and other colleges in university system from 2012-13 onwards.

1.9.2 Vocational Training

In India, vocational training is delivered through a multitude of institutions in both private and public sector. The nodal institution for providing vocational training at the central level is Director General of Employment and Training (DGET) under Ministry of Labour and Employment. Its main responsibilities are formulating policies, establishing standards, grant affiliation, trade testing and certification and matters connected to vocational training and provide employment services. There are also several specialised institutes under the nodal ministries for providing vocational training. The State governments are also responsible for delivery of

vocational training initiatives and regular administration of ITIs as vocational training belongs to concurrent subject.

In India, vocational training is provided by Industrial Training Institutes (ITI)/ Industrial Training Centre (ITC). They focus on certificate programmes in both engineering and non-engineering disciplines[37]. There are approximately 9400 ITI/ ITCs in India with a capacity of 13 lakh seats[38]. Uttar Pradesh has the second largest number of ITIs/ ITCs in India, after Karnataka. The concentration is relatively weak in eastern and north-eastern part of the country.

The vocational skill development system has not been able to fulfil the evolving employment demand for skilled workforce in Indian economy during post-liberalisation period. The dearth of skilled people has arisen both in quantitative as well as and qualitatively terms. Quantitatively, a wide gap exists due to limited seats in the training institutions and an incremental increase in young population joining the labour market. Qualitatively, the gap has been created due to the outdated curriculum (content, pedagogy and assessment) and also lack of trained professional trainers[39].

1.10 Institutions Providing Vocational Education and Training in FPI

Over the entire post-independence period, a vast array of institutions and initiatives has attempted to address the issue of generating a requisite skill base. The vocational education and training system exists in the form of direct State participation in the skilling process as well as through various non-State initiatives. The Governmental formal system for providing marketable industry specific skill in food processing is described below.

(a) Ministry of Food Processing Industries

The Ministry of Food Processing Industries is the nodal Ministry of the Government of India concerned with the reduction in the wastage of perishable agricultural produce, enhancing shelf life of food products, ensuring value addition to agricultural produce, diversification and commercialisation of agriculture, generation of employment, enhancing income of farmers and creating surplus for

export of agro and processed foods. The Ministry plays a vital role in Human Resource Development to meet the growing requirement of managers, entrepreneurs and skilled workers in the food processing industry. It has set up a national level institute of International standard called National Institute of Food Technology Entrepreneurship and Management (NIFTEM) at Kundli in Haryana which acts as a 'One Stop Solution Provider' to all the problems of the sector. The Ministry, through Non- government organisations provides grants for setting up Food Processing Training Centres (FPTCs) for persons living in rural areas with preference being given to women, SC, ST and other weaker sections of society. The Central Food Technology Research Institute, the Council of Entrepreneurial Development Programme and Paddy Processing Research Centre (PHTC), under the aegis of Ministry of Food Processing Industry provide short term courses for Food processing industry. Programmes for development of human resources in food processing, testing, training, quality management etc are being organised by the Ministry of Food Processing Industries for persons aspiring to become managers, technicians/ technologists and entrepreneurs. These are long term diploma/ degree courses approved by AICTE.

(b) Ministry of Micro, Small and Medium Enterprises

The Ministry of MSME is the nodal Ministry for Indian manufacturing sector which has been imparting training to new entrants to the workforce over the last several decades aimed at developing skills, entrepreneurship and managerial capabilities. It has been given a target of providing skill development to 42 lakh workers during 12th Five Year Plan and 1.5 crore workers by 2022.

It organises various Entrepreneurship Development Programmes, Skill Development Programmes (SDP), Management Development Programmes and Cluster Development Programmes for workers, educated unemployed youth and entrepreneurs for both short term and long term duration. The Ministry plans to open 100 Technology Development Centres in high growth cluster and 3 national Entrepreneurship Development Institutes for conducting train-the-trainer training programs. Khadi & Village Industries Corporation also runs 35 types of programmes through various training centres. The target groups are unemployed rural youths, in-

job Artisans/ Supervisors working in KVI institutes, prospective entrepreneurs, beneficiaries of different Government Schemes desirous of undertaking KVI activities. The duration of the course ranges from 2 months to 12 months.

(c) Ministry of Labour and Employment, DGET

The Ministry of Labour and Employment, Government of India, provides a new strategic framework for skill development for early school leavers and existing workers, especially in the unorganised sectors. The Directorate General of Employment and Training had initiated Craftsman Training Scheme in 1950 by establishing 50 Industrial Training Institutes (ITIs) for imparting skills in various trades to meet the manpower demand for the technology and industrial growth of the country[40].

In the Apprenticeship Training Scheme (ATS) run by the Ministry, there are about 7 courses which are targeted directly to food processing sector. These courses are of a minimum duration of 2 years and entry criteria of class 10 pass out. These programmes are implemented under the Apprenticeship Act 1961. They are applicable for school leavers and ITI graduates. All India Trade Tests for apprenticeships are conducted bi-annually.

The Modular Employable Skills (MES) Programmes were also initiated in 2007 with target of training 1 million workers. There are about 11 courses run for food processing and preservation and also offer short term courses ranging from 1 week to 6 months. The courses are divided in level 1 & 2 with up to 6 modules. The minimum entry criteria in most of the courses are 10^{th} standard and above 15 years of age. These are implemented through ITIs and empanelled Vocational Training Providers and are assessed by empanelled Assessing Bodies.

(d) Ministry of Agriculture

The Ministry has two departments under which the Department of Agriculture Research & Education organises training in agricultural extension through 21 training centres along with training in use of agricultural implements and machinery. The Department of Animal Husbandry, Dairying and Fisheries, under the University stream, runs various (12) under-graduate, post-graduate and PhD courses (DARE).

There is one Central Agriculture University, 31 State Agricultural Universities (SAUs) and four national level Indian Council of Agricultural Research (ICAR) having the status of deemed to be University. ICAR arranges need based training programmes in any state Agricultural University or ICAR Institutes in new and emerging areas.

