2.1 INTRODUCTION:
In this chapter the researcher has made an attempt to review the relevant literature pertaining to the study of food processing Industry.
Referring to the food processing industry many scholars have considered the field of organizational practice as of having greater significance. The food processing industry in India over the 50 years of planned development has made dynamic progress, both in terms of number of units and combination to the total food production.

With the development of the food processing industry, a number of problems arose from time to time, which were mainly concerned with the management and government policies, labour and by-products, et.al.

For the healthy development of the food processing industry various government committees, experts, researchers, agricultural colleges, universities, research institutions has contributed by publishing their reports, findings, recommendations, after studying the problems and various aspects of food processing industry, which are reviewed as follows.

2.2 LITERATURE REVIEW

1. **Dr. Amiya Kumar Behera**, in his Report on APO Multi-Country Study Mission on Rural-Based Food Processing Industry has reported that poverty and unemployment in the rural areas are the two most important challenges India faces. In spite of all the industrial development in the country, agriculture still maintains about 70 percent of the population of the country. It is in the rural areas again where 75 percent of the population of the country lives and they will continue to constitute at least two-thirds of labor force. It is imperative therefore that the rural economy is improved, so the burden of poverty can be lessened and the working population overflowing from the villages can be absorbed in off-farm activities. The rural economy cannot be developed fully by improving only the productivity of agriculture, although this will go a long way in improving the rural economy; however, rural industries, subsidiary activity and food processing industry in particular, are of great importance for a rapid transformation of the rural economy, in India. The economic status of this population can also be improved by increasing non-farm activities, particularly rural food processing industries.

2. **Hans Megens** in his article published in Indian Express, points out that India's potential in food and agriculture is underestimated and opines that corporate can be helpful in wasteland development in India. In some cases, the country
will benefit by encouraging private sector firms to become primary producers as well. India has over 100 million hectares of uncultivated and degraded wastelands which is not generating any benefit either to the rural population or the country as a whole. Large tracks of such land can be converted into productive cultivable land by an infusion of capital and sophisticated technology to tap deep aquifers, install drip irrigation facilities and in some cases greenhouses. The cost and technical input required to develop these lands may be far beyond the means of small farmers in the area, but can be undertaken by agri-business corporations. In order to reach the increased goals of food production, reduction of waste, more value added production and increased exports, enormous investments will be necessary throughout the whole food & agro-chain. There is ample opportunity to raise the level of processing if the necessary investments are made not only in processing facilities themselves but also in the supply chain through which these products have to be delivered at the gate of the processing facility. Investments in the infrastructure and logistics systems are extremely necessary for that purpose.

3. Gregory Orriss, "India will benefit more by staying in WTO than by keeping out", FAO consultant in India Gregory Orriss has extensive management & quality assurance experience in various sectors of the food industry. He is a consultant of the Food and Agricultural organization (FAO) in India, assisting the Government of India in further negotiations on the WTO agreement on agriculture. Orriss was at Bangalore to attend a seminar on Indian exports co-sponsored by the FAO. Orriss in his interview with India mart has expressed his views on Indian food processing industry. India will benefit more by staying in WTO than by keeping out. You have to be positive. With globalisation Indian products gain access to the international markets. India has several products like spices that can benefit from this. On the other hand India also will be required to open up its market. This might have an adverse impact on certain domestic industries. To make up for this the WTO gives developing nations like India a larger time frame to open up markets. The industry has to have a long-term quality perspective and safe processing & manufacturing systems. The government should set firm standards; provide infrastructure (labs, inspection facilities etc) and guidance. The international community also needs to step forward. It is a matter of great concern that, the countries which reject/complain about products made here don’t back it up by offer of financial & technical assistance. India has great technical & scientific potential; setting up systems should not take too long. Most importantly, Indians are great traders; there is no body better in the world. All that is needed is awareness about WTO & its requirements.

4. J. Hawthorn, the former President of the IUFoST, observed at the Fifth World Congress the following developments that over the past hundred years food science and technology have altered the structures of our societies. The most obvious example is that, whereas a century ago three-quarters to ninetenths of our citizens lived by agriculture and on the land, [today] in the developed countries at least the work of one farmer feeds forty to fifty others. This is not merely due to agricultural science but equally to the back-up of our food processing industries. This process is still continuing and has repercussions on the socio-economic situation of the agricultural producer. Its
effects have been most marked in the developed countries, particularly in the United States, Western Europe, and Japan. Agricultural and food production have increased in all countries, both in absolute terms and in terms of per capita output. The number of people engaged in the agricultural sector has drastically diminished. On the overall average, the share of economically active people engaged in agriculture has been reduced. While the number of full-time farmers has decreased, the numbers of farmers with additional income from non-agricultural sources and of part-time farmers have increased. There is a general decrease in the number of farm holdings. Smaller holdings are gradually disappearing. There has been a continuous trend in the transformation of agriculture from a labour-intensive to a capital-intensive enterprise. While certain saturation seems to have been reached in many countries with regard to the number of farm machines, there is a trend towards more sophisticated equipment.

