



**Cluster Development Programme, India**

**DIAGNOSTIC STUDY**

**SME**

**THE FOOD PRODUCTS CLUSTER**

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By UNIDO CDP, New Delhi

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## Executive Summary

Agriculture contributes approximately one third of the Indian GDP. The nation is the second largest producer of fruits and vegetables in the world. The quantum of processing this agriculture produce is however limited and is mainly concentrated at the level of primary processing only. Due to typical food habits of having the fresh food, this industry remains largely an extension of the household kitchen. The food industry is fairly wide spread in the country with units located all over. The processed foods are not a part of the traditional Indian diet, but are now gaining popularity because of urbanization, rise in per capita income and increased awareness through media.

During the mid-90s, several attempts to promote this industry by the Government have been made. A separate Ministry for Food Processing Industries has been established, Agricultural and Processed Food Products Export Development Authority (APEDA) has been set up and Food Processing Training Centers (FPTCs) are functioning in 150 rural pockets. Except for the potable alcohol and wines, all other food products have been de-licensed. The industry cluster in Pune is an agglomeration of several type of units which have grown mainly with the population of the city. On the industrial map of the city, the food industry does not occupy a very prominent and a major role. The industry in Pune is estimated to have an investment of Rs. 380 crores and a direct employment generation of about 11,500 persons.

There is a large range of food products manufactured in Pune and its adjoining villages. The products are jams, jellies, squashes, pickles, dehydrated ready food mixes, bakery products, milk products, confectionery items, ground and processed spices etc.

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Most of the household and small scale units with their limited capacity and limited geographical reach, cater to the local clientele. The study focuses on two groups of food industry:

- (i) cereal based products e.g. bakery items, flour milling and farsan (a confectionery item), and
- (ii) non-cereal products such as pickles, jams and jellies, spices, papad.

There is a well established net-work of support institutions and associations to provide help to the industry. However, multiplicity of organizations and their limited role in different product sectors comes in the way of developing the cluster as a whole.

The analysis of business operations indicates that most of the units are at cottage and household level units with only a selected number of larger units in the city. The availability of raw-material (being seasonal) and finance are the major constraints for smooth running of the units.

The industry is highly labor intensive with majority of the functions carried out either manually or by use of simple machines. The product quality is often not uniform primarily because of the non uniform raw material but efforts to standardize raw-material are yet to be made. The local entrepreneurs specially the small ones had made use of the machinery and the equipment only when it was absolutely necessary and there too it is mainly the locally fabricated equipment that is mostly used. The quality control methods employed in the industry are primitive and often it is the personal judgment that replaces formal testing. This is specially true of the small and cottage level industries with local clientele. The testing facilities in the city are inadequate and whatever facilities exist in some of the institutions, they take a long time to give the results which a small entrepreneur cannot afford.

Food being a perishable item, the industry is not very conducive for sub-contracting relationship. The cooperation among the small units is not very evident and the only exception to this is the papad industry where decentralized production takes place and common marketing under single brand name is done, successfully. The cooperation in the cluster is limited. The units join hands to fight the common threats relating to taxation measures and other statutory orders relating to stipulations for the input ingredients etc.

The bigger units have problems of different kind. These units are concerned about lack of training facilities, lack of information and expensive testing facilities for specialized tests.

The cluster has a capacity to grow and the industry can meet this challenge with certain interventions like exposing the entrepreneurs on potential of growth, development of institutional capabilities, establishment of common testing facilities to increase the rising level of the entrepreneurs in meeting the special working capital requirements of seasonal industries like the food industry in Pune.

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## 1. Industry Scenario at the National Level

*India, a giant in agricultural resources :*

Agriculture in India is one of the most important sectors and accounts for almost one third of the Gross Domestic Product (GDP) that provides employment to almost two thirds of the work force. The nation produces 166.4 million tones of cereals, 13.6 million tones of pulses, 22 million tones of oilseeds, 30 million tones of fruits, 72 million tones of vegetables and 60.8 million tones of milk. India is the second largest producer of fruits and vegetables in the world<sup>1</sup>.

*Quantum of processing is however limited:*

The current turnover of the industry is estimated to be Rs. 80,000 crores (\$ 23,000 million) according to an assessment made by McKinsey & Co. Inc. which represents 18% of the GNP and depicts an industrial growth rate of 28% during the year 1995-96. Some other estimates put the industry size at Rs. 450,000 million per annum. According to one document, the industry ranks 5th in size, employs 1.5 million workers. According to the estimates of FICCI-BISNET, the food processing industry occupies fifth position, accounting for 19% of the total industrial output with a 7% of gross investment.

The food processing industry is much less developed both quantitatively and qualitatively in proportion to the total agricultural produce. The value addition by food processing is only 7% of the agricultural value added in India; in China it is 25% and in Thailand 40% (Business World, 10-23 July, 1996). Even with a liberal definition of food processing, which includes basic operations such as sugarcane crushing, rice de-husking and flour milling, only 25% of food in India is processed on commercial basis. Among fruits and vegetables wherein India occupies a prominent place, the processing is limited to just 1.3%.

*Primary processing dominates currently:*

Of the large variety of food items produced, primary level of processing dominates the industry. Some of these items are sugar, wheat flour, edible oils, milk products, fruit pulp and ground & processed spices. The other items produced are bakery items, tomato paste, potato chips, confectionery, beverages, jams, jellies, tomato ketchup and pickles. Most of this processing is based on conventional heating for moisture drying, crushing, mixing and through addition of preservative chemicals and additives. Recent additions to the products in the industry that have come through freezing and dry freezing technology, are limited to vegetables and fruits meant primarily for exports.

*Due to the typical Indian food habits :*

Traditionally, food is usually prepared fresh for all the three meals in most homes. This includes vegetable or non-vegetarian curries, Indian bread, milk products including paneer & curd, rice

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<sup>1</sup>Source : Opportunities in Agriculture and Food Processing Industries  
Confederation of Indian Food Trade and Industry et. al. March 13, 1995

or dosa. The ready-to-eat foods, fruit juices, extruded foods, other alcoholic & non-alcoholic beverages, dried or processed marine and meat products do not form a part of traditional Indian palate. Household processing is usually done for storable products such as pickles, jams, jellies, chutneys, tomato ketchup, sweet milk products and several confectionery items.

*Industry, an extension of household kitchen :*

This explains why the food processing industry is highly decentralized with most units in the cottage and small scale sector. They are highly labor intensive and thus offer a major employment opportunity estimated to employ 18-20% of the labor force. Almost 70% of the processing is done by the cottage sector units in India. Of the estimated 55,000 bakery units in India, almost 90% are in the cottage sector.

*Volumes exist in safe forays :*

The dominance of products among both, the small and large firms remains in safer forays of either the traditional household processed items or the staple products with large volumes such as atta (flour), spices, rice or edible oils. Retailing is done through more than 3 million retail outlets spread over in all the urban and rural corners of the country. Among the fast food restaurants, the *dhabas* (roadside restaurants serving traditional Indian foods) and other Indian restaurants dominate.

*Geographically, a well spread industry :*

Being predominantly a cottage sector industry with a diversified consumer market, the industry is well diversified. On the basis of F.P.O. licenses issued, the food processing firms are spread over Maharashtra (817), Uttar Pradesh (415), Tamil Nadu (385), Kerala (327), West Bengal (260), Andhra Pradesh (252), Karnataka (230) and Gujarat (224). Nearly 41% concentration of the industry is found in the western region of the country.

