

**Understanding the Growth and Prospects of  
Agro-Processing Industries in Maharashtra**

**Jayanti Kajale**

**Agro-Economic Research Centre  
Gokhale Institute of Politics and Economics**  
(Deemed to be a University under Section 3 of the UGC Act, 1956)  
**Pune 411004**

**June, 2009**

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## Foreword

Diversification of agriculture through agro processing sector and creation of non farm employment attains utmost importance in the wake of the agrarian crisis experienced by the state economy in the post 2000 period. Considering the importance of the agro-processing sector, this study titled 'Understanding the Growth and Prospects of Agro-Processing Industries in Maharashtra' was entrusted to the Agro Economic Research Centre, Gokhale Institute of Politics and Economics, Pune.

The analysis reveals that the agro processing sector in Maharashtra has a high potential for expanding. The food processing sector in the state is growing at a very fast rate. The growth of household agro processing units in the unorganized segment of the sector is a particularly significant trend. Among the non food agro processing units, leather units have registered growth in both the organized as well as the unorganized sector.

The results of the field survey conducted reveal the efficiency of investment and employment potential of the small scale food processing units that are largely operated by female workers.

Small scale agro-based industries are playing an important role in serving the market. The potential of these industries to expand can further be improved if they are provided with good quality infrastructure, information about various markets, prices, the technical know-how and various government schemes. Establishment of institutions for procuring raw material and marketing of produce will help them in taking advantage of the scale economies and getting directly in touch with the terminal market and getting a better price for their products. These are some of the policy suggestions emerging out of the study.

It is hoped that the results of the study would be useful for the researchers and the state government as well.

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Prof. Rajas Parchure  
Offg. Director

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*Introduction***1.1 Background of the Study**

The traditional development literature views the development of a two sector economy as a process of transformation leading to expansion in the size of the modern industrial sector and modernisation of the traditional agricultural sector. The process of development transfers agricultural labour to the industrial sector. The resultant increase in the productivity of the agricultural sector not only increases the demand for the industrial goods but also releases financial resources for further development of the industrial sector. The growth of each sector thus helps the other sector to survive and grow. With increasing incomes and changing pattern of demand, a sub sector within the manufacturing sector viz. the agro-processing sector has emerged and has provided the two traditional sectors a strong link for exchange of goods, raw material and labour.

Modernisation of agriculture in 1960s and 70s and the consequent rise in production made our country self sufficient as far as food grains are concerned. Food grains production increased to 217.28 million tones in 2006-07 from 82.02 million tones in 1960-61. The growth rate of agricultural production however has been fluctuating around only 2.32 percent during 1994-95 to 2007-08. Similarly, in the 1990s, agricultural sector-the largest employment providing sector exhibited a declining capacity of employment generation. It was found that the employment elasticity of agriculture which was 0.70 during 1983 and 1993-94, declined to 0.01 during 1993-94 and 1999-00 (Economic Survey of India, 2002-03). Rising costs and falling profits in the agricultural sector have forced the farmers and policy makers to think of avenues of earning income other than traditional crop production. On this background, the importance of diversification of rural economy and important role played by the agricultural and the allied sector in this case is highly recognised. Agro-based activity i.e. the agro-processing sector therefore has come to occupy an important position as the activities involved are being looked at as growth engines generating income and employment for the agricultural sector. On the other hand, with ever growing population of the country and the increasing incomes, the demand for agro based food as well as non food a product is expected to increase rapidly. At all India level, the share of agro-based industry in terms of number

of units, employment and output in the manufacturing sector is 65 percent, 63 percent and 35 percent respectively (Chadha and Sahu, 2003).

Agricultural products like crops, grains, cotton, wood and the livestock products can be consumed only after processing. Agro processing could be defined as the set of techno economic activities carried out for conservation and handling of agricultural produce and for making it usable as food, feed, fibre, fuel or industrial raw material (Kachru, 2006). Agro-processing transforms materials of plant or animal origin through altering physical and chemical characteristics and packaging. A particular produce say grain or fish can be used, as is mentioned above, as food, feed, fiber, fuel or industrial raw material after processing. Processing increases the durability and shelf life of the raw material. Processing of the primary produce thus adds value to it before it reaches its destination. One particular produce therefore can give rise to several linkage effects. The agro processing sector encompasses a range of activities heterogeneous in nature. The units in this sector can be classified as food and non food processing units. These two segments again can be divided into sub divisions.

### **The Food Processing Sector**

The food grains production has been increasing gradually and has reached a level of 217 million tones. The index numbers of production and yield of all commodities were 165.7 and 144.3 respectively in 2000-2001 and rose up to 197.1 in 183.3 respectively in 2006-07 (Economic Survey of India, 2007-08). Apart from the increase in food grains production, there has been an increase in the area under and production of commercial crops like oilseeds and the horticultural crops. India is the largest producer of tea, milk and second largest producer of rice, wheat, vegetables, sugarcane, tobacco (<http://agricoop.nic.in>). India has the largest livestock population and the production of meat, poultry and fishery based products is also increasing. With changing consumption pattern and food habits, processed food segment has also started growing rapidly.

Recognising the importance of the food processing for the country as a whole, the government set up the Ministry of Food Processing Industries, in 1988. It is the main central agency of the Government responsible for developing a strong and vibrant food processing sector; with a view to create increased job opportunities in rural areas, enable the farmers to reap benefit from modern technology, create surplus for exports and

stimulating demand for processed food. Similarly, it acts as a catalyst and facilitator for attracting domestic and foreign investments towards developing large integrated processing capacities; providing technical guidance and advice to the industry; as well as creating conducive environment for its growth (<http://mofpi.nic.in>). The food processing industry has been identified as a thrust area for development. This industry is included in the priority lending sector. Most of the food processing industries have been exempted from the provisions of industrial licensing under Industries (Development and Regulation) Act, 1951 As far as foreign investment is concerned automatic approval for even 100 percent equity is available for majority of the processed food items.

### **Non Food Processing Sector**

The agro based non food processing sector can be sub divided into heterogeneous segments like textile, wood, paper and leather based products. With increasing urbanisation, increasing incomes and spread of education, the demand for these products has been increasing. As compared to the pre-reform period, the export of processed products from these segments especially textile and leather have been increasing in the post reform period. The Economic Survey of India, 2007-08 reports impressive growth of leather, wood and textile sectors and a fluctuating growth for the paper industry during April-November 2007 (<http://indiabudget.nic.in>).

### **1.2 Need for the Present Study**

It is widely recognized that due to the diverse agro-climatic conditions, Indian soil can grow a wide variety of crops. Similarly a wide range of allied activities can also be pursued. This indicates a huge resource base and potential for the growth of agro-processing sector. The Indian food processing industry is one of the largest in the world in terms of production, consumption, export and growth prospects. Earlier, however, processing was mainly undertaken for the commodities like sugar, tea, coffee, edible oils and spices and the processing activity was largely confined to food preservation (which mainly involved salting, curdling, drying, pickling, etc), packaging and transportation. However, over the years, with emerging new markets and technologies, the sector has widened its scope. It has started producing many new items like ready-to-eat food, beverages, processed and frozen fruit and vegetable products, marine and meat products, etc. It also includes establishment of post-harvest infrastructure for processing of various



food items like cold storage facilities, food parks, packaging centres, irradiation facilities and modernised abattoir.

The liberalisation of the Indian economy and world trade as well as rising consumer prosperity has opened up new opportunities for diversification in the food processing sector and opened up new avenues for growth. Demand for processed and convenience food is increasing constantly because of urbanisation, changing life-style and food habits of the people. Accordingly, the Indian consumers are being offered newer high quality food products made by using the latest state-of-the-art technology. Indian food processing industry therefore has become an attractive destination for investors all over the world. During the last five years, there was an inflow of 24 billion rupees of foreign direct investment (FDI) in the country (D& B Information Services India Private limited, 2007).

It needs to be noted however that the food processing sector of India, currently, is still in the nascent stage. Processing of the agricultural commodities constitutes a small proportion of the raw material available. In 2004-05, food processing sector contributed about 14 percent of manufacturing GDP. Of this, the unorganized sector accounted for more than 70 percent of production in terms of volume and 50 percent in terms of value. On the export front, India contributes 1.5 percent (2003-04) to the global agricultural exports despite its leadership in agricultural production (D and B information services, 2007). The share of this sector in GDP has almost remained same for the last ten years (A. Ganesh Kumar et al, 2006). Processing of fruits and vegetables is around 2 percent, around 35 percent in milk, 21 percent in meat and 6 percent in poultry products. By international comparison, these levels are significantly low. Processing of agriculture produce is around 40 percent in China, 30 percent in Thailand, 70 percent in Brazil, 78 percent in the Philippines and 80 percent in Malaysia. However, value addition to agriculture produce in India is just 20 percent, wastage is estimated to be valued at around US\$ 13 bn (Rs 580 bn) (D and B information services, 2007). According to one estimate, due to inadequate processing facilities, fruits and vegetables worth Rs.40000 crore were being wasted annually. Thus, food processing is also necessary for reducing the wastages which normally take place in the post-harvest period or during the period of a bumper crop.

In view of the current status and prospects of the agro processing sector, it is essential to understand the nature of growth of constraints faced by the agro-processing sector. At the disaggregated level, states have exhibited varying performance as far as the growth of the agro processing sector is concerned. Maharashtra is one of the states with high potential for the growth of food as well as non food processing sector. It is a leading state as far as its industrial development is concerned. It is also known for the advantage it has as far as the horticultural crops are concerned. As a result, it is one of the important states as far as the development of agro-based industries is concerned. In this report therefore, we discuss the growth of the agro-processing sector of this state and the problems and challenges before the sector in the state.

The data shows that Maharashtra has highest number (856 or 19 percent of the total in India) of units manufacturing fruit and vegetable products with 10 percent of the total installed capacity in 2007(www.indiastat.com).It was also the state with highest value of gross output generated by the registered SSIs (www.indiastat.com). Maharashtra was among the front-runners to receive the highest share of FDI in food processing during the last five years. The dairy and consumer industries received FDI worth Rs 2.7 bn each as foreign investment.

Within the non food industries, Maharashtra is one of the important states as far as textile and textile based products and the leather based products are concerned. These products have high export potential also. As the data for Maharashtra shows, these sectors have recorded growth in recent years. Similarly, it is equally important to note the contraction in the paper based and wood based sectors.

With this background, the study analyses working of the agro-processing industries in Maharashtra with following objectives -

### **1.3 Objectives of the Study**

1. To present a profile of the agro-processing industries and the recent trend.
2. To examine the existing location pattern of selected agro-industries.
3. To study the impact of agro-processing industry on agriculture.
4. To study the economics of agro-processing units.
5. To analyse the marketing behavior of agro-processed products.

6. To study the employment potential from agro-processing industries.
7. To analyse the constraints on acceleration of production.
8. To review the export performance of various agro-based commodities and constraints faced in accelerating the growth of export from the sector.

#### **1.4 Data Base**

The study is based on both secondary and primary data. As far as secondary data is concerned, the study has used the quinquennial NSSO data relating to unorganized manufacturing sector and the Annual Survey of Industries (ASI) data for the organized sector for the years 1994-95 and 2000-01. With the help of this data, the profile of agro-based industries in the state in terms of various characteristics such as employment, output, investment etc. is studied.

The primary data was collected from various units through canvassing a structured schedule. The data on recurring expenditure, income, output etc. was collected for the financial year 2007-08. The field work was conducted during the months of May-July 2008. The information so collected from the selected units is used to analyse the economics behind the working of these units, various problems and prospects of the units.

#### **1.5 Sampling Design, Methodology and Coverage of the Study**

Agro-based industries are classified as food and non food based/ processing units. Therefore, our sample consists these two types of units. All together, 30 sample processing units were to be selected at random, proportionately spread over food and non-food processing segment of agro-based enterprises. For selecting the units the District Industries Centres (DIC) and Khadi and Village Boards (KVIB) of the districts were also approached and units/ enterprises wherever registered, available/ existing under these were selected. As the share of food processing units is almost 60 percent of the total agro based ones at the all India level (as is shown by ASI data), out of the total of 30 units, 18 food processing units the rest 12 from non-food processing agro-based units were to be selected.

The food-processing activities are broadly divided into three categories viz. primary food processing units mainly *grain processing units; spice and horticultural products and livestock based processing units including fish processing*. The non-food

processing units are broadly divided into four categories namely, *textile products, wood and its products, paper and its products, leather and its products*. Within the group of food processing and non-food processing agro based activity, for each category of enterprise, the dominant processing activity was selected considering available data relating to state area under the concerned crop and also the number of registered units engaged in the concerned activity in the state. Based on the concentration of selected agro-based enterprises the districts were chosen. In the case of food-processing component of agro-based enterprises, for each selected processing enterprise, six units of different sizes namely Own Account Enterprises (OAMEs), Non Directory Manufacturing Enterprises (NDMEs) and Directory Manufacturing Enterprises (DMEs)<sup>1</sup> with their distribution as 3:2:1 were to be selected. Within non-food processing segment of agro-based industry, for each selected processing units, three units of different sizes namely OAMEs, NDMEs and DMEs in the ratio of 1:1:1 were to be selected. The table below shows the sampling scheme.

Table 1.1: Sample Processing Units and the Selected Districts for the State of Maharashtra

Category	Processing activity selected	Selected District	Number of Sample Units
Food Processing:			
1. Grain processing units	Rice mills	Ratnagiri	6
2. Spice and horticultural products	Cashew processing units	Ratnagiri	6
3. Livestock based processing units	Fish processing units	Ratnagiri	6
Total			18
Non-food Processing:			
1. Textile products	Tailoring units	Pune	3
2. Wood and its products	Furniture making units	Pune	3
3. Paper and its products	Notebook making units	Pune	3
4. Leather and its products	Leather processing units	Mumbai city	3
Total			12
Total Sample Size			30

<sup>1</sup> OAME = ENTP employing only the owner-worker or his or her family workers.  
 NDME = ENTP with at least one and utmost five workers of whom one is hired worker.  
 DME = ENTP with at least six workers including at least one who is hired.

As the units to be selected were those operating on small scale i.e. family enterprises and also those running with the help of hired workers, only those activities which can run on small scale were chosen.

Chapter I on introduction is followed by chapter II which discusses the status of agro-processing industries in the state. Chapter III presents the profile of the sample districts and selected processing activities. Chapters IV, V and VI are based on analysis of the primary data collected from the sample units in the state. These discuss the cost of investment and the financing of the units, economics of investment in agro-processing units and problems and prospects of the units respectively. The last chapter i.e. chapter VIII discusses the conclusions and policy implications emerging out of the study.

*Status of Agro-based Industries in the State*

**2.1 The Nature and Composition of Agro-based Industries**

With the geographical area and population of the state around 9 percent of the total area and population, Maharashtra boasts of being a better developed state of the country. The decadal population growth in the state from 1991 to 2001 has been 22.73 percent as against 21.54 percent in the country. Urbanisation in the state is also increasing. 42.43 percent of the state population in 2001 was in urban areas, as against 38.69 percent in 1991. The state economy is growing at about 6-7 percent p.a. In 2004-05, the state contributed around 13 percent to the gross domestic product (GDP). The per capita income (net national product (NNP) at 1993-94 prices) in the state, in 2003-04 was Rs.16479 and is higher than that of the country i.e. Rs.11799. The secondary sector contributes almost 28 percent to the state domestic product (SDP) whereas the tertiary sector contributes 58 percent to the SDP. These sectors are growing at the rate of around 8 percent per annum. Almost 14 percent of the working factories in India are located in the state. The per capita value added in industries i.e. Rs 5003, is above all India average of Rs. 2383. Similarly, the per capita gross output in industries is also higher than the all India average (Economic Survey of Maharashtra, various years).

The ASI results of 2004-05 relating to the organized industrial sector have revealed that the state contributed almost 21.5 percent and 19.7 percent to the gross value of output (GVO) and net value of output (NVA) respectively to the GVO and NVA at India level. The state leads as far as the values of total input per worker, total output per worker and annual wages per worker are concerned (Economic Survey, 2007-08).

In spite of its progress in the industrial sector, the state still can be called as an agrarian state as almost 57 percent of the state population is still dependent on this sector for its livelihood. This sector however contributes only 13 percent to the GSDP. The major constraining factor for this sector is the scanty rainfall in several parts of the state and the extent of irrigation which covers only 16 percent of the land under cultivation as against 42 percent at all India level. Per hectare yield of food grains in the state is 924 kg. which is far below the average of 1716 kg per hectare at all India level. This explains the

lower productivity of several crops grown in the state. Almost sixty percent area of the area under cultivation is occupied by food grains as of now and gradually the cropping pattern is shifting towards commercial crops. Apart from the traditional commercial crops like sugarcane and cotton, the area under horticultural crops and oilseed crops is increasing. The variety in the agro-climatic conditions has enabled cultivation of variety of horticultural crops. Due to the stagnation of the nature constrained agricultural sector, horticultural development and the related processing activities have become one of the thrust areas in the state.

With this background, we look into the nature of growth of agro-processing industries in the state. As is mentioned earlier, the agro-processing sector consists of a dominant unorganized sector and a small sized organized sector. For understanding the structure of this sector in the state, we look into data relating to organized as well as unorganized sector of the agro-processing industry in the state.

## **2.2 Recent Trends in Agro-based Industries**

Table 2.1 shows the number of units in the organized and the unorganized sector and their sub sectors. It is observed from the table that the unorganized sector clearly dominates the organized sector as far as the number of the units is concerned in both the years. The number of all industries in the unorganized sector in the state is 46 and 66 times higher than those in the organized sector in 1994-95 and 2000-01 respectively.

It can be seen that in the organized sector, non agro-based industries are dominating with their share being around 70 percent. However, in the unorganized sector, the agro-based industries are seen to be dominating the non agro-based industries and their number has greatly increased (1131.69 percent) over the period whereas that of non agro-based industries has fallen (the percentage change being -1088.69 over the period). Further, in the organized sector, within the agro-based industries, the share of food processing industries is observed to be around 30 percent in 1994-95 and has increased to 74 percent in 2000-01. This is because the number of food based industries has increased, however, that of all non food agro-based industries (except leather based industries) has decreased. In the unorganized sector, the share of food processing industries which was around 54 percent in 1994-95 has declined to 35 percent in 2004-05 as the number of non food agro-based industries has increased by a larger extent (846. 24

percent as compared to 285.72 percent for the food processing industries). This is mainly due to the increase in the textiles related industries.

Thus, the broad features of the industrial sector of the state are that the food processing industries are growing at a faster pace considering both the sectors. Among the non food industries, wood and paper units are seen to have adversely affected in terms of numbers in both the sectors. However, the leather units have registered a positive increase in both the sectors. The non agro-based industries have registered growth in the organized sector and have experienced a decline in the unorganized sector. On the whole, the unorganized sector is expanding whereas there is a definite decline in the size of the organised sector.

Table 2.1: Structure of Agro based Industries in the State.

Sr. no.	Industry	Number of Working Units					
		Organized sector			Unorganized sector		
		1994-95	2000-01	% change	1994-95	2000-01	% change
1	Manufacture of food products	979	2146	119.20	168179	232674	38.35
2	Manufacture of beverages, tobacco & tobacco products	765	89	-88.37	2566	8913	247.37
3	Food processing industries(1+2)	<b>1744</b>	<b>2235</b>	<b>30.84</b>	<b>170745</b>	<b>241587</b>	<b>285.72</b>
4,5,6	Manufacture of cotton textiles, Manufacture of wool, silk, and synthetic fibre textiles, Manufacture of jute, hemp and mesta textiles	1598	1415	-11.45	30513	96647	216.74
7	Manufacture of textiles products(including wearing apparel other than foot ware)	925	650	-29.73	50076	376393	651.64
8	Manufactures of wood and wood products furniture and fixtures	252	177	-29.76	192460	180570	-6.18
9	Manufacture of paper and paper product, printing publishing and allied industries	1217	652	-46.43	18835	5604	-70.25
10	Manufacture of leather & leather and fur products (except repair)	75	119	58.67	22045	34012	54.29
11	Non-food processing industries ( 4 to 10)	<b>4067</b>	<b>3013</b>	<b>-58.70</b>	<b>313930</b>	<b>693227</b>	<b>846.24</b>
12	Total agro based industries (3+11)	<b>5811</b>	<b>5248</b>	<b>-27.87</b>	<b>484675</b>	<b>934814</b>	<b>1131.96</b>
13	Total non-agro based industries (3+11)	<b>12847</b>	<b>13278</b>	<b>27.16</b>	<b>380005</b>	<b>304068</b>	<b>-1088.69</b>
14	All industries(12+13)	<b>18658</b>	<b>18526</b>	<b>-0.71</b>	<b>864680</b>	<b>1238882</b>	<b>43.28</b>

Source: 1. Annual Survey of Industries (ASI) data 1994-95 and 2000-01 for organized manufacturing  
2. National Sample Survey (NSS) data 1994-95 and 2000-01 for unorganized manufacturing.



