CHAPTER 1

INTRODUCTION AND RESEARCH METHODOLOGY
# CHAPTER 1
## INTRODUCTION AND RESEARCH METHODOLOGY

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CHAPTER 1
INTRODUCTION AND RESEARCH METHODOLOGY

1.1 Introduction:

Food processing industry across the world as well in India is a sunrise sector that has gained prominence because of its large potential for growth and socio-economic impact in recent years. Its comprises a large spectrum of industrial units are producing foods and cereal based products, marine products, vegetables based products, meat and meat based products, etc. Changing lifestyles, appropriate fiscal policies, availability of raw materials, well developed distribution network, huge scientific and research talent pool, increased literacy and rapid urbanization has given a considerable support to the industry’s growth. It not only leads to reduction of wastage but also helps in value addition, income generation, promotes crop diversification and enhancing manufacturing competitiveness, foreign exchange earnings and generating employment especially in rural areas. This sector serves as a vital link between the industrial and agriculture segments of the economy.

The food processing industry is one of the biggest industries in India and ranks 5th in terms of consumption, production and exports. In FY2015-2016, food processing industry constituted 14 percent to India’s GDP through manufacturing. India is the world’s 2nd largest producer of fruits and vegetables. In 2015-2016, the total production in horticulture sector (fruits and vegetables) is estimated at 282.5 million tonnes. The government expects the processing in this sector to grow by 25 per cent of the total produce by 2025. India is the largest producer of buffalo meat (1.4 MT in 2015) and the second largest producer of goat meat (0.91 MT in 2015). India is the largest producer of milk in the world, with the production estimated at 146.3 million tonnes in FY 2015-2016. India is third largest producer of broiler meat (4.2 million tonnes in 2016) also the second largest egg producer (78.4 billion) and globally total fish production in India is estimated at 13.0 MT during 2015-2016. Andhra Pradesh stood as the largest producer of fish with production of 741.3 Thousand Tonnes during 2015-2016 (upto June 2015) India produces more than 200 million tonnes of different food grains every year. Total food grains production
reached 270.10 MT in FY2015-2016. During FY 2011-2016 , India's exports of processed food and related products (inclusive of animal products) grew at a CAGR of 11.74 per cent, reaching USD 16.2 billion Main export places for food products have been the Southeast Asia and Middle East In FY 2016-2017, India’s exports stood at USD 1.3 billion. (IBEF 2017)

India ranks second in terms of total food production globally, after China. The industry has registered a growth of 7.1% during 2013-14, much higher than the growth in agriculture sector and at par with the manufacturing sector. The food processing sector ranks first in terms of number of factories in operation & employment and third in terms of output. Strategic geographic location and proximity to food-importing nations makes India favourable for the export of processed foods. India witnesses nearly 4.6-15.9% wastage in vegetables and fruits annually, due to lack of cold chain infrastructure and latest harvesting technologies. Moreover, the processing levels in vegetables and fruits currently stand at close to 2%. (MoFPI 2015).

The food industry, which was valued at USD 39.71 billion in 2013, is expected to grow at a Compounded Annual Growth Rate (CAGR) of 11 percent to USD 65.4 billion by 2018. The Indian food and grocery market is the world’s sixth largest, with retail contributing 70 percent of the sales. Food has also been one of the largest segments in India's retail sector, which was valued at USD 490 billion in 2013. The Indian food retail market is expected to reach USD 894.98 billion by 2020. Similarly, the online food ordering business in India is in its nascent stage, but witnessing exponential growth. The organized food business in India, which is worth USD 48 billion, of which food delivery is valued at USD 15 billion, has a huge potential.(DIPP 2016)

Food processing industry in India is seen as a possible source of developing the rural economy as it brings about linkage between the consumer, agriculture and industry. In order to exploit and facilitate the growth potential of the sector, the government on its part has initiated extensive reforms. Some of the key measures undertaken by the Government include: rationalization of food laws, implementation of the National Horticulture mission, amendment of the Agriculture Produce Marketing Committee Act etc.
The government has also outlined a plan to address the low scale of processing activity in the country by setting up the mega food parks, with integrated facilities for processing, storage and transport, procurement. To promote private sector activity and invite foreign investments in the sector the Government allows 100% FDI in the food processing & cold chain infrastructure. The recent budget has announced several policy measures, especially for the cold chain infrastructure, to encourage private sector activity across the entire value chain.