5. Hans Meliczek, Senior Officer, Agrarian Reform and Rural Development, Food and Agriculture Organization, Rome has contributed to the food science and technology to the transformation and social management of rural areas. The primary objective of food science and technology is to provide "crowded populations. With the kind and quality of food they demand at all times of the year". Seen from this point of view, tremendous progress has been achieved in recent years in the field of food production, processing, storage, and distribution. The main beneficiaries of these developments have been the consumers living in urban centres. For most of them food preparation has become easier, in many cases cheaper, and in some cases of higher quality. The purpose of his review was to analyse how and to what extent these developments in food science and technology have influenced the situation of the agricultural producer and how they have contributed to the transformations and changes in rural areas. In this context also want to appraise the role of the food processing industry, which like any other large-scale industry, is oriented towards the maximization of financial gains and profits. Frequently, this industry has promoted the development of scientific and technological processes to produce foods of elaborate quality to titillate the palates of already well-fed consumers. Frozen "television dinners" and similar articles to be found in supermarkets in the West may appear to observers from developing countries to represent an extravagant waste of scientific knowledge and technological skill. The development of such products has been facilitated by the demand of a financially potent group of consumers, which regulates the food market. However, in the face of the depressing poverty of agricultural producers in the Third World his of opinion to deplore, as has been done at previous congresses of the International Union of Food Science and Technology (IUFoST), that there has been little research on food legumes, roots, tubers, and rain-fed rice, which are staple foods in many developing countries.

6. John E. Davies, Virgil Freed, and Fred Whittemore, in their edited book on An Agromedical Approach to Pesticide Management: Some Health and Environmental Considerations, states that it is "designed to assist agromedical planners and supervisors of food production and human health programs as well as the lower echelons of the agromedical infrastructure in the developing
countries." It advocates an "agromedical approach" to the problems of pesticide use which are of mutual concern for agriculture and health: pest resistance to pesticides, human and animal poisonings, persistence of certain chemicals and chronic pesticide exposures (occupational and incidental), and disposal of pesticide containers as well as disposal of outdated stocks of pesticides. The need for effective means of pest control is very great. As the book's first chapter points out, "A variety of pests reduce agricultural productivity by as much as 50% or more and are also carriers of human disease" (p. 3). However, the use of pesticides has been a two-edged sword. The book's foreword makes this point eloquently: The impact of the stark contrast of competing needs must surely be one of the most vivid impressions encountered in tropical areas. The ever present threat of vector-borne and parasitic diseases, the obvious manifestations of kwashiorkor, marasmus, and blindness stand side by side with human and environmental suffering wrought by the very agents used to fight these scourges. It is this tragic paradox, largely the result of inadequate safety technology transfer, which has prompted us to develop this training program. The book is written clearly and has a convenient format, including summaries at the beginning of each of its 21 chapters, which have been divided into three parts. The first part, "The Agromedical Approach - General Considerations," contains material on the nature and extent of the problems with pesticide use, epidemiology of pesticides, and toxicological and environmental implications of pesticide resistance. The second part, "Prevention, Diagnosis, and Treatment of Pesticide Poisonings," covers a wide range of topics of interest to many groups, including medical-care personnel, agricultural extension workers, and those immediately concerned with the well-being of workers who may be directly exposed to pesticides. Among the chapter topics are pesticide toxicity and mode of action, first aid procedures, clinical aspects of acute poisoning, laboratory verification, and worker protection. Planners and members of government agencies will be among those most interested in the third part of the book, "Agriculture, Public Health, and Environmental Considerations," in which pesticide application, transport, storage, and disposal are discussed as well as regional differences in agromedical problems and implementation of agromedical concepts.

7. Abraham Stekei, in his book Iron Nutrition in Infancy and Childhood. As this book states, "This volume will be of interest to pediatricians, obstetricians, internists, and general practitioners, as well as specialists in nutrition and epidemiology." The subject is of pressing importance, because, as the book points out, iron deficiency affects hundreds of millions of people throughout the world, especially those in developing countries, where its causes include dietary deficiencies and parasitic infestation. Although precise estimates of prevalence are not available, one chapter presents the following statistics, among many others, on the prevalence of anaemia among infants and children: 82 per cent for children four years of age and under in Bangladesh, a range of 37.8-73 per cent among children between six months and six years of age in a low socio-economic but well-nourished group in Indonesia, and 23 per cent among kindergarten and nursery school children in China (pp. 61-74). Recently the many functional consequences of iron
deficiency, with or without anemia, have begun to be documented, including impaired immune competence, cognition, physical work capacity, and other functions (pp. 45-59). The book contains chapters on iron requirements, laboratory diagnosis of iron deficiency, functional implications of iron deficiency, prevalence of nutritional anaemia with emphasis on developing countries, iron nutrition in low-birth-weight infants, iron and breast milk, availability of iron from infant foods, bioavailability of different iron compounds used to fortify formulas and cereals, and prevention of iron deficiency. There are workshop discussions at the end of almost all chapters.