*Limited range and quantum of exports :*

- The share of dried and preserved vegetables is the largest (over 40%), followed by mango pulp, pickles and chutneys. Major consumers of our products are the large immigrant South Asian population based in Gulf countries, U.S.A. and Europe. Of these the Gulf countries account for 37% of the total Indian exports followed by Europe. India's export of major food products in fresh & processed fruits & vegetables, meat, marine products, milk & poultry products was Rs. 37,421 million in the year 1993-94. (Ref. Sectoral Background Notes on Agri-Business at Indo-US Commercial Alliance, 1995). Some of the most important products that are exported from India and their destinations are given below ;

S.No.	Products	Markets
1	Cereal preparations	USA, UK, UAE, Singapore, Russia
2	Mango fresh	UAE, Saudi Arabia, Kuwait, UK

3	Onion fresh	Malaysia, Singapore, Bangladesh, Sri Lanka
4	Other vegetables	UAE, Kuwait, Bahrain
5	Mango pulp/ concentrate	Russia, UAE, Saudi Arabia, Kuwait
6	Pineapple products	Russia
7	Pickle & Chutneys	UAE, UK, USA
8	Tropical fruit & Vegetable products	USA, UAE, UK, Germany
9	Buffalo Meat	UAE, Saudi Arabia, Oman
10	Animal Casings	Holland, Spain, Japan
11	Poultry products	Maldives, Oman
12	Marine products	Japan, USA, Middle East Countries.

Source: Status of Indian Agro Food Industry, Fact Sheet, January, 1995, Confederation of Indian Food Trade and Industry et. al.

*Industry is now undergoing a change :*

As a result of growing influence of urbanization, processed foods are gaining popularity. The socio-economic factors such as breaking up of joint family system, increasing number of working women, rise in per capita income, expansion of media and increase in the cost of household labor have led to an increase in the demand for processed food. The increase is more pronounced at the primary and secondary levels of processing. The trend is clearly seen in urban areas and for certain range of products in the rural consumer segments as well. Such products are packaged and branded products. Big corporate sectors such as Hindustan Levers Ltd. have used the strategy of promoting their products at the rural market successfully.

*By widening the product range :*

The important changes that the industry is witnessing currently relate to diversification of the industry into non-traditional foods, capacity expansion due to increase in the consumer demand, modernization and introduction of new technologies, increased exports and growing foreign direct investment. The government had received, till July 1995, 3181 proposals for setting up food-processing units at a total cost of Rs 390,990 million since the announcement of the New Industrial Policy in 1991.

*Special thrust and recent Policy Initiatives have helped :*

During the late 1990s, Ministry of Food Processing Industries was set up to provide support to this sector. Several incentives and schemes both from the central and state governments by providing exemption from excise duty on several products, subsidies on various counts including investment have contributed to the growth in the recent past. The Agricultural and

Processed Food Products Export Development Authority (APEDA) set up in 1986 provides thrust for the export of various agricultural commodities and processed foods. To encourage setting up of small food processing units by the rural women and youth, the government has decided to set up 150 'Food Processing Training Centers' (FPTC) through out the rural side.

*De-licensing being the major policy :*

The major policy initiatives that have been taken by the Government include de-licensing of food processing industry with the exception of beer, potable alcohol, and wines while simultaneously declaring a number of others as high priority ones. New policies have also led to the exemption of several processed foods from excise duty and to the levying of concessional import duty on the food machinery to be imported.

*Although several other regulations continue :*

As per the industrial policy of the Government, most of the products are reserved for manufacturing under small scale industry. The compulsory legislation that the food processing industry has to comply with are;

- a. **Prevention of Food Adulteration Act, 1954** : It is the basic statute intended to protect the consumer against supply of adulterated food by laying down certain standards. The 'Central Committee for Food Standards' under the Directorate General of Health Services, Ministry of Health and Family Welfare is responsible for operation of this Act.
- b. **Essential Commodities Act, 1954** : Regulates manufacture, commencement and distribution of essential commodities including food but does not include the health aspects.
- c. **Fruit Products Order, 1955** : The order regulates manufacture and distribution of all fruit and vegetable products, sweetened aerated waters, vinegar and synthetic syrups. The license is issued based on the satisfaction of the concerned officer with regard to quality of production, sanitation and hygiene, machinery and equipment and work area standards.
- d. **Oils, Deoiled Meal and Edible Flour Control Order 1967 and Vegetable Products Control Order, 1976** : These orders control the production and distribution of solvent extracted oils, deoiled meal, edible oil seed flours and hydrogenated vegetable oils (vanaspati). For production and distribution, a license is essential from the Directorate of Food and Civil Supplies which also regulates the price of vanaspati under the order from time to time.
- e. **Meat Products Control Order, 1973** : It regulates manufacture, quality and sale of all meat products and is operated by the Directorate of Marketing and Inspection.
- f. **Standards of Weights and Measures (Packaged Commodities) Rules, 1977**: These rules lay down certain obligatory conditions for all commodities in packed form with

respect to their quantity declaration. Directorate of Weights and Measures under the Ministry of Food and Civil Supplies operates these rules.

- g. **Export (Quality Control and Inspection) Act, 1963** : The Export Inspection Council is responsible for operation of this act under which a large number of exportable commodities have been notified for compulsory pre-shipment inspection unless specifically requested by the importer not to do so.
- h. **Voluntary Standards** : There are two organizations dealing with voluntary standardization and certificate systems concerning quality parameters in food. They are Bureau of Indian Standards (BIS) and Directorate of Marketing and Inspection (DMI).

*Promising future prospects :*

Food processing industry at all the levels of tiny, small, medium and large scale provides several promising opportunities in the face of large resource base, increasing consumer demand, large investment potential and a large variety of products that can be produced for the highly diversified market. McKinsey & Co. Inc. have estimated that the industry will grow from current level of Rs. 80,000 crore to Rs. 200,000 crores in the next ten years. (Ref. The Economic Times, N. Delhi dated August 26, 1996). However, the two important watchwords that would be necessary for firms to consider will be to satisfy the typical Indian food palate at a price that fits the budget of the price conscious middle class, especially if large volumes have to be achieved. High technology and international class of products may not necessarily mean success.

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*Sector wise projects implemented in the previous 4 years :*

Of the 96 projects implemented during the period from August 1991 to December 1995, project worth Rs. 1716.68 crores have been implemented in this sector mainly in the field of Fruit & Vegetable products, Consumer products, Fish processing, Milk & milk products and grain milling. (Source : Food processing industry, a profile by FICCI BISNET)

## **2. Landmark History and Performance of the Cluster**

*An unrelated static agglomeration :*

The cluster of Food processing units in Pune is an agglomeration of several units which has grown mainly in terms of their number due to increase in population of the city. In terms of the performance of these units singly or jointly, there does not seem to be a remarkable perceptible improvement in this cluster. In terms of the new products introduced, some of them, that need special mention are dehydrated food products such as instant mixes and powders for soups, Dosa mix, sweets mix etc. which reflects the growing need to provide more convenience to the housewife.

*Rising in number to keep pace with the population growth :*

Although it is difficult to obtain reliable data that could substantiate the growth in the number of units and quantum of production, estimates drawn from the interviews with the respondents reflect a growth that has kept pace with the demand by the customers. To substantiate, opinion about the number of bakery units in Pune at the time of Independence in the year 1947 would vary around 25 while the current estimates show the number to be 500 during the year 1996, although the typical size of the bakery unit would remain almost same. This is despite the fact that there are a few bigger automated units in the larger SSI level or medium scale level which have concentrated on select range of products catering to the needs of the affluent section of customers who prefer improved uniform quality of product under a visible brand and superior quality of packaging.