In the table 2.2a and 2.2b. we look at the structure of the organized sector industries in detail.

Table 2.2a: Economic Structure of Factories Covered by Annual Survey of Industries (Census and Non-census Sectors) in the State.

Industry	Working Units		Investment		Employment		Gross Output (Rs)	Net value added (Rs)
	No.	% Share	Amount (Rs.)	% Share	No. of workers	No. of employees		
	1994-95							
Manufacture of food products	979	5.25	53575908	8.03	68616	112553	89067110	13283736
Manufacture of beverages, tobacco & tobacco products	765	4.10	6212505	0.93	16384	23288	34363937	3713555
<b>Food processing industries</b>	<b>1744</b>	<b>9.35</b>	<b>59788413</b>	<b>8.96</b>	<b>85000</b>	<b>135841</b>	<b>123431047</b>	<b>16997291</b>
Manufacture of cotton textiles	1082	5.80	27887368	4.18	116466	140764	41647134	7836814
Manufacture of wool, silk, and synthetic fibre textiles	516	2.77	20528451	3.08	35455	45545	32514866	6178583
Manufacture of textiles products (including wearing apparel other than footwear)	925	4.96	8192535	1.23	24037	32286	23448647	4594792
Manufactures of wood and wood products furniture and fixtures	252	1.35	524534	0.08	3099	4075	1129971	151857
Manufacture of paper and paper products, printing publishing and allied industries	1217	6.52	15248131	2.28	33676	48554	27782005	7134998
Manufacture of leather and leather and fur products(except repair)	75	0.40	504126	0.08	1849	2399	1530349	266666
<b>Non-food processing industries</b>	<b>4067</b>	<b>21.80</b>	<b>72885145</b>	<b>10.92</b>	<b>214582</b>	<b>273623</b>	<b>128052972</b>	<b>26163710</b>
<b>Total agro based industries</b>	<b>5811</b>	<b>31.14</b>	<b>132673558</b>	<b>19.88</b>	<b>299582</b>	<b>409464</b>	<b>251484019</b>	<b>43161001</b>
<b>Total non-agro based industries</b>	<b>12847</b>	<b>68.86</b>	<b>534644548</b>	<b>80.12</b>	<b>646546</b>	<b>912756</b>	<b>929017202</b>	<b>212304078</b>
<b>All industries</b>	<b>18658</b>	<b>100</b>	<b>667318106</b>	<b>100</b>	<b>946128</b>	<b>1322220</b>	<b>1180501221</b>	<b>255465079</b>
	2000-01							
Manufacture of food products	2146	11.58	69384200	10.27	126630	195250	2996845	32714300
Manufacture of beverages, tobacco & tobacco products	89	0.48	1400100	0.21	49423	52612	127178	2443500
<b>Food processing industries</b>	<b>2235</b>	<b>12.06</b>	<b>70784300</b>	<b>10.48</b>	<b>176053</b>	<b>247862</b>	<b>3124023</b>	<b>35157800</b>
Manufacture of cotton textiles	1415	7.64	66950800	9.91	127252	156519	1262416	20029600
Manufacture of textiles products(including wearing apparel other than footwear)	650	3.51	2628600	0.39	13751	18817	191297	2469100
Manufactures of wood and wood products furniture and fixtures	177	0.96	2131800	0.32	2790	3793	21671	400500
Manufacture of paper and paper products, printing publishing and allied industries	652	3.52	25390000	3.76	19479	26065	297196	4032600
Manufacture of leather and leather and fur products(except repair)	119	0.64	298700	0.04	1747	2272	12030	99300
<b>Non-food processing industries</b>	<b>3013</b>	<b>16.26</b>	<b>97399900</b>	<b>14.42</b>	<b>165019</b>	<b>207466</b>	<b>1784610</b>	<b>178461000</b>
<b>Total agro based industries</b>	<b>5248</b>	<b>28.33</b>	<b>168184200</b>	<b>24.90</b>	<b>341072</b>	<b>455328</b>	<b>4908633</b>	<b>490863300</b>
<b>Total non-agro based industries</b>	<b>13278</b>	<b>71.67</b>	<b>507130900</b>	<b>75.10</b>	<b>476233</b>	<b>717471</b>	<b>1358851300</b>	<b>1358851300</b>
<b>All industries</b>	<b>18526</b>	<b>100.00</b>	<b>675315100</b>	<b>100.00</b>	<b>817305</b>	<b>1172799</b>	<b>18497146</b>	<b>312609800</b>

Note: Data relating to manufacture of jute, hemp and mesta textiles for 1994-95 not available . Data relating to manufacture of wool, silk, and synthetic fibre textiles and manufacture of jute, hemp and mesta textiles is clubbed with that relating to manufacture of cotton textiles for 2000-01.

Source: Annual Survey of Industries, 1994-95 and 2000-01

Table 2.2b: Economic Structure of Factories Covered by Annual Survey of Industries (percentage share)  
(Census and Non-census Sectors) in the State. (in %)

Industry	Working units	Invest amount	Employment	Gross Output	Net value added
	<b>1994-95</b>				
Manufacture of food products	5.25	8.03	8.51	7.54	5.20
Manufacture of beverages, tobacco & tobacco products	4.10	0.93	1.76	2.91	1.45
Food processing industries	<b>9.35</b>	<b>8.96</b>	<b>10.27</b>	<b>10.46</b>	<b>6.65</b>
Manufacture of cotton textiles	5.80	4.18	10.65	3.53	3.07
Manufacture of wool, silk, and synthetic fibre textiles	2.77	3.08	3.44	2.75	2.42
Manufacture of textiles products (including wearing apparel other than footwear)	4.96	1.23	2.44	1.99	1.80
Manufactures of wood and wood products furniture and fixtures	1.35	0.08	0.31	0.10	0.06
Manufacture of paper and paper products, printing publishing and allied industries	6.52	2.28	3.67	2.35	2.79
Manufacture of leather and leather and fur products (except repair)	0.40	0.08	0.18	0.13	0.10
Non-food processing industries	21.80	10.92	20.69	10.85	10.24
<b>Total agro based industries</b>	<b>31.14</b>	<b>19.88</b>	<b>30.97</b>	<b>21.30</b>	<b>16.90</b>
Total non-agro based industries	68.86	80.12	69.03	78.70	83.10
All industries	100.00	100.00	100.00	100.00	100.00
	<b>2000-01</b>				
Manufacture of food products	11.58	10.27	16.65	16.20	10.46
Manufacture of beverages, tobacco & tobacco products	0.48	0.21	4.49	0.69	0.78
Food processing industries	<b>12.06</b>	<b>10.48</b>	<b>21.13</b>	<b>16.89</b>	<b>11.25</b>
Manufacture of cotton textiles	<b>7.64</b>	<b>9.91</b>	13.35	6.82	6.41
Manufacture of textiles products (including wearing apparel other than foot wear)	3.51	0.39	1.60	1.03	0.79
Manufactures of wood and wood products furniture and fixtures	0.96	0.32	0.32	0.12	0.13
Manufacture of paper and paper products, printing publishing and allied industries	3.52	3.76	2.22	1.61	1.29
Manufacture of leather and leather and fur products (except repair)	0.64	0.04	0.19	0.07	0.03
Non-food processing industries	16.26	14.42	17.69	9.65	8.65
<b>Total agro based industries</b>	<b>28.33</b>	<b>24.90</b>	<b>38.82</b>	<b>26.54</b>	<b>19.89</b>
Total non-agro based industries	71.67	75.10	61.18	73.46	80.11
All industries	100.00	100.00	100.00	100.00	100.00

Note: Data relating to manufacture of jute, hemp and mesta textiles for 1994-95 not available. Data relating to manufacture of wool, silk, and synthetic fibre textiles and manufacture of jute, hemp and mesta textiles is clubbed with that relating to manufacture of cotton textiles for 2000-01.

Source: Based on table 2.2b.

The tables show that in absolute terms, the non agro industries dominate the agro-based industries. However, their share in various indicators (except in case of working

units) over the period of time has been declining. This indicates faster growth of the agro-based industries in the state. Within the agro based industries, the share of number of food processing industries which was around 9 percent in 1994-95 has increased to around 12 percent in 2000-01. However, as mentioned earlier, the share of non food agro-based industries has declined from 21 percent to 16 percent as there was a decline in the absolute number of units in all segments (except leather) of the non food agro sector. Besides the number of units, the share of food processing units in total investment, employment, output and also the net value has increased over the period. Specifically, the increase in the employment in this sector is noticeable- It now contributes 21.13 percent to the total employment as compared to 10 percent in 1994-95. This has ensured increased share of total agro-based industries (38 percent in 2000-01 as against 31 percent in 1994-95) in the total employment. The major segments within the nonfood agro-based sector - manufacture of textiles and of paper and paper products show contraction. The table clearly indicates the changing composition of the agro-based industries- expansion of the food processing sector and contraction of the nonfood agro-based sector over the concerned period.

We now look into the structure of unorganized sector industries in the state. Table 2.3a shows the structure of the unorganized sector in terms various types of units such as OAMEs, NDMEs and DMEs. Table 2.3b shows their share in the total unorganized sector units in a particular category. It can be observed that over the given period, for almost all the segments, the share of OAMEs has increased and that of other classes i.e. NDME and DME has fallen. Thus, more and more households are engaging themselves in food-processing activities. Within the agro-based industries, food sector has 78.92 and 84.56 percent of the units working as OAMEs in 1994-95 and in 2000-01 respectively. The segments where the units are relatively evenly distributed over various classes are - textile products, paper and its products. Even in these industries, share of OAMEs has increased. In absolute terms, the share of agro-based industries is seen to be less than that of non agro based industries.

Table 2.3a: Category wise Estimated Number of Enterprises in Maharashtra: 1994-95 and 2000-01

Code	Description	OAME			NDME			DME			Total		
		Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
15	Food Products	88022	35996	124065	9031	17765	26789	2057	4764	6834	99117	60803	162396
16	Beverages, etc.	0	5096	5082	0	73	73	583	201	791	388	6234	6221
	Food Processing	88022	41093	129147	9031	17838	26862	2640	4965	7625	99505	67037	168617
17	Cotton-wool-jute textile	19458	15009	34456	298	20215	20520	508	18965	19423	20722	48676	67455
18	Textile products	122301	89923	212175	5237	23448	28685	100	9001	9076	130608	132409	262705
20	Wood and its Products	94708	10982	86390	3316	5281	8593	773	2909	3683	101070	19526	126030
21	Paper & its Products	0	1110	1511	158	1686	1844	169	1645	1811	226	3940	3912
19	Leather & its Products	12131	6453	16680	404	2580	2984	23	1294	1314	12880	10730	23739
	Non-food processing	248598	123477	351212	9412	53210	62627	1574	33814	35306	265507	215280	483840
	Total agro based	336620	164570	480358	18443	71048	89489	4214	38779	42932	365013	282317	652457
	Total non-agro based	52981	60825	134638	11333	53686	65021	13440	38742	52243	72017	145333	212223
	All industries	389601	225395	614996	29776	124734	154510	17654	77521	95175	437030	427650	864680
2000-01													
Code	Description	OAME			NDME			DME			Total		
		Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
15	Food Products	139474	56778	196259	9949	19609	29558	2093	4768	6861	151522	81155	232674
16	Beverages, etc.	0	8039	8039	0	80	80	593	202	794	593	8321	8913
	Food Processing	139474	64816	204298	9949	19690	29639	2685	4970	7655	152115	89476	241587
17	Cotton-wool-jute textile	30832	23673	54506	329	22313	22642	517	18982	19499	31678	64969	96647
18	Textile products	193792	141837	335641	5770	25882	31651	102	9009	9111	199663	176731	376393
20	Wood and its Products	150069	17322	136661	3653	5829	9482	786	2911	3697	154507	26062	180570
21	Paper & its Products	0	1751	2390	174	1861	2035	172	1646	1818	346	5258	5604
19	Leather & its Products	19222	10178	26386	445	2848	3292	23	1295	1319	19690	14322	34012
	Non-food processing	393915	194762	555584	10369	58733	69103	1601	33844	35445	405884	287342	693227
	Total agro based	533389	259578	759881	20319	78423	98741	4286	38814	43100	557998	376817	934814
	Total non-agro based	83951	95940	212984	12485	59258	71744	13671	38777	52448	110094	193981	304064
	All industries	617340	355519	972865	32804	137681	170485	17957	77591	95548	668092	570798	1238878

Source: National Sample Survey (NSS) data for unorganized manufacturing 1994-95 and 2000-01.

Table 2.3b: Percentage Share of Categorywise Enterprises in Maharashtra: 1994-95, 200-01

Code		Total OAME	Total NDME	Total DME	Total units
1994-95					
15	Food Products	78.68	16.99	4.33	100
16	Beverages, etc.	85.47	1.23	13.30	100
	Food Processing	78.92	16.42	4.66	100
17	Cotton-wool-jute textile	46.31	27.58	26.11	100
18	Textile products	84.89	11.48	3.63	100
20	Wood and its Products	87.56	8.71	3.73	100
21	Paper & its Products	29.25	35.69	35.06	100
19	Leather & its Products	79.51	14.22	6.26	100
	Non-food processing	78.20	13.94	7.86	100
	Total agro based	<b>78.39</b>	<b>14.60</b>	<b>7.01</b>	<b>100</b>
	Total non-agro based	53.45	25.81	20.74	100
	All industries	71.12	17.87	11.01	100
2000-01					
15	Food Products	84.35	12.70	2.95	100
16	Beverages, etc.	90.19	0.90	8.91	100
	Food Processing	84.56	12.27	3.17	100
17	Cotton-wool-jute textile	56.40	23.43	20.18	100
18	Textile products	89.17	8.41	2.42	100
20	Wood and its Products	91.20	6.33	2.47	100
21	Paper & its Products	38.28	32.60	29.12	100
19	Leather & its Products	85.12	10.62	4.26	100
	Non-food processing	84.16	10.47	5.37	100
	Total agro based	<b>84.27</b>	<b>10.95</b>	<b>4.78</b>	<b>100</b>
	Total non-agro based	63.17	21.28	15.56	100
	All industries	78.53	13.76	7.71	100

Source: National Sample Survey (NSS) data for unorganized manufacturing

Table 2.3c shows the unorganized sector data for the rural and urban areas. It can be seen that OAMEs are the predominant category of units for all the subcategories in the rural areas. However, the share of NDMEs and DMEs is very low for the rural areas and very high in the urban areas. In case of food processing units, the OAMEs dominate the rural areas and the NDMEs and the DMEs dominate the urban areas. However, it is interesting to note that overall, the rural sector is seen to be dominating the food processing sector as well as agro based non food processing sector in both the years. This indicates increased activity in the rural areas.

Table 2.3c: Percentage Share of Rural and Urban Enterprises in each Category in Maharashtra: 1994-95, 2000-01.

Description	OAME			NDME			DME			Total		
	1994-95											
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Food Products	70.98	29.02	100.00	33.71	66.31	100.03	30.10	69.71	99.81	61.98	38.02	100.00
Beverages ,etc.	0.00	100.28	100.28	0.00	100.00	100.00	73.70	25.41	99.12	5.86	94.14	100.00
Food Processing	68.16	31.82	99.98	33.62	66.41	100.03	34.62	65.11	99.74	59.75	40.25	100.00
Cotton-wool-jute textile	56.47	43.56	100.03	1.45	98.51	99.97	2.62	97.64	100.26	29.86	70.14	100.00
Textile products	57.64	42.38	100.02	18.26	81.74	100.00	1.10	99.17	100.28	49.72	50.40	100.12
Wood and its Products	89.61	10.39	100.00	38.59	61.46	100.05	20.99	78.98	99.97	83.81	16.19	100.00
Paper & its Products	0.00	100.00	100.00	8.57	91.43	100.00	9.33	90.83	100.17	5.42	94.58	100.00
Leather & its Products	65.28	34.72	100.00	13.54	86.46	100.00	1.75	98.48	100.23	54.26	45.20	99.46
Non-food processing	66.81	33.19	100.00	15.03	84.96	99.99	4.46	95.77	100.23	55.22	44.78	100.00
Total agro based	67.16	32.84	100.00	20.61	79.39	100.00	9.82	90.33	100.14	56.39	43.61	100.00
Total non-agro based	46.55	53.45	100.00	17.43	82.57	100.00	25.73	74.16	99.88	33.13	66.87	100.00
All industries	63.35	36.65	100.00	19.27	80.73	100.00	18.55	81.45	100.00	50.54	49.46	100.00
	2000-2001											
Food Products	71.07	28.93	100.00	33.66	66.34	100.00	30.51	69.49	100.00	65.12	34.88	100.00
Beverages, etc.	0.00	100.00	100.00	0.00	100.00	100.00	74.69	25.44	100.13	6.65	93.36	100.01
Food Processing	68.27	31.73	100.00	33.57	66.43	100.00	35.08	64.92	100.00	62.96	37.04	100.00
Cotton-wool-jute textile	56.57	43.43	100.00	1.45	98.55	100.00	2.65	97.35	100.00	32.78	67.22	100.00
Textile products	57.74	42.26	100.00	18.23	81.77	100.00	1.12	98.88	100.00	53.05	46.95	100.00
Wood and its Products	89.65	10.35	100.00	38.53	61.47	100.00	21.26	78.74	100.00	85.57	14.43	100.00
Paper & its Products	0.00	100.00	100.00	8.55	91.45	100.00	9.46	90.54	100.00	6.17	93.83	100.00
Leather & its Products	65.38	34.62	100.00	13.52	86.51	100.03	1.74	98.18	99.92	57.89	42.11	100.00
Non-food processing	66.92	33.08	100.00	15.01	84.99	100.00	4.52	95.48	100.00	58.55	41.45	100.00
Total agro based	67.26	32.74	100.00	20.58	79.42	100.00	9.94	90.06	100.00	59.69	40.31	100.00
Total non-agro based	46.67	53.33	100.00	17.40	82.60	100.00	26.07	73.93	100.00	36.21	63.80	100.00
All industries	63.46	36.54	100.00	19.24	80.76	100.00	18.79	81.21	100.00	53.93	46.07	100.00

Source: National Sample Survey (NSS) data for unorganized manufacturing

Table 2.4a and 2.4b show the economic structure of the enterprises in the unorganized sector. It can be seen that the share of food processing industries in total industries, their share in the total workers and in the GVA has almost stayed constant over the years (table 2.4b) though there is a rise in value added per worker and per enterprise. In case of non food agro-based industries however, the number of units and workers show a sharp rise during the concerned period. This sharp rise has led to an increase in the share of total agro based industries in 2000-01 in terms of number of units (75 percent) and number of workers (64 percent). The main driving force has been the

textile products sector. Though wood and its products is the dominating sector in the year 1994-95, there has been a tremendous growth in the textile sector over the concerned period and it accounts for almost one third of all industries and one fifth of the total workers engaged in the unorganized sector. Though there has been an expansion of these units, the net value added per worker as well as per enterprise have registered a decline. Thus, the productivity of the units has declined over the years.

A disturbing trend that is observed from the table is the fall in the employment per enterprise for almost all the classes except the non agro based industries sector. This is in compliance with the economy wise phenomenon of falling elasticity of employment and increasing intensity of unemployment.