8. **George Wadsworth**, the Diet and Health of Isolated Populations. Valuable epidemiological lessons about nutrition and health are to be learned from populations that have been isolated from the effects of Western development. Unfortunately, such information is fragmentary and difficult to obtain. This book brings together such information as may be available on the mode of life of isolated groups from both the dry and humid tropics to the Arctic, with a review of their foods, diet, lactation and weaning practices, growth rates, and disease distribution. After introductory chapters on the nature and causes of health and disease and what is known of ancient man from archaeological evidence, the book examines a series of peoples, obviously not totally isolated, or the information would not have been obtained: the San of the Kalahari in Africa, the indigenous people of Papua New Guinea, the Australian Aborigines, and the Arctic Eskimos. The next six chapters use this information and that available for some other isolated societies to discuss growth, form, and size; physical prowess and physical performance; infective disease; child mortality; cardiovascular disease; and cancer. The wide range of foods consumed by early hunter-gatherer populations and by most isolated populations today is emphasized. The modern departure from such a diet pattern along with a host of other environmental changes is discussed in relation to differences in health and disease patterns between isolated and contemporary industrialized societies. It remains to be seen whether humankind will survive as well and for as long under these new conditions as it has for a million years or more in the past.

9. **B. M. Bhatia** in his Study on India's Food Policy: Institutions and Incentives in India's Food Security Structure. This small paperback monograph undertakes to describe and analyse the role that the government institutions and the incentives or disincentives they have created have played in India in promoting food production and the food economy over the 36 years since independence. A historical perspective is applied to the current food situation and the key issues it raises for current policy-makers and planners. Even though the mean rate of food production has kept ahead of population growth over this period, the per capita growth rate trend is downward, posing a threat for India's future leaders. The book traces the policies and factors that led to the peak years of 1964-65 and 1970-71 and the virtual stagnation since 1978-79. It examines not only the production of food but also the public food distribution and procurement systems as well as the growth of consumption, and includes very useful statistical tables. The conclusions and policy implications will be of interest to persons concerned with food and nutrition policy and planning in all developing countries.
10. **K. T. Achaya** in his published book about Everyday Indian Processed Foods. Outlines the chemistry, technology, and nutritional quality of the entire range of foods consumed in India, from the primary rice, wheat, and vegetable oil to the more sophisticated processed foods such as bread, biscuits, Vanaspati, chocolates, pickles, cheese, and other milk products. The chain of transformation, preparation, sterilization, and packaging is presented according to scientific processing with a dash of history, geography, and sometimes and exotic description; for example, the appetizing cheeses and wines, justified by the inherent fascination of their science and technology. The author combines information on the chemical, biological, and engineering principles that go into Indian food processing with the traditional and ancient practices that very often gave rise to the more sophisticated techniques of the new technology, and presents this mixture in an interesting and lively way to the lay reader. A departure from the routine presentation of food categories and groups makes the book more readable, even for specialists in the field, who will have no problem understanding that the "foundations" of the diet means the staple foods, the "cups that cheer" means tea and coffee; the "tastes that differ" refers to sugar, honey, and salt; and the "living foods" are the products of animal origin such as eggs, fish, and meat. The book is written simply and is suitable for both nutrition professionals and lay persons. However, it is missing a chapter that relates the various food preparations and local recipes to consumption at specific ages and in different physiological states.

11. **R. C. Israel and J. P. N. Tighe** in their review and analysis of the Literature of 96-page annotated bibliography with a 5l/2-page introduction. It is not a state-of-the-art review and analysis of the literature as claimed in the title. The annotated bibliography draws heavily on consultant reports for the AID-funded International Nutrition Communications (INCS) Project, managed by the senior author. Indexed by country and topic, it provides the UNESCO readership with a wealth of useful information that does not appear in established journals. The introduction chronicles the rapid expansion in the concept of nutrition education in recent years to encompass all aspects of social marketing. Technically rigorous communications and marketing approaches have yielded significant improvements in dietary practices and in nutritional status and have elevated nutrition education/communications to the status of an intervention that attracts multi-million-dollar investments. Israel's claim that more resources have been allocated to combat the problems of under nutrition in developing countries than to prevent over nutrition in industrialized countries is incorrect. This document makes reference to most of the recent, innovative developing-country projects.

12. **B. L. Amla and V. H. Potty** in their research paper Development of energy-saving technologies for the food processing industry, as pointed out awareness of the importance of energy saving in manufacturing processes was kindled only when fossil fuels registered dramatic price increases in 1973. These increases led to evolving strategies to conserve energy resources, especially exhaustible sources, by reducing their consumption and developing renewable sources of energy. To achieve any significant savings in energy consumption in manufacturing processes, the food industry must reliably assess energy
consumption at each unit operation. Estimation of gross energy requirement can be used for deciding on technology options. Two approaches for achieving significant savings in energy consumption in the food industry could be: (a) improving the efficiency of each unit operation by design improvement; (b) developing new processes or products that consume less energy than traditional processes. The latter approach may be suitable for developing countries like India, which is promoting its processed food industry on a priority basis. A few technologies that require considerably less energy to process products developed in India are highlighted in this paper.

13. Narendra Shah, CTARA* & K V Venkatesh in their paper Opportunities for the Food Processing Industry in India has expressed that in India agricultural and dairy sectors have achieved remarkable successes over the last three and a half decades. Besides being one of the world's largest producers of food-grains, India ranks second in the world in the production of fruits and vegetables and first in milk production—providing much needed food security to the nation. The accomplishments of the green and white revolutions have, however, not been matched by concurrent developments in supply chain management, and in new technologies for better processing, preservation, and storage of food. Pockets of shortages and near starvation, substantial wastages due to spoilage, quality deficiencies, and inadequate returns to the farmer are still very much in evidence.