### **3. Sketch of the SME's, Other Enterprises and Institutions**

#### *Industry Structure of Pune:*

The district of Pune is well known for its strength in the Engineering sector. According to the figures provided by the District Industries Center (DIC), there are 227 units in the medium and large scale sectors with a capital outlay of Rs. 6553.63 crores and employment size of 76,050 during the year 1995-96. Almost half of these units are estimated to be engineering based. Besides, there are units manufacturing Electronics, Plastics, Chemicals, Pharmaceuticals and Agro based products. The Agro based units producing cut flower, seeds, poultry products, animal feeds and cotton yarn are approximately 40 in number, of which 10 are sugar manufacturing units in co-operative sector. Total number of Small scale units in Pune are 23,239 with total employment of 166,203. The geographical location of Pune in India is given in the map in Annexure I.

#### *Proportionately insignificant size of Food processing Industry :*

The size of medium & large scale sector in food processing industry of Pune excluding some of the agro based products such as poultry and cut flowers is quite small and comprises of a few flour mills, a biscuit unit, vegetable oil, ground & processed spices and custard powder manufacturing units. Together, these units are estimated to have a capital investment of Rs. 100 crores and direct employment generation of about 1000 persons constituting almost 1.6% of total size of medium and large industry in Pune.

#### *Sketch of the SMEs, Other enterprises and institutions:*

Typical of the food processing industry in India and in most developing countries is that bulk of the food processing takes place in the cottage scale units according to the capital investment criteria laid down in the definition of Small scale unit<sup>2</sup>. Based on sectoral classification, maximum number of these units are bakery units followed by units producing mustard oil

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<sup>2</sup>Small scale units are defined with the plant and machinery investment of upto Rs. 6 million while for the large scale industry, the figure is beyond Rs. 30 million. Therefore the medium scale unit could be inferred to be defined with plant and machinery investment from Rs. 6 to 30 million.

(*Kachi Ghani*), spices, pickle & papad manufacturing. Other important products manufactured are confectionery & farsan, ice-cream, ice manufacturing, milk & milk products.

The sketch of food processing units typifies a pyramidal structure. Among the estimated 950 food processing units, almost 900 of them would have a turnover of less than Rs. 1 million per annum for each unit. The structure is shown in the table given as under;

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<b>Unit type</b>	<b>No. of units</b>	<b>Capital Investment (In Rs. lakhs)</b>	<b>Gross Capital Investment (In Rs. crores)</b>	<b>Average Employment</b>	<b>Gross Direct Employment</b>
Medium	6	NA	100	NA	1,000
Small	50	2	100	30	1,500
Tiny	900	0.2	180	10	9,000
<b>Total</b>	<b>956</b>	<b>-</b>	<b>380</b>	<b>-</b>	<b>11,500</b>

*Aided by the policy of product reservation in SSI :*

The absence of medium and large scale units is partly due to the Govt. policy which reserves the manufacturing of ice cream, pickle & chutneys, dal milling, bread, biscuits, confectionery except chocolates, oil mills and ground & processed spices in the small scale sector. Besides the official barrier to competition, there exists natural barrier due to wide ranging tastes of the consumers which are fulfilled by the large number of cottage scale units in their proximity.

*Range of food products :*

There is a large range of related and unrelated food products manufactured in Pune and its adjoining villages such as Jams, Jellies, squashes, pickle, dehydrated ready food mixes, bakery products, milk products such as sweets and shree khand, confectionery items, ground cereal flours, papad and ground & processed spices mainly concentrated in the cottage and small scale sector. Some of the capital intensive units among the medium and upper end of the SSI end produce custard powder, dehydrated soup powders, branded packed biscuits, skimmed milk powder and vanaspati ghee (cooking oil).

*Small size of secondary and tertiary processing :*

Despite the large availability of raw fruits and vegetables, the secondary and tertiary processing of these products is quite small. Fruit processing is mainly for jams, jellies, squashes and pickles. Some of the other products based on fruits and vegetables are processed mushroom, tomato products and pulp making for the institutional and export markets. Meat and poultry products are mainly consumed in fresh form. Marine products are not produced in Pune, it being away from the sea shore.

*Catering mainly to the Local Markets :*

Most of the household and small scale units with their limited manufacturing capacity and geographical market reach, cater to the local clientele who have typical Maharashtrian taste and palate. This applies to most of the products such as pickles, spices, bakery products, confectionery and milk products.

*Selection of Products for the study :*

As mentioned earlier, the range of products manufactured in Food Processing sector is quite large and inclusion of all these products due to their varied nature of processing, market and technology would make it unfeasible to have a focused analysis. It is therefore, that the most important food products manufactured in Pune have been selected based on the likely homogeneity and possible linkages among the units. The first of the two groups selected comprise of ;

1. 'Cereal based products and processing units' such as -bakery items (e.g. Sliced & non-sliced bread, pav, khari, cakes, pastries and a whole range of other local varieties),

λ Flour milling, and  
λ Farsan ( a confectionery item).

2. The second group of food items selected were non-cereal based products such as

λ Pickles, jams, jellies, squashes & syrups.  
λ Ground & processed Spices  
λ Papad

In the first group, flour mills provided the basic raw material for bakery units as also for farsan. A special mention needs to be made of the approximately 500 bakeries in Pune district of which about 250 are in the city itself. Several small units produced many of the items listed in the second group during different periods of the year depending upon the seasonal availability of the raw material needed there in. Independent units however existed for the papad and ground & processed spices.

Potable alcohol, fresh fruits & vegetables, cotton yarn, cut flowers, vegetable oil, sugar, meat & meat products, and hatchery related products such as broilers & eggs have been kept outside the purview of this study. Besides, local sweet shops and home scale units where the food processing activity is taken up seasonally and on part time basis have also not been included in the study purview.

*Other institutions at the local level :*

Some of the important institutions that exist in Pune and relate themselves to this industry are mentioned as under;

1. *Maharatta Chamber of Commerce & Industry, Tilak Road, Pune :*

This chamber was established in year 1934 and is recognized as one of the most prominent chambers of India at the regional level. The chamber renders services to its members not only in giving assistance and advice but also in representing the views and interests of the business community at the state and central government level. The chamber has earned a repute for its initiative, foresight and pioneering work.

With a general strength of over 2600 members representing a cross section of industry, commerce, government organizations, institutions and professionals such as consultants, exporters, bankers etc. mainly from Pune and surrounding areas, the chamber is perceived to be non-partisan and with a focus on the long term objectives. The members from large and small businesses together with equal votes elect their representatives democratically to head the chamber.

Fulfilling its promotional role, the chamber has promoted six prestigious institutions including the Bank of Maharashtra, 2 industrial estates in the years 1972 and 1974, Pune Stock Exchange in 1982 and Institute of International Business Research- 1995. Among the proposals under implementation are building up of an international exhibition complex, testing facilities centers to test the chemical residue and a floral park among others.

2. *Public Health Laboratory :*

Is a Government laboratory based in Pune and its primary role is to get the testing done on behalf of the Public Health department that monitors the quality of water supply and samples drawn from the food manufacturing units. The samples that are drawn compulsorily by the public health inspectors on random basis involves a large quantum of work. Besides, it also undertakes testing directly on behalf of the entrepreneurs on a nominal fee.

3. *Maharashtra State Institute of Hotel Management & Catering Technology, Shivaji Nagar, Pune:*

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This institute set up in 1974 offers full time training programs such as Diploma in Hotel management and catering technology of 3 years duration for students with minimum 12th standard. Other courses offered by this institution for 10th standard students are 'Diploma in Travel & Tourism' (3 years), 'Minimum competency vocational courses in Cookery, Bakery and Institutional housekeeping' (2 year duration). Besides, a one year diploma in Hotel housekeeping and Front office management is also undertaken at post-graduate level.

As per the Government policy, the institution undertakes community polytechnic projects, sponsored by the Government of India with the objective of upliftment of rural community through transfer of technology, manpower development, training, technical services and dissemination of information.