(e) Ministry of Rural Development

The Ministry of Rural Development has proposed setting up of Rural Development and Self- Employment Training Institutes (RUDSETIs) in all districts in the country to provide skill training to rural poor. Under this training infrastructure is established in each district for entrepreneurship development of rural youth through more than 60 types of short duration (1 to 6 weeks) courses. Swarnajayanti Gram Swarozgar Yojana (SGSY-SP) was initiated to ensure time- bound training aimed at bringing placement, thereby ensuring regular wage employments of rural youth below poverty line (BPL). Now the scheme has been replaced by the National Rural Livelihood Mission (NRLM).

(f) Ministry of Human Resource Development

The Ministry was created on September 26, 1985, through the 174th amendment to the Government of India Rules, 1961. The MHRD runs two departments, Department of School Education and Literacy and Department of Higher Education. In the Vocationalisation of Secondary Education Programme, run by the Department of School Education & Literacy, 6800 schools have been covered. These are training programmes for class 10th passed students and its duration is 2 years. Polytechnics also offer 3 years diploma programmes for 10th pass students in various traits. Community Polytechnic Schemes are for poorer section of society in both rural and urban areas and offer 3 to 6 months courses. Jan Shikshan Sansthan offers need based (1-4 weeks) courses for disadvantaged groups of adults. Priority is given to adult neo-literates/ semi-literates, SC and ST, women/ girls, oppressed, migrants, slum/ pavement dwellers and working children.

Besides these, various State Government have launched their own specific programmes for skill development. DRDAs have been assigned the task of fulfilling

these programmes. Further, Private sector and NGOs, too, have taken initiatives in this field. Private sector initiative may be characterised into four types: the first, where private entrepreneurs or corporate establish training centres on a profit basis; second, where private corporations training to people who get absorbed in their own production units; third, where they enter into partnership with public agencies and become the vehicles for training delivery and finance; fourth, where corporate houses set up public trusts or foundations with a development agenda to build the capacities of local communities to be self reliant systems as an integral part of their 'corporate social responsibility' Prominent among these are, SEWA, Gram Vikas (Orissa), MAYA organics (Bangalore) etc.

1.11 National Skill Development Policy

Recognising the importance of increasing and diversifying the skills-building capacity in the country, the National Skill Development Policy was announced in the year 2009.The policy aims at skilling 500 million people in the country by the year 2022. The principal objectives of the policy are to empower all individuals through enhanced skills and knowledge, to ensure access to decent employment and to strengthen India's competitiveness in the global market.

The focus of the policy is on institution-based skills development through polytechnics, ITIs, vocational training centres, technical schools, professional colleges, etc and learning initiatives of sectoral skill development organised by different ministries/ departments. It also lays emphasis on formal and informal apprenticeships training by enterprises, training for self-employment and entrepreneurial ventures and non-formal training including training by civil society organisations. Addressing the training requirements of retired persons and expanding the outreach of e-learning, web-based learning and distance learning are also the areas of due importance.

The policy lays down the institutional framework comprising-

1. Prime Minister's National Council on Skill Development
2. National Skill Development Co-ordination Board
3. National Skill Development Corporation (NSDC)

4. National Council for Vocational Training (NCVT)

The National Skill Development Policy lays down special emphasis on skill development for the unorganised sector. The policy targets the literacy and soft skill development of the unorganised sector and their skill development for self employment. Under the policy a separate institutional mechanism to plan, implement and monitor the skill development for the unorganised sector has been established.

1.12 National Skill Development Corporation (NSDC)

The National Skill Development Corporation set up as a Corporation under the Indian Companies Act of 1956 is responsible for setting up industry (or sector) specific skills council. It is a Public Private Partnership in India which aims to promote skill development by catalyzing creation of large, quality, for-profit vocational institutions. It provides funding to build scalable, for-profit vocational training initiatives[41].

1.13 Confederation of Indian Industry (CII)

CII is a non-government, not-for-profit, industry led and industry managed organisation, playing a proactive role in India's development process. It has created a Skills Development Trust with a Skills Development Fund and also an over arching CII Skills and Knowledge Mission, to guide the functioning of its Skills Development Initiative[42]. Different industry groups that are the member of the CII are partnering the central and state government in upgrading 237 ITIs through Public Private Partnership.

1.14 Federation of Indian Chambers of Commerce and Industry (FICCI)

FICCI is a non-government, not-for-profit organisation with members from the corporate sector, both private and public, including SMEs and MNCs. The FICCI Skills Development Forum (SDF) was launched in 2008 to supplement the government initiatives with industry intervention[43].

1.15 National Mission on Food Processing

The Ministry of Food Processing Industries, in its approach to 12th Five year plan has proposed to launch a National Mission on Food Processing (NMFP) in order to attain its objective of ensuing requisite growth impetus and value addition to the food processing sector. This can be achieved through an effective decentralised approach involving the state governments in implementation of various schemes and programmes of the Ministry.

1.16 Funding the Skill Development Programmes

The key stakeholders in the skills development are the industry, labour, academia and the government. As for any economy to grow and attract FDI inflows, growth and productivity in some part of the value chain shall be required and for the productivity to increase the key factors are efficiency of labour and capital inputs. Several skill development programmes have been initiated for the enhancement of labour productivity as per the demand of the industry and for capital inputs Government has been focusing on increased FDI inflow in recent years. Sector Skill Councils have been set up for food processing and various other sectors in order to bring all the stakeholders together and work in a synergetic manner.

1.17 Funding from NSDC

NSDC is functioning as the coordinating system that will dovetail and consolidate all the stake holders under some common objectives. It has been functioning as the leader in setting up Sector Skill Councils. More than 39 proposals, including six proposals for setting up Sector Skill Councils have been approved by NSDC. Out of these 21 proposals, a total financial commitment of 546.57 crore have so far been funded by NSDC.

