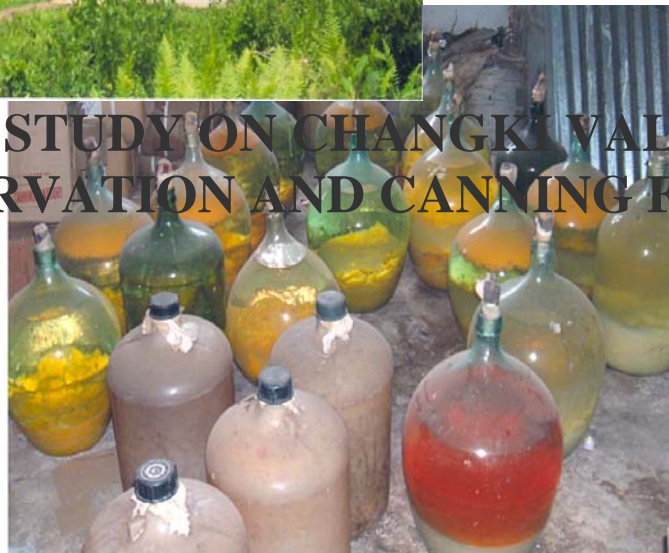


GOVERNMENT OF NAGALAND



**REVIEW STUDY ON CHANGKI VALLEY FRUIT
PRESERVATION AND CANNING FACTORY.**



**DIRECTORATE OF EVALUATION
NAGALAND, KOHIMA**

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FOREWORD

The Changki valley fruit preservation and canning factory, a maiden venture of the State Government in the food processing sector was commissioned in 1974. The factory is located at Longnak and is in the orange and pineapple belt of the state. To optimize the abundance of fruits in the area through processing and to raise the economic level of the rural populace the factory was established. However due to teething problems and the inadequate supply of fruits, the factory became a sick unit.

In 1975, the first evaluation study on Changki valley fruit preservation and canning factory was undertaken. As a follow-up to this study, to review the operational status and to take stock of the developments since the first evaluation study, a quick review study was undertaken up by the Evaluation Directorate in June 2008. It is essentially a study to evaluate the success or failure of the project and to provide inputs and feedback.

The study team was lead by Shri.Chubazulu, Inspector with Shri.Moyangin, Inspector as team member. The study contains recommendations highlighting areas for revival of the factory. I am sure policy makers/ planners in the Government and the stakeholder Departments viz Horticulture and Industries and Commerce Department will find it useful and infer ideas from the report.

**Sd/-(Alemtemshi Jamir) IAS
Additional Chief Secretary and
Development Commissioner,
Nagaland**

**Dated: 20th March 2009
Place : Kohima**

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REVIEW STUDY ON CHANGKI VALLEY FRUIT PRESERVATION AND CANNING FACTORY.

Introduction

With the objective of effectively utilizing the abundance of fruits in the area, the Changki valley fruit preservation and canning factory was set up as the first public sector food processing unit in Nagaland. A maiden venture of the State Government, it was commissioned in the year 1974 and further upgraded in 1995 under a scheme financed by the Ministry of Food Processing Industry, Government of India. The factory located at Longnak is in the orange and pineapple belt, 48 Km away from the district head quarter Mokokchung.

2.Objective

The first evaluation study on Changki valley fruit preservation and canning factory was taken up in the year 1975 and was published in 1976. The reference period for this study was 1965-1966 to 1971-1972. And to review the operational status and to take stock of the developments since the first evaluation study, a quick review study was undertaken up by the Evaluation Directorate in June 2008. It is essentially a study to evaluate the success of the Government programme/project and to provide inputs and feedback.

3. Methodology

The methodology adopted for the study was field visit / survey and collection of information through a questionnaire, through interview and consultation with the Departmental officials and employees of the factory.

A schedule/ questionnaire was prepared and canvassed. Observation and recommendations made in the first evaluation study was used as the reference and as the basis for the review study.