Table 2.4a: Economic Structure of Unorganized Manufacturing Enterprises in the State

Description	Estimated number of manufacturing enterprises	Estimated number of workers engaged in manufacturing enterprises	Estimated gross value added ('000 Rs)	Value added per enterprise (Rs)	Value added per worker (Rs)	Estimated employment per enterprise
<b>1994-95</b>						
Food products	168179	404671	5419600	32225	13392	2.41
Beverages, etc.	2566	5932	132300	51550	22299	2.31
<b>Food processing</b>	<b>170745</b>	<b>410604</b>	<b>5551800</b>	<b>32515</b>	<b>13521</b>	<b>2.40</b>
Cotton-wool- jute textile	30513	157238	6548600	214616	41648	5.15
Textile products	50076	221478	6670300	133203	30117	4.42
Wood and its products	192460	358448	3317100	17235	9254	1.86
Paper and its products	18835	84944	686900	36470	8087	4.51
Leather and its products	22045	69197	825500	37444	11929	3.14
<b>Non-food processing</b>	<b>313930</b>	<b>891305</b>	<b>18084300</b>	<b>57491</b>	<b>20249</b>	<b>2.84</b>
<b>Total agro-based</b>	<b>484675</b>	<b>1301909</b>	<b>23600100</b>	<b>48693</b>	<b>18127</b>	<b>2.69</b>
<b>Total non-agro-based</b>	<b>380005</b>	<b>1126320</b>	<b>20410100</b>	<b>53710</b>	<b>18121</b>	<b>2.96</b>
<b>All industries</b>	<b>864680</b>	<b>2428229</b>	<b>44010200</b>	<b>50898</b>	<b>18124</b>	<b>2.81</b>
<b>2000-01</b>						
Food products	232674	468882	9352799	40197	19947	2.02
Beverages, etc.	8913	26409	228278	25611	8644	2.96
<b>Food processing</b>	<b>241587</b>	<b>495291</b>	<b>9581077</b>	<b>39659</b>	<b>19344</b>	<b>2.05</b>
Cotton-wool- jute textile	96647	377222	11301207	116933	29959	3.90
Textile products	376393	604105	11511229	30583	19055	1.60
Wood and its products	180570	341635	5724439	31702	16756	1.89
Paper and its products	5604	28796	1185442	211519	41167	5.14
Leather and its products	34012	67645	1424527	41883	21059	1.99
<b>Non-food processing</b>	<b>693227</b>	<b>1419404</b>	<b>31146844</b>	<b>44930</b>	<b>21944</b>	<b>2.05</b>
<b>Total agro-based</b>	<b>934814</b>	<b>1914695</b>	<b>40727921</b>	<b>43568</b>	<b>21271</b>	<b>2.05</b>
<b>Total non-agro-based</b>	<b>304068</b>	<b>1057655</b>	<b>35222729</b>	<b>115838</b>	<b>33303</b>	<b>3.48</b>
<b>All industries</b>	<b>1238882</b>	<b>2972350</b>	<b>75950650</b>	<b>61306</b>	<b>25552</b>	<b>2.40</b>

Source: National Sample Survey data on unorganized manufacturing

Table 2.4b: Economic Structure of Unorganized Manufacturing Enterprises in the State  
(Percentage share)

Description	Estimated number of manufacturing enterprises	Estimated number of workers engaged in manufacturing enterprises	Estimated gross value added (Rs)
<b>1994-95</b>			
Food products	19	17	12
Beverages, etc.	0	0	0
<b>Food processing</b>	20	17	13
Cotton-wool- jute textile	4	6	15
Textile products	6	9	15
Wood and its products	22	15	8
Paper and its products	2	3	2
Leather and its products	3	3	2
<b>Non-food processing</b>	36	37	41
<b>Total agro-based</b>	56	54	54
<b>Total non-agro-based</b>	44	46	46
<b>All industries</b>	100	100	100
<b>2000-01</b>			
Food products	19	16	12
Beverages, etc.	1	1	0
<b>Food processing</b>	20	17	13
Cotton-wool- jute textile	8	13	15
Textile products	30	20	15
Wood and its products	15	11	8
Paper and its products	0	1	2
Leather and its products	3	2	2
<b>Non-food processing</b>	56	48	41
<b>Total agro-based</b>	75	64	54
<b>Total non-agro-based</b>	25	36	46
<b>All industries</b>	100	100	100

Source: Table 2.4a

### 2.3 Impact of Agro processing Industry on Agriculture

The above discussion shows that the agro processing industry is expanding at a fast rate in terms of number and workers engaged. Increasing demand for agro processed products indicates strengthening of backward linkages and increasing demand for the agro inputs leading to growth in demand especially for cereals and pulses, horticultural crops and commercial crops. A look at the data relating to Maharashtra agriculture shows that the contribution of the primary sector to the GSDP has been declining and currently (2005-06) is only 13 percent as compared to the workforce in agriculture which is nearly 58 percent of the total workforce. Similarly, in the post 1990 period, there was a



deceleration in the sector in terms of declining growth rates of area, production and yield of major crops. With only 16 percent of the state GCA under irrigation, the yields of many crops are lower than the All India average. The supply of agro inputs is thus constrained. Similarly, as is mentioned earlier, the proportion of agro products that are processed is very low. In addition to this, one has to account for the intra state movement of agro inputs. Such movements may not necessarily stimulate the demand for inputs in the state concerned. Though Maharashtra is one of the important states as far as agro-processing industries are concerned, it has recorded below average performance in the post 2000 period.

The horticultural sector in Maharashtra is however the growing sector which the state can boast of. Due to the government efforts - the EGS linked horticultural programme, the sector experienced growth in the post 1990 period. As is mentioned earlier, the data shows that Maharashtra has highest number (856 or 19 percent of the total in India) of units manufacturing fruit and vegetable products with 10 percent of the total installed capacity in 2007. The regions which are engaged in fruit production and processing show marked change as far as the incomes of the horticultural producers are concerned. This is observed for the mango and cashew producers in Konkan region and orange producers in Vidarbha region in Maharashtra.

The overall growth performance of the agricultural sector of Maharashtra however does not show any marked change as far as the effect of agro processing industry in the state is concerned.

It can be said that if the growth potential of the agro processing sector is to be tapped, the agricultural sector of the state has to be vibrant. Agricultural (including livestock) growth potential of each region of the state needs to be tapped to give a boost to the growing agro industrial sector in the state.

### **Concluding remarks**

The chapter discusses the structure of the agro-based industries in the state. It is observed that the unorganized sector is expanding and constitutes a major segment of these industries as far as the number of the units is concerned. This is indicative of the expansion of unregulated activity and easier entry or easier access of the small units into the market. It is observed that food processing industries are growing at a faster pace

considering both the organized as well as unorganized sectors. Among the non food industries, wood and paper units are seen to be adversely affected in terms of numbers in both the sectors. However, the leather units have registered a positive increase in both the sectors.

Within the organized sector, the share of agro processing industries in total investment, employment, output and also the net value has increased over the period. Specifically, the increase in the employment in this sector is noticeable. The data also indicates changing composition of the agro-based industries - expansion of the food processing sector and contraction of the nonfood agro-based sector over the concerned period.

In the unorganized sector, the share of OAMEs has increased and that of other classes i.e. NDME and DME has fallen. Thus, more and more households are engaging themselves in food-processing activities. This is indicative of higher efficiency of small scale household units which rely entirely on family labour- especially the female labour for the processing activity. The share of food processing industries in total industries, their share in the total workers and in the GVA has almost stayed constant over the years though there is a rise in value added per worker and per enterprise. In case of non food agro-based industries however, the number of units and workers show a sharp rise during the concerned period. This sharp rise has led to an increase in the share of total agro based industries in 2000-01 in terms of number of units (75 percent) and number of workers (64 percent). The main driving force has been the textile products sector. Though wood and its products was the dominating sector in 1994-95, there has been a tremendous growth in the textile sector and it accounts for almost one third of all industries and one fifth of the total workers engaged in the unorganized sector. However, the net value added per worker as well as per enterprise has registered a decline. Thus, the productivity of the units in non food agro based industries has declined over the years.

A disturbing trend that is observed from the table is the fall in the employment per enterprise for almost all the classes except the non agro based industries sector. This is in compliance with the economy wide phenomenon of falling elasticity of employment and increasing intensity of unemployment.

The overall growth performance of the agricultural sector since last few years shows that the sector (except the horticultural sector) has not responded to expanding agro processing sector. It can be said that if the growth potential of the agro processing sector is to be tapped, the agricultural sector of the state has to be vibrant. Agricultural (including livestock) growth potential of each region of the state needs to be tapped to give a boost to the growing agro processing sector in the state

### *Profile of the Sample Districts and Selected Processing Activities*

Maharashtra consists of 34 districts and they constitute four main regions which can be distinguished from each other due to differences in levels of socio-economic development, historical background, demographic characteristics, agro-climatic conditions etc. These regions are - Konkan or the coastal Maharashtra, western Maharashtra (WM), Marathwada or central Maharashtra and Vidarbha or eastern Maharashtra. Out of the eight main divisions of the state, the divisions in WM and Konkan such as Mumbai, Thane, Pune and Kolhapur, are the most developed divisions of the state. On the other hand, the divisions in Marathwada and Vidarbha are comparatively lagging regions of the state. Development of the state conceals lot of heterogeneity existing across various regions of the state. A major reason for the disparities in various aspects is the urban centric growth which has taken place around the districts Thane, Mumbai and Pune which are located in western Maharashtra. Population of districts Mumbai and Thane is around 20 percent of the total population of the state and their combined district income in 2005-06(at 1999-2000 prices) was around 32 percent of the total income of the state. These regions as well as agriculturally developed districts such as Kolhapur support a large proportion of the migrant population. The following table shows the percentage of the non farm workers in total main workers of the respective districts according to the census 2001. It can be seen that in these districts, majority of the workers are non farm workers. While selecting various districts for collection of primary data therefore, this particular aspect was taken into account.

Table 3.1: Share of Non Farm Workers in the districts (other workers and household industry workers)( 2001)

	District	Share of Non Farm Workers (other workers and household industry workers) (%)
1.	Mumbai Suburban	99.8
2.	Mumbai city	99.8
3.	Thane	78.1
3.	Nagpur	61.4
4.	Pune	60.5

Source: Census of India, 2001.

The next section describes selection of activities and the districts simultaneously. Profile of the districts selected for the study is also presented. The chapter also discusses the socio-economic profile of the sample entrepreneurs.

### **3.1 Selection of Activities and the Sample Districts**

After selecting the relevant processing activity within the category, the districts having those activities dominantly were selected. As is mentioned table 1.1, the main activities to be covered are the food and non food processing activities which are again sub divided. These are as follows-

#### **The Food Processing Sector in Maharashtra**

##### **1. Primary Milling of Grains - Rice milling**

Primary milling of grains is the most important activity in the grain processing segment of the industry. Grain processing includes milling of rice, wheat and pulses. Among these food grain crops, rice is the staple food for majority in the country. India is the second largest producer of rice in the world next to China and also one of the leading exporters of rice in the world market. Within the country, among all the cereals, paddy occupies the first place both in area and production. In Maharashtra, among the food grains that undergo primary processing i.e. paddy, wheat and pulses, paddy occupies largest area contributing around 12 percent to the area under foodgrains and 20 percent to the production of food grains. Thus, rice being an important crop in the cropping pattern and in the commodity basket, rice milling was selected as the dominant activity in this category.

Paddy in its raw form cannot be consumed by human beings. The harvested paddy has to be processed before it goes to the market for consumption. Paddy grain is milled either in raw condition or after par-boiling. The harvested paddy is cleaned to remove impurities, unfilled grains and stones. Husk is separated from the paddy and the bran layer is removed to get rice. The rice so obtained is polished to improve the appearance of the milled rice. The rice is graded and finally packed ([www.nabard.org/modelbankprojects/ricemill.asp](http://www.nabard.org/modelbankprojects/ricemill.asp)). The by products of paddy processing are the husk and bran which are used as fuel and as edible oil after processing respectively. Rice so obtained after the primary milling is also used for further processing to obtain various secondary and tertiary products. Over the years there has

been a steady growth of improved rice mills in the country. Most of these have capacities ranging from 2 tonnes /hr to 10 tonnes/ hr.

Existence of a rice mill in every locality is extremely important. In the absence of village level rice milling unit, the farmers have to travel great distances for milling the rice. This may increase transportation and handling losses. The Central Govt. is also providing a big boost towards the development of this industry. It has repealed w.e.f. May 27, 1998 the Rice Milling Industry (Regulation) Act, 1958 and Rice Milling Industry (Regulation and licensing) Rules, 1959 and has permitted setting up of rice milling in the country.

### **Selection of the District**

In Maharashtra, rice is grown in the coastal districts as well as districts getting high rain fall. Among various districts, the area under paddy in the costal districts in 2004-05 was 29 percent of the total state paddy area and the production was around 48 percent. Ratnagiri is one of the important coastal districts producing paddy. It contributes around 5 percent and 9 percent to state paddy area and paddy production. The coastal districts are known for the prevalence of rice mills hence district Ratnagiri from Konkan division was selected as a sample district.

### **2. Spices and Horticultural Products: Cashew nuts**

In 2006-07, the total area under horticultural crops in Maharashtra was around 14 lakh hectares and the area under spices was little more than 1 lakh hectare. Due to the domination of the horticultural crops in the cropping pattern, a horticultural crop was selected. Among various horticultural crops, cashew occupies around 11 percent of the total state cashew area. The area under this crop that was 19913 ha in 1994-95, increased to 90382ha in 2004-05 registering an increase of 78 percent. In 2006-07, the area under cashew nut was 1.65 lakh ha, highest only after that under mango (Commissioner Agriculture, Pune).

Cashews are cultivated mainly in Kerala, Maharashtra, Tamil Nadu, Karnataka, Goa and Andhra Pradesh. Table 3.2 presents the state wise status of cashew cultivation. It is clear that that Maharashtra is the major cashew producing state of India. It can be seen that yield of cashew nuts in Maharashtra is very high and the state contributes around 32 percent to the state cashew production.

Table 3.2: State wise Area, Production and Yield of Cashew nuts in 2005-06

Sr.No.	State	Area(000ha)	Production(000tonnes)	Yield (kg/ha)
1	Maharashtra	160	183	1144
2	Kerala	98	67	684
3	Andhra Pradesh	170	92	541
	India	855	573	670

Source: CMIE, 2007

In comparison with the traditional crop like mango, cashew has experienced high growth in recent years due to the growing demand in the national and international market. The cashew cultivation got a boost in the state due to the various government schemes like distribution of seeds, capital subsidy scheme. The cultivation was started in a big way after the introduction of EGS- linked horticultural scheme of the state government in 1990.

Cashew can not be consumed without processing. It is a high value crop and when processed carefully, fetches a good price to the processors. The quality of the seed, recovery from the seed and the way the seed is processed determines the price of the final product. Properly processed cashews last for 4 to 6 months or else they develop fungus or taste bitter. Most of the cashew processing is undertaken manually. The process is highly labour intensive and the work force consists mainly of women.

However, it can be noted that that out of the total cashew production in Maharashtra, only 20 percent of it is processed while rest is sent to the neighbouring cashew producing states. Approximately, the state processes around 10,000 metric tones of cashews and sends out around 35000 mt. outside the state for processing (Patil, 2006). This clearly speaks of the potential Maharashtra has in cashew processing. Therefore cashew processing was selected as the dominant activity within the category.

Processing of cashew nuts refers to the conversion of raw cashew nuts in shell to its blanched graded kernel form. Matured nuts are harvested from the fully ripe cashew fruits which fall on the ground. These are dried under sun for 2-3 days to reduce the moisture content. They are then processed and kernels are removed so that table variety can be obtained. The processing of raw nuts involves roasting, shelling, drying, peeling, grading and packing.

Steam roasting is the commonly used method by most of the processing units. In the case of steam roasting, the raw nuts are steam roasted for about 25-30 minutes. Then

the nuts are allowed to cool for 10-14 hours and taken for shelling. For shelling, commercial processing units use foot operated shell cutters. The blades cut the shell, leaving the kernel untouched. After shelling, the kernels and shell pieces are separated manually. The kernels are to be dried to moisture content of about 4 - 5 per cent. This is done by drying the kernels in hot chambers at 70 - 80 C in perforated trays for about 6 - 8 hours. Peeling involves the removal of testa (seed coat) from the kernel. Kernels are graded according to the size manually. The last stage is packaging (<http://dccd.gov.in>).

Actual recovery of table variety is around 30 percent whereas 50 percent account for shell and remaining 20 percent is process loss. Cashew shells also have a market as they are used in cattle feed (<http://mofpi.nic.in/projectprofiles/profiles.htm>).

### **Selection of the District**

The cashew cultivation has spread mainly to the Konkan region of Maharashtra due to the favourable agro-climatic conditions available in this region. Among cashew nut growing coastal districts, Ratnagiri contributes around 42 percent to the total state area under cashew nut and has a number of cashew nut processing units. Therefore district Ratnagiri was selected as the sample district.

### **3. Livestock/ fish based processing-**

The agrarian crisis in various states calls for diversification into allied activities for reducing various kinds of risks faced by the farming community and for enhancing income by engaging into value adding activities. Livestock and fish based activities therefore assume a place of importance in policy prescriptions. With changing consumption pattern, the proportion of expenditure spent on non vegetarian food – meat, poultry, fish is increasing.

Within livestock based activities, a processing activity had to be chosen which is basically undertaken on a small scale. As primary processing of fish is carried out at the household level by a large number of families in coastal areas of Maharashtra, this activity that was selected as the sample activity was.

Maharashtra has a coastline of 720 km, with five maritime districts. About 232,000 people depend on fisheries. The average production is approximately 315 lakh tonnes per year. In the traditional Koli fishing community of Maharashtra, fishing is a family-based occupation. Fresh fish is available only near the coastal areas and therefore



consumers at other locations get processed varieties. The demand for processed fish is increasing at great pace. The coastal fisherwomen usually perform all the post-harvest handling, icing, washing, sorting, drying and marketing of fish. Marine fish production in Maharashtra is a seasonal activity. Active fishing takes place for about nine months in the year, from September to May. The traditional fishermen communitary people along with people from Muslim community are engaged in fishing and processing and marketing of the fresh/ processed fish. The share of fishing in the SDP is just 2.25 percent of the NSDP.

Units engaged in fish processing mostly exist in the small scale sector. Over the last decade, the organized corporate sector has entered the fish preservation and processing industry and in the export of the processed fish. Processing of fish into canned and frozen form is carried out almost entirely for the export market.

Most of the processing is carried out at the landing centre itself. Various processes used for preserving / processing the fish are- sun drying, salting, freezing, processing for preparation of ready made fish products. Bulk of the catch is sun-dried which is an unhygienic process. The fish is dried for consumption, either for immediate sale or for sale during the monsoon. Salting is one of the common methods of fish preservation. However, now less than two per cent of fisherwomen use salt for preserving fish. With steadily growing market, it has become imperative to process scientifically for better shelf life as well. Modern units sell tinned/ frozen fish and fish products.

### **Selection of the District**

Ratnagiri, located on the west coast of Maharashtra was selected as the sample district for the survey of fish processing units. The district has a coastline of 167 km. and a number of families are dependent on fishing and fish processing activities. In 2006-07, the production of fish from sea as well as inland water sources was to the tune of 109055 metric tones and the value of this catch was Rs. 22759.47 lakh (GoM, 2006-07). The livelihood of the population is supported largely by allied activities like horticulture and fishing. Therefore this district was selected as a sample district for the fish processing units. For selecting the food processing units in the districts, authorities like DIC and KVIB were approached. The units which were registered under these authorities and which were running comparatively smoothly were listed.

