

JRF/42

(500)

ROLE OF SMALL-SCALE AGRO BASED
ON RURAL ECONOMY: THE STUDY OF
IMPACT OF THE "KANCH FACTORY" IN
THE SURROUNDING TRIBAL VILLAGES
IN NORTH CACHAR HILLS

42

1994-95



338
BOR
JRF
1994-95
JRF/42

Submitted by :

SIKHA BORTHAKUR

CERTIFICATE

Certified that the desertation entitled " The impact of small scale agro-based industries on rural economy-A case study of the Kanch Factory in N.C.Hills." submitted by Sikha Borthakur has been prepared under my supervision.

She has fulfilled all the requirements for the submission of the desertation at the "Omeo Kumar Das Institute Of Social Change and Development." The desertation is the result of her own investigation.

KKBarma 4/3/1996
(DR. K. K. BARMAN)
Reader Deptt. of Economics
Gauhati University



TITLE OF THE PROJECT :

ROLE OF SMALL-SCALE AGRO BASED INDUSTRIES
ON RURAL ECONOMY : THE STUDY OF IMPACT OF THE "KANCH FACTORY"
IN THE SURROUNDING TRIBAL VILLAGES IN NORTH CACHAR HILLS.

A C K N O W L E D G E M E N T

The idea to work out this project came to me, when my husband Sri P.K. Borthakur was transferred to N.C. Hills, and I came to know that 'Kanch' factory is situated just five kms from our residence in Haflong. I took the opportunity to visit the villages in the Jatinga valley and meet the villagers. I had a fruitful talk with the gaon - bura of the Jatinga village, Mr.E.E. Suchiyang and came to know about the various problems of the orchards. I also met Mr. O.P. Pachwan, Chairman, District Council who is also the chairman of Assam Hills small industries Development Corporation (AHSODC). I am very much thankful to Mr.P.K. Borthakur, without whose guidance and Co-operation it would not have been possible to complete this project. I am also thankful to Mr. A. Verghese who had helped me in typing out my questionnaires.

I take this opportunity to thank Miss. M.Masha, Miss. Veronica Masha who had helped me in communicating with the villagers of Jatinga.

I also thank Mr.B.C. Singh, DAO N.C. Hills who had given me several data and reports and guided me with the situation in N.C. Hills.

Lastly, I thank my guide Dr.K. Barman, Reader, Department of Economics, Gauhati University for his valuable guidance in making this project.

Sikha Borthakur
(SIKHA BORTHAKUR)

I N D E X

1. ACKNOWLEDGEMENT
2. CHAPTER I - STATEMENT OF THE PROBLEM
3. CHAPTER II - REVIEW OF LITERATURE
4. CHAPTER III - SOCIO - ECONOMIC PROFILE OF N.C. HILLS
5. CHAPTER IV - ROLE OF VILLAGE & SMALL SCALE INDUSTRIES.
6. CHAPTER V - METHODOLOGY
7. CHAPTER VI - FIELD STUDY - SOME OBSERVATIONS
8. CHAPTER VII - THE KANCH FACTORY
9. ANNEXURE - (i) Map of N.C. Hills
(ii) Map of N.C. Hills showing
fertility Index
10. BIBLIOGRAPHY

LIST OF TABLES

TABLES	PAGE NO.
Table 1; Avg. Family size, Level of Education	36
Table 2; Occupational distribution of sample households	37
Table 3; Income from Cultivation (Income per annum)	38
Table 4; Ranking of difficulties faced in horticulture	39
Table 5; 1st preferences between Wet Paddy/Jhum/Horticulture	39
Table 6; Marketing of horticulture produce	40
Table 7; Products of Kanch Factory	46

CHAPTER : 1

Statement of the Problem.

The problem of rural poverty has to be attacked directly at its root causes if the condition of the rural masses is to be improved. Agriculture keeps the people engaged for a term of five months in a year; the remaining period they have to remain without employment resulting in poor income and as a corollary to it poor level of standard of living. Therefore, expansion of productive activities and more employment opportunities are to be made in the rural areas by the economic planners. Apart from this, the excessive dependence on agriculture has been ruinous for the people resulting in endless sub-division and fragmentation of holding and low productivity per acre, so, the excessive pressure on land should be minimised by diverting part of the man-power available in the rural areas to activities allied to agriculture and activities other than agriculture. Larger scale cannot be developed immediately as they require a large amount of capital to start with. Besides, these small industries create more opportunities of employment than large scale industries, for a given outlay.

In Assam about 91% of the total population is rural, in which most of the people live below the poverty

level. Although agriculture and rural development are apparently the two sides of the same coin and rural development in Assam cannot be thought of without development of agriculture and yet excessive dependence on agriculture is one of the causes of rural poverty. The problem of unemployment and under employment in the rural sector has to be tackled through diversification of economic activities. There is enough scope for developing integrated farming systems in which a combination of enterprises like crop-cultivation, Horticulture, Sericulture, Animal Husbandry etc for both generation of income and employment hitherto remains unexploited. Another aspect to be taken into account is that in the hilly areas horticulture and other forest products for raw materials can very well be encouraged. In the countryside, household agro - based industries based on farm products may be promoted to provide additional employment opportunity to the rural mass.