4. Summary of findings of the evaluation study undertaken during 1975.

4.1 During the time of the first evaluation study, the area under the Changki valley fruit preservation and canning factory comprised of 15 acres of land which included the area for main factory cum office building, staff quarters, labour barracks, godown, garage for motor vehicles and 6 acres of land for utilisation as the factory orchard. The original estimate for construction of the factory was Rs. 6.48 lakhs but was later revised to Rs. 4.04 lakhs. And an amount of Rs. 5.00 lakhs was allocated for commissioning the construction project for phase-wise sanction. Most of the preliminary exercises for establishing the factory except the main factory building was completed by 1965-1966. However, construction of the main factory was completed only in 1971 due to alignment of some portion of land for construction of road from out of the area earmarked for the factory and the subsequent delay in arriving at a decision. All the construction works were undertaken by the State Public Works Department (PWD) and the factory building was ultimately completed and handed over by the PWD to Agriculture Department in January 1972. Meanwhile even before construction of the main factory could be completed, packers-cum-workers, a driver, a handy man and an office assistant were recruited without much scope for utilising their services. The staff strength of the factory during the time of the first evaluation study in 1975 is as shown below

Staff Strength of the factory in 1975 - Table: 1

Sl. No	Designation	No. of posts sanctioned	In position
	1	2	3
1.	Fruit Technology Officer (Class II Gazetted)	1	1
2.	Fruit Technology Assistant	1	1
3.	U.D.A. Cum Accountant	1	1
4.	Driver	1	1
5.	Handyman	1	1
6.	Packer-cum-worker	8	5
7.	Chowkidar	1	1
8.	Peon	1	1
Total		15	12

4.2 During the first evaluation study, the factory was under the administrative control of the Department of Agriculture. A Fruit Technology Officer (FTO) from the then Horticulture section was deputed to the factory who along with one horticulture officer were responsible for managing the factory. The raw material for the factory was procured from the fruit growers in the nearby areas. Production process during this period was very basic with squash, jam, jelly and canned products as the end products. The volume of production being low, transportation and marketing of the products outside the State was economically unviable and the products were

marketed locally. And due to low demand for the products within the state, gestation period for realizing returns from the sale of products was long. Consequently, unit returns from the sales was low.

The kind of fruits procured and processed were:

<u>Name of the fruit</u>	<u>Period of procurement</u>
1. Plum	: June – July
2. Pineapple	: June – August November – December (winter variety)
3. Pear	: July – August
4. Guava	: August – September
5. Orange	: November – February
6. Lemon	: September – February

5. Observation/findings of the review study.

5.1 With an installed capacity of 250 MT per annum, the factory which could boast of production of a myriad of finished products like orange, lemon & pineapple & plum jams, canned pineapple rings, tit-bits, slices, canned bamboo shoots etc., has been lying idle since 2006, primarily due to inadequate production of horticulture crops. Only the store sheds were in use. This was despite the annual allocation and sanction of funds by the State Government. In the absence of production, factory's earning was nil. The funds allocated and sanctioned by the Government for the factory was therefore found to be insufficient for investment in raw material and capital. Despite the factory being redundant, the staff strength of the factory during the time of the study was 24 and whose monthly salary/wage outgo was Rs.2.50 lakhs. The factory is headed by a subject matter Specialist/Sr. Fruit

Technological Officer equivalent to the rank of Deputy Director assisted by one Fruit Technological Assistant, one Assistant Chemist, one Supervisor, one Boiler Man, one Food Machinery Mechanic, eight Packer-cum-worker, four Malis and six Ministerial Staff.

5.2 The fund requirement of the Changki valley fruit preservation and canning factory, Longnak is met from out of the budget allocation of the Horticulture Department under Demand No. 70 under a sub-head of account for allocation of funds to the fruit processing factory in Longnak. On an average the Government incurs an annual expenditure of Rs. 40.00 lakhs for the factory. From Rs. 32.40 lakhs per annum in 2006-2007 the annual budget allocation for the factory has increased by 35.50 percent to Rs. 43.91 lakhs in 2008-2009. Expenditure on salary and wages for the employees in the factory constitute 76 percent of the total budget allocation. The average expenditure on salaries and wages is Rs. 30.00 lakhs per annum. Allocation for maintenance of the factory too has been enhanced from Rs. 93,000/- in 2006-2007 to Rs.10.93 lakhs in 2008-2009.