## **Non –food Agro based Processing Sector in Maharashtra.**

As far as non food processing sector is concerned, within each of the categories i.e. textile, wood, leather and paper, a number of activities are carried on. However, for selecting the activities, only those activities were considered which are carried on a smaller scale. Under each category, process of manufacturing of the concerned product was not selected as these are basically large scale activities, having large capital and employment requirements e.g. textile mills, paper mills or tanneries. Thus, those activities were chosen which are undertaken generally and largely by small units. Therefore, tailoring units, notebook making units, furniture making units and units making leather goods as shown in table 1.1 (chapter 1) were selected. District wise information relating to the number of units and employment in these non food agro-based units is not available. However, the available secondary data clearly shows that these non food agro-industries are carried on a large scale in better developed districts and in urban areas (table 3.1). Therefore the two most developed districts viz. Mumbai and Pune were selected for the non food based agro-units. Both the cities are located in western Maharashtra. Whereas Mumbai is the coastal district, Pune is located to the south east of Mumbai. The table shows that districts in western Maharashtra have very high percentage of non farm workers. Therefore, Mumbai and Pune were chosen for selecting sample units from the non food sector. Within the non farm activities, leather processing is an important activity of the unorganized small scale units in Mumbai city and hence Mumbai city district was selected for selecting sample units. Units in other categories i.e. paper, textile and wood products were selected from district Pune.

### **1. Textile based products**

Textile industry in India plays an important role as far as the income and employment generation are concerned. It contributes around 14 percent to industrial production, 4 percent to GDP and 16 percent to the country's export earnings. The sector is the second largest provider of the employment after agriculture (GoI, 2005-06). The textile industry consists of organized, capital intensive mill sector and the decentralized power loom sector. This decentralized sector is comprised of the three major segments viz., power loom, handloom and hosiery. In addition to the above, there are readymade garments, khadi as well as carpet manufacturing units in the decentralised sector.

Among various states of India, Maharashtra is the leading textile state. Mumbai, is known for composite mills, and now is a hub of garment manufacturers - exporters. Similarly, Ichalkaranji, Solapur are the major Handloom centres in Maharashtra.

### **Selection of the Activity and the District**

Tailoring units in Pune were selected as sample units.

## **2. Paper based products**

The Indian paper industry is the 15th largest in the world and contributes Rs. 25 bn to the government. The industry has recorded a volume growth of CAGR of 5.5 percent over the last 3 years. India's per capita consumption of paper is at 6 kgs compared to the global level of 52kgs ([www.indiainfoline.com](http://www.indiainfoline.com)). However, with the expected increase in literacy rate and growth of the economy the per capita consumption of paper is expected to increase. Paper industry produces paper for printing/ writing, packing, board making etc. The Indian paper industry has an installed capacity of 6.7 mn tons while, the effective capacity is estimated to be lower at 6.15mn tons ([www.indiainfoline.com](http://www.indiainfoline.com)).

### **Selection of the Activity and the District**

Notebook making units were selected from the district Pune.

## **3. Leather based products**

India is the largest livestock holding country (21percent large animals and 11 percent small animals). The country possesses a large population of cattle, buffaloes, goat and sheep which is a source of 10 percent of the global leather requirement. The leather industry utilizes the by products of slaughterhouses and transforms the raw material into finished goods. Hides and skins from animals from slaughter houses are sent to tanneries for tanning and finishing. These are capital intensive activities. The finished leather is used for production of various leather goods. This is a labour intensive activity.

Today India is the third largest producer of leather in the world and has shown impressive growth as far as exports are concerned. Composition of exports of leather and leather products has undergone a change over the years and India now exports more of value added leather products to the world.

Dharavi area in Mumbai in Maharashtra is Asia's largest slum and is a house for people engaged in various small scale businesses for earning livelihood. Dharavi

inmates have households/ individuals engaged in leather business-i.e. tanned leather suppliers, suppliers of accessories, leather goods manufacturers and leather goods traders. The leather goods producers acquire vegetable tanned hides or semi tanned leather from within Maharashtra (Baramati, Meeraj) or from Chennai, Kanpur and Kolkatta.

#### **Selection of the Activity and the District**

Leather processing units from district Mumbai city were selected as the sample units.

#### **4. Wood based units**

The trunks of trees are primarily used to make solid wood products such as furniture, musical instruments, lumber and handles for tools and sporting equipment. Trunks also are peeled into thin sheets and used as veneer for plywood and furniture. Industrial wood includes all types of wood other than fuel wood. Various industrial sectors, such as pulp and paper, plywood, match industry, sports goods industry, railways, packaging industry, vehicle body builders, agricultural equipment as well as furniture and housing sector make up the demand for industrial wood.

Growth of the Indian economy has posted healthy growth figures since the early 90s. This has led to multiplication of the demand for timber. Massive real estate development, increasing urbanization and growing middle and upper income classes are the major drivers of this demand ([www.atree.org](http://www.atree.org)).

#### **Selection of the Districts**

Furniture making units were selected from district Pune.

### **3.2 Profile of Districts Selected for the Study**

#### **Ratnagiri**

This district is one of the four costal districts of the state. It is surrounded by Indian ocean on the western side and Sahyadri hill on the eastern side. It occupies 2.7 percent of the total geographical area of the state is home to 1.75 percent of the total state population.

The agro-climatic condition of the state does not allow the population to earn their living solely through agriculture (mainly crops like paddy, nagli) as only 37.91 percent of the cultivable land is actually cultivated. This is because many parts of land are hilly and saline. Similarly, the percentage of land under irrigation in gross cropped area (GCA)

was only 3.37 percent in 2000-01. Thought the district falls under heavy rainfall region, due to the topographical conditions, it becomes difficult to obstruct water. The Employment guarantee scheme (EGS) linked to horticulture started by the government in 1990 gave a boost to the cultivation of fruit crops like mango, cashew and coconut. The best quality fruits have a potentially wide international market and many cultivators are earning through exporting their produce.

As is mentioned earlier, Ratnagiri has a coastline of 167 km. and a number of families are dependent on fishing and fish processing activities. As far as the processing of this catch is concerned, out of the total, 15.20 percent fish were dried, 8.9 percent were salted and the remaining were marketed within as well as outside the district (GoM 2006-07).

The district lags behind on account of its industrial development also. There are only a few big factories in the state. In 2005, there were only 11085 workers in various registered factories of the district. The livelihood of the population is therefore supported largely by allied activities like horticulture and fishing and the remittances sent by the family members migrated towards industrial areas like Mumbai and Pune.

### **Pune**

Pune is an important district of the state. It occupies 5 percent of the geographical area 7.5 percent of the population of the state. Population wise it is the second largest district of the state. It share in the NSDP is around 9 percent (2004 and 2005). The district is well known for its industrial development, IT hub, educational and research institutions. Pune districts has many industrial estates/industrially developed areas in which a number of factories are located. These manufacture agricultural machinery, chemicals, pharmaceutical products, fertilizers, textile products, automobiles, etc. There are 13 sugar factories in the districts. A number of small scale industries are also located in the state. Because of industrial as well as educational development of the district, it receives streams of migrant population from other parts of the state/ country.

### **Mumbai**

Mumbai is the capital city of the state. Mumbai city district along with the Mumbai suburban district makes up the metropolis of Mumbai. The city area is the South Mumbai or Old Mumbai. The district is entirely an urban district. The city has global

importance since it has an international sea port and the international airport. It is a home to many multinational companies which have set up their commercial base in Mumbai.

Table 3.3 and 3.4 show population and income of the sample districts respectively. The tables clearly show the traditional structure and underdeveloped nature of economy of Ratnagiri as compared to the urbanized economies of Pune and Mumbai.

Table 3.3: Population in the Sample Districts - 2001.

	Ratnagiri	Pune	Mumbai city
Total population	16,96,777	72,32,555	33,38,031
Share of Rural population to total population (%)	88.67	41.92	-
Density of population (per sq Km)	207	462	27,209
Total Main workers	58791	26,45,429	12,50,710
% of agricultural labourers in TMW	8.09	10.5	-
% of cultivators in TMW	52.42	26.82	-
Literacy Rate (%) Total	75.05	80.45	86.4
Male	85.89	88.34	90.23
Female	65.77	71.89	81.38
rural	73.32	72.44	-
urban	88.26	86.11	86.4

Sources: For Pune GOM (2005-06), for Ratnagiri GOM (2006-07), [www.censusindia.gov.in](http://www.censusindia.gov.in) for Mumbai.

Table 3.4: Income of the Sample Districts and State- 2005-06.(Rs.Cr)

Sr.No		Ratnagiri	Pune	Mumbai	Maharashtra
1	Net District Domestic Product (at constant (1999-00) prices. (Rs.Cr)	4190	32,369	60,961	2,96,155
2	District per capita income at current prices (Rs)	29,214	52,811	57,229	36,090

Sources: Economic Survey of Maharashtra, 2007-08.

With this background, we look into the profile of the sample units which were selected from the above mentioned districts.

### 3.4 Profile of the Sample Entrepreneurs of Agro-Processing Activities

The units could not be selected in the suggested proportion within the sub-categories due to non availability of enterprises/ units of a particular category at the time of survey. Table 3.5 shows the actual number of units that were selected during the survey. The units selected in the requisite proportion were from sub categories- fish

processing, grain processing, leather, paper and wood. In all, 18 from the food processing category and 12 from the non food processing category were selected.

Table 3.5: District wise and Activity wise Selection of Sample Processing Units  
(Numbers)

Processing Activity	Ratnagiri			Mumbai			Pune			Total			
	O A M E	N D M E	D M E	O A M E	N D M E	D M E	O A M E	N D M E	D M E	O A M E	N D M E	D M E	A L L
<b>A) Food Processing</b>													
1.Cashew	2	3	1	0	0	0	0	0	0	2	3	1	6
2.Fish	3	2	1	0	0	0	0	0	0	3	2	1	6
3.Rice mill	3	2	1	0	0	0	0	0	0	3	2	1	6
<b>Total</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>18</b>
<b>B) Non-Food Processing</b>													
1.Leaner	0	0	0	1	1	1	0	0	0	1	1	1	3
2.Paper	0	0	0	0	0	0	1	1	1	1	1	1	3
3.Textile	0	0	0	0	0	0	2	1	0	2	1	0	3
4.Wood	0	0	0	0	0	0	1	1	1	1	1	1	3
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>12</b>
<b>All Activities</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>13</b>	<b>11</b>	<b>6</b>	<b>30</b>

Table 3.6 presents socio-economic profile of the sample entrepreneurs. It can be seen that most of the entrepreneurs belong to the category 'others' which also includes people from other religions (e.g. Muslims which are involved in fish processing).67 percent of the leather entrepreneurs belong to the SC /ST category as tanning of the animal skin has been the traditional business of this community. It is also interesting to note that only two entrepreneurs out of a total of thirty belong to this particular category. This indicates lower occupational mobility in this particular community. As far as education is concerned, it can be observed that majority of the entrepreneurs are educated. Majority of them have been educated upto the 10<sup>th</sup> standard. It can also be observed that the entrepreneurs possessing cashew processing units, rice mills and paper based (binding) units have taken education above 10<sup>th</sup> standard. Thus, the entrepreneurs engaged in activities which need technical know-how, relatively heavy investments in terms of machinery are seen to be better educated. As far as land holding size is concerned, it can be seen that urban based households engaged in non food processing agro-based activities do not possess land. It is only the households in rural areas of a Konkan engaged in cashew processing and rice milling possess land. These households

depend upon agriculture and agro- based activities for their survival and hence possesses land. Families engaged in fish processing also do not possess land. It is also observed that majority of the units are existing units and have experience of more than 5 to 10 years back. This is specifically true in case of fish and leather units as the business is carried on traditionally and hence the household members have learnt the business traditionally. It can be noted that the cashew units are the newly established units and all the entrepreneurs have been trained as running the business needs technical training and knowledge about the machinery.

Table 3.7 shows the factors which motivated the entrepreneurs to take up the business. It can be seen that majority of the entrepreneurs have reported getting employment as the motivating factor. Similarly majority has reported that previous experience in the business and traditional nature of the business has motivated them to continue with activity. The units engaged in cashew processing have however reported other factors as motivating factors as the units are newly established.

Table 3.8 presents the composition of the family size of the sample entrepreneurs. The average size of the family is varying between 3-7 for food and 4-9 for non food agro units. It can be seen that for majority of the categories, women are also the earning members along with the male members. The average dependency ratio is higher for non food units (49.91) than the food units (32.50). This possibly indicates higher participation of household members in the processing activity in case of the food processing units.



Table 3.6: Socio Economic Profile of the Sample Entrepreneurs

Sr. No	Variables	Category	Food Processing Units Reporting			Non- Food Processing Units Reporting			
			Cashew(6)	Fish (6)	Rice Mill (6)	Leather (3)	Paper (3)	Textile (3)	Wood( 3)
1.	Social Group	SC & ST	0 (0)	0 (0)	0 (0)	2 (67)	0 (0)	0 (0)	0 (0)
		OBC	2 (33)	0 (0)	5 (83)	0 (0)	0 (0)	1 (33)	1 (33)
		Others	4 (67)	6 (100)	1 (17)	1 (33)	3 (100)	2 (67)	2 (67)
2.	Age(Yrs.)	< 25	1 (17)	0 (0)	1 (17)	0 (0)	0 (0)	0 (0)	0 (0)
		25-45	2 (33)	4 (67)	4 (67)	0 (0)	0 (0)	0 (0)	2 (67)
		45-60	3 (50)	2 (33)	1 (17)	3 (100)	1 (33)	3 (100)	1 (33)
		> 60	0 (0)	0 (0)	0 (0)	0 (0)	2 (67)	0 (0)	0 (0)
3.	Education	Illiterate	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		Up to 10 <sup>th</sup> Std	2 (33)	6 (100)	2 (33)	3 (100)	2(67)	3( 100)	3 (100)
		Above 10 <sup>th</sup> Std	3 (50)	0 (0)	4 (67)	0 (0)	1 (33)	0 (0)	0 (0)
		Tech. Qualified	1 (17)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
4.	Land Holding	Nil	1 (17)	6 (100)	1 (17)	1 (33)	3 (100)	3(100)	3 (100)
		< 1 ha.	3 (50)	0 (0)	3 (50)	0 (0)	0 (0)	0 (0)	0 (0)
		1-2 ha.	0 (0)	0 (0)	0 (0)	2 (67)	0 (0)	0 (0)	0 (0)
		2-4 ha.	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		4-10 ha.	2 (33)	0 (0)	1 (17)	0 (0)	0 (0)	0 (0)	0 (0)
		> 10 ha.	0 (0)	0 (0)	1 (17)	0 (0)	0 (0)	0 (0)	0 (0)
		Secondary	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
5.	Previous Experience in Selected Activity	Nil	3 (50)	0 (0)	0 (0)	0 (0)	0 (0)	1 (33)	0 (0)
		< 5 Yrs.	2 (33)	0 (0)	3 (50)	0 (0)	0 (0)	1 (33)	2 (67)
		5-10 Yrs.	0 (0)	0 (0)	1 (17)	2 (67)	3 (100)	0 (0)	0 (0)
		10-20 Yrs.	1 (17)	2 (33)	2 (33)	0 (0)	0 (0)	1 (33)	1 (33)
		20-30 Yrs.	0 (0)	2 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
		> 30 Yrs.	0 (0)	2 (33)	0 (0)	1 (33)	0 (0)	0 (0)	0 (0)
6.	Nature of Experience	Learnt Traditionally	0 (0)	6 (100)	1 (17)	2 (67)	1 (33)	2 (67)	1 (33)
		Work Experience	0 (0)	0 (0)	3 (50)	0 (0)	2 (67)	1 (33)	2 (67)
		Trained	6 (100)	0 (0)	2 (33)	1 (33)	0 (0)	0 (0)	0 (0)

Note: Figures in the bracket indicate percentage to the total in the category.

Table 3.7: Motivating Factors for the Sample Entrepreneurs

(Numbers)

Name of the Processing Activity	Type of enterprise (OAME / NDME / DME)	Entrepreneurs Reporting							
		Traditionally Followed	Previous experience	Demonstration effect	Persuasion by others	Higher Profit margin	Demand for the product	Lack of avenues	To get employment
A) Food Processing									
1.Cashew Processing	OAME	0 (0)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	0 (0)	2 (100)
	NDME	0 (0)	0 (0)	2 (67)	2 (67)	2 (67)	1 (33)	0 (0)	3 (100)
	DME	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)	1 (100)
2.Fish	OAME	3(100)	1 (33)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (100)
	NDME	2 (100)	1 (50)	0 (0)	0 (0)	0 (0)	1 (50)	0 (0)	2 (100)
	DME	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
3.Rice Mill	OAME	1(33)	3 (100)	2 (67)	1 (33)	2 (67)	0 (0)	0 (0)	3 (100)
	NDME	2 (100)	1 (50)	1 (50)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)
	DME	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	1 (100)
B) Non-Food Processing									
1.Leaner Industry	OAME	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	NDME	1 (100)	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	1 (100)
	DME	1(100)	1 (100)	0 (0)	0 (0)	1 (100)	1 (100)	0 (0)	0 (0)
2.Binding	OAME	0 (0)	1 (100)	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	1(100)
	NDME	0 (0)	1 (100)	1 (100)	0 (0)	0 (0)	1 (100)	1 (100)	1 (100)
	DME	1 (100)	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
3.Textile	OAME	2 (100)	2 (100)	0 (0)	0 (0)	1 (50)	1 (50)	1 (50)	1 (50)
	NDME	1 (100)	1 (100)	0 (0)	0 (0)	1 (100)	1 (100)	0 (0)	0 (0)
	DME	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
4.Wood	OAME	0 (0)	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
	NDME	1 (100)	1 (100)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)
	DME	1 (100)	1 (100)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)
Total		17 (57)	18 (60)	8 (27)	3 (10)	9 (30)	8 (27)	4 (13)	24 (80)

Note: Figures in brackets indicate percentages of total entrepreneurs in the category of enterprise.

Table 3.8: Average Size of the Family and its Composition of Sample Entrepreneurs (Numbers)

Processing Activity	Type of enterprise (OAME /NDME / DME)	Men		Women		Children	Total	Average Size of Family	Dependency ratio (%)
		Earner	Dependent	Earner	Dependent				
A) Food									
1.Cashew	OAME	3	0	4	0	4	11	5.50	36.36
	NDME	6	1	4	2	4	17	5.67	41.18
	DME	1	0	1	0	1	3	3.00	33.33
2.Fish	OAME	8	0	6	0	5	19	6.33	26.32
	NDME	4	0	5	0	3	12	6.00	25.00
	DME	2	0	3	0	1	6	6.00	16.67
3.Rice Mill	OAME	6	1	4	3	2	16	5.33	37.50
	NDME	4	1	2	1	1	9	4.50	33.33
	DME	2	1	2	1	1	7	7.00	42.86
B) Non-Food									
1.Leather	OAME	1	0	1	0	2	4	4.00	50.00
	NDME	1	0	0	2	2	5	5.00	80.00
	DME	3	0	0	3	3	9	9.00	66.67
2.Binding	OAME	2	0	1	1	2	6	6.00	50.00
	NDME	2	0	1	1	2	6	6.00	50.00
	DME	1	0	2	2	1	6	6.00	50.00
3.Textile	OAME	3	0	4	0	1	8	4.00	12.50
	NDME	3	0	2	0	0	5	5.00	0.00
	DME	0	0	0	0	0	0	0.00	
4.Wood	OAME	2	0	1	0	2	5	5.00	40.00
	NDME	2	0	1	0	1	4	4.00	25.00
	DME	1	0	0	1	2	4	4.00	75.00

## **Concluding remarks**

The chapter presents background information for carrying out discussion in the succeeding chapters. Profile of the districts chosen shows that district Ratnagiri which is chosen for food processing units is mainly an agrarian district, depending on agriculture and allied activities for livelihood. On the other hand, Pune and Mumbai are the most developed and industrial districts of the state. Profile of the sample entrepreneurs shows that fish and leather units are the ones carrying on the traditional business. Most of the sample entrepreneurs are educated with a minimum education attainment upto 10<sup>th</sup> standard. Whereas the fish units are owned by people from Muslim community, leather units are owned by those belonging to the SC category. All other entrepreneurs belong to the category of 'others'. The dependency ratio is found to be lower for the food processing units in Ratnagiri than the non food processing units in Pune and Mumbai indicating higher level of participation of household members in the former.