Rural development in the Hills of Assam cannot be thought of without discussing Jhumming. Jhumming is practised widely in the hill districts of the State viz. Karbi Anglong and North Cachar Hills, though in the valleys within the districts settled cultivation is also practised. Over 75% of the population of these two district is scheduled tribes. The total geographical area of Assam Hills is around 15.35 Lakh hectares out of which Jhumming alone accounts for about 4.98 lakh hectares i.e.32.44%. The annual area under jhumming is around 0.79 lakh hectares i.e.nearly 14% of the total jhum area. The Jhum cycle has declined from 10 years in 1965 to 5.11 years by 1990. The cultivated area per household is 1.37 hectares which is unviable. Mixed crops like paddy, Maize, cotton, etc are grown under jhumming. Though yeild per hectare is comparable to that of the plains in the state, over the time it has declined.

The district has about 14,400 nos of farming families (commonly known as Jhumiya families) practising shifting cultivation(Jhuming) by burning Jungles as regular practice thereby degrading hill slopes and imbalancing natural ecology.

The practice of shifting cultivation signifies a social institution. The whole socio-cultural fabric of the community in N.C. Hills is woven around the institution of shifting cultivation. This socio cultural aspect of the practice of shifting cultivation was invariably borne in mind while promulgating Jhum Land Regulations from time after independence of the country. None of the regulations and legislations dared violate the basic norms of the tribal Community life. But all concerned are convinced that jhuming is full of menaces. Therefore, it has to be gradually replaced by scientific methods of Agricultural practise. often it is seen that persistence of jhumming in the hilly areas is not because of its advantage but because a viable alternative to jhumming has not been brought to the masses.

HORTICULTURE :

Horticulture plays a unique role in developing countries like India, both in economic and social spheres for improving income and nutritional status, particularly of the rural masses.

With respect to the improvement of rural economy the role played by the horticultural crops is significant. Fruits are commercial crops by their nature and enjoy promising marketing potential. Besides, the cultivation of sizeable production of fruits and vegetables can sustain quite a few agro-based industries which may cater to the needs of internal as well as foreign markets. Here it may not be out of context to cite the example of Australia, Israel, Hawaii and Japan which have achieved notable achievements in the field of horticultural-based flourishing industries.

Area under study :-

The region of N.C. Hills forms a part of the hilly regions of Assam. The district is situated in the rugged hilly region of the state of Assam, between 25 North Latitude and between 92 32'E longitude bordering Karbi Anglong and Nagaon District in the North Cachar District in the South, Nagaland and Manipur states in the East and Jaintia Hills District of Meghalaya State in the West. The District comprises of two civil sub-divisions. Viz. Halflong and Maibong.

Aims and Objectives :-

The present study is an attempt to analyse the various scope and potentialities of N.C. Hills with regard to horticultural development and along with it, the establishment of agro-based industries in the region.

Moreover, "Jhum cultivation" which is widely practised in this region is a matter of serious concern both from economic and ecological point of view. So far various attempts have been made in order to wean away the people from the practice of jhum cultivation. One such attempt, is the encouragement to take up horticultural activities. The district is obviously lacking in the required infrastructure in ways of research and development organisations to boost up horticultural activities. But it is a well known fact that there are vast potentialities for the development of horticulture in the district. The question now arises, why this district has not come into the horticultural map of the country, despite its immense potentialities. What are the inefficiencies in the the production process ? How and what factors of production should be induced for achieving rapid growth in horticultural productivity ? The major objectives are :-

- i. to analyse the characteristics of natural and socio-economic factors which govern, to large extent, the horticultural growth over space & time.
- ii. to find out the changes if any in the land-use pattern due to introduction of horticulture.

- iii. to identify the role of agro-based industries in generating employment opportunities and bring extra income to the household.
- iv. To examine the marketing arrangement of horticultural products.

HYPOTHESIS :

In the present study, the following hypotheses have been tested.

- 1. Horticulture acts as an alternative occupation for Jhumming and it is an economic necessity.
- 2. Setting up of agro-based industries leads to more employment opportunities and generate income.
- 3. Horticulture promotes environmental conservation.

CHAPTER II

REVIEW OF LITERATURE

INTRODUCTION :

The word horticulture has been derived from two words viz "Hortus" and "Colere" meaning cultivation of crops in an enclosure. It is a mixture of art, Science and technology. It encompasses all aspects of cultivation, processing and utilization of a variety of crops, namely; fruits, vegetables, ornamentals and aromatic crops including spices, plantation crops and mushrooms, etc. Thus horticulture crops are high value crops. These crops are highly responsive to the inputs resulting in high-productivity per unit area. They are highly perishable in nature, hence needs to be stored, handled carefully and transported quickly. They can be put to processing to different forms and products. They can also be exported in either fresh or processed forms. Thus horticultural crops have potential to generate gainful employment, promote trade and earn foreign exchange. In addition, horticultural crops provide nutrition, to the people, as these crops are rich in proteins, vitamins and minerals.

In the past, horticulture was limited only to poor peasants and marginal farmers. They used to grow seasonal and leafy vegetables on their marginal holdings

and sell the vegetables in the local markets to earn their day to day bread. Rabi season vegetables can also be grown under rainfed conditions with minimum inputs. The traditional fruits like mango, banana, guava, pineapple were grown by small and marginal farmers with little care. But the qualitative aspects have been ignored. There has been a growing awareness about the potentialities of horticultural crops in promoting nutritive security, high returns per unit area, employment to rural population and earning foreign exchange.

The Govt. of India has been continuously encouraging the cultivation and processing of horticultural crops. Research and development activities in horticulture have also been accelerated. New technologies in the production of hybrid seeds and genuine planting materials, and processing technologies have been generated. During the last two decades large scale areas have been brought under horticultural crops leading to geometrical progression in production. Many non-resident Indians too have started horticultural firms and processing units. Many voluntary organisations and growers Co-operatives have been formed to systematise the production and marketing of various horticultural commodities.