However, despite of continual efforts and initiatives of the Government to provide the required stimulus to the sector, processing activity is still at a nascent stage in India with low penetration. At the same time, though India is a key producer of food products, having an adequate production base for inputs, productivity levels are very low in the country. While India remains a top producer of food, production yield levels are among the lowest amongst the BRIC countries. Also, the Indian export market, at USD 13.7 billion, has a share of only 1.4% of the world food trade. (FICCI 2010)

It may be noted that recent trends in the development of agro-based processing industries has enhanced technological complexities, attracted higher capital investments and managerial requirements. The degree of processing has been considerably modernized and intensified by the growth of processed food industry which is based on mixing, cooking and chemical alteration producing a textured vegetable food. By-product processing of major agriculture commodities has opened up the vast potential of agro industrial growth in the rural India in recent years.

A majority of the medium and large scale food processing units are milk & dairy units, sugar mills, roller flour mills and vegetable oil seed processing units. At present there are very few units both in medium and large sectors as well as in small sector producing fabricated and high term foods in the state sophisticated. It is also reported that lack of infrastructural facilities for storage and distribution of both raw and processed food, absence of scientific handling is resulting in wastages of foods at every stage. (FAO, 2010).
1.2 Statement of the Problem:

Food processing Industry providing important bridge between the two pillars of our economy – agriculture and manufacturing. The Food Processing industry in India is undergoing a significant transformation. The population growth has emphasized the need for increasing food production, preservation and processing. There is no refuse to agree that the idea of processed foods has created trend for the customers in the recent years. This is mainly due to the reason that they provide enhanced variety, convenience, taste and nutrition. Food processing plays an important role in the effective utilisation and conservation of available food supply. On the one hand they have bright future in the light of increasing trend of demand and sale of food products in foreign and Indian market. On the other hand being most of these units are in the form of MSMEs, they have number of problems at grass root level. It inspires us to conduct the present study. The present study is entitled as, “A STUDY OF FEASIBILITY PROSPECTS AND PROBLEMS OF FOOD PROCESSING INDUSTRY IN WESTERN MAHARASHTRA.” The study attempts to examine the problems related to functional areas of industries i.e. like finance, production, marketing and human resources especially constrains in access to credit facility, unavailability of raw material, availability of skilled and unskilled labours, inadequate infrastructure, problems relating to marketing etc. marketing management and Financial management of such food processing units are the burning issues in this context.

1.3 Significance of the Study:

Food processing industry has high significance in human life and its evolution and the food processing is mostly depends on agriculture sector. The present research study covers one of the important issues which affect various segments and sectors of the economy. It is helpful to enterprises to conduct the day-to-day activity of management. It would help to the entrepreneurs in proper way for solving their general and specific problems, to manage their business. The present study will provide policy prescription and suggestion to the government to improve the support to such enterprises.
1.4 Assumptions:

1. It is assumed that the market potential in food processing industry growing at high rate.

2. There is high economic feasibility for development for food processing industry in Western Maharashtra.

3. The food processing industry in Western Maharashtra is presently facing economical and commercial problems.

4. The prevailing performance of food processing industry not up to the mark.

1.5 Objectives of the Study:

1. To analyze the economical feasibility of food processing industry in Western Maharashtra.

2. To evaluate performance of food processing industry on selected economic parameter.

3. To analyze the market potential to develop food processing industry in Western Maharashtra.

4. To identify various economical problems face by food processing industry in Western Maharashtra.

5. To suggest the measure to improve the status of food processing industry in Western Maharashtra.

1.6 Justification of the Objectives:

1. To analyze the economical feasibility of food processing industry in Western Maharashtra.

   To determine whether or not a selected food processing industry in Western Maharashtra is able to development of value-added in food processing.
2. **To evaluate performance of food processing industry on selected economic parameter.**

   Evaluating performance of sample food processing industry with the selected economic parameter like Sales, Revenue, wages, Financial Turnover, Production Level etc.