NSDC has also taken the initiative of loaning in partnership with Central Bank of India to provide skill loans to the students at NSDC-funded institutions. NSDC is also searching for the option of partnering with state-run banks on a suitable financing model for vocational education and training courses. This partnership would help the people living at subsistence level, to join the skill development centres. Some of NSDC's partners have also joined hands with the

corporate groups on enterprises for refunding the course fees after a certain minimum year of service in those enterprises.

1.18 Private Sector Funding

NSDC, along with some private players under the Public Private Partnership (PPP model) has been contributing for employment and education of the local people, the skill development and economic empowerment of local communities through the establishment of technical training institutes, donations, sponsorship etc. A number of private sector companies are investing into skill development of the workforce by

a. Up-grading existing technical training institutes and
b. Establishing new technical training institutes through public private partnership model.
c. Special technical training to the economic and socially disadvantaged, through social partnerships and in-house training.
d. Building and managing multi skill schools all over India.
e. Giving scholarship to the meritorious post graduate and graduate students.
f. Providing donations and sponsorship for skill development activities.
g. Coordinating the training programmes with the skill requirement of the booming sectors.

1.19 International Collaborations

The Government of India has been exploring the chances of International collaborations with several developed and industrialised countries. Countries like UK, Germany, and Australia have already been providing both financial and technical assistance to India for delivery of skill training. These countries are ready to invest more in India and take advantage of the enormous business opportunities available in India.

With UK: UK India Skills Forum (UKISF) established in April 2002,provides a platform for organisations across the technical and vocational education sectors in UK and India, to tap the business opportunities in the sector by enhancing ideas for delivery of skills training by collaborations between the two countries. The UK India Business Council acts as the secretariat for the UK India Skill forum and the

first point of contact for the UK skill providers, while the FICCI acts as the main point of contact for Indian skills providers. India and UK have also undertaken several collaborations and initiatives on skills development. The UK India Education and Research Initiative aims to work with a range of different skills and training bodies to enable participation and facilitation of skill development requirements in both these countries.

With Germany: Germany has been providing financial and technical assistance to India since 1958 through various ministries and institutes. It has suggested setting up of 'Vocational and Educational Training' in India through public private partnership model based upon 'Dual Education' system in Germany. It has been assisting India in up-gradation of vocational training centres and development of competency standards in light of the changing market dynamics. One of the leading German automobile company has started an apprenticeship programme in India based upon the dual education system of vocational education and training in Germany.

With Australia: Australia is also collaborating with India in various skill development initiatives so as to share expertise and experiences. A new bilateral Australia India Education Links website has been launched which supports education and training collaborations between Australian and Indian education and training institutions, business and industry[44].

1.20 Funding from World Bank

The World Bank plans to fund skill development initiatives in India and provide technical assistance to the National Skill Development Corporation (NSDC) to achieve its goal. NSDC, with a larger mission, has a mandate to train as many as 150 million people over the next 10 years. It currently has a corpus of Rs. 1,500 crore, of which it has committed Rs. 1,147.9 crore for skill training[45]. The World Bank shall provide funds in instalment after calculating the success of the skill development initiative. The funds can be used for developing innovations in skill training, getting better exposure to partners and forming a central monitoring system for mapping the growth of the sector. NSDC welcomes support from bilateral and multilateral agencies and has so far signed agreements with 46 training partners- 38 companies and eight sector skill councils.

1.21 Budgetary Provision for Skill Development in Food Processing Industry

The realisation by the policy makers that the growth of the food processing sector would be key to growth of agriculture in the country allowed the Ministry to recast its programmes and schemes on a much wider scale and in an integrated manner, with stress on appropriate backward linkages to agricultural production[46]. The total plan outlay of the Ministry rose from Rs. 650 crore during the 10th Plan to Rs. 4,031 crore during the 11th Plan and to Rs. 15,077 crore during the 12th Plan. The budgetary provision for Human Resource Development has been increased from Rs. 65 crore in 11th Plan to Rs. 1426 crore in the 12th Five Year Plan.

The most significant initiative of the 12th Plan is launching of a National Mission on Food Processing (NMFP).

1.22 Literature Review

There is substantial literature on Food processing industry produced both by government and private bodies. In addition, academia has also contributed substantially. Broadly, the available literature could be divided into three themes, viz.

1. Current status and growth prospects of Food processing industry in India
2. Employment Status; and
3. Skill development Scenario.

Important literature is reviewed below:

(A) Current Status and Growth Prospects of Food Processing Industry in India

Food Processing Sector is being considered as the sunrise sector having enormous potential for the economic growth of the country. Now, the Sector is not confined to the traditional form as the packaged food sector which only meant pure buying/ selling across the value chain. Modern food processing forms a vital link between the agriculture sector and the final food consumption. At present, the Food Processing Industry requires due attention both on productivity at the farm level and on safe and improved consumption choices of the customers.

"White Paper on Food & Food Processing Industry in India" (2009)[47] by Dessence Consulting, describes food processing as any type of value addition to agricultural or horticultural produce and involves processes such as grading, sorting and packaging which enhances shelf life of food products. Diverse agro-climatic conditions lead to a wide ranging and large raw material base suitable for food processing industries in India. Rapid urbanisation and rising per capita income and growing literacy are the reasons for the increasing demand for processed food. Cheaper workforce availability can be effectively utilised to set up large low cost production bases for domestic and export markets. The report describes the status and potential in various segment of the food processing industry. Currently most of the processing in India is manual. There is lack of technology like pre-cooling facilities for fruit & vegetables, controlled atmospheric storage and irradiation facilities. Bringing in modern technology is an area that existing as well as new investors in the sector can focus. It will make a clear difference in both process efficiencies as well as quality of end product.