On the developmental front, each state has now a separate department of horticulture and regulated markets for horticultural crops. At the national level, National Horticultural Board has been established, which supports and promotes horticultural industries in India. The Board also facilitates the marketing of highly perishable commodities through the network Computer market survey and Market data base. The Govt. of India has also established the Agricultural Produce Export Development Authority (APEDA) which promotes the export of horticultural crops. The National Bank for Agriculture and Rural Development (NABARD) provides loans for horticulture development. The Govt. of India is also providing subsidies towards the cost of horticultural inputs like fertilizers, pesticides, deep irrigation system and plant protection equipment. It has also liberalised the import of inputs in agriculture.

REVIEW OF LITERATURE :-

The importance of horticultural crops to the economic development of hills cannot be over emphasized; Land holdings in the hills are small and there is limited irrigation facilities. Also in the hilly areas, there is serious land degradation due to deforestation, Jhumming, etc. Under these conditions, the introduction of more intensive horticultural production is considered to be the best way to utilise the natural resources of the hills

which will ultimately generate more farm income and employment (Chandha 1987).

Himachal Pradesh has witnessed voluminous increase in fruit production over the last one and a half decades. Hence, farmers are definitely shifting their area from field crops to horticultural crops all over the state. This is mainly because fruit farming is more remunerative than the field crops. Therefore, that is why relatively a larger portion of the geographical area is devoted to fruit cultivation in Himachal Pradesh than elsewhere in the country (AZAD, SWAYUP, IKKA, 1988).

In a predominantly agrarian economy, development of horticulture may prove remunerative complementary occupations to the farmers. In view of the rugged and variegated topography, dearth of sunny, flat and fertile land for cultivation of agricultural crops, the development of horticulture can well make good for the above deficiency. The development of horticulture may make the life of the farmers happier in the hilly terrain of the region. Rather, the geographical handicaps confronted while cultivating agricultural crops can be converted into fortune by means of the programme of horticultural development. Besides, the India Council of Agricultural Research complex of North Eastern Regions, Shillong has

engineered a model for agriculture in the hills as longrun approach with a view to minimising the menace of shifting cultivation. According to this model, the upper portion of the hills beyond 30 percent slope may be covered permanently with perennial horticultural crops species with suitable inter or composition crops. The fruit plants may be planned by making half-moon terraces, and bench terracing may be avoided. In the low hills upto 900m crops like citrus, pineapple, bananas, Guava, lichee, in the medium hills from 900 to 1500m, stone fruits like peach, plum, apricot, pear, persimmon and in high hills beyond 1500m, fruit crops of apple. Pear, chestnut, walnut, etc. may be tried. With respect to generation of income in rural economy the role played by the horticultural crops is significant. The fruits are commercial crop by nature. They enjoy promising market potential. Besides, the cultivation and sizeable production of fruits and vegetables can sustain quite a few agro based industries which may cater to the needs of internal as well as foreign market. It can earn valuable and highly needed foreign exchange and provide jobs to millions under secondary and tertiary sectors, (JHA S.D. 1985).

Where the cultivable land-man ratio is poor and the productivity of land-man ratio is also poor in traditional agriculture, it has been found in one study, that horticulture is the obvious answer. Once horticulture has established itself, agro-based industries can be set

up.(B. Sivaranab,1988).

Horticulture is more advisable for hills than cultivation by ploughing for safety of the soil. Mobile canning and processing units are needed for utilising the fruit production which are quickly perishable. This will increase cash income of the farmers. (G.C.Pande 1988).

In another study on hill areas it has been concluded that the comparative advantage of hill areas in the development of primary sector-based activities. Although the possibilities of developing large-scale industries are limited in the region, there is considerable scope for developing agro-based small scale industries (Ajit Kumar Singh 1988).

In another study (Katar Singh) it has been found out that agro-based industries are the only alternative avenues of providing productive employment and these industries should be organized in the cooperative sector structured on Anand pattern.(Katar Singh).

In another study (J.C. Budhraj, R.T. Tewari D.C. Srivastava) it has been proposed that cold storage facilities should be developed in the hill areas. It also proposes to provide stores and ware-housing facilities near the marketing centres. Community canning facilities

should be further strengthened and extended. Besides, private entrepreneurship should be developed to start cottage-scale fruit preservation units to use C and D grades of fruits and vegetables. Promotional backing for marketing of canned and bottled fruits and vegetables would also encourage this industry to flourish on a mass scale.

The programme of horticultural development may be viewed as strategy for rural development in Assam, specially in N.C. Hills. the relevance of horticultural development may be sought in the light of the incredibly low income of the farmers, the practise of mono cultivation practice during Kharif season and consequently longer duration of off season, the availability of meagre job opportunity and favourable climate conditions. In view of the rugged and variegated topography, dearth of sunny, flat and fertile land for the cultivation of agricultural crops, the development of horticulture can well make good for the above deficiency.

CHAPTER - III

SOCIO-ECONOMIC PROFILE OF N.C. HILLS

For the purpose of the present study, a single district N.C. Hills has been selected. It enjoys certain distinctive features with regard to socio-economic as well as climatic factors. The following are the main characteristic features of the district.

1. Situation :

The District of North Cachar Hills is situated in the rugged hilly region of the state of Assam, between 25°N and 25°45' North latitudes and between 92° 32' and 90°32 E longitude bordering Karbi-Anglong and Nagaon District in the North Cachar District in the South, Nagaland and Manipur states in the east and Jaintia Hills District of Meghalaya state in the West.