## ***Cost of Investment and its Financing***

In this chapter, we look into the status of the units in terms of their age, registration status, area of operation etc. This gives us an idea as to whether these are well established or otherwise. We also look into the pattern of investment made by these units and the financing of the investments made. The data brings out in what proportion the units are financing investment through their own funds, loans or subsidies and the proportion of block and working capital in the total.

### **4.1 Status of the Sample Units**

Table 4.1 presents the status of the sample units. Table shows that most of the units are the existing ones. It is the cashew processing units and the rice mills which are seen to be the new units. It can also be seen that most of the units are registered. Four fish processing units and one OAME each from leather, textile and wood category are the unregistered units. The fish units carry out their activity outside the house near the beach. The area covered by the units using machinery - cashew units, rice mills and binding units is seen to be more than the other business units. It can also be seen that for all the non food processing units, the concerned activity is the main activity. In case of food – processing units, it can be seen that the activity is the secondary activity in case of the rice mills. For these households, cultivation of rice and fruits is the main activity.

### **4.2 Cost of Investment**

Table 4.2 shows the details of investment made by the entrepreneurs. It can be seen that generally, within a category, investment is increasing with the size of the unit. This means that size of the investment by OAMEs is lower than that of NDMEs which in turn have lower investment than DMEs. The size of the working capital is seen to be lower for the OAME units as these units do not have to incur expenditure on wages/ salaries.

It can also be seen that size of the investment is higher in case of rice mills and paper based activity of binding which depend upon costly machinery for processing. Size of the investment is seen to be lower for fish processing OAMEs and NDMEs. The fish units need more working capital than fixed capital. The activity of drying and salting of

fish does not require any heavy initial investment. However, due to the high value of the raw material i.e. fish, proportion of working capital is seen to be higher than the block capital. For other units, the share of block capital is seen to be very high-it varies from 64 percent to 99 percent for food units. For non food units, it ranges from as low as 27 percent to a high of 97 percent. Since the non food section consists of units carrying out various activities with different requirements, share of block capital in each activity is seen to be different.

#### **4.3 Financing of the Investment**

Table 4.3 shows various sources that are used for financing the investment. These are - own fund, institutional/ non institutional loan and also subsidy in case of food processing units. All the units engaged in cashew processing, rice milling and one (DME) each in book binding and leather have taken loan to finance their own investments. The share of loan ranges from 37 percent to 80 percent. It can also be seen that as the food processing units like cashew units and the rice mills have been registered under DIC/ KVIB schemes, they have received loans as well as subsidy. On an average 18 percent of the investment has been funded by the subsidy for the 12 units covered under these food processing activities. The subsidy received by these units under the schemes has helped them to finance the investment needed thereby reducing their reliance on other sources like loan / own fund. It can be seen that units engaged in fish processing, and majority units in non food processing activities have utilized their own funds to finance investment. Only two units out of the sample of 30 units have taken non institutional loan.

Table 4.1: Status of the Sample Units

(Numbers)

Name of the Processing Activity	Type of enterprise (OAME / NDME / DME)	Status of Unit				Average age of the sample unit (years)	Registration status		Average Area (Sq. ft.)
		By occupation of the Entrepreneurs		By year of existence			Registered	Not Registered	
		Main	Secondary	New	Existing				
A) Food									
1.Cashew	OAME	1	1	2	0	2	0	700.00	
	NDME	3	0	2	1	2.67	3	1029.33	
	DME	1	0	1	0	3	1	400.00	
2.Fish	OAME	3	0	0	3	25.00	0	300.00	
	NDME	2	0	0	2	27.5	1	300.00	
	DME	1	0	0	1	45.00	1	500.00	
3.Rice Mill	OAME	1	2	1	2	4	3	460.67	
	NDME	1	1	1	1	12.5	2	1087.50	
	DME	0	1	1	0	3	1	1500.00	
B) Non-Food									
1.Leather	OAME	1	0	1	0	2.5	0	100.00	
	NDME	1	0	0	1	22	1	110.00	
	DME	1	0	0	1	37	1	400.00	
2.Binding	OAME	1	0	0	1	20	1	120.00	
	NDME	1	0	0	1	40	1	1200.00	
	DME	1	0	0	1	30	1	750.00	
3.Textile	OAME	2	0	0	2	35	1	120.00	
	NDME	1	0	0	1	40	1	240.00	
	DME	0	0	0	0	0	0	0.00	
4.Wood	OAME	1	0	0	1	15	0	150.00	
	NDME	1	0	0	1	28	1	200.00	
	DME	1	0	0	1	7	1	400.00	

Table 4.2: Details of Investment made by Entrepreneurs of the Sample Processing Units

Name of the Processing Activity	Type of enterprise	Per Unit Investment (in Rs.)		
		Block Capital	Working Capital	Total
<b>A) Food Processing</b>				
1.Cashew	OAME	375250.00 (95)	18324.75 (5)	393574.75 (100)
	NDME	325903.33 (88)	42430.00 (12)	368333.33 (100)
	DME	165000.00 (64)	92125.33 (36)	257125.33 (100)
2.Fish	OAME	10083.33 (22)	36007.67 (78)	46091.00 (100)
	NDME	4750.00 (5)	81937.50 (95)	86687.50 (100)
	DME	52500.00 (10)	467650.00 (90)	520150.00 (100)
3.Rice Mill	OAME	327000.00 (99.80)	649.92 (0.20)	327649.92 (100)
	NDME	631000.00 (98)	10870.00 (2)	641870.00 (100)
	DME	1250000.00 (99.71)	3640.00 (0.29)	1253640.00 (100)
<b>B) Non-Food</b>				
1.Leather	OAME	10700.00 (93)	750.00 (7)	11450.00 (100)
	NDME	67000.00 (90)	7350.00 (10)	74350.00 (100)
	DME	507700.00 (82)	114660.00 (18)	622360.00 (100)
2.Binding	OAME	45000.00 (96)	1917.00 (4)	46917.00 (100)
	NDME	120000.00 (27)	319400.00(73)	439400.00 (100)
	DME	1450000.00 (97)	52500.00 (3)	1502500.00 (100)
3.Textile	OAME	13700.00 (93)	1100.00 (7)	14800.00 (100)
	NDME	42000.00 (64)	23500.00 (36)	65500.00 (100)
	DME	0.00 (0)	0.00 (0)	0.00 (0)
4.Wood	OAME	30000.00 (36)	54083.00 (64)	84083.00 (100)
	NDME	75000.00 (42)	105275.00 (58)	180275.00 (100)
	DME	52300.00 (59)	36250.00 (41)	88550.00 (100)

Note: 1. Figures in brackets indicate percentage of total investment. 2. Block capital includes expenditure on machinery, tools, equipment, electric items, building / work shed and working capital comprises of expenditure on procurement / storing of raw materials payment to human labour, transportation charges, marketing, expenses, tax, insurance payments etc.



Table 4.3: Financing of Investment

(Rupees)

Name of the Processing Activity	Type of enterprise (OAME /NDME /DME	Average Gross Value of Investment Per Unit	Source of Fund Per Unit					
			Own Fund	Institutional Loan	Non-Institutional Loan	Total without Subsidy	Subsidy	Total with Subsidy
A) Food								
1.Cashew	OAME	393574.75	60000.00(17)	287500.00 (83)	0.00 (0)	347500.00 (100)	97500.00(21.91)	445000.00
	NDME	368333.33	133333.33 (37)	133333.33 (37)	91666.67 (26)	358333.33 (100)	25000.00(6.52)	383333.33
	DME	257125.33	0(0.00)	325000.00 (100)	0.00 (0)	325000.00(100)	113750.00(25.93)	438750.00
2.Fish	OAME	46091.00	10166.67 (100)	0.00 (0)	0.00 (0)	10166.67(100)	0	10166.67
	NDME	86687.50	12500.00 (100)	0.00 (0)	0.00 (0)	12500.00(100)	0	12500.00
	DME	520150.00	25000.00 (100)	0.00 (0)	0.00 (0)	25000.00(100)	0	25000.00
3.Rice Mill	OAME	327649.92	80000.00 (32)	173333.33 (68)	0.00 (0)	253333.33(100)	83333.33(24.75)	336666.66
	NDME	641870.00	150000.00(28)	387500.00 (72)	0.00 (0)	537500.00(100)	112500.00(17.31)	650000.00
	DME	1253640.00	450000.00 (42)	631000.00 (58)	0.00 (0)	1081000.00(100)	189000.00(14.88)	1270000.00
B) Non-Food								
1.Leather	OAME	11450.00	12000.00 (100)	0.00 (0)	0.00 (0)	12000.00(100)	0	12000.00
	NDME	74350.00	75000.00 (100)	0.00 (0)	0.00 (0)	75000.00(100)	0	75000.00
	DME	622360.00	125000.00(20)	500000.00 (80)	0.00 (0)	625000.00 (100)	0	625000.00
2.Binding	OAME	46917.00	50000.00(100)	0.00 (0)	0.00 (0)	50000.00 (100)	0	50000.00
	NDME	439400.00	450000.00(100)	0.00 (0)	0.00 (0)	450000.00(100)	0	450000.00
	DME	1502500.00	750000.00(50)	700000.00 (47)	50000 (3)	1500000.00(100)	0	1500000.00
3.Textile	OAME	14800.00	15000.00(100)	0.00 (0)	0.00 (0)	15000 (100)	0	15000
	NDME	65500.00	65000.00(100)	0.00 (0)	0.00 (0)	65000 (100)	0	65000
	DME	0.00	0.00 (0)	0.00 (0)	0.00 (0)	0 (100)	0	0
4.Wood	OAME	84083.00)	85000.00 (100)	0.00 (0)	0.00 (0)	85000 (100)	0	85000
	NDME	180275.00	200000.00(100)	0.00 (0)	0.00 (0)	200000 (100)	0	200000
	DME	88550.00	90000.00(100)	0.00 (0)	0.00 (0)	90000 (100)	0	90000

Note: Figures in brackets indicate percentages of total in investment.

## **Concluding remarks**

The data presented shows that most of the units except the cashew processing units and the rice mills are the existing units. It can also be seen that most of the units are registered except four fish processing ones and three OAMEs from non food sector. . The area covered by the units using machinery - cashew units, rice mills and binding units is seen to be more than the other business units. It can also be seen that for all the non food processing units located in Pune and Mumbai, fish units and most of the cashew units, the concerned activity is the main activity. The activity is the secondary activity in case of the rice mills. For these households, cultivation of rice and fruits is the main activity.

It can also be seen that size of the investment is higher in case of rice mills and paper based activity of binding which depend upon costly machinery for processing. Size of the investment is seen to be lower for fish processing units. For other units, the share of block capital is seen to be very high - it varies from 64 percent to 99 percent for food units. For non food units, it ranges from as low as 27 percent to a high of 97 percent. Majority of the units have financed the activity using their own funds. Units engaged in cashew processing and rice milling and one (DME) in book binding and leather have taken loan to finance their own investments. The former two have received subsidy as well under the DIC/ KVIC schemes which has helped them to finance the investment needed thereby reducing their reliance on other sources like loan / own fund. Only two units out of the sample of 30 units have taken non institutional loan.

## ***Economics of Investment in Agro-processing***

This chapter analyses the economics behind working of the sample units. It analyses the data relating to the process of production of the processing units and goes on to discuss the net income of the units calculated on the basis of total costs and gross value of income.

### **5.1 Production and Operation Cycle of the Activities**

Table 5.1 shows the details of the functioning of the units. The number of working days per month as well as working hours per day are seen to be uniform for all the units. The difference can be noted as far as working days per year are concerned. As the food processing units are located in the coastal district of Ratnagiri, all the activities come to a halt because of heavy rains during June-September. Therefore, working days per year for these units are less than the non food processing units in Pune and Mumbai. Depending upon the nature of activity, number of days required for other components of the operation cycle (stocking period, marketing and credit realization period) are seen to be different for different activities. The number of production cycles which a unit completes in a year also differs with the type and size of activity. Normally it can be seen that within a category the number of cycles completed increases with the size of the unit. It can also be seen that depending upon the time taken for processing of the input, the number of production cycles each unit completes is seen to be different. Thus, under food processing, rice processing has highest number of cycles per year as each cycle is of an hour. For cashew units, the number of cycles completed in a year is comparatively low as each cycle is of 3-4 days. Generally, all the units reported that the produce is marketed immediately. Cashew and fish units sell their produce to the agents, wholesalers. Rice mills, leather, furniture and tailoring units sell their produce to the agents and wholesalers ( and clients in case of rice mills) who provide them the basic raw material. Binding units also did not report any delay in marketing of the produce. It can be seen that for the fish processing units and the rice mills, the credit realization period is nil. For other units the number of days taken for credit realisation varies from 2-90 days. It is seen that on an

average, the credit realisation period for all the units is low except units in some categories such as leather and textiles units.

## **5.2 Sources of Raw Material and Marketing Linkages of the Processed Product**

This section deals with the markets from where the units obtain their raw material and sell their finished product. This gives us an idea about the number of linkages the producers have with various input and output markets.

It needs to be mentioned that as the units are small units, often working with only family labour, the capacity of the units to reach out to various markets was found to be limited. Similarly units like rice mills, leather units, textile mills and furniture units which process only the raw material provided to them by the customers at their doorstep do not have strong linkages with either input or output markets. In case of leather units in Mumbai, the produce is sold to the agents who send it to various places all over India. Hence the unit owners directly do not come in contact with the terminal consumers/markets. Hence, it is not shown separately in tables. Thus all the units except the cashew units have reported that they have only one source (market) for procuring raw material as well as selling their product. This can be observed from tables 5.2 and 5.3.

It can also be noted that since the units are small with the maximum number of workers being 9 (cashew DME), no unit in the total sample has the capacity to export the produce. Hence no unit has an export market. Hence table 5.4 does not carry any information about the exports of the produce. Thus, for all the households, 100 percent of the output has been sold domestically. Table 5.4 presents the quantity and value of the produce sold as well as the implicit price. The per unit price is seen to be different within the categories as far as cashew units and all the non food processing units are concerned as there are differences in the quality of the final output and type of the output especially in case of non food units.

Whereas the earlier tables have shown the number of channels of marketing, tables 5.5 and 5.6 show the source from where the raw material has been purchased and market where the produce is sold. Table 5.5 shows that except for the cashew units, all other units have one type of source from where the material is purchased. In absence of producers co-operatives, the units have not reported purchases from cooperative societies.

Table 5.1: Details of Functioning of the Sample Units (Per Unit).

Name of the Processing Activity	Type of enterprise	Level of working		Operation Cycle (number of days)					Working Days/Yrs	Prod Cycle/Yr (number)
		Days/M	Hrs./Day	Input Stock	Prod. Process	Output stock	Marketing	Credit Realisation		
A) Food										
1.Cashew	OAME	25.50	8.00	60.00	3.50	25.50	-	18.00	220.00	59.34
	NDME	23.67	8.00	220.00	2.67	2.67	4.00	0.00	198.67	64.33
	DME	25.00	8.00	270.00	3.00	2.00	1.00	2.00	225.00	75.00
2.Fish	OAME	23.67	8.67	0.00	3.33	0.00	-	0.00	189.33	183.00
	NDME	25.50	9.00	0.00	3.50	0.00	-	0.00	229.50	228.00
	DME	25.00	8.00	0.00	3.00	0.00	-	0.00	200.00	197.00
3.Rice Mill	OAME	25.33	4.67	0.00	1.00	0.00	-	0.00	202.67	858.67
	NDME	22.00	7.50	0.00	1.00	0.00	-	0.00	176.00	1312.00
	DME	26.00	10.00	0.00	1.00	0.00	-	0.00	208.00	2080.00
B) Non-Food										
1.Leather	OAME	24.00	12.00	0.00	1.00	3.00	-	0.00	288.00	288.00
	NDME	25.00	8.00	0.00	1.00	0.00	-	0.00	300.00	300.00
	DME	25.00	12.00	0.00	1.00	0.00	-	60.00	300.00	300.00
2.Binding	OAME	25.00	12.00	30.00	4.00	4.00	-	0.00	300.00	75.00
	NDME	25.00	8.00	30.00	1.00	7.00	-	0.00	300.00	300.00
	DME	25.00	8.00	15.00	1.00	20.00	-	90.00	300.00	300.00
3.Textile	OAME	25.00	9.00	0.00	1.00	5.00	-	30.00	300.00	300.00
	NDME	24.00	8.00	0.00	0.00	25.00	-	30.00	288.00	288.00
	DME	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00
4.Wood	OAME	25.00	10.00	10.00	0.00	5.00	-	0.00	300.00	75.00
	NDME	25.00	8.00	0.00	4.00	10.00	-	15.00	300.00	75.00
	DME	25.00	8.00	0.00	1.00	0.00	-	0.00	300.00	300.00

Table-5.2: Sources of Raw Materials (Production Inputs Reported by Sample

Processing Units)

Units Reporting Sources of Raw Materials (Number)						
Name of the Processing Activity	Type of enterprise	1 source	2 sources	Name of the Processing Activity	Type of enterprise	1 source
Food				Non Food		
1.Cashew	OAME		2	1.Leaner	OAME	1
	NDME	2	1		NDME	1
	DME	1			DME	1
2.Fish	OAME	3		2.Binding	OAME	1
	NDME	2			NDME	1
	DME	1			DME	1
3.Rice Mill	OAME	3		3.Textile	OAME	2
	NDME	2			NDME	1
	DME	1			DME	0
				4.Wood	OAME	1
					NDME	1
Total		15(50)	3(10)			12(40)

Note: Figures in bracket indicate percentages of the total reporting units.

Table 5.3: Terminal Markets where Product is Sold by Sample Processing Units

Units Reporting Sources of Raw Materials (Number)						
Name of the Processing Activity	Type of enterprise	1 source	2 sources	Name of the Processing Activity	Type of enterprise	1 source
Food				Non Food		
1.Cashew	OAME		2	1.Leaner	OAME	1
	NDME	2	1		NDME	1
	DME	1			DME	1
2.Fish	OAME	3		2.Binding	OAME	1
	NDME	2			NDME	1
	DME	1			DME	1
3.Rice Mill	OAME	3		3.Textile	OAME	2
	NDME	2			NDME	1
	DME	1			DME	0
				4.Wood	OAME	1
					NDME	1
Total		15 (50)	3 (10)			12 (40)

Note: Figures in bracket indicate percentages of the total reporting units.

Table 5.4: Marketing of the Processed Product

Name of the Processing Activity	Type of enterprise	Total average value output of processed product		Price per unit (Rs)
		Value(Rs)	Quantity(Kg)	
<b>A) Food</b>				
1.Cashew	OAME	265000.00	875.00	302.857
	NDME	491666.67	1916.67	256.52
	DME	1120000.00	4000.00	280
2.Fish	OAME	472960.00	4741.33	99.75
	NDME	1152000.00	10912.50	105.57
	DME	5000000.00	50000.00	100
3.Rice Mill	OAME	38186.67	169007.19	0.23
	NDME	198560.00	347483.50	0.57
	DME	520000.00	676000.00	0.77
<b>B) Non-Food</b>		<b>Quantity (Number)</b>		
1.Leather	OAME	475200.00	864.00	550
	NDME	270000.00	900.00	300
	DME	1650000.00	3300.00	500
2.Binding	OAME	238200.00	12000.00	19.85
	NDME	4400550.00	220027	20
	DME	988080.00	49404	20
3.Textile	OAME	40200.00	1002.00	40.12
	NDME	748800.00	6048.00	123.81
	DME	0.00	0.00	
4.Wood	OAME	984720.00	492.00	2001.46
	NDME	1495690.00	672.00	2225.73
	DME	1045235.00	522.00	2002.37

Table 5.5: Marketing Channels for Purchasing the Raw Materials

Channel	Food Processing Units Reporting (Nos.)			Non-Food Processing Units Reporting (Nos.)			
	Cashew (6)	Fish (6)	Rice Mill (6)	Leather (3)	Binding (3)	Textile (3)	Wood (3)
1.Purchasing raw material from farmers / fishermen directly	(3) Farmers	(6) Fishermen	—	—	—	—	—
2. Purchasing raw materials from farmers' Cooperative Societies	—	—	—	—	—	—	—
3. Purchasing raw materials through established trade channels and market channels	(3) Agents		(6) Taken for processing from customers/ farmers growing paddy	(3) Agents Traders/	(3) Whole Salers	(3) Taken for processing from the customers who supply cloth	(3) Whole Salers

It can be seen from table 5.6 that the cashew, fish and the binding units have sold their product to the agents, wholesalers (i.e. market functionaries) and also to the small consumers in the same market (i.e. directly to the consumers in the terminal market). Through the market functionaries like agents and wholesalers, the produce goes to various places.