M. Bhupat Desai & N.V.Namboodiri (1992)[48] in their study 'Development of Food Processing Industries', selected four industries viz. food grains milling, edible oilseeds processing, sugarcane processing and milk processing as all these industries were concerned with mass consumption instead of consumption by better off. They found that all these industries were raw material, labour and working capital intensive. Edible oil industry was found to be highly raw material and working capital intensive whereas grain mill industry is the most labour intensive. Labour efficiency and labour productivity was also seen to be highest in edible oil industry. The study focused upon development of these industries for rural-led employment oriented economic development. They suggested for the location of these industries in rural areas from where basic raw materials, labour and incremental demand would emerge. Public and private investment together with a small fraction of capital subsidy may be encouraged to modernise processing technology in those basic food processing technology where the technology is obsolescent. Lowered interest rate, easy access to institutional finance and bottom-up co-operativisation may be encouraged for the development of food processing industries.

The report on **"Indian Manufacturing Industry: Technology Status and Prospects"[49]**, observes that to achieve faster rates of economic growth India urgently needs to strengthen its own manufacturing sector. For the growth in manufacturing sector the Indian firms need to focus on their production efficiency. And production efficiency may be attained by developing, importing and adapting new technologies. India is amongst the world's largest producers of food, producing over 600 million tons of food products.

Dr. Amiya Kumar Behra (2004)[50] in the paper "Rural-based Food Processing Industry in Asia" discusses the status of rural based food processing industry in India and lays emphasis on their development as agricultural productivity alone may not transform the rural economy. He shows that in post-liberalisation period the major challenge before the small and unorganised food processing sector is that of marketing. Also, the tax levels on processed food in India are highest in the world and because of various taxes and duties the products are very highly priced. Therefore, it is not able to compete in the national and international market. The food processing industries are mostly owned by the private players who don't have access to latest technology because of its prohibitive cost. The plethora of laws covering food and processed items involve multiple agencies and act as a big constraint in the growth and administration of processed food industry. They found that the value addition of food fortification in India is only 7 percent. The study suggests an effective linkage between private enterprise, NGO, community organisation and individual farmers for the development of small and medium scale food processing industries in rural India for growth in the rural economy of the country.

John Wilkinson (2004)[51] in his research paper "The Food Processing Industry, Globalisation and Developing Countries", reviews the major trends in food processing industries in three big developed nations of the world and its impact on the internal transformations of the food processing sector of developing countries. The non-traditional exports according to author from the developing countries has generated two types of views. For some it represents a strategic opportunity for new sources of revenue, employment generation and internalisation of new knowledge and technology whereas for others it may be outsourcing of the transnational, taking

advantage of low wages and less stringent environmental regulation. The study finds that the development of FPI in developing countries is mainly concerned with poverty, malnutrition and obesity on one hand and a key source of employment opportunities on the other.

M.S. Sidhu (2005)[52] in the paper "Fruit and Vegetable Processing Industry in India: An Appraisal of the Post-Reform Period", examines the growth of the fruit and vegetable processing industry in India. The study compares the number of licensed units in pre-reform and post reform period and finds that the growth of these units has been slower in the post- reform period. The fruit and vegetable industry being decentralised, a large number of such units are in the cottage and small scale sector. The Government of India's setting up of food parks in different parts of the country to enable small and medium entrepreneurs to find access to capital intensive facilities is also discussed. It also states that the traditional methods of preservation are dominant in the cottage and small scale sectors, while bigger and new units have started using modern technologies.

Awasthi Dinesh et al (2006)[53], in their book "A Manual for Entrepreneurs: Food Processing Industry", describe the various categories within the food processing industry and also about their current status. As India is the second largest producer of food in the world the growth of the food processing industry shall bring immense benefits to the economy, raise agricultural yields, enhance productivity, create employment and raise life- standards of a large number of people across the country, especially in rural areas. A recent study has also revealed that the liberalisation of the Indian economy has opened new vistas for growth and the food processing industry has tremendous potential in India to build a profitable business. The book analyses the challenges, constraints and concerns for the food processing industry in India. The food industry in the country is much neglected and the small-scale and unorganised sectors account for 75% of the total industry. The inherent strength of high raw material production and large domestic market base has to be buttressed and energised by evolving the right international-level infrastructure and growing suitable raw material. Taxes on processed food are also among the highest in India and theses taxes lead to price hike of the food products. The sector has been characterised by poor marketing, transport and communication infrastructure.

Cooperatives and semi- government organisations are weak and there is lack of people's participation either through PRIs, NGOs, farmer organisation or industries association in the food processing sector.

The book makes recommendation for a comprehensive pan-India initiative through which planning is done with bottom up approach rather than top down. An integrated model has been proposed wherein cottage, small and medium enterprises act as input factors for further development of products by larger enterprises, by creating primary/ secondary processing facility centres within a radius of 15 to 25 km from the farm. The process will ensure backward and forward links between farmers, markets (domestic and international) and larger industries. All Panchayat institutions in the country need to be the leading market outlets, including the top players in the industry and the government must provide Centrally-sponsored direct assistance to Panchayat institutions. There are various strategies and policies proposed in the new policy for creating an enabling environment for the growth of the food processing industry in India. The Central and State governments shall work closely and evolve joint efforts to provide an enabling environment to entrepreneurs to set up food processing enterprises.

C. Laxmi Kantha Reddy & S. Rathna Kumari (2014)[54] in their study "Performance of Agro-based Industries in India: A Critical Analysis", found that though the food grains production increased from 52 million tonnes in 1951 -52 to 244.78 million tonnes in 2010-11, but its share in real GDP has fallen given its lower growth rate compared to industry and services. Higher growth rate may only be achieved through incremental productivity gains and technology diffusion. They have also emphasised on the development of agro- based industries as it can provide employment to a large population at low level of investment. The study finds that the food products and beverages sector has the highest number of units as compared to other agro-based industries and it also provides the highest share of employment i.e. 38%. Among the different categories of manufacturing based on primary sector, the value of output is the highest in case of manufacturing of food products and beverages i.e. 57% during the period 2011-12.