Physiologically the District can be divided into three main divisions :-

- i. The low lying areas of river valley
- ii. The high hills of Borail Range and,
- iii. The plateau of Gunjung and Umrangso area.

The main river of the District are the Diyung and Jatinga rivers. the former originates from the

Northern side of the Borail Range and the latter from the southern parts.

The total area of the District is 4890 sq.km. It covers an area of 6.25% of total area of the state of Assam. Out of total geographical area of 4.89 lakhs hectore, only 1.88 lakhs hectore is fit for cultivation.

There are 13 distinct tribes in the district, of which Dimasa Kacharies constitutes 36% and rest Khasi Nagas, Kukies, Hmar, Biete, Hrange Khol, etc. (1971 census).

CLIMATE AND RAINFALL

The general climatic conditions as obtained in the district is by and large, characterised by average coolness, high humidities all the year round and abundance in rainfall.

- i. Altitude : a) Eastern Region-800 to 900 meters.
b) Northern Region-1000 to 1200 meters,
- ii. Average Rainfall-2200mm to 2300 mm.
- iii. Average mean maximum temperature-24°C to 26°C
- v. Lowest temperature recorded during
December to January in Haflong-6°C to 10°C
- vi. Humidity- 73% to 84%

SALES AND TOPOGRAPHY :-

General soil texture ranges from sandy loam to sandy clay Loam.

The soil of N.C. Hills can be classified as laterised red soils and non-laterised red soils (Mixed red and black soils). Laterised red soils are found in hilly areas and also in mountain valley. In case of non-laterised type red soil are observed at higher elevations whereas the black soils are found in the lower elevation.

Soil of the region is mostly acidic in reaction ranging from PH 5.5 to 8.1 About 25% of the soils is strongly acidic i.e. then PH ranges below 5.5.

Organic carbon status in the soil is found to be high. Around 80% of the sample analysed by the soil testing laboratory in Haflong, shows high Nitrogen content. The soils are red in organic matter due to intense forest coverage and very little agricultural exploitation were done to these soils.

Most of the soils of the entire region are poor in phosphorus. The phosphorus status of N.C. Hills soil can be rated as medium to low.

The available potash content of this district ranges from medium to low. As the soil is acidic and contains high per centage of organic matter and nitrogen, a variety of crops including paddy, sugarcane, mustard, til, cotton, maiz etc. and horticultural crops like citrus, urgane, pineapple, banana etc. are grown. But for want of irrigation, all crops cannot be grown successfully. A vast majority of the rural families have small holdings. This is the greatest impediments to agriculturalists of the N.C. hills (Gazettear of India 1971).

BASIC STATISTICS OF THE STUDY REGION

(N.C. HILLS)

	<u>N.C.Hills</u>	<u>Assam</u>
1. Geographical Area, (St. Km) (1991 census)	4888	78438
2. Population (1991 census)	149346	22294562
3. Rural Population as percent of total popn.	115140	1,98,23674
4. Density of popn. (per square kilometre)	31	284
5. No . of sub- division	2	48

Source : Paper : Govt. of Assam, Deptt. of Agriculture,

LAND USE PATTERN :

One important relevant points concerning the hill areas of the districts of Assam is that, not to speak of hilly areas, even the limited plains areas of the hill districts of Assam are yet to be completely covered by cadestral survey and preparation of land records or rights.

According to prevailing customs, the Gaonbura (village Headman) is the custodian of the village land under the overall control of the District Council. A household is free to select a suitable plot but without having ownership right on the plot and such arrangement remains valid for the period of cultivation only. Flat lands suitable for wet cultivation or other permanent cultivation are however given allotment by the District Council to individual villagers on a annual basis. The allottee is also devoid of any right of inheritance and transfer without prior approval of the District Council Authorities. However, there is well defined village boundaries for each village.

5. IRRIGATION AND RAINFALL :

The average rainfall in the area varies between 2200mm to 2300mm with humidity being 73% to 84%. There are

several irrigation scheme in the district. Total area covered under irrigation is about 3976 hectares.

6. AGRICULTURAL PRACTICES AND AGRARIAN SITUATION :

The tribal farmers of this hilly district, practice jhum cultivation. Jhum is a labour intensive method. This shifting may be ascribed to the typical topographical conditions and consequent dearth of good arable land. Due to scanty land, the situation is further aggravated by the increasing demographic pressure on the land. The farmers are looking for an alternative.

7. CROPS GROWN AND CROPPING PATTERN :

Paddy is the main cereal crops grown by the Jhumiya farmers. Cereals, pulses, oilseeds sugarcane etc. are grown in the permanent cultivable area which covers about 21,287 hectares, i.e. 4.3% of the total area. A large variety of horticultural crops are also grown in the district. The major fruit growing Zones of the district are :-

- i. Mahur laisong area :- Orange, pineapple, banana, black pepper, ginger, pomegranate, etc.
2. Jatinga area :- Orange, pineapple, singer, turmeric black pepper.

- iii. Harangajao area :- Pineapple, ginger, turmeric, banana, orange, black pepper, Arecanut, etc.

8. COMMUNICATION & MARKETING FACILITIES :

The district is well connected by both roadways and railways with Silchar, Guwahati, Diphu, etc. There are about 9 major markets in the district.

9. OCCUPATIONAL PATTERN :

Agriculture is the main occupation in the district. The district council has local tribals as its employees, therefore there are Government job holders too.

10. POPULATION :

The Dimasas are the main tribe in the district. The district is also inhabited by the jaintias, Kukis, jemei- nagas, hmar, nepalis, etc.

CHAPTER - IV.