Table 5.6: Marketing Channels for Selling the Processed Product Domestically

Channel	Food Processing Units Reporting (Nos.)			Non-Food Processing Units Reporting (Nos.)			
	Cashew (6)	Fish (6)	Rice Mill (6)	Leather (3)	Binding (3)	Textile (3)	Wood (3)
1. Selling the processed product directly in the terminal market			3		3	3	
2. Selling the Product through Market functionaries				3			3
3. 1 and 2	6	6			3		

### 5.3 Cost of Production

The fixed costs which recur through out the process of production are mentioned in table 5.7. Within each category, the quantum of the fixed cost is seen to be increasing with the size of the unit. On an average, only 13 to 14 percent of the total costs have been contributed by own fund in case of food as well as non food processing units. Out of the 30 units, bank loan has been taken only by 12 units and therefore, interest forms a part of fixed capital only for these units. These are basically the food processing units registered under DIC or KVIC and covered under their schemes. Other fixed costs (periodic maintenance, rent, insurance premium, taxes and salaries bonus) and depreciation are the main components of the recurring fixed costs.

As far as recurring variable cost is concerned, it can be seen from table 5.8 that cost on raw materials is the major component of the variable cost for most of the activities. However, it can be noted that the share of this component is higher for the food processing units i.e. cashew and fish processing units. For these units, generally, proportion of cost on raw material is seen to be declining with increase in the size of the units in the category. This is because with increase in the size, other costs like those on wages, marketing and



transportation are seen to be increasing. This cost is lower for the non food units as for many non food activities like tailoring, leather processing, and also the rice milling, the units do not have to buy the basic raw material that is to be processed. The units are provided with the raw material for processing by the customers who take back the processed product. Costs on repair and replacements are higher for the rice mills as these use heavy machinery.

Table-5.7: Recurring fixed Costs (Per Unit)

Name of the Activity	Type of enterprise	Interest on Capital			Depreciation	Other Fixed costs	Total
		Own Fund	Bank Loan	Other Loan			
(Rupees/yr.)							
A) Food							
1.Cashew	OAME	2350.00 (5)	10090.00 (22)	0.00 (0)	28400.00 (62)	4850.00 (11)	45690.00(100)
	NDME	6833.33(14)	7575.67 (16)	2924.00	18337.737 (39)	11646.67 (25)	47317.41(100)
	DME	0.00(0)	39000.00(27)	0.00 (0)	6908.33 (5)	96140.00 (68)	142048.33(100)
2.Fish	OAME	685.00 (23)	0.00 (0)	0.00 (0)	1026.59 (34)	1316.67 (43)	3028.26(100)
	NDME	800.00 (3)	0.00 (0)	0.00 (0)	900.00 (3)	28522.50 (94)	30222.50(100)
	DME	1750.00 (14)	0.00 (0)	0.00 (0)	3566.70 (29)	6800.00 (56)	12116.70(100)
3.Rice Mill	OAME	6416.67 (11)	10133.33 (17)	0.00 (0)	11201.12 (19)	32274.67 (54)	60025.79(100)
	NDME	14250.00 (16)	43187.50(49)	0.00 (0)	6451.69 (7)	24440.00 (28)	88329.19(100)
	DME	46830.00 (27)	48620.00 (28)	0.00 (0)	32733.30 (19)	45875.00 (26)	174058.30(100)
B) Non-Food							
1.Leather	OAME	10800.00(17)	0.00 (0)	0.00 (0)	866.66 (1)	50400.00 (81)	62066.66(100)
	NDME	4500.00 (6)	0.00 (0)	0.00 (0)	2650.00 (4)	67350.00 (90)	74500.00(100)
	DME	10800.00 (2)	0.00 (0)	0.00 (0)	14642.58 (3)	477500.00 (95)	502942.58(100)
2.Binding	OAME	4500.00 (21)	0.00 (0)	0.00 (0)	2033.34 (10)	14700.00 (69)	21233.34(100)
	NDME	13500.00 (19)	0.00 (0)	0.00 (0)	3205.70 (4)	56200.00 (77)	72905.70(100)
	DME	67500.00 (23)	9100.00 (3)	0.00 (0)	37416.67 (13)	177000.00 (61)	291016.67(100)
3.Textile	OAME	1100.00 (38)	0.00 (0)	0.00 (0)	956.67 (33)	810.00 (28)	2866.67(100)
	NDME	5200.00 (3)	0.00 (0)	0.00 (0)	2425.00 (1)	159500.00 (95)	167125.00 (100)
	DME	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)
4.Wood	OAME	7650.00 (21)	0.00 (0)	0.00 (0)	2033.33 (6)	27000.00 (74)	36683.33 (100)
	NDME	12000.00(10)	0.00 (0)	0.00 (0)	3566.67 (3)	110200.00 (88)	125766.67 (100)
	DME	4500.00(1)	0.00 (0)	0.00 (0)	3882.50 (1.37)	274000.00 (97)	282382.50 (100)

Note: 1. Recurring fixed costs refer to costs occurring at periodic interval and generally not keeping with any correlation with the level of production. 2. Figures in bracket indicate percentages of the total recurring fixed costs.

Table -5.8: Recurring Variable Cost of the Investment (Per Unit)

(Rupees/yr.)

Name of the Activity	OAME / NDME /DME	Repair & Replacement On Machinery	Cost on Raw Materials	Wages	Marketing Cost	Electricity Charges	Investment Working Capital	Transportation Cost of raw Material	Total
A) Food									
1.Cashew	OAME	4420.00 (2.72)	140000.00 (86.14)	0.00 (0.00)	10850.00 (6.68)	4150.00 (2.55)	1850.00 (1.14)	1250.00 (0.77)	162520.00 (100)
	NDME	1850.00 (0.53)	317000.00 (90.21)	10346.67 (2.94)	8633.33 (2.46)	5333.33 (1.52)	7000.00 (1.99)	1233.33 (0.35)	351396.66 (100)
	DME	1200.00 (0.39)	90000.00 (29.60)	90000.00 (29.60)	106250.00 (34.94)	8100.00 (2.66)	1050.00 (0.35)	7500.00 (2.47)	304100.00 (100)
2.Fish	OAME	736.67 (0.20)	335008.00 (90.97)	0.00 (0.00)	18333.33 (4.98)	4200.00 (1.14)	403.33 (0.11)	9600.00 (2.61)	368281.33 (100)
	NDME	600.00 (0.08)	691200.00 (91.99)	18360.00 (2.44)	19125.00 (2.55)	1200.00 (0.16)	500.00 (0.07)	20385.00 (2.71)	751370.00 (100)
	DME	20000.00 (0.45)	3600000.0 0 (80.33)	36,0000 (8.03)	387000.00 (8.64)	12500.00 (0.28)	1750.00 (0.04)	100000.00 (2.23)	4481250.00 (100)
3.Rice Mill	OAME	24666.67 (64.16)	0.00 (0.00)	0.00 (0.00)	8960.00 (23.31)	3616.67 (9.41)	1200.00 (3.12)	0.00 (0.00)	38443.34 (100)
	NDME	5500.00 (13.53)	0.00 (0.00)	19040.00 (46.85)	0.00 (0.00)	14000.00 (34.45)	2100.00 (5.17)	0.00 (0.00)	40640.00 (100)
	DME	80000.00 (37.43)	0.00 (0.00)	29120.00 (13.62)	0.00 (0.00)	56000.00 (26.20)	48620.00 (22.75)	0.00 (0.00)	213740.00 (100)

Contd....

Name of the Activity	OAME / NDME /DME	Repair & Replacement On Machinery	Cost on Raw Materials	Wages	Marketing Cost	Electricity Charges	Investment Working Capital	Transportation Cost of raw Material	Total
B) Non-Food									
1.Leather Industry	OAME	2400.00 (10.74)	8400.00 (37.58)	0.00 (0.00)	600.00 (2.68)	6000.00 (26.85)	4950.00 (22.15)	0.00 (0.00)	22350.00 (100)
	NDME	2400.00 (2.60)	15000.00 (16.23)	60000.00 (64.94)	5700.00 (6.17)	4800.00 (5.19)	4500.00 (4.87)	0.00 (0.00)	92400.00 (100)
	DME	12000.00 (0.88)	840000.00 (61.43)	405000.00 (29.62)	54000.00 (3.95)	9600.00 (0.70)	10800.00 (0.79)	36000.00 (2.63)	1367400.00 (100)
2.Binding	OAME	4000.00 (13.33)	15000.00 (50.00)	0.00 (0.00)	1000.00 (3.33)	8000.00 (26.67)	0.00 (0.00)	2000.00 (6.67)	30000.00 (100)
	NDME	4000.00 (0.10)	2820000.0 0 (72.67)	46800.00 (1.21)	543000.00 (13.99)	30000.00 (0.77)	13500.00 (0.35)	423000.00 (10.90)	3880300.00 (100)
	DME	25000 (3.47)	300000 (41.59)	126000.00 (17.47)	14400.00 (2.00)	36000.00 (4.99)	40000.00 (5.54)	180000.00 (24.95)	721400.00 (100)
3.Textile	OAME	2500.00 (22.12)	4500.00 (39.82)	0.00 (0.00)	0.00 (0.00)	3600.00 (31.86)	700.00 (6.19)	0.00 (0.00)	11300.00 (100)
	NDME	800.00 (0.37)	57600.00 (26.67)	144000.00 (66.67)	0.00 (0.00)	9600.00 (4.44)	4000.00 (1.85)	0.00 (0.00)	216000.00 (100)
	DME	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0)
4.Wood	OAME	15000.00 (2.28)	600000.00 (91.10)	0.00 (0.00)	0.00 (0.00)	9600.00 (1.46)	9000.00 (1.37)	25000.00 (3.80)	658600.00 (100)
	NDME	7000.00 (0.68)	840000.00 (81.84)	102000.00 (9.94)	16800.00 (1.64)	9600.00 (0.94)	3000.00 (0.29)	48000.00 (4.68)	1026400.00 (100)
	DME	4000.00 (0.44)	480000.00 (53.40)	225000.00 (25.03)	105000.00 (11.68)	5400.00 (0.60)	4500.00 (0.50)	75000.00 (8.34)	898900.00 (100)

Note: 1.Recurring variable costs refer to costs that vary with the level of production, almost proportionately. 2. Figures in bracket indicate percentages of the total recurring variable cost for a particular category.

#### 5.4 Net Income of the Investment

Table 5.9 compares gross value of the output as well as investment and presents the values of net income earned by the sample units.

Table 5.9a: Per Unit Net Income from the Investment (In Rs)

Name of the Processing Activity	Type of enterprise	GVO of the processed Product	Expenditure			Net Income
			Fixed	Variable	Total	
<b>A) Food</b>						
1. Cashew	OAME	265000.00	45690.00	162520.00	208210.00	56790.00
	NDME	491666.67	47317.41	351446.67	398764.08	92902.59
	DME	1120000.00	142048.33	304100.00	446148.33	673851.67
2. Fish	OAME	616960.00	3028.26	369353.00	372381.26	244578.74
	NDME	1152000.00	30222.50	751370.00	781592.50	370407.50
	DME	5000000.00	12116.70	4121250.00	4133366.70	866633.30
3. Rice Mill	OAME	83520.00	37025.79	6150.00	43175.79	40344.21
	NDME	198560.00	88329.19	40640.00	128969.19	69590.81
	DME	520000.00	174058.30	213740.00	387798.30	132201.70
<b>B) Non-Food</b>						
1. Leather	OAME	475200.00	62066.66	22350.00	84416.66	390783.34
	NDME	270000.00	74500.00	92400.00	166900.00	103100.00
	DME	1650000.00	502942.58	926400.00	1429342.58	220657.42
2. Paper	OAME	238200.00	21233.34	30000.00	51233.34	186966.66
	NDME	4400550.00	72905.70	3880300.00	3953205.70	447344.30
	DME	988080.00	291016.67	570400.00	861416.67	126663.33
3. Textile	OAME	40200.00	2866.67	11300.00	14166.67	26033.33
	NDME	748800.00	167125.00	216000.00	383125.00	365675.00
	DME	0.00	0.00	0.00	0.00	0.00
4. Wood	OAME	984720.00	36683.33	658600.00	695283.33	289436.67
	NDME	1495690.00	125766.67	1026400.00	1152166.67	343523.33
	DME	1045235.00	282382.50	679900.00	962282.50	82952.50

Firstly, a comparison of variable and fixed cost shows that the share of variable costs is higher than that of fixed costs for most of the units. On an average, 71 percent of the investment is the variable investment. In case of fish processing households, the share of fixed costs is seen to be marginal. This is because the activity is labour intensive and essentially forms a part of the unorganized sector of the economy with no expenditure on salaries/tax/insurance premium etc. Size of the total investment is seen to be increasing with the size of the units specifically for the food processing units. Similarly, in absolute terms, the paper and leather processing units are seen to have had heavy investments as

compared to other units. For all the units, the total investment is compared with the gross value of the output to find the net return. All the activities and units show a positive net return. It can be seen that for the food processing activities, the net return increases with the size of the unit. Among these activities, the highest net income is earned by the cashew processing unit (DME) followed by fish processing (DME). Among non food processing units, this particular pattern i.e. increasing income with increasing size is not observed. This might be because of the heterogeneous nature of these non food processing activities. Even within the categories, in some cases, the products of these units are differing slightly from the other units.

It can be noted that if we account for the subsidy received by the food units by adding it up with the net return, the value of net return of all cashew and rice mills will register an increase. The amount of subsidy is seen to be rising with increase in size of the unit. The average net return will increase by that amount.

Table 5.9b shows values not only of net income and expenditure, but also of net income per labourer and the ratio of net income to expenditure. To get an idea about the productivity of the unit, net income per unit of labour (hired plus family) was calculated. It was observed that this indicator followed a pattern similar to that of net income. For cashew and fish processing units, productivity is seen to be increasing with the size of the unit within the category. These are all female labour intensive units. However, this is not necessarily true of the non food units. For leather, paper and wood based units, productivity of the OAME units in each category is observed to be very high. These are the units working only with family labour. Higher labour productivity of these units possibly indicates efficiency of the family labour. Similarly, indicators like technology used, skill of the labourers, type of labour used also might have influenced per labourer output in case of these non food units.

Again for standardising and comparing the net income across the classes, the ratio of net income to total expenditure was found out. It was generally observed that the ratio was declining within a particular category with increase in the size of the unit. This shows that as the size increases, the expenditure rises more than proportionately. This points out at the efficiency of the investment of the smaller units.

Table 5.9b: Income and Expenditure of the Sample Units (Rs per year)

Processing Activity	Type of enterprise	Total Expenditure	Net Income	Net Income / Total Expenditure (%)	Net Income per labourer
<b>Food</b>					
1.Cashew	OAME	208210	56790	27.28	14198
	NDME	398764	92902.6	23.3	18581
	DME	446148	673852	151.04	74872
2.Fish	OAME	372381	244579	65.68	48916
	NDME	781593	370408	47.39	52915
	DME	4133367	866633	20.97	123805
3.Rice Mill	OAME	43175.8	40344.2	93.44	40344
	NDME	128969	69590.8	53.96	13918
	DME	387798	132202	34.09	22034
<b>Non Food</b>					
1.Leacher	OAME	84416.66	390783	462.92	130261.11
	NDME	166900	103100	61.77	25775
	DME	1429342.6	220657	15.44	36776.24
2.Binding	OAME	51233.34	186967	364.93	93483.33
	NDME	3953205.7	447344	11.32	89468.86
	DME	861416.67	126663	14.7	21110.56
3.Textile	OAME	14166.67	26033.3	183.76	26033.33
	NDME	383125	365675	95.45	52239.29
	DME	0	0		
4.Wood	OAME	695283.33	289437	41.63	144718.34
	NDME	1152166.7	343523	29.82	114507.78
	DME	962282.5	82952.5	8.62	13825.42

Source : based on tables 5.9a, 5.10.

### 5.5 Employment Generation

Table 5.10 presents the details of the employment generation in the processing units. It can be seen that the number of total labour in the units is increasing with the size as is expected. The highest number of workers i.e. 9 is found in cashew processing DME unit. It can also be seen that all the categories in the food processing sector except one have engaged female family labourers. Thus, food processing (which can be carried out along with the domestic chores) is seen to be a female dominated activity. As against this, in all only three categories in the non food sector (wherein work is carried out within the household) have the engaged female family labourers. Similar pattern is found as far as

hired female labourers. Leather as well as wood processing units are seen to be basically male dominated units. Table 5.10 shows Employment creation per 1000 rupees of investment has been found out; however it does not indicate any important pattern.

Table 5.10: Employment Generation under the Activity (Standard Man days of 8 hrs. Unit per year)

Name of the Processing Activity	Type of enterprise	Family Labour		Hired Labour		Average total labour	Employment creation per Rs.1000/-of investment
		Male	Female	Male	Female		
<b>A) Food</b>							
1.Cashew	OAME	2	2	0	0	4	0.01
	NDME	1	2	0	2	5	0.01
	DME	0	1	0	8	9	0.04
2.Fish	OAME	2	3	0	0	5	0.11
	NDME	2	3	1	1	7	0.08
	DME	2	3	2	0	7	0.01
3.Rice Mill	OAME	1	0	0	0	1	0.00
	NDME	2	1	2	0	5	0.01
	DME	2	2	2	0	6	0.00
<b>B) Non-Food</b>							
1.Leather	OAME	3	0	0	0	3	0.26
	NDME	2	1	1	0	4	0.05
	DME	0	0	6	0	6	0.01
2.Binding	OAME	2	0	0	0	2	0.04
	NDME	2	2	1	0	5	0.01
	DME	1	1	4	0	6	0.00
3.Textile	OAME	1	0	0	0	1	0.07
	NDME	2	2	1	2	7	0.11
	DME	0	0	0	0	0	-
4.Wood	OAME	2	0	0	0	2	0.02
	NDME	2	0	1	0	3	0.02
	DME	1	0	5	0	6	0.07

### Concluding remarks

The chapter discusses the working of the sample units and the economics behind their working. The data relating to production and operation cycles shows that the units have production cycles of different duration. Majority of the units do not face any problems as far as marketing of the produce and credit realisation is concerned. As far as the procuring the raw material and marketing of the produce' is concerned, it was observed that as the units are small units, often working with only family labour, the capacity of the units to reach out to various markets is limited and they work through



agents. Hence the unit owners directly do not come in contact with the terminal consumers/ markets. Units like rice mills, leather units, textile mills and furniture units which process only the raw material provided to them by the customers at their doorstep do not have strong linkages with either input or output markets. All the units except the cashew units have reported that they have only one source (market) for procuring raw material as well as selling their product. The units in all the categories cater only to the domestic demand and do not export any of their products.

All the activities and units show a positive net return. It is found that for food processing activities, the net return increases with the size of the unit. Among these activities, the highest net income is earned by the cashew processing unit (DME) followed by fish processing (DME). Among non food processing units, this particular pattern i.e. increasing income with increasing size is not observed. For cashew and fish processing units, net return per labourer is seen to be increasing with the size of the unit within the category. These are female labour intensive units. However, this is not necessarily true of the non food units. For leather, paper and wood based units, productivity of the OAME units in each category is observed to be very high. These are the units working only with family labour. Higher labour productivity of these units possibly indicates efficiency of the family labour. This possibly points out indicators like technology used, skill of the labourers, type of labour used also might have influenced per labourer output in non food units. It is observed that the food processing is a female dominated activity. As against this, in all only three categories in the non food sector (wherein work is carried out within the household) in the non food sector have the engaged female family labourers. Similar pattern is found as far as hired female labourers. Leather as well as wood processing units are seen to be basically male dominated units.