3. **To analyze the market potential to develop food processing industry in Western Maharashtra.**

   Identify the potential of the sample food processing industry having increasing trend or decreasing trend in demand and sales to further development of food processing industry in Western Maharashtra.

4. **To identify various economical problems face by food processing industry in Western Maharashtra.**

   Identify various economical problems like capital, wage rate, transport cost, revenue etc. of sample food processing industry in Western Maharashtra which create obstacle to development of food processing industry.

5. **To suggest the measure to improve the status of food processing industry in Western Maharashtra.**

1.7 **Hypotheses of the Study:**

The research study is conducted with the following hypotheses:

H1: It is presume that high market potential and economical feasibility in food processing industry of Western Maharashtra.

H2: The food processing industry in Western Maharashtra is not performing up to the mark due to improper demand estimation in market.
H3: The food processing industry needs pragmatic impetus for healthy Development.

1.8 Working Definitions of Terms Used:

Following are some operational concepts used in the study:

1. Feasibility Study

A project feasibility study is a comprehensive report that examines in detail the five frames of analysis of a given project. It also takes into consideration its four Ps, its risks and POVs, and its constraints (calendar, costs, and norms of quality). The goal is to determine whether the project should go ahead, be redesigned, or else abandoned altogether.

The five frames of analysis are: The frame of definition; the frame of contextual risks; the frame of potentiality; the parametric frame; the frame of dominant and contingency strategies.

The four Ps are traditionally defined as Plan, Processes, People, and Power. The risks are considered to be external to the project (e.g., weather conditions) and are divided in eight categories: (Plan) financial and organizational (e.g., government structure for a private project); (Processes) environmental and technological; (People) marketing and socio-cultural; and (Power) legal and political. POVs are Points of Vulnerability: they differ from risks in the sense that they are internal to the project and can be controlled or else eliminated.

The constraints are the standard constraints of calendar, costs and norms of quality that can each be objectively determined and measured along the entire project lifecycle. Depending on projects, portions of the study may suffice to produce a feasibility study; smaller projects, for example, may not require an exhaustive environmental assessment (Wikipedia).

A feasibility study is an analysis of how successfully a project can be completed, accounting for factors that affect it such as economic, technological, legal and scheduling factors. Project managers use feasibility
studies to determine potential positive and negative outcomes of a project before investing a considerable amount of time and money into it. (Investopedia)

2. Food Processing:
   The action of performing a series of mechanical or chemical operations on food in order to change or preserve it. (Oxford dictionaries)

   Food processing and preparation activities cover three main fields: (1) the preservation of foods by (a) modern methods such as refrigeration, canning and irradiation, and (b) traditional methods such as drying, salting, smoking and fermentation; (2) the development of protein-rich foods; (3) food additives. (FAO)

1.9 Scope of the Study:

   India is one of the largest producers of food, and has the chances to be the largest on a global food canvas and agriculture, according to a Corporate Catalyst India (CCI) survey. With the evolution of the society there has been a huge evolution of food processing globally. The food processing industry is of highly significant for India's economical development, as it has effectively and efficiently linked the nation’s economy, industry and agriculture. Development in the field of Food processing is vital for transforming the raw materials into finished products at an increased rate of production productivity, agro-processing, and at a reduced cost of production and to complete the demands as well. Maharashtra is the leading state in India as far as food processing is concerned.

