



## NOVEL CONCEPT OF PILOT MODEL FOOD PROCESSING CENTRES (PMFPC) IN RURAL AREAS

A. Satyanarayana, R.G. Math,  
T. Jyothirmayi and **D.G. Rao\***

Central Food Technological Research Institute  
Resource Centre, Hyderabad



India is a land of rich biodiversity encompassing various agro-climatic zones (tropical and subtropical), and hence giving rise to production of several produce of different varieties viz.,

- ☞ cereals & pulses
- ☞ fruit & vegetables
- ☞ spices & condiments
- ☞ nuts and oil seeds
- ☞ animal resources (birds, bovine and marine).



## The Indian Agricultural Scenario

Rural population	72%
Depending directly or indirectly on agriculture	72%
Total agriculture production	600 million tonnes
Share in India's GDP	25%




## Problems for marketing the agricultural produce

- 👉 Numerous intermediaries
- 👉 High level of wastages
- 👉 Poor infrastructure – storage, packaging, transportation
- 👉 Poor linkages in the marketing channels
- 👉 Processing of F&V is only of the order of 2%


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☹️ **In spite of good processing of the produce also, the returns to the farmers are always poor.**


➤ **A tentative break up of the cost of the produce during processing is as follows**

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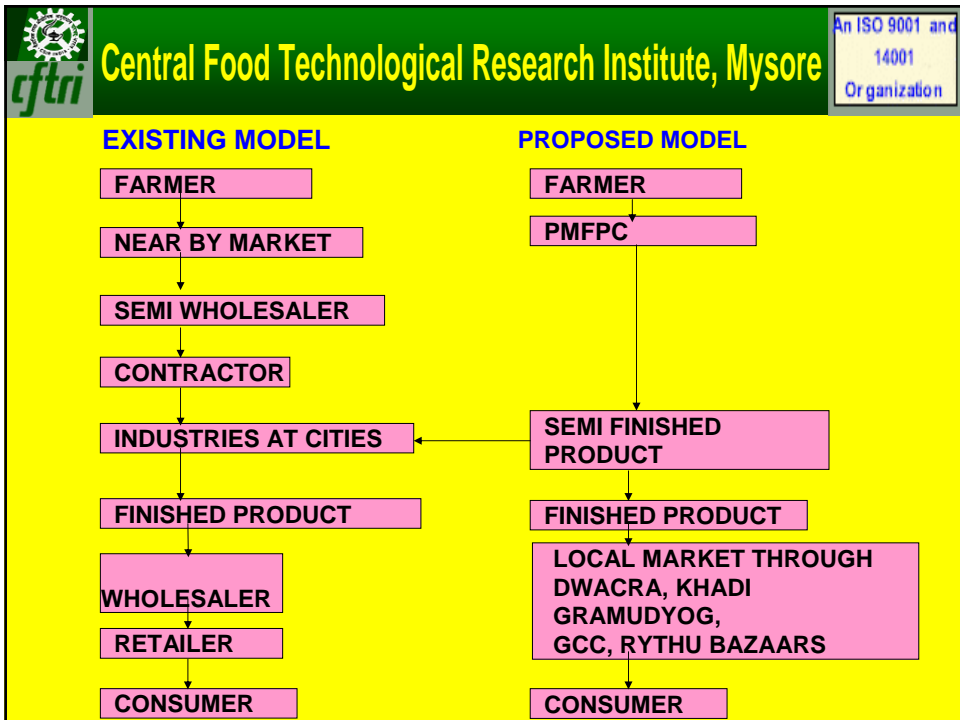
**A TENTATIVE BREAK UP OF THE COST OF THE PRODUCT**



Component	Percentage
Raw Material	10%
Cost of Additives	10%
Cost of Production	10-20%
Cost of Packaging	10%
Profit	10%
Taxes	10-15%
Wholesaler	10%
Retailer	15-20%