In the article "Food Processing: Unrealised Potential", (2003)[55], finds that the food processing sector is suffering from lack of funding as it has been identified as the no-go area for the banks being a high-risk area with long gestation period and low returns. Although the government has accorded high priority to the sector in every recent policy pronouncement, lack of investment throughout the supply chain has meant that expectations of growth have not been fulfilled. One of the major shortcomings with the sector is its unorganised nature, which is mainly concentrated in the small scale sector, where very few players have the financial wherewithal to invest in equipment and technology. The alarming fact is that several export consignments of Indian food products have been rejected by US and the European Union on a variety of grounds. Therefore, an all-round tightening of norms with proper regulations, better information avenues and a monitoring system for compliance is required.

In the article "Food Processing Policy- Still in the Making", (2004)[56], mentions that the government has declared its plan to energise and sustain growth in the food processing industry and would move to the formulation of an unified food processing law and would set up a regulatory authority. The food processing policy would overcome the many shortcomings faced by the sector, by creating avenues of profit from India's natural advantages in production of various commodities. Though a large number of laws (14) and ministries (half a dozen) are involved in regulation and monitoring, there is urgent requirement of an integrated modern food law. The article also finds that numerous export consignments of Indian food products have been rejected due to their failure to meet quality standards. For every person directly employed in the sector, indirect employment generated will be 2.38 times as much. There is immense potential in the sector but, with proper policy initiatives.

(B) Employment Status

Chandrashekhar Rao and Sukti Dasgupta (2009)[57] in their paper "Nature of Employment in the Food Processing Sector" examined the nature of employment and the quality of work in the food processing sector. The structure and nature of employment in food processing industry has been analysed from the data of the

Annual Survey of industries and the NSSO whereas the wages, condition of workers, employment security, gender bias have been analysed through the data from the field study in the organised sector in fish processing and cashew processing and the unorganised sector mango and jelly making. The authors found great potential in the food processing sector for the creation of new jobs and also a good number of employment opportunities in this sector but they bemoan the quality of employment. Elasticity of employment was found to be higher in organised segment than in unorganised segment of food and beverages sector. Also, it is higher in food and beverages sector than the total manufacturing taken as a whole. In the organised segment the size of female employment was larger than unorganised segment. Other food product industry employs highest proportion and dairy industry lowest. It is also noteworthy that this sector employs mostly (72%) illiterate and landless (95%) worker. Human resource development is an important aspect of the entire process, as the growth of the sector from the present stage requires specialised skills. Training of the present workforce especially women in the upgraded technology and retaining their jobs should be part of the human resource development strategies.

Chandrashekhar Rao (2009)[58], in his book "Enhancing Growth and Productive Employment Linkages in the Food Processing Sector", finds that the food processing sector has improved its share in the total value of manufacturing output from 15% in 1994-95 to 18% in 2000-01. The organised segment has been the major contributor in this growth and the labour intensive nature of the sector offers jobs at a much lower capital investment to the manufacturing sector as a whole. In the unorganised sector, the OAMEs play a bigger role in providing employment in the sector compared to total manufacturing with 71 percent followed by 16 percent in NDMEs and 13 percent in DMEs. The structure of employment at the macro level seems to be moving towards self-employment and regular salaried employment in recent times. The proportion of women in both organised and unorganised segment is around 27 percent. The OAMEs employ 86 percent of women followed by 10 percent in DMEs and in NDMEs. Among women in unorganised segment, 83 percent are in manufacturing of other food products and so, improvement in the growth and quality of employment in this subsector will have maximum positive impact on women.

The author, after analysing the responses of male and female workers concludes that the men workers suffer more due to excessive hours of hard work. The female workers are pushed into lower earning jobs due to segregation of work and the men workers capturing the skilled jobs. Though the labour productivity in the organised segment of the food processing sector is much better than the total organised manufacturing in the country, the wages are lower by 55 percent. As compared to agricultural wages, the women workers are paid lower whereas the men workers get better wages compared to agricultural labour. Majority of workers are also illiterate and their skill level is very low. The up-gradation of skill to the changing technologies is a serious problem and the workforce has also resisted introduction of modern technology with an apprehension that they may not be able to handle the new machines. Therefore, human resource development needs more focus. The establishment of more number of Food Processing Training Centres (FPTCs) will help in training the entrepreneurs and workers in the unorganised sector. The human resource development strategy should aim to train the present workforce especially the women, to work in the up-graded technology and retain their jobs.

Vinoj Abraham (2009)[59] in the article "Employment Growth in Rural India: Distress-driven", analyses the trends and pattern of rural employment which is basically led by the distress in the agrarian sector and poor earning capacity of the poor in rural areas. He also tries to study the trends in wage rate and wage differentials and the gender aspect of rural employment. The study finds that the female and the aged population are forced to enter the labour market due to abject poverty and also the paid wage labour has turned into unpaid family labour.

P. Nomita Kumar (2010)[60] in the article "Uttar Pradesh Manufacturing Sector: State, Structure and Performance", has analysed the reasons for poor performance of Uttar Pradesh in industrial sphere despite having abundant natural resources. The study found that the reforms by the planners have not been employment generating. In comparison to other states Uttar Pradesh has been less successful in attracting investments and in case of registered food processing industries, per unit employment has gone down from 7.00 to 3.57. Labour productivity has increased but the fixed asset ratio indicates that the modern SSI has been using sophisticated machinery and equipment relative to labour. The author has

suggested three processes namely- the strategy process, the operation process and the people process to be strengthened and clubbed work together in order to revitalise the industrial sector in UP. Lack of skilled manpower has been identified as one of the major reasons for the poor industrial growth of UP.