The institute has a good reputation among the business community of the industry but the interface between the business community and the institute through consultancy, training and information dissemination is quite less. Several respondents among the business community expressed that they would like to seek assistance from the institute for their business development.

4. *MITSAN laboratory :*

Is a private laboratory that was set up by Dr. Deshpande responding to the testing needs of the entrepreneurs. Besides, this laboratory provides consultancy and other advisory services to the

entrepreneurs on charging a fee. The laboratory has a good reputation in the industry for a fair testing and honest advice. Its test reports are also relied upon by the exporters in Pune and importers outside the country. Another reason for its success is its reputation of providing test analysis report sooner than the Government laboratory does usually.

5. *Pune Zilla Bakers Association :*

Is an old and established institution comprising of the bakery units in District of Pune. This institution had been active more than 20 years ago when the major raw material viz. Maida was in short supply. The association had undertaken to get the raw material from the State Government through their supply godowns and allocate it to the bakery units as per the quota regulated by the association. The quota fixation was done by the association based on assessment of requirements by each of its members. The other raw material that it used to provide in the 1970's are sugar and hops obtained from Czechslovakia for fermentation.

With the shortage of raw material disappearing and Maida available in plenty directly from the flour mills in the market, the association continues to perform the same task although a few members actually utilize these services now. The association besides above, undertakes to organize a few meetings when private firms want to introduce their product such as preservatives or other chemicals used in food processing. The members would like to see the association activated and started providing more useful services such as training and consultancy.

6. *Lipton Master Bakery Service, Master line service club* c/o Brooke Bond Lipton India Ltd. 14/1, 11th.Floor, Wood Street, Richmond Road, Bangalore- 560025 Tel 579110:

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This private club under the auspices of Brooke Bond India Ltd. undertakes to provide demonstration for new recipes that can be prepared by the bakery units by using the chemicals developed by their unit.

7. *Community Food & Nutrition Extension Unit*, E/5, Market Yard, Gultekdi, Pune- 37 Tel 467856:

This unit provides training to the local persons especially the women from rural and urban areas who wish to start their enterprises for manufacturing food items at household level with a view to supplement their incomes. Demonstration is given for making pickles, chutneys, tomato ketchup, jellies, jams, squashes etc.

8. *Maharashtra Papad manufacturers association :*

This association that has come into being only during late 1995, was formed to lobby with the state government against imposition of sales tax on Papad. The association has a membership of only 20.

9. *Farsan Wafers and Milk Products Association :*

It was formed in the year 1988 to lobby for the interests of its members with the Governments.

10. *All India Food Preservers Association (Pune Chapter) :*

The body does not seem to be effective in relating itself with the food industry of Pune.

11. *Maharashtra State Masala Producers Association, Pune :*

It was formed to fight the Government against its stipulation of packing into plastic packaging which may have leaked thus causing contamination. The association obtained stay order against the rule and the matter remains subjudice.

12. *All India Food Scientist and Technologist federation, Pune Chapter :*

This body has also been termed as a talking platform without being effectively contributing much to the industry in Pune.

A cluster map of bakery units in Pune depicting the various players in the cluster is given in *Annexure II*.

#### **4. Analysis of the Business Operations**

The business operations of the units in the cluster and how they link with each other is explained as under;

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The range of food items produced by the industry comprises of bakery products (e.g. sliced & non-sliced bread, pav, khari, biscuits, cakes, pastries and a whole range of other local varieties), wheat flour milling, farsan, semi-processed ready mix products, pickles, jams, Jellies, squashes & syrups, ground & processed spices and papad. Among the confectionery and farsan products, the important ones will be chiwda, wafers, dhokla and bakerwadi. One unit in the medium scale unit also produces tea bags, hot beverages, custard puddings, baking products, heat and serve products, jellies & desserts, glucose etc.

Within the same range of products manufactured, the upper end of the small scale units and the medium scale units cater to the needs of the more affluent sections of the society who are relatively more brand conscious and hygiene conscious. The pricing of such products would accordingly be higher and packaging superior. On the other hand, most of the smaller units compete with each other for their market share through lower prices and thin margins. Bulk of the market consists of the low income segment that buys non-branded, low priced products from among the bakery products, farsan, pickles, ground spices and mustard oil.

Those units which do not have their own marketing outlet, undertake distribution through local shops and hawkers which form an important marketing channel with little long term relationship with the manufacturers. These suppliers act more as commodity traders with little brand consciousness and specific product feature and quality. The institutional buyers in Pune such as industrial canteens and road side food vendors, as it emerged from the interviews are

driven largely by the low pricing factor for their purchases. In terms of the structure of the industry, it could be stated that price based competition existed among the institutional buyers some times at the cost of poor quality and low hygiene. Secondly at the retail level where the sale is over the counter, taste and hygiene become important for the consumer.

In terms of the size of the market segment, low income segment could be estimated to be at least 3 times the size of the upper end of the market. This becomes very important since the entrepreneurs would consciously or otherwise set up their enterprise to meet the demands of their consumers accordingly. The technology used, marketing channels employed, pricing of the product and packaging of the product will accordingly be driven.

In terms of geographical reach, the market for most manufacturers in Pune would typically comprise of the city base while only a select few would have their presence felt at the state level. Only a very small number of them could be said to have national reach. Total exports of the products are quite small compared to the domestic market. However the trend among several upward mobility entrepreneurs is to move out which puts pressure on them to package the product better, brand it and promote it. The help and guidance available in this regard is not easily available on formal basis. But references from distributors, friends and relatives are helpful sometimes.

A strong linkage with the local consumer obviates the need for small and tiny units to advertise and promote their products formally. For such products, there are no visible and easily measurable standards which would necessitate special testing of the products by the technical laboratories within or outside the manufacturing premises of the units. Word of mouth publicity and faith in the entrepreneur for supplying reliable product is enough for such units to sustain and run their operations. This is compounded by the fact that the brand consciousness among the consumers is low. It was therefore not surprising to note that there was a strong feeling of complacency among at least half of the respondents when inquired about whether they looked forward to growth in the near future.

Most of the products were packed manually in simple packing material with a label of the manufacturer tucked inside the packing partly due to mandatory considerations and sometimes due to promotional reasons. The packaging especially in case of small and cottage units is done with the objective of protecting the food items from dust and moisture rather than to enhance shelf appeal for the consumer. Semi-automated and automated machines are used only by a select larger units among them with a justifiable size of production. It is estimated that almost half of the bakery products are sold loose through the hawkers without any packaging. A process flow chart for the manufacture and supply of bakery products is given in *Annexure III*.

With a view to institute standards in food products, Government of India has promulgated compulsorily 'Food Products Order' (FPO) on several products such as tomato ketchup, jams, jellies and pickles etc. but the level of awareness among most consumers about the FPO is low. For other products such as meat & meat products, milk & milk products, there are more standards For ground and processed spices, 'Agmark' standards have been promulgated by the government on voluntary basis. Most of the manufacturers did not get their products tested for Agmark standards since most consumers did not demand products with Agmark quality. In two cases, the manufacturers after having obtained Agmark standards from the authorities for some

years left it since they did not find the consumer appreciating these standards. For several other products, Bureau of Indian Standards has instituted voluntary compliance of (Indian Standards) ISI marks.

In order to ensure compliance to one of compulsory standards as also under the 'Prevention of Food Adulteration Act, 1954', the local food inspectors visited every single unit and collected samples randomly. But the effectiveness of such external pressure for compliance becomes difficult, if the control mechanisms are not effective and strong. The response of all the entrepreneurs visited indicated that the visiting food inspectors on quality from the government departments are nothing more than a nuisance and a regular source of corruption.