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- ☞ From the above price structure, it is evident that if we are buying a jam bottle of 200g for Rs.25/- in the market, the processor gets only Rs.2.50 as profit.
- ☞ The jam contains about 50% of fruit pulp.
- ☞ 200g bottle contains 100g of pulp and it fetches Rs.2.50 to the farmer for his fruit pulp.
- ☞ Thus 1 kg of pulp fetches to the farmer Rs.25/-
- ☞ Hence 1 kg of fruits goes for Rs.10/- to 12/-



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**COST COMPARISON IN EXISTING AND PROPOSED MODEL**

%	Description	Amount in Existing Model (Rs.)	Amount in Proposed Model (Rs.)
10	Raw Material	2.50*	2.50
10	Additives	2.50	2.50
20	Production	5.00	5.00
10	Packing	2.50	2.50
10	Profit Margin	2.50	2.50
15	Taxes	3.75	<b>3.75</b>
10	Wholesaler	2.50	-
15	Retailer	3.75	-
	<b>Price for Consumer</b>	<b>25.00</b>	<b>18.75</b>

\*Actually Farmer gets 25% of it

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- With this price structure, the prospects of food processing industries apparently look to be grim.
- However, the situation is not all that thorny nor all that rosy.
- The above example refers to a fancy food product like jam.
- There are many other food products which are a part of staple foods, and are not that costly.
- Some of them are shown in Table.



**Table : Various small scale food processing technologies**

- pickles and chutneys
- energy food, weaning food and baby foods
- malted weaning foods
- papads and vadiams
- puffed and parched rice
- low cost pulse milling
- minimally processed fruit and vegetables (cut and trim F&V)
- non vegetarian pickles
- gravy mixes for veg and non veg curries
- spice powders and masala powders
- bakery and biscuits
- oil seed cake based preparations

The list is not exhaustive: it is only indicative. There could be many more.....



- Every region (or state) in our country is a rich treasure house of knowledge, which is encapsulated in the form of traditional foods of that region.
- The traditional foods have been developed over ages taking into consideration the nutritional needs of the local people based on the locally available raw materials.
- They purportedly have got a good scope for processing and marketing at tiny scale / SS sector.



## POSSIBLE REMEDIES

- To popularize processing of traditional / ethnic foods
- To increase the volume of processing and sales (ie the processing activities should be increased).
- To process at
  - ✓ large scale level
  - ✓ medium scale level.
  - ✓ small scale level.
  - ✓ cottage / tiny scale level.



## POSSIBLE REMEDIES (Contd...)

- ☞ The large scale industries somehow survive by virtue of their money power.
- ☞ The medium scale and small scale industries reap the wrath of the stringent economic constraints.
- ☞ Now the focus should be more on cottage scale and tiny scale processing sector which provides a large scale employment to our unemployed rural youth and artisans.
- ☞ Another biggest advantage with cottage scale processing is its low overheads as contrast to large scale and medium scale processing industries.



POSSIBLE REMEDIES (Contd...)

☞ Only draw back with the cottage scale processing is the quality and hygiene of food products, which are of paramount importance in food processing.



IMPORTANCE OF QUALITY AND HYGIENE IN FOOD PROCESSING



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## POSTULATION OF MODEL

- Most of the unit operations in cottage scale are carried out manually which is a possible and potential source of contamination.
- This affects the quality and hygiene of the product.
- Manual operations are labour intensive, and hence maintenance of consistent quality is always at stake.
- Obviously certain amount of mechanization or automation is a possible solution to it.



- Now, let us try to find out the ways and means how to improve the quality and hygiene at cottage scale.

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- ▶ The proposed model envisages that instead of every processor owns the desired machinery and equipment, there will be a facility where the machinery and equipment are available at a central place.
- ▶ The processor brings his produce and processes it in that place and takes away his product for marketing.
- ▶ It is in this context, pilot model processing centers would meet the requirement of providing centralized facilities with a good technology background.