   However, there are number of problems being faced by the government and the food processing sector is taking various steps to solve these challenges. Few of the steps taken include, sanctioning cold chains, allowing 100% FDI in the food processing sector, building mega parks and many more. So there is a scope to overcome challenges and use potentiality of food processing industry.

1.10 Universe and Sample Size:

1.10.1 The Universe

   The universe of the present study covers the food processing units in Western Maharashtra. The problems and prospects of these units have been analyzed and
interpreted under this study. Food processing sector includes Grain & Cereals (rice mills), Edible oil (oil mills), Spices, Fruits & vegetables, Meat & Poultries, Milk and dairy products, Fisheries & Sea foods, Consumer industry and Plantation of tea, coffee, cashew coca etc. But for the present study, (i) fruit & vegetable processing, (ii) oil mills, (iii) milk and milk product and (iv) grain processing have been covered as selected segments of the food processing industry as many studies had been previously conducted by earlier researchers on (a) sugar (b) consumer industry and (c) meat and poultry. Fisheries and sea food is the negligible segment of FPI in Western Maharashtra. So these segments have been excluded.

The Directorial of Economics and Statistics organisation of Maharashtra Government’s District and Socio-Economic Review of respective districts of Western Maharashtra has registered 561 food processing units in their respective segment in the Pune, Satara, Sangali, Kolhapur and Solapur districts

1.10.2 Selection of Sample:

The population of the food processing units are large and scattered all over the region. Therefore sample has been confined to only four categories of food processing units (see Table 1.1) and 85 units (15.15%) have been selected for the present study by stratified random sampling method.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>District</th>
<th>Type of Processing Unit</th>
<th>Total Registered Unit (Universe)</th>
<th>Sample (15%)</th>
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<tbody>
<tr>
<td>1</td>
<td>Pune</td>
<td>1. Fruits and Vegetables Processing</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Oil Processing</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Milk and Milk Products</td>
<td>60</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Grain Processing</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>149</strong></td>
<td><strong>22(14.76)</strong></td>
</tr>
<tr>
<td>-----</td>
<td>------------</td>
<td>----------------------------------</td>
<td>------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>2</td>
<td>Satara</td>
<td>27</td>
<td>13</td>
<td>33</td>
</tr>
<tr>
<td>3</td>
<td>Sangli</td>
<td>04</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>4</td>
<td>Kolhapur</td>
<td>06</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Solapur</td>
<td>05</td>
<td>74</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>561</td>
<td></td>
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Source: Compiled by Researcher on the basis of data obtained by District and Socio-Economic Review 2015
1.11 Justification of Sampling Method and Sampling Procedure:

The area consists of five districts. For selection of sample food processing industry and various segment of the industry from all the districts will be taken in to consideration.

For selection of samples Stratified Random Sampling Method will be used by the researcher. The number of food processing varies in each district so it will be hard to fix a particular number of samples for each district. So Stratified Random Sampling Method will be applied on the availability of samples.

1.12 Research Design:

‘A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure’

For conducting this research ‘Research design in case of descriptive and diagnostic research studies’ will be used.

The research design will be as follows:-

Step 1:- Analyze the research problem statement.

Step 2:- Review the literature on food processing industry in India.

Step 3:- Recognize the need of study and prepare questionnaire as per requirement of study.

Step4:- Data collection.

Step 5:- Analyse the data using various tools and techniques.

Step 6:- Test the hypothesis establishment.

Step 7:- Draw conclusions.

Step 8:- Form recommendations and suggestions for further study.

1.13 Sources of Data Collection:

There are two main sources of data collection-

- Primary data
- Secondary data
1.14 **Method of Data Collection**

For conducting the research the data will be collected in two way Primary Data and Secondary Data.

**A) Primary Data:**

For the purpose of collecting primary data, a detailed and comprehensive interview-schedule was prepared on the basis of the objectives of the study. The data have been collected by conducting survey of food processing units in Western Maharashtra.