Pawan Kumar Dhiman and Amita Rani (2011)[61] in the article "Problems and Prospects of Small Scale Agro-Based Industries: An Analysis of Patiala District", begin with the aetiology of industrialisation in India after independence. The primary objective of the rural industrialisation was to bring about a cooperative agro- industrial economy and create employment opportunities to raise standard of living, mobilise rural communities and seek diversification of rural economy so that it contributes to the welfare of landless and weaker sections of village communities. The main focus of the study is to find out the current status of rice-mill industry in Patiala district and to analyse the factors adversely affecting the growth of the industry. Most of the units have been facing serious management problems, the main reason being a large investment in fixed assets, diversification of funds and disputes among partners. Another issue dealt with the human resource as most of the industries had to hire labours from other states at very high prices and their training increased the cost of production. The study also found lack of skilled labours and labour investment.

Harpreet Singh and Manish Bansal (2013)[62] in their article "Major Problems and Prospects of Food Processing Industry in Punjab", have discussed the extent of change taking place in the product/ production and its efficiency due to change in season. They have shown that demand and preferences of processed food items change with the change in season. They observed that shift of technology requirement in each season differs and hence the cost of processing is not given importance. Labour requirements also change with season which affects regular employment of skilled workers.

'A Brief Report on Food Processing Sector in India' (2013)[63] by ASA & Associates LLP, describes the Food Processing industry as one of the largest industries in India ranking fifth in terms of production, consumption, export and expected growth. India is one of the biggest emerging markets, with over 1 billion

population and a 250 million middle class. The highest share of processed food is in the dairy sector, where 37 percent of the total produce is processed, of which only 15 percent is processed by the organised sector. The State Government's have been assigned with the task of implementation of various schemes under National Mission on Food Processing, the most important being the scheme for human resource development. India has comparatively cheaper workforce which can be effectively utilised to setup large low cost production bases for domestic and market supply.

G.S. Mehta (2011)[64] in his book "Agro-processing Industry in Uttar Pradesh: Emerging Structure and Development Potentials", examines the contribution of Agro-based industries in increasing employment opportunities and income level of rural people and also in overcoming challenges of unemployment and poverty in rural areas of Uttar Pradesh. It found that out of total 44,740 units 42,586 agro-processing units were in unorganised sector with low productive technology. The share of agro-based industries in total industries was 26 percent and in total employment was 23 percent in the state. Agro-processing industries were headed mainly by young entrepreneurs, 32 percent possessing below primary education and 44 percent with secondary education. Both registered and un-registered units were found employing different skilled and un-skilled as paid workers and un-paid family workers of both genders. Employment has been growing at the rate of 4 percent per annum in un-registered units but not in registered units. Establishment of agro-processing industries in nearby villages and the supply of agricultural produce to concerned units has motivated the farmers to shift from traditional crops towards commercial crops as per the demand of the industry. The study recommends strengthening of ITIs to impart skills as per the requirement of units located in particular areas and also entrepreneurship training for ITI diploma holders willing to start agro-units and apprenticeship for skilled labours. There is also need for skill development for un-skilled labour to increase the supply of skilled labour force.

(C) Skill Development Reports & Policies: Review

The issue of skill development has been dealt with by many authors and agencies which inter alia, focus on skill development, value chain, putting the learner first,

linking non-formal education with vocational training, skill gaps, deficiencies of the system etc. The demographic dividend could be meaningfully utilised only if skill development is given due importance.

FICCI's report on "Sector Profile on Skill Development"[65] presents a brief overview of the Skill Development Sector in India. India has a great opportunity to meet the future human resource demand of the world and it can become the world wide sourcing hub for skilled workforce. The government of India has launched several schemes to empower the young but the major challenge lies in the implementation of these schemes at the grass root level.

The National Skill Policy, 2009 has set a target of imparting skills training to 500 million by 2022. A three-tier structure is formed for policy direction and review at the top of which there is the Prime Minister's National Council on Skill Development, followed by the National Skill Development Coordination Board. At the bottom is the National Skill Development Corporation. The Director General of Employment and Training provides a new strategic framework for skill development for early school leavers and existing workers especially in the unorganised sector. The main objective is to provide employable skills to school leavers, test existing skills and certify them and also identify the drop-outs as child labour above 14 years age through structural institutionalisation.

The Ministry of Labour & Employment, Ministry of Rural Development, Ministry of Urban Development & Poverty Alleviation along with 14 other ministries have come up with various schemes for skill development. The key stakeholders in the skill development are the industry, labour, academia and the government. In order to up-skill the workforce with the changing industry dynamics and to improve their productivity, Sector Skill Development Councils have been set up across various sectors including food processing. NSDC has taken the responsibility of funding various proposals for skill development and has signed an agreement with Central Bank of India so that the students can avail skill loans. The Government is also working in collaboration with several industrialised nations like UK, Germany, and Australia etc.

FICCI's report on 'The Skill Development Landscape in India and Implementing Quality Skills Training' (2010)[66] found that a large portion of the workforce would migrate to the secondary and tertiary sectors as evidenced by a shrinking employment in the primary sector. Skill and Knowledge would be the driving forces of the economic growth and social development and the skill sets required for secondary and tertiary sectors would be quite different from that of the primary sector. This skill gap necessitates skill development in the workforce. In addition to several other sectors, food processing sector would play an important role in driving the growth of the economy as well as employment generation.

India is expected to be home to a skilled workforce of 500 million by 2022. The skill development agencies are facing magnitude of challenge in implementing various schemes such as mobilising trainees, developing standardised and scalable content, ensuring the availability of trainers, making available appropriate infrastructure, coordinating placement and industry linkage.