*Problems and Prospects of Agro-Processing Industries*

**6.1 Introduction**

It was noted in the earlier section that all the processing units have exhibited a positive net return and a minimum income of rupees seven thousand per capita per year. However, the units, especially the food processing units are facing problems that need to be taken note of. Table 6.1 shows the problems as reported by the food units. It can be seen that majority of the cashew and fish units have reported non availability of raw material throughout the year. As far as the cashew units are concerned, non availability of good quality cashews is mainly due to inability of the small units to find agents or seller supplying good quality raw material. In absence of information/ resources to find the same, these units are often at a disadvantage if the cashews supplied are not of good quality. These units have also reported non availability of labourers during the peak season and variability of prices. The fish units also face this problem, as during the months of monsoon, fishing does not take place. Similarly it was reported by these units that over a period of time, the supply of good quality fish has been reducing due to various reasons such as entry of large firms. Another major problem faced by the fish units is the absence of any government schemes/ promotional agencies (unlike in case of cashew units covered under DIC/ KVIC) which would provide support to these units. Similarly, there are no NGOs or self help groups which would ensure better functioning of the units. Though cashew units and rice mills are availing of the schemes of KVIC and DIC, they do face problems while interacting with the government machinery.

In case of the rice mills, the main problem reported was irregularity in the electricity supply. These have also reported that there is a tough competition from other rice mills as due to the liberal policy of the government regarding licensing, many new rice mills are being established.

As far as the non food processing units are concerned, it is already mentioned that textile, leather and wood are the units which mainly work on the raw material supplied by the agents/ wholesalers. Majority of the units reported unavailability of cheap labour

as one of the important problems. Similarly absence of any promotional agencies is another problem reported by the units (table 6.2).

## **6.2 Prospects of the Units**

Food processing units-. As is mentioned earlier, urbanization, growing incomes, changing food habits have encouraged the growth of this sector. The secondary data presented clearly shows the growth of the food processing sector in the organized as well as in the unorganized sector in the state. The analysis of the data collected from the sample units shows that cashew unit (DME) has earned highest net income followed by fish unit (DME). The net income per labourer is found to be increasing with the size of the units. It can be noted that these are basically female (hired/ family) labour dominated activities. All the sample units are located in the coastal district Ratnagiri. Being a relatively backward district, it faces problems like non availability of good roads, continuous electricity supply etc. Similarly, informal discussions with the people revealed that the co-operative movement has never been successful in this area.

The cashew units are the newly establishes units under DIC/KVIC schemes. Due to the increasing demand for the cashew nuts in the domestic as well as international markets and due to the huge untapped potential for processing of the fruit, the units can in future also, take advantage of the expanding markets. This would be possible if the units have a wider choice of markets for selling their produce and centers for providing information relating to the markets.

Fish processing units are existing units working since 10-20 years. Most of these have their business on the beaches under unhygienic conditions. The major problem faced by these units is the irregular supply of good quality fish. Similarly, these units are not covered under any scheme as they do not require heavy capital investments. Assistance to these units in terms of market information and value addition techniques would increase their earning capacity.

The major problem for the rice mills is the contraction of the business due to opening up of many rice mills in the vicinity in the context of liberal licensing policy of the government. The mills thus need to be more competitive and modernized.

Non food sector- Due to urbanization, increasing incomes and education there has been a rise in the demand for agro-based non food units such as those based on leather,

textiles, paper and wood. However, the secondary data at the state level shows that there has been a contraction in the number of non food units (except the leather units) in the organized sector. As against this, the unorganized sector shows a better performance the textile units are seen to be the units registering growth. However, the productivity of these units in non food agro based industries has declined over the years. Thus, overall, there has been a contraction in the non food agro based sector. As far as the sample units are concerned, these are located in the developed districts of Pune and Mumbai. The units do not exhibit uniformly increasing net income with size within a category. Thus, the DME units are not necessarily the units with highest net income. This may be indicative of efficiency of small units which depend mainly on family labour.

The units mainly have reported non availability of labour , absence governmental support, existence of rivalry as the main problems. In this case also therefore, like in case of the agro based units, the units would expand their earning capacity and be more competitive if they are provided information regarding market conditions and various existing schemes and extension services.

Table 6.1: Constraints Faced by the Food Processing Units

(Number)

Sr. No.	Problems reported	Cashew Processing (6)			Fish (6)			Rice Mill (6)		
		OAME	NDME	DME	OAME	NDME	DME	OAME	NDME	DME
1	Non availability of raw materials throughout the year.	2	3	1	2	2	1	-	-	-
2.	Poor quality of raw materials, absence of information network to keep track of raw materials prices and availability.	-	2	-	1	-	-	-	-	-
3.	Variability of prices of raw materials and hence difficult to fix prices of its product.	1	1	-	2	-	-	-	-	-
4.	Non availability of labour in general, skilled labour in particular in running the processing activity.		1	-	-	1	-	-	-	-
5.	Non availability of capital .	1	-	-	-	-	-	-	-	-
6	Non availability of supporting infrastructures like electricity, roads, communication.	-	-	-	-	-	-	2	2	1
8	Seasonality of demand for the product.	-	-	-	3	-	-	-	-	-
9	Quality consciousness of buyers.	1	-	-	2	-	-	-	-	-
10	Non existence of co-operation amongst enterprises to harvest scale economies.	-	-	-	-	1	-	-	-	-
11	Existence of rivalry/ cutthroat competition among manufacturers.	-	-	-	1	-	-	1	2	-
12	Absence of a strong network for marketing the products.	-	-	-	-	-	-	-	-	-
13	Problems faced due to the administrative set up of the government	2	1	-				-	-	-
14	No government support in training, supplying equipments, others (if any).		-	-	1	2	1	-	-	-
15	Non existence of promotional agencies	-	-	-	3		1	-	-	-
16	Non Existence of Non-Government-Organizations (NGOs), or Self-Help-Groups (SHGs) or Co-operatives to support the specific processing activity	2	2	-	1	2	-	-	-	-

Table 6.2: Constraints Faced by the Food Processing Units

(Number)

Sr. No.	Problems	Leather Industry (3)			Binding (3)			Textile (3)		
		OAME	NDME	DME	OAME	NDME	DME	OAME	NDME	DME
1	Non-availability of labour in general, skilled labour in particular in running the processing activity:	-	-	-				1		-
2.	Non-availability of capital:	-	-	-			1	-		-
3	Quality consciousness of buyers:	-	-	-				1		-
4	Existence of rivalry/ cutthroat competition among manufacturers.	-	-	-				1		-
5	Non-availability of government support in training, supplying equipments, others	-	1	1						

## **Concluding remarks**

Majority of the cashew and fish units have reported non availability of raw material throughout the year. As far as the cashew units are concerned, non availability of good quality cashews is mainly due to inability of the small units to find agents or seller supplying good quality raw material. The fish units also face this problem. It was reported by these units that over a period of time, the supply of good quality fish has been reducing due to various reasons. Another major problem faced by the fish units is the absence of any government schemes/ promotional agencies (unlike in case of cashew units covered under DIC/ KVIC) which would provide support to these units. In case of the rice mills, the main problem reported was irregularity in the electricity supply. These have also reported that there is a tough competition from other rice mills as due to the liberal policy of the government regarding licensing, many new rice mills are being established. The non food processing units mainly have reported non availability of labour , absence governmental support, existence of rivalry as the main problems

With increasing urbanization and income, changing food habits and consumption pattern, the demand for agro-based food as well as non food products is increasing. The units would be able to compete and increase their earning capacity if they have sound knowledge of market conditions, various government schemes

*Summary and Conclusions*

**7.1 Introduction**

The traditional development literature views the development of a two sector economy as a process of transformation leading to expansion in the size of the modern industrial sector and modernisation of the traditional agricultural sector. With increasing incomes and changing pattern of demand, a sub sector within the manufacturing sector viz. the agro-processing sector has emerged and has provided the two traditional sectors a strong link for exchange of goods, raw material and labour. In the recent past, rising costs and falling profits in the agricultural sector have forced the farmers and policy makers to think of avenues of earning income other than traditional crop production. On this background, the agro-processing sector has come to occupy an important position as the activities involved are being looked at as growth engines generating income and employment for the agricultural sector as a whole. On the other hand, with ever growing population of the country and the increasing incomes, the demand for agro based food as well as non food products is expected to rise.

Agricultural products like crops, grains, cotton, wood and the livestock products can be consumed only after processing. Agro processing could be defined as the set of techno economic activities carried out for conservation and handling of agricultural produce and for making it usable as food, feed, fibre, fuel or industrial raw material. Processing increases the durability and shelf life of the raw material and adds value to it before it reaches its destination. A particular agricultural produce can give rise to several linkage effects due to the processes it can undergo. Therefore the agro processing sector encompasses a range of activities heterogeneous in nature. The units in this sector can be classified as food and non food processing units. These two segments again can be divided into sub divisions.

With increasing food production, increasing incomes and changing food habits, the processed food segment has started growing rapidly. Earlier, processing was mainly undertaken for the commodities like sugar, tea, coffee, edible oils and spices and the processing activity was largely confined to food preservation involving salting, curdling,



drying, pickling, packaging and transportation. However, over the years, with emerging new markets and technologies, the sector has started producing many new items like ready-to-eat food, beverages, processed and frozen fruit and vegetable products, marine and meat products, etc. It also includes establishment of post-harvest infrastructure for processing of various food items like cold storage facilities, food parks, packaging centres, value added centres, irradiation facilities and modernised abattoir.

The agro based non food processing sector can be sub divided into heterogeneous segments like textile, wood, paper and leather based products. With increasing urbanisation, increasing incomes and spread of education, the demand for these products has been increasing. As compared to the pre-reform period, the export of processed products from these segments especially textile and leather has been increasing in the post reform period. The Economic Survey of India 2007-08 reports impressive growth of leather, wood and textile sectors and a fluctuating growth for the paper industry during April-November 2007.

## **7.2 Need for the Present Study**

It is widely recognized that due to the diverse agro-climatic conditions, Indian soil can grow a wide variety of crops and a wide range of allied activities can also be pursued. The Indian food processing industry is one of the largest in the world in terms of production, consumption, export and growth prospects.

The liberalisation of the Indian economy and world trade as well as rising consumer prosperity has thrown up new opportunities for diversification in the food as well as non food processing sector and opened up new avenues for growth. Indian food processing industry has become an attractive destination for investors all over the world. During the last five years, there was an inflow of 24 billion rupees of FDI in the country.

It needs to be noted however that the food processing sector of India, currently, is still in the nascent stage. Processing of the agricultural commodities constitutes a small proportion of the raw material available. In 2004-05, food processing sector contributed about 14 percent of manufacturing GDP. Of this, the unorganized sector accounted for more than 70 percent of production in terms of volume and 50 percent in terms of value. On the export front, India contributes 1.5 percent (2003-04) to the global agricultural exports despite its leadership in agricultural production. The share of this sector in GDP

has almost remained same for the last ten years. Processing of fruits and vegetables is around 2 percent, around 35 percent in milk, 21 percent in meat and 6 percent in poultry products. By international comparison, these levels are significantly low. Processing of agriculture produce is around 40 percent in China, 30 percent in Thailand, 70 percent in Brazil, 78 percent in the Philippines and 80 percent in Malaysia. However, value addition to agriculture produce in India is just 20 percent, wastage is estimated to be valued at around US\$ 13 bn (Rs 580 bn). According to one estimate, due to inadequate processing facilities, fruits and vegetables worth Rs.40000 crore were being wasted annually.

In view of the current status and prospects of the agro processing sector, it is essential to understand the nature of growth of constraints faced by the agro-processing sector. At the disaggregated level, states have exhibited varying performance as far as the growth of the agro processing sector is concerned. Maharashtra is one of the states with high potential for the growth of food as well as non food processing sector. It is a leading state as far as its industrial development is concerned. It is known for the advantage it has as far as the horticultural crops are concerned. As a result, it is one of the important states as far as the development of agro-based industries is concerned. In this report therefore, we discuss the growth of the agro-processing sector of this state and the problems and challenges before the sector in the state.

The data shows that Maharashtra has highest number (856 or 19 percent of the total in India) of units manufacturing fruit and vegetable products with 10 percent of the total installed capacity in 2007. It was also the state with highest value of gross output generated by the registered SSIs. Maharashtra was among the front-runners to receive the highest share of FDI in food processing during the last five years. The dairy and consumer industries received FDI worth Rs 2.7 bn each as foreign investment. Within the non food industries, Maharashtra is one of the important states as far as textile and textile based products and the leather based products are concerned. These products have high export potential also. As the data for Maharashtra shows, these sectors have recorded growth. Similarly, it is equally important to note the contraction in the paper based and wood based sectors.

With this background, the study analyses working of the agro-processing industries in Maharashtra with following objectives-

### **7.3 Objectives of the Study**

1. To present a profile of the agro-processing industries and the recent trend.
2. To examine the existing location pattern of selected agro-industries.
3. To study the impact of agro-processing industry on agriculture.
4. To study the economics of agro-processing units.
5. To analyse the marketing behavior of agro-processed products.
6. To study the employment potential from agro-processing industries.
7. To analyse the constraints on acceleration of production.
8. To review the export performance of various agro-based commodities and constraints faced in accelerating the growth of export from the sector.

### **7.4 Data Base**

The study is based on both secondary and primary data. As far as secondary data is concerned, the study has used the quinquennial NSSO data relating to unorganized manufacturing sector and the Annual Survey of Industries data for the organized sector. With the help of this data, the profile of agro-based industries in the state in terms of various characteristics such as employment, output, investment etc. is studied.

The primary data was collected from various units through canvassing a structured schedule. The information so collected from the selected units is used to analyse the economics behind the working of these units, various problems and prospects of the units.

### **7.5 Sampling Design, Methodology and Coverage of the Study**

Agro-based industries are classified as food and non food based/ processing units. Therefore, our sample consists these two types of units. All together, 30 sample processing units are selected at random proportionately spread over food and non-food processing segment of agro-based enterprises. As the share of food processing units is almost 60 percent of the total agro based ones at the all India level (as is shown by Annual Survey of Industries data), out of the total of 30 units, 18 food processing units were to be selected and the rest 12 were to be from non-food processing segment of agro-based enterprises.

The food-processing activities are broadly divided into three categories viz. primary food processing units mainly *grain processing units; spice and horticultural products and livestock based processing units including fish processing*. The non-food processing units are broadly divided into four categories namely, *textile products, wood and its products, paper and its products, leather and its products*. Within the group of food processing and non-food processing agro based activity, for each category of enterprise, the dominant processing activity was selected considering available data relating to state area under the concerned crop and also the number of registered units engaged in the concerned activity in the state. Based on the concentration of selected agro-based enterprises the districts were chosen. In the case of food-processing component of agro-based enterprises, for each selected processing enterprise, six units of different sizes namely OAMEs, NDMEs and DMEs with their distribution as 3:2:1 were to be selected. Within non-food processing segment of agro-based industry, for each selected processing units, three units of different sizes namely OAMEs, NDMEs and DMEs in the ratio 1:1:1 were to be selected. The table below shows the sampling scheme.

Table 7.1: Sample Processing Units and the Selected Districts for the State of Maharashtra

Category	Processing activity selected	Selected District	Number of Sample Units
<b>Food Processing:</b>			
1. Grain processing units	Rice mills	Ratnagiri	6
2. Spice and horticultural products	Cashew processing units	Ratnagiri	6
3. Livestock based processing units	Fish processing units	Ratnagiri	6
Total food processing			18
<b>Non-food Processing:</b>			
1. Textile products	Tailoring units	Pune	3
2. Wood and its products	Furniture making units	Pune	3
3. Paper and its products	Notebook making units	Pune	3
4. Leather and its products	Leather processing units	Mumbai city	3
Total			12
Total Sample Size			30

As the units to be selected were those operating on small scale i.e. family enterprises and also those running with the help of hired workers, only those activities which can run on small scale were chosen. Field survey was conducted during the months of May-July 2008. The data relating to income relates to financial year 2007-08.

Chapter I on introduction is followed by chapter II which discusses the status of agro-processing industries in the state. Chapter III presents the profile of the sample districts and selected processing activities. Chapters IV, V and VI are based on analysis of the primary data collected from the sample units in the state. These discuss the cost of investment and the financing of the units, economics of investment in agro-processing units and problems and prospects of the units respectively. The last chapter i.e. chapter VIII discusses the conclusions and policy implications emerging out of the study.

## **7.6 Major Findings of the Study**

### **I. Status of the Agro based Industries in the State**

It is observed that the unorganized sector constitutes a major segment of these industries as far as the number of the units is concerned. This is indicative of the expansion of unregulated activity and easier entry or easier access of the small units into the market. The data shows that that the food processing industries are growing at a faster pace considering both the organized as well as unorganized sectors. Among the non food agro based industries, wood and paper units are seen to have been adversely affected in terms of numbers in both the sectors. However, the leather units have registered a positive increase in both the sectors.

In the organized sector, the share of agro processing industries in total investment, employment, output and also the net value has increased over the period as compared to the non agro based industries. Specifically, the increase in the employment in this sector is noticeable. The increased share of agro-processing units in total employment has ensured increased share of total agro-based industries (38 percent in 2000-01 as against 31 percent in 1994-95). The data also indicates changing composition of the agro-based industries- expansion of the food processing sector and contraction of the nonfood agro-based sector over the concerned period.

In the unorganized sector, the share of OAMEs has increased and that of other classes i.e. NDME and DME has fallen. Thus, more and more households are engaging themselves in food-processing activities. This may be indicative of higher efficiency of small scale household units which rely mainly on family / female labour for conducting the activity. It can be seen that the share of food processing industries in total industries, their share in the total workers and in the GVA has almost stayed constant over the years

though there is a rise in value added per worker and per enterprise. In case of non food agro-based industries however, the number of units and workers show a sharp rise during the concerned period. This sharp rise has led to an increase in the share of total agro based industries in 2000-01 in terms of number of units (75 percent) and number of workers (64 percent). The main driving force has been the textile products sector. Though wood and its products is the dominating sector in the year 1994-95, there has been a tremendous growth in the textile sector over the concerned period and it accounts for almost one third of all industries and one fifth of the total workers engaged in the unorganized sector. Though there has been an expansion of these units, the net value added per worker as well as per enterprise have registered a decline. Thus, the productivity of the units has declined over the years. A disturbing trend that is observed from the table is the fall in the employment per enterprise for almost all the classes except the non agro based industries sector. This is in compliance with the economy wise phenomenon of falling elasticity of employment and increasing intensity of unemployment.

The overall growth performance of the agricultural sector since last few years shows that the sector (except the horticultural sector) has not responded to expanding agro processing sector. It can be said that if the growth potential of the agro processing sector is to be tapped, the agricultural sector of the state has to be vibrant. Agricultural (including livestock) growth potential of each region of the state needs to be tapped to give a boost to the growing agro processing sector in the state

## **II. Profile of the Sample Districts and Selected Processing Activities**

### **Food based Units**

#### **i. Primary Milling of Grains - Rice milling**

In Maharashtra, among various districts, the area under paddy in the costal districts in 2004-05 was 29 percent of the total state paddy area and the production was around 48 percent. Ratnagiri is one of the important districts producing paddy. It contributes around 5 percent and 9 percent to state paddy area and paddy production. The coastal districts are known for the prevalence of rice mills hence district Ratnagiri from Konkan division was selected as a sample district.

## **ii. Spices and horticultural products: Cashew processing units**

In 2006-07, the total area under horticultural crops in Maharashtra was around 14 lakh hectares and the area under spices was little more than 1 lakh hectare. Due to the domination of the horticultural crops in the cropping pattern, a horticultural crop was selected. Among various horticultural crops, cashew occupies around 11 percent of the total state cashew area. In 2006-07, the area under cashew nut was 1.65 lakh ha, highest only after that under mango. Maharashtra is the major cashew producing state of India. However, out of the total cashew production in Maharashtra, only 20 percent of it is processed while rest is sent to the neighbouring cashew producing states. This clearly speaks of the potential Maharashtra has in cashew processing. Therefore cashew processing was selected as the dominant activity within the category.