Several of the uneducated entrepreneurs expressed utter sense of ignorance about the rules and how to comply with them. Those who would wish to voluntarily comply with the rules, as was acknowledged by the Government officials would not get the information easily. Besides there is no suitable mechanism to inform the entrepreneurs about the changes in the rules that take place from time to time. Only the technical experts or entrepreneurs who can afford to hire the services of chemists would be aware of the regulations which however is not enough to avoid corruption due to some of in-built contradictions among the various regulations and their interpretation.

In case of three products viz.; common sliced bread, ground spices and farsan, medium and higher end of small scale units have altered the structure of the market for these products. These comparatively bigger units have introduced better packaging with automatic and semiautomatic machines thus ensuring longer shelf life of the product and a perception of better hygiene of the product. This has led to the cottage scale and smaller end of SSI units to share their market with such comparatively bigger players. For example, there are at least 7 popular brands of the common sliced bread made on electrical semiautomatic and automatic machines which have captured between 50% to 75% of the local market. Similarly, some popular brands of ground and processed spices have also made inroads into the consumer segments hitherto the bastion of cottage and small scale sector.

#### *Private industrial estates in plenty :*

Despite the fact that there are several private estates in Pune, food processing industry does not seem to have utilized the benefit since most of the units are small and set up their shops close to the local customers preferably in domestic areas. The bigger units that intend to grow and feel constrained by the space have been seeking to move out of residential areas. Such units are papad manufacturing and packaged spices.

#### *Restricted availability of Finance a constraint :*

The enterprises selling products on retail basis or on cash terms such as bakery and farsan did not envisage problems related to finance. Such units comprise of tiny as well as non-tiny enterprises. However, when the raw material has to be procured in bulk due to seasonality factors, the finance requirements escalate. This is applicable to the units manufacturing products such as tomato ketchup, fruit jams, jellies and dehydrated vegetable mix soup powders. Irrespective of the size of the units, several such units expressed the inability of the local banks

to appreciate the need to be flexible in providing working capital finance to meet the seasonal requirements of finance.

*Cooperative Banks seem to be helpful :*

Most of the small units who could get the finance for their working capital or long term requirements got the credit from one of the local cooperative banks. These banks who have positive links with the entrepreneurs due to the local linkages prove to be an effective vehicle for credit provision for them. The firms have to take compulsory membership of the banks which builds up a long term stake and relationship of theirs in these banks.

### **Production, Technology and Testing**

*Low capital intensive small units predominate :*

There are almost five hundred bakery units that exist in Pune of which almost 90 percent have wood based ovens, while 7 percent are estimated to be run with the help of Diesel/LDO/Gas. Another 3 percent of these units are believed to have electric ovens. Barring 2 units in the medium scale, almost all the Papad manufacturing units are small that subcontract the dough to women labor for preparing papads. The case of pickles, jams and jellies is also no different.

*Predominantly Manual Operations :*

The process of manufacturing in most small and tiny units is primarily manual whether it relates to making bakery products, tomato ketchup, Chutney, Jam, Jellies, Farsan Pickles, Ground and processed spices or Papad. The first step involved in the industry is to mix required ingredients in right proportion which is carried out manually. In some of the products such as Papad, the process is so simple that the only operation involved is to prepare the dough, roll small parts of it manually using a wooden base plate and place it in an open area for sun drying. In the bakery units, the mixing of ingredients, dough preparation, placing of baking trays in the oven and slicing of bread are done manually in most of the tiny units.

*Using Raw Material available in plenty at local level :*

For bakeries, the main raw material used is fine wheat flour (Maida) that comes from the various flour mills situated in and around Pune. The other important ingredients i.e. sugar, dry fruits and vanaspati ghee are available through the wholesalers while the units manufacturing especially sugar and ghee are also situated nearby in the States of Maharashtra itself. Besides these raw materials, the bakery units also used yeast, preservatives and food colors for which several suppliers exist in the city. Similarly for the other products, the main ingredients such as fruits, vegetables, raw & ground spices, pulses etc. are all available from the local wholesale market. Only the bigger units procure the ingredients from the manufacturing units directly. For the farsan units using *mawa* (concentrate of natural milk fats), the production has to be stopped during 2 months in a year when a ban is enforced to ensure sufficient supply of liquid milk in view of the shortages.

*But not of uniform grade :*

In the food processing industry, it is essential to use uniform grade of raw material. Irrespective of the size of unit and the nature of product, almost all the units had problems in procuring raw material of uniform quality. Among the bakery units, the raw material quality specially that of Maida is the most critical factor that ensures uniform quality and taste of the product which was not uniform even when procured from the same source and of the same brand.

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*Usage of certain machinery and equipment dictated by necessity :*

When the production increases, introduction of certain equipment becomes necessary since the requisite quantity and quality of production is difficult to achieve through manual processing without the aid of supplementary equipment to reduce the drudgery of manual work involved. However this does not obviate or lessen the dependence on personal judgments & skills of the entrepreneur or supervisor during the process. For example, the equipment which is used to produce tomato ketchup, jams, jellies and squashes comprise of a mini boiler, steam jacketed pans, pulveriser, fruit mill, cutter and peeler. For the ground chilli and other spices, pulverization is carried out in small hammer mills and pulverizers. However, the hammer mill being open from the above emits out the powder in the ambiance.

*Which is indigenously available :*

In case of bakery units, the important equipment needed is weighing scale , sugar pulveriser, dough mixer, kneading machine, flour sifter, dough dividing machine and beaters. All these equipment are easily available in the local areas itself.

*But sometimes innovatively designed :*

These equipment locally produced with indigenous technology and design is often an innovation worked out by the entrepreneur and local machinery manufacturers with inputs mainly from the former. Certain type of machinery and equipment suited for the tiny and small scale units may not be easily available or not known to be available by the entrepreneurs. Farsan manufacturer with a brand name of 'Laxmi Nrayan' and Shanti Food Products manufacturing tomato ketchup, jams and jellies have created their own machines at very low costs to ease their working. The local strength in designing and supplying such machinery for specific requirements is quite helpful in several cases.

*Traditional wood based heating is used :*

Heating is done through different energy sources according to the type of oven used. While the wood based ovens are the simplest and also of traditional variety the less often used ovens using LDO /Diesel or Gas need to have an injector, filter, pipeline, fuel storage tank and regulator. the fermented dough is then placed in the bakery trays and baked in the oven. The type of dough and shape thereof is dependent upon the type of product to be produced. The final products that are mainly produced in the bakeries are conventional sliced breads, cakes, nan-khatais, biscuits , khari, buns and pavs. The slicing of bread is done by a slicing machine. All these machines including the ovens are also available locally.

*Municipality discourages use of wood but without better alternatives :*

By not issuing any further license for the wood based bakeries within the city limits, the local municipality is trying to promote cleaner ways of heating. These wood based ovens are built by local masons according to their judgments. The problems associated with such ovens are inefficient insulation, affluent discharge, lack of uniform heating and inefficient control of temperature. The maintenance is also carried out by the local masons thus reducing the cost of

operations. On the other hand the Diesel and LDO based ovens are not only much more expensive to buy but also to maintain. Such ovens however provide uniform heating due to better control on fuel charging. The electrical ovens that are normally available from specialized manufacturers based in Mumbai and Delhi are still more costly, difficult to maintain and unreliable to operate due to erratic supply of electricity. Despite this, the electric ovens are used by very few units that produced specialty range of bakery items requiring controlled heating.

*Personal judgment replaces formal testing :*

During the process, personal judgment is relied upon more than the testing equipment. So even the basic instruments such as temperature gauges are not used in bakeries despite the fact that uniformity of temperature is one of the crucial parameters to ensure better quality. Formal control on process parameters and testing of products during or after the process is not generally relied upon during manufacturing of other products besides the bakery products. A select few units from among the medium scale units do have facilities for in-house testing and some times get their products tested from the external laboratory as well. To adjust the process parameters, the supervisor or master baker (often the owner himself) would rely on his judgments based on the past accumulated experience.