Role of village industries & small scale industries.

The Approach paper to the seventh five year plan (1985-90) states (Published by Govt. of India, Planning Commission, New Delhi P.16) that "The village & small Industries sector constitutes an important segment of the economy in terms of employment, output and exports. The policies and programmes for this sector should emphasise rationalisation of the fiscal and taxation regime provision of appropriate infrastructure, the introduction of modern management techniques, upgradation of skills of artisans and propagation of appropriate technology & adoption of a coherent marketing strategy both for internal of export marketing.

Small scale & cottage industries have a significant role to play in increasing income generation in backward areas to help in the process of attacking poverty in India particularly in the rural sector.

In India a small industry is defined as one having an investment upto Rs. 1,00,000 in machinery and equipment. The horticultural crops together cover roughly 7 percent of the gross cropped area in a year, yet contribute more than 18-20 percent of the gross value of

the gross value of the agricultural output of the country. The progress made in horticultural production, though of a modest scale, has placed our country as the second largest producer of fruits and vegetables next to Brazil & China.

Accordingly, natural debates ensued on the need for diversification of Indian agriculture from the age-old dependence on cereal based cropping systems. The diversification Campaign brought to the lime light the potential of horticulture crops in terms of their capability for improving returns per unit area, uplifting the rural economy, earning foreign Exchange through exports and generating large employment opportunities in the rural sector. Fruits and vegetables fetch 20-30 times more foreign exchange per unit area than cereals due its higher yields and higher prices available in the international market. As far as the employment generation is concerned, the average labour required for fruit production works out to be 60 mandays per hectare as against 143 mandays for the cereal crops. Grapes, banana and pineapple generate much large employment-1,000 to 2,500 mandays per hectare. Their importance as a major source of raw material for food processing industries is well known. Major developments are taking place in this direction since last years involving, several multinational companies seeking collaboration for setting up fruit or

vegetable processing units in the country.

plan outlay of horticulture for India.

V (1973-78)		76.1 (Actual)
VI(1980-85)		91.3 (Actual)
		Rs. in million
VII(1985-90)		241.9 (Actual)
VIII(1992-97)		10,000
		(Allocation)

Source : Horticulture, (Journal) 1991

CHAPTER V

METHODOLOGY :

The research project has been an intensive study. the methodology used has been the social-survey method which consisted of collection of data concerning the living and working conditions of the people of Jatinga village and Boro-Haflong village. This had been done on face to face interview basis along with scheduled questionnaire.

At the first stage, villages were selected for a comparative study- Jatinga and Boro Haflong. This had been done after having discussed with the District Agricultural Officer. Jatinga is primarily a horticultural village whereas Boro-Haflong is still primarily based on Jhum Cultivation with few exception who have started with horticulture.

The second stage is sampling. The method used for the Jatinga village is simple random sampling. Whereas in case of Boro Haflong it has been selected sampling, on basis of type of cultivation practised.

The interview schedules were set with mostly closed questions provided with several alternatives with

ranking scales. In order to set the questionnaire field visits had been made to make an on the spot study to find out the relevant question and to test the questionnaire.

AREA OF THE STUDY :

The area of the field study covers two villages namely Jatinga which is predominantly a horticultural village and Boro Haflong where Jhum is the main occupation but where some individuals have slowly started with horticulture.

Jatinga is around 7 kms away from the Haflong town. This village is well connected both by road and railways with Silchar, Lumding, Guwahati and several other towns in the district. The inmates of Jatinga are the Jatintia tribe. Horticulture is the main source of livelihood. Oranges and pineapples are the primary fruits grown in their gardens. Besides, one also finds lichi, Plums, peaches pears and bananas. The Jaintia people are basically rice eaters.

The people of Jatinga have been earning their livelihood primarily from horticultural products which are perishable. But there is hardly any storage facilities available in and around the village. Hence the farmers are

compelled to dispose off their products at the current price offered by the middlemen.

Boro Haflong, is another village selected for study. This village is situated at around 5 kms. distance from Haflong town. This village is inhabited by the Jeme Naga tribe. Here the primary occupation is Jhum. But there are few individuals who have taken up horticulture. Jatinga and Boro Haflong are neighbouring villages but one finds a last difference in the living conditions between these two villages.

SOCIO-ECONOMIC PROFILE OF JATINGA VALLEY :

Both villages fall in the Jatinga valley which is situated in the valley area of the high hills of the Borail Range. The Jatinga is the main river flowing through the valley which originates from the southern part of the Borali Range. These villagers are under the Mahur development Block. Because of the Borail range this area is bestowed with fairly diverse climate owing to varying elevations, those permitting cultivation of large varieties of horticultural crops.

CROPPING PATTERNS IN JATINGA VALLEY :

1. Jhum land :- Mixed cropping with paddy as main Crop. Other crops-Brinjal- Chilli etc.

2. Wet paddy land :- Mono crop, sali paddy due to lack of irrigation facilities.
3. Horticultural land :- Hill slopes are utilized for horticultural crops like oranges interclap with pineapple, ginber or turmeric.

The general climatic condition in this area is characterised by average coolness, high humidity all the year round and abundance in rainfall. The average rain fall is 2200mm to 2300mm and temperature being 24°-26°6 in summer and 6°-10°C in winter.

A fruit preserving factory (KANACH), was established in June 1977. It is an undertaking of Assam Hills small Industries development Corporation (AHSIDC). It is situated at a distance of around 5 km from Haflong town. The factory buys the fruits through the Co-operative Society of the villages. But this single factory cannot buy all the raw materials available because of its limited capacity and out- dated machineries. Hence, modernising this existing factory should be the foremost step taken by the concerned authorities. Moreover, the Govt. is taking various steps to minimise the extent of Jhum cultivation. Horticulture can become an alternative, and more and more

agro-hosed industries both at small-scale and cottage industries can be set up. The conditions as obtained in Jatinga may be a guiding example in this respect.