## CONCEPT OF PMFPC:

- ☛ The concept of pilot model food processing centers (PMFPC) stems from the idea of flour milling unit (*Chakki* mill).
- ☛ Just as for grinding a few kg of wheat to make flour (*atta*), one need not own a chakki mill.
- ☛ So also one need not own a food processing unit for processing a few hundreds of kgs of one's produce.



CONCEPT OF PMFPC (Contd.)

- processing of the produce almost at / close to the production place would reduce the burden of transportation charges.
- it would bring in additional revenue to the farmers and encourage to produce more.
- it would distribute the byproducts and wastes from the processing units.
- processing produce at production centers in rural areas would reduce the wastage of food produce which is going to be a national benefit.



CONCEPT OF PMFPC (Contd.)

- PMFPCs will be established in some centralized area in a district.
- The proposed center consists of the processing facilities to meet the requirements to process most of the products mentioned in earlier Table.
- The facilities are more general in nature rather than specific.
- They are not tailor-made facilities.
- Farmers go with their produce and process



### The facilities include

- ✓ utilities like steam, water line, high wattage electric supply etc.
- ✓ process equipment like steam heated jacketed vessels, mixing units
- ✓ grinding, size separation and mixing equipment
- ✓ heat exchangers, vacuum evaporator etc.
- ✓ dehydration/drying units
- ✓ canning facilities like exhausting, can seaming, retorting/autoclaving etc.
- ✓ mechanical operations like centrifugation, filtration etc.
- ✓ packaging facilities like form filling, pilfer proofing, vacuum filling / nitrogen filling, crown corking.
- ✓ quality control facilities.



### Table : Details of machinery to be installed in the proposed pilot models food processing centre:

- ☞ Pulper
- ☞ Boiler (Non-IBR),
- ☞ SS Steam jacketed kettle
- ☞ Balance
- ☞ Aluminum top tables
- ☞ Crown corking machine,
- ☞ Bottle washing and rinsing machine
- ☞ Electrical Tray dryer
- ☞ Handling vessels
- ☞ Sealing machine
- ☞ Pulveriser



- ☛ Installation of some of these facilities would cost approximately Rs.10.0 Lakhs (\$ 25000).
- ☛ The facilities shown in Table would approximately cost Rs.5-6 Lakhs (\$ 12500-14000).
- ☛ The required utilities and infra structural facilities will be provided by the District Rural Development Agency (DRDA).
- ☛ CFTRI would coordinate the activities.



### OPERATIONAL APPROACH

- ❖ At the very outset, we have chosen to initiate the model with the District Rural Development Agencies (DRDAs) who have got their Technology Training and Demonstration Centers (TTDCs) with infrastructural facilities.



OPERATIONAL APPROACH (contd.)

- ❖ Their whole objective is employment generation and rural development.
- ❖ Food processing normally tops their agenda.
- ❖ The DRDAs also have the Self Help Groups (SHGs), which are mostly managed by the women.
- ❖ They lend money to their members on revolving basis.
- ❖ Hence, this lending process helps for meeting the working capital requirement.



OPERATIONAL APPROACH (contd.)

- ❖ The processing facilities can be utilized on hire basis by the needy entrepreneurs.
- ❖ They get their raw materials, process them and package them hygienically.
- ❖ They may use the facilities only for a few days may be of the order of 10-15 days, and go for marketing the produce.
- ❖ Subsequently another person may hire them.



OPERATIONAL APPROACH (contd.)

- ❖ The hiring charges are essentially collected to meet the requirements to maintain the equipment and personnel.
- ❖ Once, if the entrepreneur feels confident of using the machinery and equipment,
  - probably he/she will subsequently create his/her own facilities,
  - and become a full fledged entrepreneurs in the years to come.



OPERATIONAL APPROACH (contd.)

CFTRI Resource Centre, Hyderabad with the approval of Director, CFTRI, Mysore will be taking up the activity of setting up the Pilot Model Food Processing Centres (PMFPCs) in three districts of AP with the financial support of some Government Agency (most likely MFPI)

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**OPERATIONAL APPROACH (contd.)**

- ❖ After the facilities are installed in the TTDCs of DRDAs, trainings will be imparted to the needy entrepreneurs, and the resource persons of the DRDAs.
- ❖ These resource persons will receive the trainer's training from CFTRI to look after the day-to-day maintenance of the PMFPCs.