*Although testing becomes essential sometimes :*

Some of the units may resort to testing in order to gain an understanding of the problems that their product may have and to find the appropriate solution thereof. For exports, technical problems require specific solutions. Besides, certain specialized tests need to be conducted on the finished products to confirm to the specifications required by the importer. These tests such as upper end of the micro-biological tests and pesticide tests are not stipulated according to the national standards nor dictated by the markets within the country.

*Inadequate testing facilities :*

While there exist some public and private laboratories that carry out some of the tests needed for domestic markets as well as exports, the upper end specialized tests cannot be got done in Pune since none of these laboratories is equipped with the necessary equipment needed for it. Among some of the private laboratories, MITSAN laboratory is considered to be a prominent one. The Government laboratories are not considered to be useful especially for exports since it usually takes as long as two to three weeks to get the report of testing.

*Government efforts to ensure better quality have not quite succeeded :*

The consumer has largely been satisfied with the quality of the products which has been responsible for what is produced by the units. The government efforts to improve the standard of products through regulation and enforcement have not quite succeeded. 'Prevention of Food Adulteration act' is considered to be a strong act enacted by the central government, the enforcement of which is left to the state governments through the local municipal machinery. The inspectors visit the units to ensure better housekeeping by checking the cleanliness of premises, inoculation of workers, cutting of their nails, wearing of aprons and stacked raw material storage facility.

The samples from the food units are randomly drawn and sent for testing at the local Public health laboratory set up by the Government. The tests that are conducted and the parameters that are tested are not generally known to most of entrepreneurs. Since the penalties related adulteration stipulated by the act are quite stringent, the entrepreneurs prefer to find their way through by paying off regularly to the inspectors. There exists complete lack of transparency about the technical standards required to be maintained by the entrepreneurs. The public health laboratory did not have literature pertaining to the standards when requested by the researchers to show. Almost 7% of the samples fail the test according to the officials of the Public Health laboratory, who felt that there was a need to work together with the entrepreneur and ensure that the mechanism not only provides more transparency but also serves to be the guide to the entrepreneur to improve the products.

### *Training and Labor:*

A common linkage among most of the entrepreneurs was observed that either they had been trained in the units that their elders had started or they had been workers in another unit and then set up their enterprise after gaining hands on experience. Entrepreneurs from only 10% of the visited units in small and tiny category of units had been formally trained. Problems are sorted out based upon skills developed due to accumulated experience. While several entrepreneurs expressed their desire to develop their skills by getting themselves formally trained through short term courses, non availability or lack of knowledge about such courses was the major problem that was expressed. Majority of the entrepreneurs in tiny and smaller level of SSI have never visited a food fare, local training institutions or an exhibition to update their knowledge about the new recipes, machinery available and type of packaging that could be used for the better. The Food and Nutrition extension unit is the only one that has trained very small entrepreneurs who usually take up the activity of food processing for their home or for part time engagement.

Management skills of the entrepreneurs are limited. Costing of the product is not undertaken for pricing the product. Accounts are hardly kept and if they are done, it is with a view to get over the statutory requirements related to taxation and banking finance. With the growth of enterprises, the complexities of the business also grow which several small entrepreneurs find it difficult to face. So almost half of the entrepreneurs when asked about their future plans, they not only denied any growth plans but also reflected their resolve to remain small.

As one of the farsan manufacturers put it, "*With expansion it will not be possible to monitor and control the quality. Personal supervision will not be possible. My ears, nose and eyes are the laboratories which cannot cope with the high level of output. Then, instead of gaining the market, I will lose even the existing market.*"

Lack of formal training is also true for the supervisors and/or masters (skilled foreman) in case of non-tiny SSI units who usually grow from the position of an unskilled worker to reach their current level. However the other important function that the supervisors performs is to exercise control over the labor. In certain cases the responsibility of recruiting the labor is also of the supervisor who hires them from his native village mainly from Uttar Pradesh. Besides the supervisor and sometimes a master, all the workers are unskilled workers who carry out the task

of raw material and finished goods movement, packing and other sundry jobs. In tiny units, the entrepreneur himself acts as the supervisor.

To avoid regulations of the labor laws related to the provision of statutory employee benefits, inoculation, minimum wages and provision of other basic facilities, the muster rolls of the small and tiny units do not reflect the actual labor employed. In other cases, the persons were passed off as casual workers hired for a specific task during the day.

Irrespective of the size and type of units, most entrepreneurs emphasized the need to educate the workers to maintain cleanliness and hygiene. Most of these unskilled workers who have never worked in food related units may not appreciate the need to ensure cleanliness. To reduce the cost of hiring workers, most of the bakery units provide in-house lodging & boarding included in the compensation package. The lodging is provided within the work place which adds to the problems.

In the absence of a formal training system and low compensation, there exists a high labor turnover and absenteeism. An unhealthy competition exists to poach labor. Manufacturers of Lijjat papad, Shree Mahila Udyog Samiti, a successful co-operative venture with 1800 member female workers in Pune alone have an informal training mechanism to train new incumbents who have to be introduced and trained by an existing member before her enrollment.

Non-availability of labor is not a problem in units manufacturing pickle, chutney and papad where home based workers, mainly women are hired to work either in their own homes or sometimes in the premises of the unit.

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## **5. Assessment of the Organizational Linkages in the Cluster**

*A high degree of heterogeneity :*

While analyzing the structure of food processing industry, it is witnessed that the industry is highly heterogeneous in terms of the range of products, technology used, problems faced and facilities required therein. The linkages among the units howsoever weak and with other institutions terminated within the specific sub-sector in the industry. This is because the level of organization, type and strength of linkages that exist within the various processing units producing different range of products do not reflect closeness among themselves. Some of the important characteristics of the industry are given as under;

*Nature of industry not conducive for subcontracting relationship :*

Food products being perishable in nature, require processing under controlled parameters which are best carried out at one set of premises. The medium scale and upper end of the small scale units manufacturing instant mix powders, custard powders and spice processing have therefore linkages limited to supply of preservatives, additives and packaging material. The only possibilities suggested by the entrepreneurs from the medium scale units relate to development of linkages relate to the cleaning and cutting of raw material such as cereals, fruits, vegetables and spices, which does not provide worthwhile value addition. Only in one case, a unit got the

dehydration of vegetables got done from the smaller units during the high season when the in-house capacity was constrained.

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*Nor a horizontal co-operation has been witnessed :*

In the case of smaller and tiny units, the need to cooperate on process parameters does not exist. The units producing bakery products, farsan, pickle, tomato ketchup, jams and jellies all undertake processing within their own premises with little or no affiliation to the other smaller and tiny units. The market pressures both domestic and external have also not been conducive to strike the possibility of developing linkages to undertake joint marketing. The size of units, nature of local markets and the horizon of entrepreneurs have all contributed to keeping the processing to marketing on to themselves.

*With the exception of Papad industry in a limited way :*

The exception to this exists in the case of papad manufacturing which is undertaken generally at the premises of the workers themselves from the prepared dough that is provided from the centralized premises of the unit. The finished product is then packed manually in the centralized premises in simple polythene sheets and then marketed through its appointed agents who directly transport the goods to the institutions and the retail shops on strictly cash basis. Similar branches in other parts of the country cooperate through a centralized office in Mumbai to decide an overall policy for the business, promote the product through advertisement television and other media. The profits are then distributed back to the members. The case of Lijjat papad is a classical example. For this high order achievement, they have not sought and intend not to seek any external assistance from anywhere.