14. M.S. Gupta in his comparative study of International Food Legislation and Practices has expressed his views as Food Processing Industry is widely recognized as a 'sunrise industry' in India having huge potential for uplifting agricultural economy, creation of large scale processed food manufacturing and food chain facilities, and the resultant generation of employment and export earnings. India has enormous growth potential from its current status of being the world's second largest food producer to be the world's number one producer. However, there are several bottlenecks that need to be overcome for achieving such position. Part of the problems, arises from India's multiple food laws and their complicated administration structure making adherence difficult.

15. Satish Chacker and KK Juneja has given their review on Food Standards, Implementation and Quality Control as food is one of the essentials for maintenance of life and is embedded in cultural and social habits of people. It is very important that the food available is safe/hygiene, wholesome with right nutritional content, free from infection/bacterial contamination, intoxication, contamination and adulteration. Changes have been brought about habits—resulting due to developments in technology and for socio economic reasons; food is in increasing demand for a range of food products. Therefore Food Regulations and standards have become a sensitive subject and the regulation of the quality of the food products the object of an increasing public interest. Quality is being the first consideration for the Consumer acceptance, which in turn is linked with recognised national and international standards, reflecting the national and international markets which are essential for the manufacturer to be able to design, produce and market products embracing the Consumer's needs of quality features and using up to date technologies. Compliance with
these standards is ensured through the use of regulatory standards and quality assurance systems.

16. Rajat K. Baisya in his article on Nutrition Labeling of Foods highlights on how consumers are exposed to a whole range of processed foods everyday. Those who do not want the inconvenience of preparing their own meals are willing to pay a premium for foods perceived to be of high quality and standard. One of their main bases of comparison is the information on the labels of these items. But our foods regulations in India are not elaborate and stringent enough to make it mandatory for the manufacturers to declare relevant information on the label to guide purchase decisions of the consumers. In India food labeling standard is still in its infancy and only provide very limited information towards product quality, safety and wholesomeness. Only recently a very select category of foods like baby foods and fruit and vegetable products have been taken up for deciding about the Environment Friendly Labelling Standards at the initiative of the Ministry of Environment and Forest and I have represented Confederation of Indian Industry (CII) in that Committee. But that is a voluntary standard and I have immense doubt whether there will be any taken for that in the Industry. It would be a great service if the food labelling is made compulsory to incorporate nutritional and other quality details of the product so that consumers are not taken for a ride.

17. The study carried out by S. Mahendra Dev and N. Chandrasekhar Rao of the Centre for Economic and Social Studies (CESS) for the International Food Policy Research Institute (IFPRI) and the State Government, pointed to the high price elasticity of consumers, low capacity utilisation, lack of insurance facilities, lack of pre-cooling units, roads, extension services, quality testing facilities, brand development and low per capita production. On the positive side, the study cited as strengths of the State, high production of raw material, cheap labour, large domestic market base, trained manpower and a network of research institutions. Dr. Dev presented the details of the study, "Agro-processing in Andhra Pradesh: Opportunities and Challenges", at a seminar on "Agricultural exports and food processing", organised by IFPRI at the Acharya N.G. Ranga Agricultural University. The study made a series of policy recommendations. It suggested bringing all food processing industries under an independent Ministry and creation of a separate department at the State level. It recommended encouragement to contract farming in fruits, vegetables, poultry, feed crops like maize, soybean, organic rice and other products and large players in these fields attracted to set up units.

18. Indrajeet Chatterjee in his complied report on ‘Food processing industry has bright prospects in India’ on the world wide web has anticipated that the Indian food processing industry is expected to touch Rs 5,00,000 crore as more and more opportunities begin to emerge in the sector. According to the report the government initiatives in the area will determine the pace of growth. “The government has to ensure level playing field by rationalising tax structure, allowing equal assess to farm produce and introduce integrated food law. It should ensure that key enablers are in place and also play a facilitator role to the industry,” the report suggests. The CII-Mckinsey report has identified five key opportunities emerging in the Indian food market requiring
targeted strategies with strong focus on achieving the right balance of efficiency and innovation. According to the report, mass-market basic foods will continue to be the largest area and will require companies to ensure distinctive efficiency across their business system to reduce inefficiencies and compete with the low-cost unorganised sector. A mass-market value-added food opportunity is beginning to emerge in products like rotis, ready-to-cook/eat products and condiments. Given their mass consumption nature, product innovation needs to be backed by a highly efficient business system to succeed, the report says. Niche market opportunities in more exotic product categories will continue to exist and provide reasonable profitability, but will require tailoring of the product mix to local tastes to gain acceptance. Exports of food products can become a valuable growth driver for the industry, leveraging the historic base, new specialty categories and other areas where India can build a distinctive advantage and a strong brand. There will also be a significant growth in terms of input providers, logistics suppliers and retail, the report says. It says Indian companies need to focus their efforts on creating market driven linkages across the entire chain, develop innovative products and low-cost business system.

19. According to a recent report "Indian Food and Beverages Forecast (2007-2011)" published by RNCOS, India’s food-processing sector has undergone significant changes over the last six to seven years (2001-2006). The types, variety, quality, and presentation of products have all improved, mainly as a result of economic liberalization. The report augurs that the Indian food processing industry would witness a CAGR growth of 15% for the period spanning from 2007 to 2011. Many countries are increasingly eying upon India for food. Recently, India has determined to export 6000 Metric Tons of rice to Sri Lanka. Even multinational companies are banking on India to meet global food needs today. Corporations and large investors, both domestic and global, are cashing in on India’s agribusiness as a promising market with dual prospects - to provide for the swelling Indian middle-class and export-oriented premium quality processed food. Various measures like food parks, government subsidies, tax breaks, public-private partnerships in investment, increased FDI, modern retail structure, and strengthening supply-chain infrastructure, along with worldwide road shows have thrust the industry’s growth.