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Thus, with the help of CFTRI, the proposed PMFPCs will function effectively for the national cause as follows:

- ✓ Identifying cluster areas and organizing awareness camps
- ✓ Establishment of Food Processing centre at identified place (with machinery as indicated in Table).
- ✓ Conducting training programmes to trainers, and hands on training to the artisans/women entrepreneurs

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**The following awareness/training programmes will be planned for the better utilization of the proposed centre :**

1. Awareness programmes on food Processing.
2. Hands on training programmes/ Demonstration programmes in the processing centre.
3. Quality control awareness programmes.
4. Quality control training programmes on identified processed products.

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**BENEFITS THAT WOULD ACCRUE FROM THE PROPOSED MODEL PMFPCs:**

- ☛ The model is conceived with a number of noble motives. Even if they are partially fulfilled, it would purportedly generate good employment in the rural areas.
- ☛ Even if the center runs for 200 days in a year, it would continually provide employment for 10-15 persons on the job directly.
- ☛ This would trigger activities elsewhere in the peripheral areas to an extent of 2.4 times which means around 25-30 persons would find employment elsewhere.

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**BENEFITS THAT WOULD ACCRUE (contd.)**

- Proper utilization of farm materials in the processing units would encourage farmers to grow more which in turn would enhance the productivity and provide justifiable returns to the farming community who otherwise would not have such activities.

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**BENEFITS THAT WOULD ACCRUE (contd.)**

- In stead of carrying the raw materials to the processing place, which are mostly situated in urban areas, semi processed or processed goods with shelf-stability can be sent to urban areas for better marketing.



BENEFITS THAT WOULD ACCRUE (contd.)

- Processing of the produce at farm level would reduce the wastage and farm loses by employing better PHTs at or near to the farms in rural areas.
- It reduces the rural migration to urban areas which has been creating a number of sociological problems.



BENEFITS THAT WOULD ACCRUE (contd.)

- Processing of the raw materials would generate a lot of waste and byproducts, their disposal in a concentrated form in urban areas is becoming problematic, since the biodegradation is difficult.
- in view of the heavy load, instead, if the materials are processed at rural level, the disposal of waste is easy, and does not cause environmental problems.



BENEFITS THAT WOULD ACCRUE (contd.)

- The food materials can be processed at tiny scale / cottage scale using the machinery and equipment; and hence the quality of product improves and meets the standard requirements.
- Good quality product with good packaging can fetch better price in the competitive markets also.



OPERATIONAL THAT WOULD ACCRUE (contd.)

- Above all, since the processing units are not owned by individuals, in case of their failure to continue with the line of activity, they will close down the activity.
- Since they do not borrow the money from the banks, it does not add to the NPAs of the lending banks.
- An entrepreneur takes up the processing activity only if he is proved to be successful; other wise, not.



## CONCLUSIONS

- ▶ The concept of pilot model food processing centers is novel, and is conceived with the idea that an entrepreneur has the access for all machinery and equipment for industrial processing without owning an industry.



## CONCLUSIONS (Contd.)

- ▶ The PMFPCs are also conceived for the benefit of small scale farmers and producers who wish to process their produce to a shelf-stable finished product with value addition by paying a small amount of money towards the hiring charges.



CONCLUSIONS (Contd.)

- ▶ The concept will help the tiny scale/cottage scale processors to produce hygienic and standard quality products, so that they can compete in the market.



CONCLUSIONS (Contd.)

- ▶ The PMFPCs would help reduce the wastage, which in turn means an increase in the national productivity.



CONCLUSIONS (Contd.)

📢 This will be very helpful for the first generation entrepreneurs who have brain but not bank balance. They can implement their ideas and later on may become entrepreneurs.