*Unhealthy competition remains the trend among smaller units :*

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With most products being bought and sold as commodity by the smaller units rather than branded and differentiated quality based products, the pressure remains on price and meeting of local requirements which are not demanding and hence not conducive to product development and value additions. Some changes are now witnessed with the larger of SSI units and medium scale units who have begun to cater to the needs of more hygiene conscious consumer

*Co-operation limited to common enemy as Government :*

In three of the four sub-sectors the units had joined hands to form their associations. However the function of these associations remained limited to fight the government against any new or enhanced taxes. Bakery units had their association for more than a decade when their major function was limited to procure the scarce raw material Maida (wheat flour) from the government which regulated the supply of it. Subsequently the supply of this raw material got eased and maida became freely available for the last several years. So while the association continues to procure the raw material and supply it to the bakeries, there are a few takers for it. Maharashtra Papad Manufacturers Association was recently formed against 2% Sales tax levied on them during the year 1995.

*Since the benefits of co-operation are not readily perceived :*

None of associations provided technical, marketing, training, advisory and legal services to its members. This is mainly due to lack in faith among the office bearers who would corner away

any such benefits that the members may seem to get in future. Yet they wanted to have an effective body that could help them solve some of their problems. For example, some of the bakery units wanted to know about new recipes and new machinery available.

*Government extension institutions considered to be ornamental only:*

The support institutions set up by the Government have been perceived to be too general to be of any effective help to the industry. The institutions such as 'Maharashtra State Institute of Hotel Management & Catering Technology' which could be of help to the industry gets engaged in regular graduate and post graduate courses meant for new comers. The short term courses conducted by the institute are neither conducted regularly nor advertised to be able to reach out to the existing entrepreneurs. The Public Health laboratory which could be used for getting products tested, for various reasons, was not perceived to be helpful since it took a long time to provide the test report.

*So a private laboratory fulfills the gap :*

The upper end of SSI and the medium scale units were critical of the bureaucratic and unfriendly attitude of premier institute 'Central Food and Technological Research Institute' based at Mysore which has an excellent infrastructure to provide consultancy. With regards to the conduction of short term training courses, the medium sized units in the industry used their services. To meet the local demands to provide expert advice, a private laboratory called MITSAN laboratory helped to fulfill some of their needs effectively in relation to testing and provision of consultancy. Although the test reports provided by this laboratory are accepted by most importers and also the government, it is not recognized by law since no provision to do so exists according to the government rules. Secondly, it does not have testing facilities for high end tests such as micro-biological tests and pesticide tests that require very costly equipment which are difficult to afford.

*Linkages with local machinery suppliers :*

The limited range of machinery and equipment required by the units in various sub-sectors are easily provided by local suppliers. Some of the machinery which is being used by the units is an innovation using local material and ingenuity of the fabricators. No support from the existing institutions came through to provide any help in such cases.

*Bigger units have different problems :*

Most important observation of these industrial units related to the Government policies, lack of expensive testing equipment specially required for exports, lack of training facilities and provision of timely and correct information.

*Lack of raw material standardization being important :*

Raw material such as cereals, fruits and vegetables are not standardized since the industry has little linkages with the farmer. Standardized raw material is important to ensure uniformity in the taste and quality of the final product. Only one of the medium scale units had now begun to

develop linkages with the farmer to get assured supply of the required standard of raw material. However the answer does not lie only in development of linkages with the raw material but also in educating the farmer on harvesting techniques, providing seeds and ensuring complete post harvesting infrastructure necessary to keep the produce useful for the feed-stock to the industry.

*Provision of working capital finance being the other :*

Food industry being a seasonal industry in many ways requires increased working capital to procure raw material during the season. Several units, both small and medium expressed difficulties in dealing with the banks who failed to appreciate the working capital needs of the industry due to the nature of industry.

## **6. Proposed Strategy for Cluster Development**

*Too heterogeneous to consider one line of action plan :*

Despite selective products chosen for the current study, the food processing sector is too heterogeneous to be considered it for development under classical cluster development approach under one umbrella. Each of the sub-sectors within the broad product range of food processing industry would need development approach specific to that sub-sector. A general strategic approach before preparing an action plan in relation to each sub-sector or according to the size of the units is being given as under;

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a) *Exposing entrepreneurs on potential of Growth.*

The cluster under study is static as concluded above. An overall assessment of the potential of the cluster needs to be developed taking into consideration the overall industry potential at national and international level and the entrepreneurs be exposed to it. This should be followed up with visits or interaction of entrepreneurs with machinery manufacturers, model units and institutions that are likely to prove useful for the entrepreneurs to understand the potential and help them take their decisions on modernization and restructuring. This should be taken up at sub-cluster level by organizing poster display, workshops, interaction programs etc. through associations or a task force set up at local level under the umbrella of national coordinating institution.

However, it needs to be ensured that the programs be organized in the native language and not English and scheduled at a time when it is convenient for entrepreneurs to participate. These activities would help to stimulate the interest of the entrepreneurs so that they can decide for themselves the need for building up co-operation and later join hands with others to achieve up-gradation for themselves and for the cluster as a whole.

b) *Provision of firm level support :*

When the interest is stimulated among the entrepreneurs, several of them would come to seek information, guidance, suggestions and also to undertake project report preparation. It is here that a more proactive role of the institutions or the implementing agency will be necessary to

seek the relevant information which will be anticipated to be required by the firms. This support should be provided on charge basis so that this phase becomes self sustainable to the extent feasible.

c) *Sub-sector Specific Up-gradation Programs :*

The critical gaps identified for each of the sub-clusters that require common action programs such as simple technology improvements that could help the entire sector. Such examples may be related to technology up-gradation with a view to reduce the fuel consumption or to network the marketing of SSI units through a marketing company. Technology up-gradations, for example, should generally lead to improvements at the appropriate levels without expecting a major structural change at one go leading to high investments or retrenchment of labor or both which are not likely to be realistic nor desired.

Collaboration with institutions at the national and international level with a view to learn from their experiences and also to seek support from institutions such as 'International Development Research Center' (IDRC), Canada should be worked out since these institutions have carried out several similar technological improvement projects since the year 1979 including one on 'Improvements in noodle-processing industry in Thailand' by IDRC. The common programs relevant to the industry should be so designed that the improvements are tailored according to entrepreneurs' aspirations, industrial conditions and consumer market constraints. An appropriate task force is necessary constituting technical experts, marketing and project experts with a view to offer realistic options for improvement.

Since most of the entrepreneurs and workers lack basic training about the process and criticality of the factors regulating the quality of finished products, it is felt important that carefully designed training activities be organized through local industry associations with the help of hired experts in different fields such as packaging, new product development and on innovative promotional measures for marketing.

d) *Development of Institutional Capabilities :*

The institutions involved in the implementation task should be ready to provide the necessary services. This will involve up-gradation of the institutional capabilities to provide support that should reflect technical and economic viability from the view point of the entrepreneurs. To ensure assistance from other relevant institutions such as technical labs, Government offices and especially the banks and financial institutions by involving them in designing the action plan.

e) *Financial and Institutional Sustainability of the Project :*

To ensure sustainability of the project from institutional and financial viewpoint, the vehicle of implementation should be through the private institutions by building up their capacities to continue the task. As the confidence of the entrepreneurs builds up in the project and the institutions involved therein, additional programs could be taken up by interaction between the entrepreneurs and implementing institutions. Common facilities such as common testing facility centers or initiatives for common consultancy should be at least partly financed in the initial

stages to build towards financial self sustainability. For units at larger of SSI or medium scale units, such facilities should at least be financed to the extent of 50% or more.

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f) *Policy Related initiatives :*

Certain policy related issues need to be resolved to ensure a conducive environment for the growth and up-gradation to be successful. This may relate to enforcement of certain quality standards, framing of clear rules, standards and ways to suggest better compliance thereof. This information specific to each industrial sub-sector such as bakery, farsan, milk & milk products etc. should be compiled in a booklet and translated in local language to create awareness about the need for their compliance.