Among cashew nut growing coastal districts, Ratnagiri contributes around 42 percent to the total state area under cashew nut and has a number of cashew nut processing units. Therefore district Ratnagiri was selected as the sample district.

## **iii. Livestock/ fish based processing : Fish processing units**

Within livestock based activities, a processing activity had to be chosen which is basically undertaken on a small scale. As primary processing of fish is carried out at the household level by a large number of families in coastal areas of Maharashtra, this activity that was selected as the sample activity.

Ratnagiri has a coastline of 167 km. and a number of families are dependent on fishing and fish processing activities. In 2006-07, the production of fish from sea as well as inland water sources was to the tune of 109055 metric tones and the value of this catch was Rs. 22759.47 lakh. The livelihood of the population is supported largely by allied activities like horticulture and fishing. Therefore this district was selected as a sample district for the fish processing units.

## **iv. Non –Food Agro based units**

As far as non food processing sector is concerned, within each of the categories i.e. textile, wood, leather and paper, a number of activities are carried on. However, for selecting the activities, only those activities were considered which are carried on a smaller scale. Therefore, tailoring units, notebook making units, furniture making units and units making leather goods were selected. District wise information relating to the

number of units and employment in these non food agro-based units is not available. However, the available secondary data clearly shows that these non food agro-industries are carried on a large scale in better developed districts and in urban areas. Therefore, the two most developed districts viz. Mumbai and Pune were selected for the non food based agro-units. Within the non farm activities, leather processing is an important activity of the unorganized small scale units in Mumbai city and hence Mumbai city district was selected for selecting sample units. Units in other categories i.e. paper, textile and wood products were selected from district Pune.

Profile of the districts chosen shows that district Ratnagiri which is chosen for food processing units is mainly an agrarian district, depending on agriculture and allied activities for livelihood. On the other hand, Pune and Mumbai are the most developed and industrial districts of the state.

### **III. Profile of the Sample Entrepreneurs of Agro-Processing Activities**

Profile of the sample entrepreneurs shows that fish and leather units are the ones carrying on the traditional business. Most of the sample entrepreneurs are educated with a minimum education attainment upto 10<sup>th</sup> standard. The entrepreneurs engaged in activities like cashew processing and rice milling which need technical know-how and relatively heavy investments in terms of machinery are seen to be better educated. Whereas the fish units are owned by people from Muslim community, leather units are owned by those belonging to the SC category. All other entrepreneurs belong to the category of 'others'. It is also interesting to note that only two entrepreneurs out of a total of thirty belong to this particular category. This indicates lower occupational mobility in this particular community. The dependency ratio is found to be lower for the food processing units in Ratnagiri than the non food processing units in Pune and Mumbai indicating higher level of participation of household members in the former.

As far as land holding size is concerned, it can be seen that urban based households engaged in non food processing agro-based activities do not possess land. It is only the households in rural areas of a Konkan engaged in cashew processing and rice milling possess land. These households depend upon agriculture and agro-based activities for their survival. Families engaged in fish processing also do not possess land. It is also observed that majority of the units are existing units and have experience of



more than 5 to 10 years back. This is specifically true in case of fish and leather units as the business is carried on traditionally and hence the household members have learnt the business traditionally. It can be noted that the cashew units are the newly established units and all the entrepreneurs have been trained as running the business needs technical training and knowledge about the machinery.

Majority of the entrepreneurs have reported getting employment as the motivating factor. Similarly majority has reported that previous experience in the business and traditional nature of the business has motivated them to continue with activity. The units engaged in cashew processing have however reported other factors as motivating factors as the units are newly established.

The units could not be selected in the suggested proportion within sub-categories. Table 7.2 shows the actual number of units that were selected during the survey. The units selected in the requisite proportion were from sub categories- fish processing , grain processing ,leather, paper and wood. In all, 18 from the food processing category and 12 from the non food processing category were selected.

Table 7.2: District wise and Activity wise Selection of Sample Processing Units (Numbers)

Processing Activity	Ratnagiri			Mumbai			Pune			Total			
	O A M E	N D M E	D M E	O A M E	N D M E	D M E	O A M E	N D M E	D M E	O A M E	N D M E	D M E	A L L
<b>A) Food Processing</b>													
1.Cashew	2	3	1	0	0	0	0	0	0	2	3	1	6
2.Fish	3	2	1	0	0	0	0	0	0	3	2	1	6
3.Rice mill	3	2	1	0	0	0	0	0	0	3	2	1	6
<b>Total</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>18</b>
<b>B) Non-Food Processing</b>													
1.Leachter	0	0	0	1	1	1	0	0	0	1	1	1	3
2.Paper	0	0	0	0	0	0	1	1	1	1	1	1	3
3.Textile	0	0	0	0	0	0	2	1	0	2	1	0	3
4.Wood	0	0	0	0	0	0	1	1	1	1	1	1	3
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>12</b>
<b>All Activities</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>13</b>	<b>11</b>	<b>6</b>	<b>30</b>

#### **IV. Cost of Investment and its Financing**

As is already mentioned, most of the units are the existing ones. It is the cashew processing units and the rice mills which are seen to be the new units. It can also be seen that most of the units are registered. Four fish processing units and one OAME each from leather, textile and wood category are the unregistered units. The fish units have not been availing any loan facilities and are not covered by any scheme. They carry out their activity outside the house near the beach. The area covered by the units using machinery - cashew units, rice mills and binding units is seen to be more than the other business units.

It is observed that generally, within a category, investment is increasing with the size of the unit. This means that size of the investment by OAMEs is lower than that of NDMEs which in turn have lower investment than DMEs. The size of the investment is higher in case of rice mills and paper based activity of binding which depend upon costly machinery for processing. The quantum of investment is seen to be lower for fish processing units. For other units, the share of block capital is seen to be very high-it varies from 64 percent to 99 percent for food units. For non food units, it ranges from as low as 27 percent to a high of 97 percent. The size of the working capital is seen to be lower for the OAME units as these units do not have to incur expenditure on wages/ salaries.

Majority of the units have financed the activity using their own funds. Units engaged in cashew processing and rice milling and one (DME) in book binding and leather have taken loan to finance their own investments. The share of loan ranges from 37 percent to 80 percent. The former two have received subsidy as well under the DIC/ KVIC schemes which has helped them to finance the investment needed thereby reducing their reliance on other sources like loan / own fund. It can be seen that units engaged in fish processing, and majority units in non food processing activities have utilized their own funds to finance investment. Only two units out of the sample of 30 units have taken non institutional loan.

## **V. Economics of Investment in Agro-processing**

### **i. Production and Operation Cycles**

The data relating to production and operation cycles shows that the units have production cycles of different duration. Majority of the units do not face any problems as far as marketing of the produce and credit realisation is concerned. As far as the procuring the raw material and marketing of the produce is concerned, it was observed that as the units are small units, often working with only family labour, the capacity of the units to reach out to various markets is limited and they work through agents. Hence the unit owners directly do not come in contact with the terminal consumers/ markets. Units like rice mills, leather units, textile mills and furniture units which process only the raw material provided to them by the customers at their doorstep do not have strong linkages with either input or output markets. All the units except the cashew units have reported that they have only one source (market) for procuring raw material as well as selling their product.

### **ii. Investment and the Net Income form Investments**

Table 7.3 compares gross value of the output as well as investment and presents the values of net income earned by the sample units. Firstly, a comparison of variable and fixed cost shows that the share of variable costs is higher than that of fixed costs for most of the units. On an average, 71 percent of the investment is the variable investment. In case of fish processing households, the share of fixed costs is seen to be marginal. This is because the activity is labour intensive and essentially forms a part of the unorganized sector of the economy with no expenditure on salaries/tax/insurance premium etc.

Size of the total investment is seen to be increasing with the size of the units specifically for the food processing units. Similarly, in absolute terms, the paper and leather processing units are seen to have had heavy investments as compared to other units.

For all the units, the total investment is compared with the gross value of the output to find the net return. All the activities and units show a positive net return. It can be seen that for the food processing activities, the net return increases with the size of the unit. Among these activities, the highest net income is earned by the cashew processing unit (DME) followed by fish processing (DME). Among non food processing units, this

particular pattern i.e. increasing income with increasing size is not observed. This might be because of the heterogeneous nature of these non food processing activities. Even within the categories, in some cases, the products of these units are differing slightly from the other units.

Table 7.3: Per Unit Net Income from the Investment of the Sample Units (In Rs)

Name of the Processing Activity	Type of enterprise	GVO of the processed Product	Expenditure			Net Income
			Fixed	Variable	Total	
A) Food						
1.Cashew	OAME	265000.00	45690.00	162520.00	208210.00	56790.00
	NDME	491666.67	47317.41	351446.67	398764.08	92902.59
	DME	1120000.00	142048.33	304100.00	446148.33	673851.67
2.Fish	OAME	616960.00	3028.26	369353.00	372381.26	244578.74
	NDME	1152000.00	30222.50	751370.00	781592.50	370407.50
	DME	5000000.00	12116.70	4121250.00	4133366.70	866633.30
3.Rice Mill	OAME	83520.00	37025.79	6150.00	43175.79	40344.21
	NDME	198560.00	88329.19	40640.00	128969.19	69590.81
	DME	520000.00	174058.30	213740.00	387798.30	132201.70
B) Non-Food						
1.Leather	OAME	475200.00	62066.66	22350.00	84416.66	390783.34
	NDME	270000.00	74500.00	92400.00	166900.00	103100.00
	DME	1650000.00	502942.58	926400.00	1429342.58	220657.42
2.Paper	OAME	238200.00	21233.34	30000.00	51233.34	186966.66
	NDME	4400550.00	72905.70	3880300.00	3953205.70	447344.30
	DME	988080.00	291016.67	570400.00	861416.67	126663.33
3.Textile	OAME	40200.00	2866.67	11300.00	14166.67	26033.33
	NDME	748800.00	167125.00	216000.00	383125.00	365675.00
	DME	0.00	0.00	0.00	0.00	0.00
4.Wood	OAME	984720.00	36683.33	658600.00	695283.33	289436.67
	NDME	1495690.00	125766.67	1026400.00	1152166.67	343523.33
	DME	1045235.00	282382.50	679900.00	962282.50	82952.50

Table 7.4 shows values not only of net income and expenditure, but also of net income per labourer and the ratio of net income to expenditure. To get an idea about the productivity of the unit, net income per unit of labour (hired plus family) was calculated. It was observed that this indicator followed a pattern similar to that of net income. For cashew and fish processing units, productivity is seen to be increasing with the size of the unit within the category. These are female labour intensive units. However, this is not

necessarily true of the non food units. For leather, paper and wood based units, productivity of the OAME units in each category is observed to be very high. These are the units working only with family labour. Higher labour productivity of these units possibly indicates efficiency of the family labour. This possibly points out indicators like technology used, skill of the labourers, type of labour used also might have influenced per labourer output.

Again for standardising and comparing the net income across the classes, the ratio of net income to total expenditure was found out. It was generally observed that the ratio was declining within a particular category with increase in the size of the unit. This shows that as the size increases, the expenditure rises more than proportionately. This points out at the efficiency of the investment of the smaller units.

Table 7.4: Income and Expenditure of the Sample Units (Rs)

Processing Activity	Type of enterprise	Total Expenditure	Net Income	Net Income / Total Expenditure (%)	Net Income per labourer
<b>Food</b>					
1.Cashew	OAME	208210	56790	27.28	14198
	NDME	398764	92902.6	23.3	18581
	DME	446148	673852	151.04	74872
2.Fish	OAME	372381	244579	65.68	48916
	NDME	781593	370408	47.39	52915
	DME	4133367	866633	20.97	123805
3.Rice Mill	OAME	43175.8	40344.2	93.44	40344
	NDME	128969	69590.8	53.96	13918
	DME	387798	132202	34.09	22034
<b>Non Food</b>					
1.Leather	OAME	84416.66	390783	462.92	130261.11
	NDME	166900	103100	61.77	25775
	DME	1429342.6	220657	15.44	36776.24
2.Binding	OAME	51233.34	186967	364.93	93483.33
	NDME	3953205.7	447344	11.32	89468.86
	DME	861416.67	126663	14.7	21110.56
3.Textile	OAME	14166.67	26033.3	183.76	26033.33
	NDME	383125	365675	95.45	52239.29
	DME	-	-	-	-
4.Wood	OAME	695283.33	289437	41.63	144718.34
	NDME	1152166.7	343523	29.82	114507.78
	DME	962282.5	82952.5	8.62	13825.42

### iii. Employment Generation

Table 7.5 presents the details of the employment generation in the processing units. It can be seen that the number of total labour in the units is increasing with the size as is expected. The highest number of workers i.e. 9 is found in cashew processing DME unit. It can also be seen that all the categories in the food processing sector except one have engaged female family labourers. Thus, food processing (which can be carried out along with the domestic chores) is seen to be a female dominated activity. As against this, in all only three categories in the non food sector (wherein work is carried out within the household) in the non food sector have the engaged female family labourers. Similar pattern is found as far as hired female labourers are concerned. Leather as well as wood processing units are seen to be basically male dominated units. Employment creation per 1000 rupees of investment has been found out, however it does not indicate any important pattern.

Table 7.5: Employment Generation under in the Sample units (Standard Man days of 8 hrs. unit per year)

Name of the Activity	Type of enterprise	Family Labour		Hired Labour		Average total labour	Employment creation per Rs 1000 of investment
		Male	Female	Male	Female		
<b>A) Food</b>							
1.Cashew	OAME	2	2	0	0	4	0.01
	NDME	1	2	0	2	5	0.01
	DME	0	1	0	8	9	0.04
2.Fish	OAME	2	3	0	0	5	0.11
	NDME	2	3	1	1	7	0.08
	DME	2	3	2	0	7	0.01
3.Rice Mill	OAME	1	0	0	0	1	0.00
	NDME	2	1	2	0	5	0.01
	DME	2	2	2	0	6	0.00
<b>B) Non-Food</b>							
1.Leather	OAME	3	0	0	0	3	0.26
	NDME	2	1	1	0	4	0.05
	DME	0	0	6	0	6	0.01
2.Binding	OAME	2	0	0	0	2	0.04
	NDME	2	2	1	0	5	0.01
	DME	1	1	4	0	6	0.00
3.Textile	OAME	1	0	0	0	1	0.07
	NDME	2	2	1	2	7	0.11
	DME	0	0	0	0	0	-
4.Wood	OAME	2	0	0	0	2	0.02
	NDME	2	0	1	0	3	0.02
	DME	1	0	5	0	6	0.07

## **VI. Problems and Prospects of Agro-Processing Industries**

Majority of the cashew and fish units have reported non availability of raw material throughout the year. As far as the cashew units are concerned, non availability of good quality cashews is mainly due to inability of the small units to find agents or sellers supplying good quality raw material. The fish units also face this problem. It was reported by these units that over a period of time, the supply of good quality fish has been reducing due to various reasons such as entry of large firms. Another major problem faced by the fish units is the absence of any government schemes/ promotional agencies (unlike in case of cashew units covered under DIC/ KVIC) which would provide support to these units. In case of the rice mills, the main problem reported was irregularity in the electricity supply. These have also reported that there is a tough competition from other rice mills as due to the liberal policy of the government regarding licensing, many new rice mills are being established.

The non food units units mainly have reported non availability of labour , absence governmental support, existence of rivalry as the main problems

With increasing urbanization and income, changing food habits and consumption pattern, the demand for agro-based food as well as non food products is increasing. The units would be able to compete and increase their earning capacity if they have sound knowledge of market conditions, various government schemes.

### **7.7 Policy Suggestions**

In view of the potential for expanding the agro-processing activities in the state and the existing problems and prospects of the sample agro-processing units, following policy suggestions emerge from the study.

1. Agricultural department, through the extension services disseminates information regarding various government schemes. It is important that the information is accessible and reaches various regions. For easy accessibility of this information, information centers should be established. These can give information relating not only about various government schemes but also markets, prices and the technical know how relating to the concerned activities. This should guide the entrepreneurs in adding value to their products and in reducing costs.

2. Ensuring good quality infrastructure including roads and supply of electricity is very important. This is specifically important for the hilly parts of Konkan area where some of the sample units are located. Good quality infrastructure would help in reducing the costs of the units. Uninterrupted supply of electricity would help the rice mills in increasing their net return.
3. Establishment of co-operative marketing for cashews and fish units can be promoted. This is important as the units mainly rely solely on agents for marketing of the produce as well as for procuring raw material. In case of lack of information regarding the market functionaries, the units may have to compromise as far as the quality of the raw material and price of the produce is concerned.
4. The administration of the schemes (e.g. those by KVIC/ DIC) should be made simple and transparent so that the borrowers or the units availing of the scheme do not face administrative hurdles.
5. Online trading for cashews can be encouraged.
6. In the wake of non availability supply of fish through out the year and reduction in the supply over the years, aquaculture should be promoted in the state.

Diversification of the agricultural sector through agro processing sector and creation of non farm employment attains utmost importance in the wake of the agrarian crisis experienced by the state economy in the post 2000 period. Therefore promotion of agro based non food processing units assumes great significance. Following policy suggestions are made as far as nonfood processing units are concerned.

7. The sample units reported absence of any promotional agency or government help in running the activity. Hence, it is felt that efforts should be made to encourage establishment of self help groups or co-operative production / marketing units which would also act as information centres for the units.
8. Like in case of food processing units, information regarding various government schemes (giving loans/ subsidies) should be easily accessible to the public so that the entrepreneurs take advantage of it.

Small scale agro-based industries are playing an important role in serving the market. It can be said that the potential of these industries to expand can be improved if



they are provided with good quality infrastructure, information about the market and prices and the technical know-how. This would also help them in taking advantage of the wider markets. Establishment of institutions for procuring raw material and marketing of produce will help them in taking advantage of the scale economies and getting directly in touch with the terminal market and getting a better price for their products.

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**ANNEXTURE-I**  
**Comments on Draft Report**

1. Title of the Draft study Report Examined: Understanding the growth & Prospects of the Agro-Processing Industries in Maharashtra
2. Date of Receipt of the Draft Report: 31.03.2009
3. Date of Dispatch of Comments: 08.05.2009
4. Comments on objectives of the study: The study has carefully covered the objectives of the report. However, depending on the availability of district level data, the location and importance of selected agro-based industries may be studied in relation to comparative advantage of the cropping pattern and resource base of the state.
5. Comments on the Methodology: The Authors have followed the indicated methodology given in the coordinated study design.
6. Comments on presentation and Get up etc: Presentation is satisfactory. However, few suggestions are given for incorporating in the tables indicated below.  
Table – 2.1, PP-11: In the unorganized sector data for the year 200-01, the industry category of manufacturing of food product includes beverages also which is not for the year 1994-95. Hence this should be mentioned in the footnote of the table.  
Table-5.1, PP-48: the number of production cycles which a unit completes in a year need to be checked in the last column of the table.  
Table-5.4, PP-50: Total value of marketed output and proportion of output sold need to be inserted in the table.  
Table-5.10, PP-59: In the table, the level of employment needs to be expressed in terms of man-days of 8 hrs per unit per year.
7. Overall view on Acceptability of Report: The report has come out well. However, the above points may be incorporated for finalization of the report.

## **Annexure II**

### **Action Taken**

#### **I. Comments on the Problem and Objectives:**

Depending upon the availability of the data, importance of selected agro-based industries in relation to comparative advantage of the cropping pattern and resource base of the state already included in section 3.1 titled 'Selection of Activities and the Sample Districts'. Location of the sample districts inserted in section 3.1.

#### **II. Comments on the Methodology of the Study:**

No comment

#### **III. Comments on the Coverage of Various Aspects, Presentation etc:**

1. Table 2.1, PP- 11: Data for the category 'beverages, tobacco and tobacco products' is available separately for both the years and therefore has been already shown separately for the unorganized sector.
2. Table 5.1, PP-48: The number of production cycles which a unit completes in a year given in the last column rechecked.
3. Table 5.4, PP- 50: Total value of marketed output and the value of output sold are same.
4. Table 5.10, PP-59: The title of the table already mentions the unit (man days of 8 hours) of the level of employment

Jayanti Kajale

Gokhale Institute of Politics and Economics,  
Punc.