Interview and questionnaire technique used to collect data from food processing units.

**B) Secondary Data:**

The required secondary data useful for this study have been collected sources through: (i) Annual reports and statements (ii) Books, journals, periodicals and reports (iii) Ph. D. theses etc.

1.15 **Tools of Data Analysis:**

For this study the data collected have been processed by using tools and techniques for bringing out the findings on all aspects of food processing units which influenced the development. The data have been presented by using tables, bar charts and pie charts formulated through the computer package MS Excel. The data have been analyzed by using tools such as percentage, cumulative growth index, mean, standard deviation, coefficient of variation etc. For statistical testing of hypotheses used Anova test.

1.16 **Chapter Scheme:**

The present study is divided into six chapters. The brief outline of each of the chapter is given below:

1. **Introduction and Research Methodology:**

This chapter deals with the introduction of the subject. The introduction points out meaning, concept of food processing industry. It also defines types of food processing industry. This chapter defines all relevant aspects such as approach to the problem, statement of the problem, objective
of the study, hypothesis of the study, research methodology, significance, scope and limitations of the study.

2. **Food Processing Industry at a Glance:**

   This chapter focuses on the characteristics of the food processing industry. It describes contribution in GDP, employment, production, fixed capital, world rank, state wise factories, wastage of major crops, FDI, leading producing states, export etc. of the selected categories of the food processing industry.

3. **Review of Literature:**

   This chapter deals with the review of literature about food processing industry. It includes the detailed review of various books, published articles in journals and Ph. D thesis related to the subject.

4. **Profile of Western Maharashtra:**

   This chapter deals with the profile of Western Maharashtra. It includes physical, geographical and demographic features of the districts. It includes district wise detailed information about the population, urbanisation, agricultural area of land, main occupation, rivers, major crops, status of Milk co-operatives societies, education infrastructure, industrial investment and employment status, financial institutions, number of villages etc.

5. **Problems and Prospects of Food Processing Units (Analysis and Interpretation of data)**

   In this chapter analysis of general information about selected food processing units are made with the help of location, type of organization, area, site, education, sex, age of the owner. This chapter also includes the detailed analysis of selected food processing units with following points.

   **1. Production:** In this point various aspects are analyzed such as number of finished product, source of raw material, problems of raw material, need of product development, FSAAI certification, processing techniques, sources of power/energy, power supply Problem, production difficulties, technical assistance, status of technology or machines,
machinery breakdown, product design determinants, production trend, wastage utilization plan, storage facilities etc.

2. Finance: In this point various aspects were analyzed like, financial plan, invested capital, sources of raising capital, adequacy of capital, nature of working capital, sources of working capital, procedure for smooth working cash flow, capital raising problems, computer utilization, payment method, supplier’s credit facility and period, financial turnover trend, product price determinants, grant, subsidy and incentives from government were discussed.

3. Human resource management: In this point the recruitment and selection procedure, number of employees, training and development policy, training usefulness, wages & salary determinants, basis of wages, employee discipline, participation of employees in decision making, working shifts, labour related problems were analyzed.

4. Marketing: In this point market research, distribution channel, demand estimation method, demand estimation accuracy, nature of sales, area of market, product selling trend, status of targeted sales, nature of competition, credit policy, need of advertisement and publicity, branding were analyzed.

The data collected from processing units have been analyzed and interpreted in this chapter. It also includes the testing of hypotheses.

6. Findings, Suggestions and Conclusions:

The main findings and conclusions are given in this chapter on the basis of detailed analysis and interpretation of the collected data. Some suggestions are also given for the development of food processing industry in Western Maharashtra.
References:


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4. (FICCI 2010): Bottlenecks in Indian Food Processing Industry FICCI survey on challenges in food processing sector downloaded from the website http://ficci.in/


9. FAO: http://www.fao.org/docrep/x5573E/x5573e0e.htm