Agricultural prospects of N.C. Hills (In hectares)

(a)		
Gross Cropped Area	Area sown more than once	Total area cultivable for agriculture use.
21,000	1000	62,000(Approx)

(b) Industrial Potential for N.C. Hills.

Industries : No. of Units recommended

Agro based	Forest based
15	8

(a) (Source : Statistical handbook, Assam 1981)

(b) (Source : Techno technomic survey report, 1986 prepared and recommended by Development Commissioner (SBI), Govt. of India).

FIELD STUDY-SOME OBSERVATIONS

The North Cachar Hills district of Assam is a hilly area situated between 25.0' and 25.4' North latitudes. the total geographical area of the district is 4.89 lakh hectares, out of which only 1.88 lakh hectares is suitable for cultivation. Gross cropped area is 30,991 hectares out of which 23,698 hectares covered under horticultural crop. More or less 74% of the total population is engaged in agricultural activities. Jhum cultivation is the main source of livelihood in this district.

The department of Agriculture is seen to have taken two broad strategies- one is to motivate the Jhumiya families for growing field crops like sesamum, pea, blackgrame, archar, tapioca, cotton, maize, etc. Another strategy is to motivate Jhumiya families in adoption of permanent type of cultivation of different horticultural crops like orange, pineapple, ginger, pears, peach, lime, lemon, pomegranate, etc. Moreover, the district being bestowed with fairly diverse climate owing to varied elevation, it has got immense potential for horticultural activities. Keeping in mind such rich horticultural potentialities, the Assam Hills Small Industries Development Corporation (AHSIDC) have set up a fruit

preservation unit (KANCH) at Haflong. It is a small scale factory with a limited annual turnover.

The development of horticulture in the district, inspite of the vast potentialities it possesses, is still lagging far behind. Development of horticulture and setting up of agro-based industries would go a long way in improving of the economic condition of the people because the return per acre from orchards in any case would be far more than the return being obtained by the cultivators from the traditional form of agriculture.

Studies undertaken by various research scholars and organisations in the region have concluded that the system of shifting cultivation sustains the tribal people for barely six to eight months in a year while for the rest of the period the families have to seek out a lining through alternative occupations. It has been observed that "economy of the people depended on this form of agriculture has reached a critical points". there is need for a change in this very primitive system of cultivation to aid in the economic upliftment of the tribal families.

FINDINGS :

The universe of my field study consists of the fruit growing areas of the KANCH FACTORY near Haflong

in N.C. Hills. There are three different units of my study viz. (i) The villagers of the Jatinga village, (ii) the villagers of the Boro- Haflong village and (iii) employees of the 'Kanch FACTORY'.

Table I : Avg. Family Size, Level of Education

Sl.No.	JATINGA	BORO HAFLONG
1. TOTAL UNITS IN THE UNIVERSE	307	87
2. NO OF UNITS IN THE SAMPLE	34	13
3. SAMPLING %	11%	15%
4. AVERAGE FAMILY SIZE	6	6
5. LEVEL OF EDUCATION OF RESPONDENTS		
a. % above Class X	20.5%	Nil
b. % V- X	68.5%	93%
c. % between- IV	6%	Nil
d. % of illiterates	5%	7%

The findings show that average family size in both the villages is same. But the percentage of illiteracy is more in the sample house-holds of Boro-Haflong.

Table 2 : Occupational Distribution of sample house holds

OCCUPATION	JATINGA	BORO HAFLONG
GOVT. JOB	6%	9.4%
TRADE	NIL	1.35%
CULTIVATION	94%	89%

The Jatinga, 6% of the total population of the sample are engaged in Government jobs, and about 94% in cultivation. Whereas in Boro Haflong 9.4% of the population of the sample are engaged in Government jobs, 1.35% in trade and 89% in cultivation. My findings also show that 58% of the families surveyed also have poultry as a source of income in Boro- Haflong.

Table 3:- Income from Cultivation(Income per annum)

AVERAGE FAMILY INCOME FROM	JATINGA	BORO HAFLONG
WET PADDY	Rs. 1857	Rs. 4680
JHUM	Rs. 1083	Rs. 1400
HORTICULTURE	Rs. 4227	Rs. 6000

From the table 3 it can be clearly observed that horticulture provides the highest income when compared to Jhum and wet paddy. From the survey it has been noticed that due to disease in the old orchards of Jatinga, orange production has gone down steeply. The farmers are earning only half of what they are earned 4-5 years ago. And in Boro Haflong it has been observed that the majority of tea gardens are new and have not yet borne fruits. There was one interviewee who had to face a loss of Rs. 60,000/- due to wild fare.

Table 4 : Ranking of Difficulties Faced in Horticulture

DIFFICULTIES	JATINGA	BORO HAFLONG
LESS LAND	9%	7%
DISEASES	91%	57%

From this table it can be concluded that diseases is the main threat to the orchards. The experienced farmers of Jatinga as well as the new horticultural farmers feel that spread of diseases is a serious problem.

Table 5: 1st Preferences Between Wet Paddy/Jhum/Hort.

PREFERENCE	JATINGA	BORO HAFLONG
WET PADDY	23%	7%
JHUM	2%	Nil
HORTICULTURE	94%	69%

From the above table it is very clear that majority of the farmers would prefer to do horticulture provided Government is willing to give the necessary facilities, training and guidance.