In another report **"Knowledge Paper on Skill Development in India: Learner First" (2012)[67] by FICCI** in collaboration with Ernst & Young explores the idea of putting the learner first and focuses on ways to empower the learner through improved skills. India has evolved as knowledge based economy with low cost labour and rich talent pool. The perspective of the learner regarding skills and vocational training is given very less importance and at the same time the judgement of learner is clouded by challenges of survival. In India, although the current primary education enrolment is high, the students completing their high school education and carrying on their tertiary education are very low. The total enrolment has increased over the years resulting in a high literacy rate of 74% but, a high drop rate of more than 50% is seen as the major hurdle to the growth of the economy. The learner needs financial assistance from the Government to fulfil his aspirations and also requires career counselling in order to select the best option of vocational education available for him/ her. The report presents the projected growth and demand of the various sectors of the economy. About 12 million people join the workforce every year comprising highly skilled, skilled, semi-skilled and un-skilled workforce in the country. The report gives the profile of the learner on various parameters such as gender, social and educational status and also gives an overview

of the opportunities available to the learner for skill development under Central, State Government and private sector. For the food processing industries, training courses are run by various research institutes such as CFTRI, Paddy Processing Research Centre, PHTC, Council of Entrepreneurship Development Program, Food Processing and Training Centres. The model of Bangladesh has been described where non-formal education is linked with vocational education.

A report on **"Human Resource and Skill requirements in the Food Processing sector (2022)[68]" by National Skill Development Corporation (NSDC)**, gives an overview of the food processing industry in India. It discusses the value chain in the major segments and analyses the key success factors and key risk factors for the food processing industry in India. The report also describes the current employment pattern in the food processing sector which employed about 8.5 million persons in 2008 with about 18% of the employment in the organised sector. It also explores the profile and educational level of persons employed in organised food processing sector along with the skill requirement and the skill gaps at each level in the value chain of various segments. It finds that the skill gap is maximum considering the demand for persons trained by short term courses, with low educational qualification (below $10^{th}/12^{th}$ standard) where there is a required demand for about 1 lakh trained persons annually against a supply of over 10,000 persons. The report presents the skill pyramid and also proclaims the focus area for skill building at the lower portion of the pyramid where a large proportion of workforce falls.

A study conducted by **Self Employed Women's Association (SEWA)[69]** observes that with globalisation & liberalisation new technologies and fast changing markets have made existing skills obsolete and require up-gradation, new skill and multi-skill. Women workers are paid low compared to their men counterparts. Manufacturing sector appears to be the most discriminatory towards women. Skills of women are not recognised, least to say on its marketability. Dubbed as 'unskilled', they are treated slavishly. So the report lays emphasis on identification of the emerging opportunities for women and building a directory of skills required. It suggests for extensive training for women. The present disparities between the small number of formal skilled workers and the large number of informal workers, who are considered 'unskilled', can only be bridged if a continuum of skills from

highest to lowest is created. In the fast changing technology and markets, women should have the opportunity to upgrade their skill from time to time. For the unorganised sector, a more different informal system of accreditation should be set up.

Amitendu Palit (2009)[70], in his article "Skills Development in India: Challenges and Strategies", analyses the current skills development scenario in India by examining the technical training infrastructure of the country. The study finds that in spite of lower per capita income in Uttar Pradesh compared to other developed states, it has the largest number (2,774) of higher educational institutions in India. Polytechnics, industrial training institutes (ITIs) and industrial training centres (ITCs) focus primarily on engineering courses. Most of the diploma programs and the certificate courses are in engineering programmes which has resulted in lack of skills in other disciplines. In India, the number of private ITIs is greater than government owned ones, although student intake capacities are higher in state-owned institutes. The industrially backward state Uttar Pradesh has fairly high number of polytechnics but its average institutional enrolment is lower than many states. He also identifies the deficiencies of the system and outlines the latest policy initiatives for skill development. The lack of skills due to early drop-out from the formal education system and also the inability of the system to align to the labour market requirements are some of the issues to be resolved. More than 90% of India's workforce belongs to the unorganised non-factory sector whose skills can be developed through training programmes of short-duration modules for encouraging greater participation. The paper examines the scope for foreign technical training providers in playing an active role in India's skills-building efforts.

"Data Bank on Economic Parameters of Food Processing Industries" (2013)[71] has made an attempt to develop a database on the food processing sector from the available official sources of data. The article compares the number of persons employed in the registered and unregistered food processing units during 2005-06 to 2010-11. It found that number of persons employed under the registered FPI has been increasing although there has been decline in employment in unregistered sector.

The final report of the **National Productivity Council on "Productivity and Competitiveness of Indian Manufacturing: Food Processing Sector" (2009)**[72] says that the food processing sector employs about 13 million persons directly and about 35 million persons indirectly but the labour productivity at all India level has been declining continuously over the years. Food processing sector in India is facing acute shortage of skilled and quality manpower for continuous quality up-gradation and diversification, marketing of food products and management of quality control systems. The report recommends the formation of an apex organisation for skill development and training in this sector and also for specialised Training centres in various State and Central Government institutions catering to the needs of the food processing industry. Some schemes have already been implemented by the Government in the 10th Five year plan to create suitable manpower to manage, innovate and build Indian food processing sector. Though the country has comparative advantage in terms of raw material/ agro production and growing demand for processed food, the level of food processing is not significant.

Santosh Mehrotra et al (2013)[73] **in their study "Understanding Skill Development and Training in China: Lessons for India"**, have compared the skill development model in China with India, which faces the similar challenges that administrators have grappled with in China. The efficiency of the Chinese Technical and vocational Education and Training system (TVET) system in improving the skills of graduates and the state's commitment towards TVET through law and monetary support to the students are very important for India to learn. The study tries to find out the loopholes in Indian system and suggests several measures such as stipend for vocational students, vocational education law, training of the trainers, curriculum design, industry participation and proper financing of the TVET programmes which china has introduced.

Huang Yanjie (2013)[74]**, in his paper "China Plans to Upgrade the Skills of its Labour Force"**, describes the status of workers in China. It states that China is suffering from an acute undersupply of high-skilled workers and in order to overcome this problem the Chinese government has included the training of high-skilled workers in its national development strategy. A high level leading group has also been formulated to supervise the national skill up-grading programme. He has

pointed out that technical schools are either neglected or forced to upgrade and merge with general institutions of higher education. Another important feature of his paper is emphasis on strengthening new on-job training programmes and creation of new system of skill classifications, besides revamping of technical education system.