Budget allocation for the factory, Longnak – Table:2 Rs. in lakhs

	2006-07	2007-08	2008-09	Total (for 3 years)
Salaries	27.66	29.17	29.17	86.00
Wages	2.20	2.20	2.20	6.60
Travel Expenses	0.03	0.03	0.03	0.09
Motor Vehicles	0.10	0.10	0.10	0.30
Materials & Supplies	1.48	1.48	1.48	4.44
Maintenance	0.93	10.93	10.93	22.79
Total	32.4	43.91	43.91	120.22

Source: Demand for Grants. 2007-2008 & 2008-2009

5.3 The 6 acres of land allocated for fruit cultivation as factory orchard during the first evaluation study no longer existed. And in the absence of factory's own orchard, the factory was now fully dependent on the local fruit growers for supply of raw material. Plants and machineries viz. boiler, boiling pan, plastic sealing machine, bottle sealing machine, pineapple slicer, exhaust box, retort pressure cooker, can sealing machine, juice extractor, jam sealing machine etc were all found to be useable since these machineries were regularly serviced (plants and machineries can be seen in the photograph). All together, there were 11(eleven) staff quarters in the factory premises. Except one, all the staff quarters, were found to be in good condition and were occupied by the employees. Power supply was reportedly regular and water supply sufficient to meet the requirement of the factory. The fruit growing areas were now linked up to the factory with motor able roads ensuring easy transportation of fruits and raw material.

6. Recommendations

6.1 Processing plays an important role in the conservation and effective utilization of available food supply. Besides reducing wastage /loss of food crops and fruits, processing helps raise the economic level of the rural people and generates employment opportunities. It enlarges the demand base for farm products and thereby stabilizes the farm process and incomes. It has to be borne in mind that the enterprise is a maiden venture in the State. Notwithstanding its shortcoming, it has contributed towards enrichments of experiences. The benefits accrued to the fruit growers too cannot be undermined. The experiences so gained could be used to run the factory profitably.

6.2 The Department of Horticulture has been implementing the scheme of Area Expansion under the Horticulture Technology Mission since 2001-2002 in all the districts based on crop zoning. Consequently, production of horticulture crops has shown an upward trend. Villages like Longkhum Village, Mokokchung have reported surplus produce. In view of these developments, there is scope for revival of the factory with the right technical input and investment. And in doing so the economic well being of the fruit growers in particular and of the state in general could be ensured, in the long run. With the increased global demand for organic products, the state's inherent practice of using only organic manure for cultivation of crops could be capitalised. The factory could procure and process only organically grown fruits/ vegetables and label them accordingly. These products could cater to high end markets and fetch premium prices.

6.3 Since all the available technical employees in the factory from F.T.O to packer- cum-workers are trained, capacity enhancement programmes for updating their knowledge and skills could be designed and organized to ensure adaption of updated technology. Exposure trips for the employees to successful fruit processing units in the region will sensitize them on the working systems. New technology for diversification of products could also be introduced along with expansion of the operational capacity to optimally run the factory. Expansion in capacity would lead to economies of scale. Simultaneously, abundant and consistent supply of fruits/vegetables at favourable prices should be ensured for sustained functioning. Increased demand for fruits/vegetables will lead to increased cultivation of horticulture crops which will augur the farm incomes of the rural people. It will provide impetus to the forward and backward linkages and will increase subsidiary

activities viz transportation activities, agro business etc. Concept of contract farming of specified crops /fruits through incentivizing SHGs/local growers to contract farming could also be explored. This would lead to conceptualizing agriculture as a business.

6.4 Given that the shelf life of fruits and vegetables are short, cold storage facility is one of the primary requirements of the factory. Construction of such facility would ensure continuous supply of raw material for the factory. Addressing transportation bottlenecks will ensure regular supply of raw materials and shipment of finished products to the marketing outlets. The possibility of introducing shifts could also be explored.

6.5 The State Government could take immediate remedial measure to revive the factory. Failure to do so would only burden the State exchequer in terms of salary outgo and maintenance cost, without any return/revenue from the factory. The Government could also consider the disinvestment method or privatize the management of the factory. It could also explore the possibility of the private-public-partnership mode to make the factory economically viable.

6.6 The Government could consider the following suggestions to the factory.

- (i) Additional capital investment.
- (ii) Increase research and development /technical inputs/modernize technology.
- (iii) Increase area under fruit cultivation
- (iv) Formation of Self Help Groups and train them to cultivate /market diversified range of hybrid/local fruits.