Table 6 : Marketing

FRUITS SOLD	HAFLONG MARKET	KANCH FACTORY	ELSE WHERE
ORANGE SOLD IN NOS.	18,100	2000	89,000
ORANGES SOLD IN %	16%	1%	81%
PRICE OFFERED PER NO.	Rs. (0.80 to 1)	Rs. 0.80	Rs. (0.70 to 1)
PINEAPPLES SOLD IN NOS.	6975	4350	6350
PINEAPPLES SOLD IN %	39%	24%	36%
PRICE OFFERED PER NO.	Rs. 2-Rs. 3	Rs. 0.75 to Rs. 2.25	Rs. 0.75 to Rs. 2

From the study it has been observed that Kanch buys only 1% of the oranges sold. And in case of pineapples it has been found that only 24% of the pineapples sold is bought by the Kanch factory. Therefore, there is no scarcity of raw materials for Kanch factory at present.

CHAPTER - VII

THE KANCH FACTORY :

The North Cachar Hills district is situated in the hilly region of the state of Assam, between 25°N and 25°45' North latitude and between 92°32'E and 90°32'E longitude bordering Karbi Anglong and Nagon District in the North Cachar District in the South, Nagaland and Manipur states in the East and Jaintia Hills District of Meghalaya state in the West. The total area of the district is 4890 sq. kms and it covers an area of 6.23% of the total area of the state of Assam. Out of the total geographical area of 4.89 lakh hectares of the district only 1.88 lakh hectares is fit for cultivation.

¹ Jhum is the main method of cultivation in the district and the permanent cultivable area (cereals, pulses, oil seeds, sugarcane, etc.) covers only 21,28 & hectares i.e. 0.3% of the total cultivable area. Though paddy is the main cereal crop in some areas horticulture is also practised. As the district is bestowed with fairly diverse climate owing to varying deviations, cultivation of a large varieties of horticultural crops has been possible. the major fruit growing zones of the district area :-

- 1) Jatinga areas :- for growing orange, pineapple, ginger, Turmeric, Black pepper, etc.
- 2) Mahur Laisong area :- for growing orange, pineapple, Banana, black pepper, ginger, pomegranati, etc.
- 3) Harangajas area :- for growing pineapple, turmeric, banana, orange, black pepper, precanut, etc.

Considering such rich horticultural potentialities the Assam Hills Small Industries Development Corporation (AHSIDC) have set up a fruit preservation unit (KANCH) at Haflong. The 'Kanch' factory is a small scale factory with a limited annual turnover.

It was established in June 1977. The head office of AHSIDC is at Diphu, and it is headed by a Chairman and a Managing Director who are appointed by the Govt. of Assam. The corporation is under the administrative control of the Hill areas Department, Government of Assam.

CHAIRMAN

MANAGING DIRECTOR

MANAGER

SUPERVISOR

ASSISTANTS

GRADE IV

MANAGEMENT :

There is a full time manager who is in the overall charge of the functioning of the factory. There is a supervisor and two factory assistants. There are in total 12 permanent staff members including the manager. The rest are all daily wage labourers. There are only 5 skilled persons running the factory. Basically the education level of the staff is matric or under-matric. The establishment cost of the factory is borne by the AHSIDC.

PROCESSING AND STORAGE :

The production capacity of Kanch is 75 tonnes per annum. But it is running at a level far below its capacity. The factory processes the following items :-

- Pineapple and Orange squash
- i) Pineapple and Orange juice
- ii) Pineapple slices and titbits
- Pineapple and Orange jam.

Last year (1994-95) the factory production was only 28 metric tonnes. The factory processes the raw materials depending on the packaging materials available and since there is hardly any cold storage facilities available, therefore, the management cannot buy the raw materials before hand.

THE PROBLEMS OF KANCH :

The factory faces the problem of packaging. The containers like tin cans, bottles, etc. are being imported from Bombay, Calcutta, etc. As a result the cost of containers comes heavily on the overall cost production.

There is a lack of Co-ordination between the factory management and the Corporation.

i) Due to lack of cold storage facilities the factory cannot buy all the raw materials at the peak season itself.

DEMAND AND SUPPLY OF KANCH PRODUCT :

There is a heavy demand for the processed products of pineapples and Oranges. But demand in the internal market itself has not been fulfilled because brands like Kissan, Dipys of Bangalore account for 80% of the local market of N.E. Region. The local brands could cover the remaining 20 percent of the regional demand. Moreover, demand for pineapple products are very high in the international market. But due to non-availability of packaging materials locally, the products had to be limited. Due to these constraints the supply of Kanch products is very less compared to the demand.

SUPPLY OF RAW MATERIALS :

Kanch factory is situated in the horticultural belt of Jatinga valley. There is a regular supply of horticultural products like pineapple and oranges. As such there is no scarcity of raw materials for the factory. From the study it has been found that Kanch buys only 25% of the total pineapples and oranges sold by the growers.

ROLE OF THE KANCH FACTORY :

1) Income Generation :

For proper disposal of highly perishable horticultural produce, fruits and vegetables in particular, existence of organised marketing and transport agencies are bare necessities. The poor returns available to the growers are due largely to the lack of organised marketing sector that may lift the surplus produce from the growers at a reasonable price. The low internal consumption of different fruit crops, results in huge marketable surplus from the growers point of view. Interestingly, for proper storage of perishable fruits, there is no cold storage facility. Usually, where sufficient quantity of marketable surplus is available due to marketing and transportation difficulties, processing of fruits and vegetables are thought as the alternate sector through which a reasonable return can be ensured to the growers. For a region like N.C. Hill, the...

and vegetable growing is closely linked with the success of fruit processing units and the positive demand pull by the processing industry can only help in sorting out the problem of proper disposal of perishable commodities like fruits and vegetables.