Mohammad Rais et al (2013)[75], in their paper "Food Processing Industry in India: S&T Capability, Skills and Employment Opportunities", give an overview of the Food Processing Industry in India. Their main focus is on skill and training capabilities of the industry and also employment generation capacity. The paper highlights the challenges faced by the industry and the impact of policies and programmes run by the government in order to develop the FPI. On the basis of their field work they have shown how in various operations/ activities conventional technology is being upgraded, and improved agro- processing operations are being used in food processing industry. Adoption of new technology requires new skills and/or up-gradation of skills. They have also found notable hiatus between skills required and skills available in various segments of food processing industries. They have underlined that the shortage of skilled, semi-skilled and un-skilled workers has emerged as a critical factor impacting the competitiveness of Indian food industry.

Nanda, Prashant K, & Sangeeta Singh (2012)[76], in the article "World Bank Plans to Fund Skill Development in India" inform about the plans of the World Bank to fund the skill development initiatives in India. The World Bank shall provide 'technical assistance' (NSDC) to the National Skill Development Corporation in India. It may initially provide Rs. 480 crore and lend further support depending on the success of the initiative. The Indian government has moved a proposal in this matter to be finally approved by Planning Commission. The funds provided to NSDC shall be used for developing innovations in skill training, giving better exposure to partners and putting in place a central monitoring system for mapping the growth of the sector. The article quotes that during a skill council meeting the then Prime Minister Dr. Manmohan Singh had said that country would need 260 million skilled people by 2018 and around 340 million by 2022. He mentioned that there is a significant gap between the demand and the supply which, unless checked, will constrain India's economic growth.

Krishnamurthi Lakshman and Khandelwal Sugandha (2011)[77], in their article "India Journal: Why India's Demographic Dividend Will Lag China's", compare the productivity of huge population in China and India. Statistics shows that Indian population will overtake China's population by 2030 with a population of 1.48 billion. India has a large number of people in the working age population aged between 15 to 64 years. China in just 15 years, between 1995 and 2010, leveraged its "demographic dividend" to build the world's second largest economy after the U.S. and will overtake U.S. within the next 20 years. The major concern in the article is over India leveraging its demographic dividend for economic growth and the betterment of millions of poor. India's sector GDP is split 17%, 28% and 55% in agriculture, industry and services respectively. The employed workforce split 52%, 14%, 34% respectively. The agricultural sector which is the major contributor in employment generation is extremely inefficient. In India, the employment in industry, which could have been the key driver of the economy, is also very low being mostly in the informal sector with very low productivity.

India needs to invest more in education to improve literacy and skills, mostly in vocational education. Some of the factors like land reforms, flexible labour policies need to be taken care of.

Mittal Neha (2012)[78], in her article "Skill Development in India: Challenges Ahead", compares the human resource in India with the rest of world. When developed countries are struggling with shrinking domestic demands and capacity challenges in meeting them, India, with its huge young demographic dividend, is well positioned to become the skill capital of the world. But despite its population of more than 1.25 billion India suffers from skilled manpower deficiency, mainly due to absence of required skills among the vast majority of its workforce. The study finds that the skill development system is non-responsive to the labour market due to a demand-supply-mismatch on several counts such as numbers, quality and skill types. The author suggests that the skill development efforts in India need to be expedited for the overall growth of the economy. India can only move to its developmental state through its skilled and trained workforce.

1.23 Rationale of the Study

Given that India has the raw materials and an abundant supply of manpower, the country has the potential to develop as a food processing manufacturing hub and an agro-product sourcing destination. The proposed study will shed light on issues like suitable training pedagogy, appropriate institutional mechanisms for delivery, and strategies for harnessing large number of trainers from among actual practitioners, making apprenticeship training effective and combining it with on-the-job learning. Thus, it would help in exploring newer areas for further research on the subject.

1.24 Statement of the Problem

India inherited an agricultural economy from the Britishers. Vast stretches of land and salubrious nature in co-ordination with Science and Technology provided the country opportunities for abundant production. Yet, poverty, especially in rural areas, continues to regress advancement of great proportion of rural masses. Why?

1. Surplus agricultural produce is not being diverted to modernised processing and preservation. Consequently, a huge quantity of food grains is wasted.
2. Institutional incorporation of a large size of young population remains a distant dream.
3. Some states suffer from insufficient number of institutions. And where there are institutions either enrolment is insufficient or infrastructural facilities and proper human resource are lacking.
4. Traditional methods of food preservation are not being channelized for modern marketing system. Consequently, value addition to these products.

These are some of the major problems before agro-processing in India and the present study is attempted to find out some significant measures to improve the bleak scenario.

1.25 Objectives of the Study

1. To assess the existing training system available with formal and informal training organizations and its effect on employment, income and productivity in food processing sector.
2. To study the existing training programs available for the target groups and assess the training needs in the food processing sector in Allahabad.
3. To suggest ways for integrating informal training providers with the formal training system in a synergetic manner for expanding training capacity for skill development program.

In India, food processing started way back traditionally and then slowly modern technology is replacing the older ones. Literature reveals that the traditional methods of preservation are dominant in the cottage and small scale sectors, while the big industries are incorporating advanced technologies. Food processing industry has a great potential in India due to very high raw material production base. There have been several reports researching the skill development status in the country. With the advancement of the industry, demand for skilled manpower has increased. People with low educational qualification are required in abundance to work in the food processing industry in India. Therefore, the role of government has been very crucial in training the large young population, making them capable. The budgetary allocation for human resource development in food processing has also been increased in the 12th five year plan. In addition to this, several national and international agencies are also funding the skill development initiatives.

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