The specific concerns of various industry groups and ways to address to some of these concerns sector-wise are given below:

### **Medium & Bigger SSI units**

#### **1. Problems related to Standards**

Some of the problems relate to standards of Food Products which have not kept pace with time and sub-standardization is taken as adulteration. Multiplicity and overlapping minimum standards needs to be looked into. The industry can take up research based lobbying to get the laws changed with support from other National level associations and influence groups.

#### **2. Non-availability of certain sophisticated testing facilities with export market perspective**

The facility can be established under a private set up jointly with support from Government and/or other external funding agencies which may be run on commercial basis thereafter. Idea for a co-operative venture with part support from the local industry can also be explored.

#### **3. Lack of R&D for new product development**

The industry and institution interaction which at present is weak needs to be strengthened. This can be done by involving CFTRI, Mysore and National Chemical Laboratory (NCL), Pune in this area.

#### **4. Training Facilities for Workers & Supervisors**

Training programs being conducted at present are very basic and there is no upgradation of the skills/infrastructure of the training institutions. The industry would have to interact with these institutions to specify its needs of training related to process control, process development, packaging, storage and other allied areas.

### **Tiny & Smaller SSI Units**

#### **1. Uniform Quality of Raw Material**

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Due to small order size the units get variation in Raw Material Quality. One of the ways of countering this problem was to patronize a select flour mills through the association and have regular checks on their product.

## **2. Problems related to Process Control & Quality Control**

Small units face problems of process control like uneven heating in wood fired bakeries, tray by tray baking where skill of labor is crucial etc. These things can be handled by simple design changes. The problems of hygiene and cleanliness can be tackled by creation of awareness. All this needs a service facility which can provide guidance on some of these basic yet very important issues.

## **3. Packaging for better Shelf Life**

Some of these units do not use the already available packaging material either due to lack of awareness or due to cost reduction. An awareness needs to be created for increasing the shelf life by packaging and thus increasing the possibility of marketing in a more distant area and without loosing on the freshness of the product.

## **4. Working Capital Finance**

Food Industry is dependent on Agriculture for its raw material which by its very nature has a seasonal output. It is difficult for a small entrepreneur to hold stocks because of its limited capital base. An awareness needs to be created among financial institutions to allow certain concessions for this industry considering its peculiar nature.

## **5. Absence of Common and basic information on Commercial & Technical Aspects**

The small entrepreneurs spent a lot of their time and energy looking for information on commercial and technical aspects. This can be facilitated by a service call as mentioned about where this information is maintained centrally and is passed on as a service with nominal charges.

## **6. Advertising and Sales Promotion**

The cost of sales promotion being very high, some innovative ideas like the one of common brand name of Lizzat Papad adopted by one of the units can be tried out.

## **Suggestions made by the Small and Tiny Entrepreneurs on how to implement the program.**

1. Most people will not be interested in this initiative since they would not know its utility. So first of all interest will have to be aroused by doing such an activity which is of their direct relevance. For example, most people are interested to know about new machinery and new type of recipes that they can make. We could organize a display of the posters, catalogues etc. for each sub-sector (bakery, papad, farsan, pickle etc.). Then people will

see the utility. It should be a short exhibition in Pune, may be at a scaled down version of what is held in big trade fairs in Delhi.

2. A task force should be constituted for this purpose with 1 or 2 members each from every sub-sector which should undertake the task of mobilizing the membership from their industry. The role of task force should be to provide services and get the work done rather than involve itself into politics.
3. Membership of the task force should be on payment basis, although nominal to begin with. Every day some new persons should be called upon to explain the purpose of this initiative and to motivate them to join.
4. Sponsorship from bigger industrial units could also be obtained who would like to spread their good will.
5. Meetings should be organized at timings convenient to the members usually after 7.00 p.m. and preferably on holidays so that more people could join in.

**Suggestions made by the Medium and larger of Small Entrepreneurs on how to implement the program.**

1. Food processing industry is too big an area to be handled by one group. There is a need to first prioritize certain sub-sectors that should be in line with the national priorities and entrepreneur's potential and concentrate on them rather than spreading the resources thin.
2. There is a need to set up a quasi commercial institute supported and run by the private sector which will do the following;
  - λ Training for total quality management
  - λ Testing laboratory at the high end
  - λ Practical consultancy for problem solving
  - λ Training for hygiene consciousness for the workers.
  - λ Business policy training for the Chief Executive Officers
  - λ Separate training courses for the supervisors
  - λ Consultancy for designing for the food processing.
  - λ Help in ISO 9000 certification
  - λ Training to groom technical personnel who can service the food processing machinery.

The industry would be willing to contribute part of financing and other resources to that it helps the industry at large. However, the objectives of such an institution may not be able to cover very small and tiny level units.

3. No significant improvements in the food processing industry can come through unless we ensure that the raw material itself is of uniform good quality. For this we have to start from the farmer itself. We need to provide necessary inputs and farm management

training to the farmers themselves so that the produce that they come up with is of requisite uniform quality. Only then the processing can add value to make the product of uniform good quality. This would also involve up-gradation for the post harvest technology and infrastructure available. The above mentioned institute may take it up as a major area of work.

4. Some experts can be called from foreign countries even on free basis. Such institutions exist that provide technical expertise not only to run regular programs but also to provide institution building expertise.
5. Besides the post harvest technologies, the other possible areas are fruits and vegetables processing, dairy processing and cereal based products etc. There are such several options and each one of them has diverse complex needs. UNIDO will have to prioritize where it wants to begin with. Otherwise a common approach for all the food processing industry even for this institute will fail. e.g. A single laboratory for pesticides testing will cost about Rs. 3.5 crores. This is for high end industry and meant for exports.
6. Linkages with the medium and large industry can be thought of, such as manual cleaning of cereal before it is sent for processing to medium industry. Similarly for other products as well.
7. In Karnataka, there is a mobile fruit processing plant which goes around, collects the raw material and processes it there itself. It runs on a mobile generator.
8. Upon inquiring as to whether it will be a better option to take the help of existing institutions such as CRRI, Mysore and local institutions, the entrepreneurs felt that they would feel more comfortable with a new institution since it would function and work according to the priorities of the industry while the other institutions will have to modify their approach to serve the industry better.

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## ANNEXURE

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## **ABBREVIATIONS**

AIFPA	-	All India Food Preservers Association
AIFSTF	-	All India Food Scientist & Technologist Federation
APEDA	-	Agricultural & Processed Food Products Export Development Authority
BIS	-	Bureau of Indian Standards
CFNEU	-	Community Food & Nutrition Extension Unit
CFTRI	-	Central Food & Technological Research Institute
DMI	-	Directorate of Marketing & Inspection
DIC	-	District Industries Center
FPTC	-	Food Processing Training Center
FICCI-		
BISNET	-	Business Network of FICCI
FPO	-	Food Products Order
FWMPA	-	Farsan Wafers & Milk Products Association
GDP	-	Gross Domestic Product
GNP	-	Gross National Product
HLL	-	Hindustan Levers Limited
IDRC	-	International Development Research Center
LDO	-	Light Diesel Oil
LMBS	-	Lipton Master Bakery Service
MCCI	-	Maharatta Chamber of Commerce & Industry
MPMA	-	Maharashtra Papad Manufacturers Association
MSIHMCT	-	Maharashtra State Institute of Hotel Management & Catering Technology
MSMPA	-	Maharashtra State Masala Producers Association
PHL	-	Public Health Laboratory
PZBA	-	Pune Zila Bakers Association
SSI	-	Small Scale Industries

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