20. In their analysis of Opportunities for the Food Processing Industry in India Narendra Shah, & K V Venkatesh, has anticipated that the increased urbanization, improved standards of living, and the convenience needs of dual income families point to major market potentialities in the food processing and marketing sectors. This is also evident from the presence of several global foods giants and leading Indian industrial enterprises in the country's food processing sector, such as: Nestle India Ltd, Cadbury's India Ltd, Kelloggs India, Hindustan Lever Ltd, ITC-Agro, Godrej Foods and MTR Foods Ltd. Besides, in the current globalized milieu, our surplus food production, as well as the increasing preference for Indian foods (in several regions of the world) need to be leveraged to achieve economic, and strategic objectives through exports. The Food and Agriculture Integrated Development Action (FAIDA) report (1997) prepared by McKinsey has estimated that, driven by changing
consumer preferences, the annual consumption of 'value-added' foods alone would grow to Rs.225, 000 crores by 2007?larger than the entire manufacturing sector! A more recent report has stated an absolute revenue increase of Rs. 900 billion in food manufacturing between 1993 and 2000. This is in contrast with Rs. 150 billion and Rs. 300 billion in the pharmaceutical and IT industries, respectively. Overall, the value of the Indian food industry has increased from Rs. 3.09 trillion in 1993-94 to Rs. 3.99 trillion in 2000-01. The segments with the largest growth potential have been identified as dairy, wheat, fruits and vegetables, and poultry. This report has also identified some of the major challenges for the emerging food industry in India

21. Westby. A. and Gallat. S, in their article ‘Inflation will have impact on food industry as well’ has studied the effect of inflation on food processing industry. Inflation is now well above 8 percent. Basic food items are much costlier now. Government actions to stop steel export and tightening the money supply has not yet made any impact in the reduction of inflation rate. Although finance ministry and planning commission is still hopeful that the inflation rate will soon come down but market is yet to see any impact of the initiatives taken so far. There will be thus direct and indirect impact of the rising inflation rate on the performance of the processed food industry as well. Let us examine the kind of impact inflation can have on our processed food industry.

Firstly, the rise in input cost will increase the cost of production and entire escalation in cost cannot be passed on to the consumers resulting in lower profitability of processors. The lower profit will force the manufacturers to cut down on other costs such as R&D, advertisement and promotion as well as the manpower cost.

Secondly, manufacturers will not be able to absorb entire cost escalation and therefore will resort to price increase which will reduce the demand for the products. As processed food products do not fall under essential goods and therefore consumers will use discretion to spend in this product category. Thirdly, consumers in general, will have less cash surplus (disposable income) to indulge in buying products, which are sometimes impulse purchase. Middle class population that constitutes the large part of the market will resort to drastic reduction in budgetary allocation for purchase of processed food products.

Fourthly, the rise in prices has also resulted into short supply of the basic agricultural input. This is also partly the result of low growth in agricultural sector. The manufacturers will have difficulty to get the regular supply of the basic agro commodities of uniform quality and price resulting into fluctuating manufacturing programme in the process plant or the fluctuating cost of production which makes the supply chain management issues more complex.

Fifthly, the rising cost of production will impact the exporters of processed food products. Those who are highly dependent on the export sales or those
who are in the international trade of processed food are already passing through difficult phase as rupee started becoming stronger in relation to dollar.

_Sixthly_, as we all know that processed food industry is consisting of mainly small and medium players. The large and established players are very few. Although small players have more flexibility they cannot have capacity to absorb shock and thus have less staying power which large players have.

Thus the ripple effect of inflation in the entire business of processed food. Of course, some of these observations will be true for other categories as well but processed food industry is going to experience direct impact, which others are not possibly experience.

22. **Raghu-Raman, S.V,** ‘Retail Revolution is Finally Arrived: Impacting Our Food Industry’ Wal-Mart, the world’s number one company in the fortune 500 list has finally firmed up a plan to enter India through a 50 : 50 joint venture with Bharti Telecom. Bharti Group had been discussing their retail business with the Tesco for quite sometime and it was reported earlier that they are going together. Only recently Bharti has withdrawn from that discussion and the very next day announced the formation of JV with Wal-Mart. This only indicates that the discussion continued by Bharti parallely with both Tesco and Wal-Mart and finally the decision was taken in favour of Wal-Mart who were very actively scouting around for the joint venture partner in India and the choice was for the large all India group with significant presence. Reliance could have been the other choice for Wal-Mart along with some of the big groups like Raheja Construction including the existing players in retail domain like Shopper Stop, Pantaloon etc. Even the domestic group like Godrej was also named as prospective partners for Wal-Mart. Finally the issues are resolved and Bharti-Wal-Mart joint venture is formed. Mr. Sunil Mittal of Bharti gave the press statement that it is not necessarily the joint venture of equal equity participation but a joint venture of two equals. The real term retail revolution therefore is about to begin in India and that will impact the prospects of our processed food industry.