- (v) Enhance capacities of the available human resource through capacity enhancement/ skill development programmes/ exposure tours.
- (vi) Expand operational capacity
- (vii) Improve infrastructure for preservation and storage/ build cold storages through Public Private Partnership mode.
- (viii) Enlarge demand base by diversifying production/products
- (ix) Ease transportation bottlenecks.
- (x) Improve link roads for fruit growing areas.
- (xi) Improve packaging/ bottling / labeling.
- (xii) Sales promotion through advertisement.
- (xiii) Periodic inspection of the factory by technical staff to ensure adherence to quality specification.
- (xiv) Maintenance of hygienic conditions/ facilitate marketing/tie ups with companies/marketing outlets/hotels/ restaurants.
- (xv) Incentivise the unemployed youth to the potentials in agrobusiness/contract farming.
- (xvi) Avail Central Government's facilities to up -grade the factory.
- (xvii) Capitalise USP of processing and manufacturing only organically cultivated vegetables/ fruits.
- (xviii) Utilise services of consultants /assistance of Central Food Technological Research Institute ,Mysore.
- (xix) Introduce concept of market intelligence for products.
- (xx) Explore possibility of Public Private Partnership for management and operation of the factory.

Snapshots of the Changki valley fruit preservation and canning factory, Longnak



Overall view of the factory



Store Shed



Office



Store Shed



Generator



Staff Quarters



Inside view of the Factory



Extracted juice



Boiling Pan



Plastic Sealing machine



Bottle sealing machine



Boiler



Pineapple slicer



Exhaust box



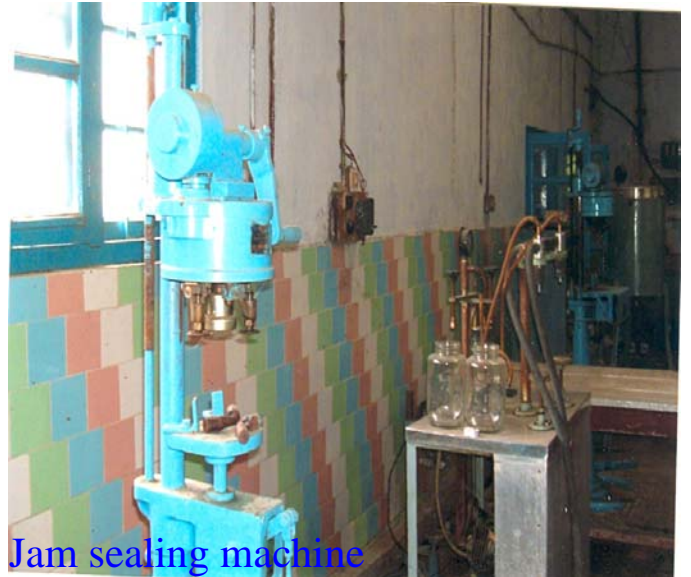
Retort pressure cooker



Can sealing machine



Juice extractor



Jam sealing machine



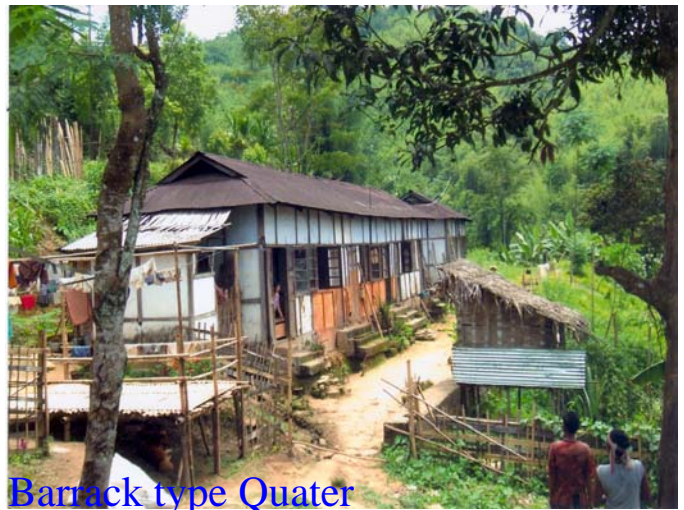
Staff Quarter(Repairable Condition)



Fruit Technology Officer Quater



Water Reservoir(Tank)



Barrack type Quater



Nursery