TABLE -7 : PRODUCTS OF KANCH FACTORY

YEAR	PINEAPPLES PROCESSED		ORANGE PROCESSED		
1994-95	48492 NOS		3563 Kg.		
OUTPUT					
199495	SQUASH	JAM	JUICE	TITBETS	SIICES
Pineapple	745.920	2837 Kg	3839.450Kg	185.300Kg	343.400Kg
Orange	2937 Kg.	1096	1990	-	-

At present the Kanch factory is buying only 1% of the oranges sold and 24% of the pineapples sold and the growers are getting a reasonable price for their pineapples. The growers would have been benefitted more if the unit was running properly or up to its full capacity. If the maladies of the unit be solved and made to function to its full capacity, more and more shares of the horticultural products can be absorbed in the factory itself. Processed pineapple products are of high quality and have good demand in the market. Exports play a vital role in the growth of pineapple industry. Unfortunately the share of the North Eastern region, far is very negligible. Pineapple being an internationally known fruit, there is a good demand for pineapple products in many countries of the world. To cite an example UK alone imports so much of pineapple products that all the existing processing units in the country put together is not in a position to meet its needs. If the 'Kanch' factory could be run successfully the benefits will go both growers and consumers.

In N.C. Hills, the department of agriculture is motivating the Jhumiyas to take up horticulture and from the present study it has been found that the jhumiyas are ready to take up horticulture. But then more motivation will not solve the problem, Government should chalk out plans to absorb the horticultural products so that the farmers may not

have to worry about the market of their products. By setting up agrobased industries and by improving the condition of the present unit the farmers will have a steady flow of income.

1) Employment Generation :

At present, the Kanch factory has a permanent staff of 12 personnels including the manager. The average education level of these personnel is VII th standard. Almost 50% of them are local tribals and the rest are local non-tribal. Among the daily wage labourers around 33% are tribals and the rest are non-tribals. These daily labourers are recruited for about 60-70 mandays, depending upon the production.

Therefore, there have been an employment generation to a small section of the tribals due to the setting up of the 'Kanch factory'. The Kanch factory has tremendous scope for expansion due to increase in horticultural activities in the region and with it the scope for employment generation in the near future can be increased.

The level of productivity of this unit is very low and the unit works only 50-80 mandays in a year when fruits like pineapple or citrus became available. Ironically

even in the peak season, the units use only a part of their installed capacity due to lack of cold storage facilities and non-availability of packaging materials in time.

iii) Marketing :

N.C. Hills is well connected by both railway and roadways. A survey is being conducted for the extension of broad Gauge to this district. Hence the district does not have any transportation difficulties. At present, marketing of the products of Kanch is satisfactory. There are various outlets in different places of the state. But the supply of these Kanch products is limited due to various constraints. The demand for this Kanch product is quite satisfactory. The quality ^{is} being appreciated by the consumers. Looking to the demands in the international market, a major share can be exported. Inspite of a good demand for the Kanch products, the 'Kanch' factory is under the threat of closing down.

Problems : Maladies of the Factory :

- (i) There is lack of cold storage facilities in the district and in the factory itself. Due to this the factory cannot buy the required raw materials during the peak season. As a result, the growers are not benefitted by the 'Kanch' market.

ii) Lack of Co-ordination between the officers at different levels is another cause for the malfunctioning of the unit. The problems of the unit had not been considered seriously at the highest Government level. The Government have not yet realized the importance of the role and agro-based unit can play in the upliftment of the rural economy.

iii) There is an immediate need for setting up a bottle making plant in the region itself. The plant would serve the demands of the various factories in the whole N.E. Region. Otherwise the cost of packaging will exceed the cost of raw materials. Moreover, the non-arrival of the packaging materials in proper time results in the wastage of processed raw materials.

These are some of the major problems faced by the Kanch factory. There is an immediate need for solving these problems. Otherwise, the growers, the workers and the consumers all will suffer.

RECOMMENDATION :

Immediate steps should be taken up for cold storage facilities.

Packaging materials should be made available in time. If possible a bottle and can making plant should be set up in the N.E. Region to satisfy the needs of the food processing industries of the entire North East.

The prospects of agro-based industries should be taken up seriously in the highest Government level.

The farmers should be made aware of the commercial potentialities of fruits.

The growers should have a Co-operative society which should be made functional and active.

Development of market intelligence and publishing of information bulletin would help the farmers to know the prices offered in different areas of the region at a given time. This would help them from the exploitation of the middlemen.

Proper training should be given to the factory personnel and farmers for the proper running of the factories.

OKDISCD

I. Bibliography.

1. *Agriculture Development and Planning in India* by Rajpat Ram.
2. *Horticultural Development in Hill Areas* by K. Azad, R. Swarup & B.K. Sikka.
3. *Development of Hill Areas ——— Issues and Approaches.*
Editors : F. S. Papola, B. K. Joshi, H. S. Verma &
R. C. Sinha.
4. *Economy of North-East India* by Dr. G. Bordoloi & A. K. Hoeg.
5. *The Wealth of Arunachal Pradesh* by S. P. Jha.
6. *Small Scale Industries and India's Economic Development* by L. T. H. S. Tarun.
7. *Tribal Economy of the North Eastern Region (Ed.)* by Dr. T. Mathay, 1981.