23. **Graffham, A.J** Some New Food Ventures Enchasing on Huge Opportunity from Global Retail Giant Many local food ventures collapsed because they could not create sufficient local demand to support the investment. These units struggled for existence and survived at subsistence level or even ended up in closure. We have cited many such examples in past in the same series. Institutional funding also, as a result, got blocked creating low prospect category for investors. When domestic market was not growing, players found their fate got sealed as no one ever thought of building capability to market finished product in international trade. The lifting of the trade barrier and related force of globalization have definitely opened up new horizon for some of these capable food ventures. These new generation food processing food-processing industries have been able to create some success stories which stories that others should try to emulate. They have been able to see new market opportunities beyond the geographical boundaries of our country and were able to make their products acceptable in global market. The volume of
business is so high that over fifty percent of the capacity is utilized by one retail chain. That has made their task of marketing much easier and they can now focus and concentrate on improving technology, cost and quality and at the same time will have time and resources to gradually build the domestic market over a longer period of time. And this is what exactly they are doing. We will discuss the cases of a few such ventures.

24. Shegaonkar. V, in his article ‘Health foods are getting more focus’ explains how Heath Foods, dietary supplements and nutraceuticals are increasingly gaining grounds and the category is growing fast. Even in the regular category, marketers are increasingly focusing on communicating the nutrition and health aspects of the product more than the associated fun and convenience that goes with the consumption of any processed food. This trend is now more visible and as younger generation has become more health conscious marketers are trying to focus on this attribute. As safety, health and nutrition become more important and the regulatory mechanism has become more stringent the nutritional quality assumes significance. There is a distinct shift from consumption of so called junk foods to health foods.

25. Saxena, S., Thangaraj, G.S has focused their attention on’ Acquisition of Domestic Food Business by MNCs’. Liberalisation has brought in through the entry of large multinational and transnational corporations, foreign investment in this sector. This resulted in competition, technological upgradation and market expansion. In the face of the competition, domestic Industries are gradually losing market share and thus selling their businesses to the new entrant MNCs well before the value of the brand and businesses drops further due to ongoing onslaught of multinational brands. This is happening because MNCs have much greater resources to put behind their brand and business and also have long term vision and sustainability. Domestic industries are no comparison.

26. David Feder, Managing Editor FoodProcessing.com in his online article ‘The 6 top trends in food processing’ has discussed the following six trends in the food processing industry. 1. Organic = healthy---That equation is not necessarily true, but the message is so ingrained in the minds of millions of consumers that the math cannot be ignored. 2. Get well soon ---The twin epidemics of obesity and diabetes dominate the health and wellness category. No day passes without the mention of one, the other or both on television, radio or in newspapers. But in general, between one-fourth and one-third of consumers make food choices based on health for some reason. 3. Age awareness--Health is still the biggest part of the aging trend. For every age group there’s a health concern some processor is targeting. Attention is split mostly among concerns of children, teens and seniors. 4. Eat global, buy local---New findings in a joint study by Mintel and the National Assn. of the Specialty Food Trade, New York, show specialty food “continues to show strong mainstream movement,” and it singles out ethnic influences as part of the growth surge in the $35 billion product niche. 5. Control yourself---We’re controlling portions not just for health but convenience. As a trend, convenience has been high on the list of movements to follow for years. But the two aspects merged in 2004 when Kraft Foods Inc.’s Nabisco brand launched 100-Calorie Packs of some of its most popular cookies and crackers. 6. Make room kosher, halal is here---Kosher broke away from ethnic as a
trend of its own with the first wave of fear over mad cow disease. Halal certification, the Muslim equivalent of kosher, is finally grabbing at the same brass ring.

27. Premkumar.T, in his paper ‘FOOD AND DRUG INDUSTRY IN INDIA "AN OVERVIEW". This paper discusses the present Government policy, regulatory and business trends in food and pharmaceuticals Industry in India. These sectors of industry provide multifarious opportunities to potential investors in this Sector, both domestic and foreign. As several policy initiatives are undertaken by the Government of India since liberalization in August 1991, the industry sectors have witnessed unprecedented growth in most of the segments

28. C. Balagopalan. Nayar, ‘Food processing industries in India-Regulatory Framework’. Different laws govern the food processing sector in India. The prevailing laws and standards adopted by the Government to verify the quality of food and drugs is one of the best in the world. Multiple laws/regulations prescribe varied standards regarding food additives, contaminants, food colours, preservatives and labelling. In order to rationalize the multiplicity of food laws, a Group of Ministers (hereinafter referred as “GoM”) was recently set up to suggest legislative and other changes to formulate a modern, integrated food law, which will be a single reference point in relation to the regulation of food products. The food laws in India are enforced by the Director General of Health Services, Ministry of Health and Family Welfare, Government of India.

29. Despite 6.2 percent growth, India’s agro industry lags behind, as Rajeev Ranjan Roy express his views on India’s agro-industry has miles to go before it catches up with the rest of the world. Its share in the agro-products of developing countries has gone up only marginally from 3.1 percent in 1995 to 3.8 percent in 2005, despite growing at 6.2 percent in the 10-year period. China tops the list by accounting for 26.5 percent of the total agro-products in developing countries, says the UN Industrial Development Organisation (Unido) International Yearbook of Industrial Statistics 2007. “Malaysia’s and India’s agro-industry grew on average by 8 and 6.2 percent respectively over 10 years (1995-2005), while the regional agro-industry growth performed at 5.7 percent,” the report states. India’s agro-industry employment share, says the Unido report, in total manufacturing formal employment is only 1.2 percent, while it is 9.5 percent in the Philippines, 8.8 percent in Malaysia and 7.6 percent in China. “There is tremendous potential in India for the growth of the agro-industry. It is happening in other countries, but not in India. What is needed is proper coordination with farmers, and adequate processing infrastructure for agro-products,”

30. Satish Y. Deodhar in paper Motivation For and Cost of HACCP in Indian Food Processing Industry is of view that to remain quality competitive in the post-WTO regime, Indian food processing firms would have to adopt a food safety management system - Hazard Analysis and Critical Control Points (HACCP). It is necessary to understand, therefore, in what way the system benefits firms, and, what are the costs of HACCP implementation. This paper does that. Data on reasons for and cost of HACCP implementation was generated through questionnaire survey of food processing firms. Analysis was performed using factor analysis, contingency tables and chi-square tests.
While quality and production related factors motivate firms to employ HACCP, trade associations are not at all instrumental in promoting the system. Set-up cost and operating cost vary with the type of food sub-sector and the size of firm. Government and trade associations may facilitate sector specific concessional loans for HACCP implementation and initiate training programmes. Economies of scale are important in HACCP adoption; hence Indian firms may want to go for horizontal and/or vertical integration.

31. Marvin T. Batte, Jeremy Beaverson and Neal Hooker in their research work *Organic Food Labels: A Customer Intercept Survey of Central Ohio Food Shoppers* presents a report of a customer intercept survey of customers in six central Ohio grocery stores; two suburban, two inner-city and two rural. The survey addressed customer awareness of the USDA National Organic Program (NOP), particularly for processed foods. Also studied were customer willingness to pay for alternative levels of organic content in breakfast cereals, customer purchase patterns for organic foods, and their opinions about the benefits of organic and other food characteristics. Forty-two percent of those surveyed reported purchases of organic foods, the majority purchasing at least twice monthly. Consumers indicated a willingness to pay higher prices for processed foods with organic content. This willingness to pay varied with income and demographic characteristics of the households. Differences were also observed by store location.

32. Madan Lal in his article ‘Food Processing Industry poised for growth’ expressed that the Food Processing Industry in India is one of the largest in terms of production, consumption, export and growth prospects. Important sub-sectors in food processing industries are: Fruit and Vegetable Processing, Fish Processing, Milk Processing, Meat and Poultry Processing, packaged/Convenience Foods, Alcoholic Beverages and Soft drinks and Grain Processing, etc. As a result of several policy initiatives undertaken since liberalization in July 1991, the industry has witnessed fast growth in most of the segments. As per a recent study on the food processing sector, the turnover of the total food market is approximately Rs.250,000 crore (US$69.4 billion) out of which value-added food products comprise Rs.80,000 crore (US$22.2 billion). Primary food processing is a major industry with lakhs of rice-mills/hullers, flour mills, pulse mills and oil-seed mills. There are several thousands of bakeries, traditional food units and fruit/veg./spice processing units in unorganized sector. In the organized sector, there are over 820 flour mills, 418 fish processing units, 5,198 fruit/vegetables processing units, 171 meat processing units.

33. Dr. R.P. Das** and Mr. Vikas Nath in their research paper on ‘Environmental marketing with special reference to fast food industry in India’ As concern grows for maintaining and improving quality of environment and protecting human health, organizations of all sizes are turning their attention to potential impacts of their activities, products and services on environment. The environmental performance of any organization is of increasing importance and achieving sound environment requires organizational commitment to a systematic approach and continuous improvement. Food has a very wide meaning but it can be summed up as any plant or animal material, which can be consumed for nutrition and sustenance. Human beings have always recognized that preservation of food and
processing of food is of central concern. Food processing industry is of enormous significance for India’s development because of vital links it provides between the two strong pillars of our economy viz. industry and agriculture. It is in this context that Govt. of India (GOI) has given utmost priority to develop the food-processing sector. The entire sector has been deregulated and no license is required except in the case of alcoholic beverages. Automatic approval for foreign investment up to 51% is allowed. Even where investment is more than 51%, approval is given on a case to case basis by the Foreign Investment Promotion Board (FIPB).

34. Harish Yadav in his online article ‘Dirty secrets of the food processing industry’ has criticized the way food is processed. We have always processed our food; that is something that humans do. We cook our food - that is one type of processing. Processing has two functions: to make food more digestible and to preserve food during times when it isn't readily available. This type of processing produced traditional foods like sausage and the old-fashioned puddings and haggis. It includes bread, grain products, cheeses, milk products, pickles, butter, everything from wine and spirits to lacto-fermented beverages. Farmers and artisans like bread makers, cheese makers, distillers, millers and so forth processed this food. This type of processing made delicious foods, retained their nutritional content, and kept the profits on the farm and in the farming communities where it belonged. Food processing should be a cottage industry and produced locally. Unfortunately, in modern times we have gone from local artesian processing to factory and industrial processing which actually destroys the food rather than making it more digestible as traditional processing did. Industrial processing depends upon sugar, white flour, processed and hydrogenated oils, additives, synthetic vitamins and an extrusion processing of grains. These are the tools of the food processing industry. Let's have a look at the typical American breakfast of cereal, skim milk and orange juice. These cereals are produced by a process called extrusion. They take the grains from the farmer, pay them a pittance for them, make the grains into slurry and put them in a tank, a machine called an extruder. The grains are forced out of a little hole at high temperature and pressure and shaped into little o's and flakes and shredded wheat and so forth, or puffed up. A blade slices off each little flake which is carried past a nozzle and sprayed with a coating of oil and sugar to seal off the cereal from the ravages of milk and to give it crunch. Paul Stitt has written about the extrusion process used for these cereals which treats every grain with very high heat and high pressure and destroys much of the nutrients in the grains. It destroys the fatty acids; it even destroys the chemical vitamins that are added. The amino acids are rendered very toxic by this process. The amino acid lysine, a crucial nutrient, is especially ravaged by extrusion. This is how all the boxed cereals are made, even the ones in the health food stores. They are all made in the same way and mostly in the same factories. All dry cereals that come in boxes are extruded cereals. The only advances made in the extrusion process are those which will cut cost regardless of how these will alter the nutrient content of the product. Cereals are a multi-billion dollar business which has created huge fortunes. You would think there would be some studies on the effect on man or animals. There are no published studies and there are only two unpublished studies which were done on rats.
35. **Dr. A. Sivakumar** highlights the types of food additives and their increasing significance in the food processing industry. Any substance added to food that changes its characteristics is called ‘food additive’. These are used in the production, processing, treatment, packaging, transportation or storage of food. Additives may be direct or indirect. Ethical food manufacturers use food additives that are generally recognised as safe. Like all scientific inventions, food additives have both the positive and negative aspects. While they serve useful purpose in efficient utilisation of food resources, they could be a health hazard if used indiscriminately. Consumers must be educated and be vigilant about the use of additives and the marketers of food products must be ethical in the use of the same. Likewise, transparency through mandatory regulation as well as voluntary disclose would help further the cause of additives.

36. **Jagdeep Kapoor** explains in his article why the Samsika ‘ATA’ module is a strategic weapon for brand marketing. One of the fastest growing industries in the world is the food processing industry. In any continent or country, this sector has shown growth by leaps and bounds. However, while this industry offers tremendous potential, it has also witnessed the largest numbers of failures. There is a special Samsika food brand marketing module called the Samsika ‘ATA’ module. ATA stands for focus on Availability, Taste and Affordability. ‘Availability’ not only in terms of width of distribution, but also in terms of quality, availability and visibility. ‘Taste’, including regional presences and changing likes and dislikes. The intangibles in the taste factor also need to be considered because Indians are people with a fine taste. Finally for ‘Affordability, wherein a choice needs to be given to consumers across size, price and range so that not only width and consumption, but also depth and frequency of consumption go up. In the food processing industry, it becomes extremely important to first make a need assessment and understand the habits of the Indian consumer.

37. **Francis Stalder** in his article gets into the specifics of cold chain monitoring, as she explains its significance for the growth of Indian food processing industry. India holds the second largest arable surface in the world and various agro-climatic zones. It has tremendous production advantages in the agriculture, with the potential to cultivate a vast range of agricultural products. Because of its strong base in agriculture, it provides a large and varied raw material base food processing. However, processing levels are low in the country. And as a consumer, India, with a population of 1.08 billion, is a large and growing market for the food products. Cold chain visibility solutions streamline the quality maintenance process and its cost provide pinpoint accuracy when determining acceptable product freshness guidelines and produce a return on investment in both increased revenues and customer loyalty.

38. **D.M. More** in his article on processing the jamun and Karonda for beverages has put forward some strategies for the food processing units which are engaged in manufacturing beverages from jamun and Karonda. He has carried out the detailed study on effect of different process on percent juice recovery, chemical composition and sensory qualities of unfermented beverages prepared from ripe jamun and karonda fruits.

39. **Dada Dongare**, in his experimental study has investigated the physico-chemical composition of fruits, their storage behaviour under different storage
conditions as well as preparation of value added products from firmflesh and softflesh types of fruits and their wastes. Also their storage at ambient conditions were studied.

40. Dr. Vijay Mehta, in his article Konkan agro development vision 2020, has revealed the current agricultural development in Konkan region. In this article the researcher has studied various challenges faced by different entities in the food processing industries, right from the agriculture activities to providing the finished processed food to the consumer.

2.3 SUMMARY

Even though there has been lot of work on management practices to increase the efficiency and utilize it in food processing industry. While every one seems to accept this fact, there is equality in studies of these practices and policies. But form review of relevant literature it is clear that the studies are piecemeal in nature. There is no more work on an food processing industries in Konkan region, so to fill in the gap the researcher has adopted a holistic approach. Hence, the present research endeavor is an attempt to fill in this gap.
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32. Madanlal, Faculty Member, Indian Institute of Foreign Trade, science tech entrepreneur, Food Processing Industry poised for growth October 2007 New Delhi

33. Dr. R.P. Das** and Mr. Vikas Nath ENVIRONMENTAL MARKETING WITH SPECIAL REFERENCE TO FAST FOOD INDUSTRY IN INDIA, Research paper presented at Pt. Jawahar Lal Nehru Institute of Business Management.


