Chapter II

Review of Literature
A lot has been written on shifting cultivation by different people. But, so far as our knowledge goes practically no study has been made on the economic aspects of Employment, Output and Marketed surplus leaving jhum more as an anthropological and sociological area of study.

Dr. B.D. Sharma has written an interesting article on jhum cultivation entitled, "Shifting cultivators and their development" which very completely reviews the existing literature. He has analysed such aspects as what shifting cultivation is, what its origin was, what its methods of growing crops happen to be and where it is prevalent. The study throws interesting light on jhum - its problems and prospects.

He has discussed both the merits and demerits of jhuming. He thinks that in this type of cultivation there is intensive resource utilization. This however, is not the case with respect to the degree of utilization of the land resources. In fact, this mode of cultivation is a special form of extensive cultivation which is relatively more land than capital or labour intensive in form. This mode is feasible only when land-man ratio is highly favourable. Once the population pressures emerge in the economy, jhumming becomes inappropriate in the resource
base of the economy. Jhumming is, however, highly compatible with the social structure and the customs of the jhumias. Consequently, the attempts of the agricultural department to remove and replace it with the settled cultivation have not been very successful.

With the rising population pressures, the land-man ratio falls and the jhumias try to supplement their incomes by exchanging minor forest produce, other natural products of forests like horns and skins of wild animals etc. in the nearby markets, as income from jhum tends to fall short of their requirements. This may lead to a structural change in the rural economy.

However, he fails to note that forestry will play this supplementary role provided that (a) the jhumias continue to enjoy unconstraint rights to the forests and their produce as in the past; and (b) sufficient forest cover still remains, increasing deforestation of jhumming under increasing population pressure notwithstanding. The premises that underlie Dr. Sharma's argument are of questionable validity both on logical and empirical grounds.

He has suggested certain measures to make the jhumias leave jhuming and go in for permanent cultivation. These measures should be such as can change base of community.
providing them more agricultural land. Hill areas should be cut, into terraces in order to facilitate terraced cultivation. Terraces tend to be eroded over a certain period of time under the onslaught of heavy rainfall which the North-Eastern Region is endowed with. So this cannot be a once for all affair. Then, the conversion of jhum into terraced fields on a continuing manner will need heavy doses of investment of both labour and capital which will be economically viable if and only if the yields of such converted fields is raised substantially above the level of the yields of jhum. Mere terracing may not suffice for this. An alternative high value crop mix will have to be identified and/or the yield augmenting inputs like water, fertilizers, improved seed varieties, etc. will have to be used on an ever rising scale. These measures will further enhance the investment needs, especially in the working capital. The individual farmers, at least the majority of them if not all, have neither the resource base nor the incentives and motivation for it. The multinational corporations and the big industrialists seldom bother for the environmental pollution with all its attendant heavy social costs. Compared to these entrepreneurs, the economic base and social enlightenment of the subsistence tribal farmers engaged in jhum should not be expected to be strong.
Although his is an excellent and elaborate analysis of shifting cultivation yet he has not even touched the above three aspects which are of interest to an economist. He, for instance has practically said nothing about employment, yield, output and marketed surplus, the aspects in which we are interested.

The North-Eastern Council's publication on shifting cultivation in the North Eastern Region deals with the ill effects of shifting cultivation, measures taken to replace it with the settled cultivation and to what extent the North Eastern Council has been successful in this attempt.

B. Dutta Ray's edited book entitled, "Agriculture in the Hills - A Case Study of Meghalaya", contains a number of papers written by different scholars on the agricultural problems of the state. A brief analysis of these papers are given below.

Dr. D.N. Borthakur portrays a picture of the current status of agriculture in Meghalaya. He shows the gross area of land under cultivation and the important crops grown in Meghalaya. He has also described the problems of agriculture in the State. About 41% of the net area sown is under the shifting cultivation. According to him there exists a yawning gap between the agricultural research available technologies and the agricultural problems of the state.
A.K. Sharma also discusses the problems of agricultural development of Meghalaya.

J.P. Singh compares agricultural production with the production of non-agricultural goods. For the production of any commodity we need land, labour, capital and technology, similarly for the production of agricultural goods also we need these factors which are scarce in Meghalaya. He suggests that the land should be classified into various categories according to its various uses, and restrictions should be put on the use of agricultural land for the non-agricultural purposes.

According to L.S. Gassah, agricultural productivity is low in Meghalaya due to the inadequacy of the means of communication, irrigation, transport and marketing.

D.N. Majumdar opines that population in Meghalaya is rising rapidly, consequently the land-man ratio has been falling which has been leading to the cultivation of the fallow land, adoption of intensive cultivation and ultimately to the imparting of the grains. If, however, intensive cultivation leads to the adoption of the settled cultivation, this should be welcome. Even otherwise, the more intensive use of a scarce resource should be welcomed. Planners have not been able to make the jhumias take up permanent cultivation because there is a big communication gap between the planners and the cultivators.
M.C. Goswami contradicts Dr. Elwin's view that the shifting cultivation is a permanent way of life of the jhumias. He cites the example of some Meghalayans who have realised that the jhumming is socially harmful and therefore, they have migrated to the plains for engaging themselves in the wet cultivation. He highlights the point that if the jhumias forever pursue the traditional way of cultivation, it will lead them nowhere except to irreducible poverty.

B.K. Mishra and P.S. Ramakrishnan's paper on "Energy Flow through a Village Ecosystem with Slash and Burn Agriculture in North-Eastern India", deals with the pattern of energy flow through four major sub-systems (jhum, valley, animal and domestic) of a typical Khasi village ecosystem characterised by the slash and burn agriculture.

The paper of P.S. Ramakrishnan, O.P. Toky, B.K. Mishra and K.G. Saxena, entitled "Slash and Burn Agriculture in North Eastern India", states that, as the jhum cycle has shortened from 20-30 years to 4-5 years, it has caused deterioration in the local environment. They suggest to restrict the cultivation of cereals and encourage horticulture and other perennial crops.

A.K. Gangwar and P.S. Ramakrishnan's paper "Jhum Cultivation - Controversy and Future Prospects," gives a detailed picture of what the jhum cultivation is. They have
not condemned this ancient practice of agriculture as has been done by some others. They opine that, provided the jhum-cycle is longer than ten years, the jhum system is as efficient as the modern method of cultivation.

The paper of P.S. Swamy and K.S. Rao, entitled "Socio-Economic Analysis of Agricultural Systems and Options for Eco-Development in North-East India - A Case Study from Meghalaya", suggests that jhum is the traditional and more popular form of agriculture. Therefore, considerable importance has to be given to it in the development and economic planning of the region. It has given a detailed picture of the different modifications of the jhumming at different elevations. They have also highlighted the differential levels of output in jhumming at different elevations having different jhum-cycles.

The book "A Comparative Study of Crop Production Under Shifting and Terrace Cultivation - A Case Study in Garo Hills, Meghalaya", by D. Borah and N.R. Goswami, gives a detailed comparative analysis of shifting and terrace cultivation. A broad definition of shifting cultivation, and a comparative account of yield of crops per acre (especially paddy) in the two types of cultivation - namely terrace and shifting cultivation has been given. In terrace cultivation the yield of paddy per acre is 2.77 quintals, which in shifting cultivation paddy yield per acre is 2.04 quintals.
At another seminar on the "Review and Re-Appraisal on Shifting Cultivation in North East India", held on 13-14 May 1988 by the North-East India Council for Social Science Research, many papers were presented by several scholars. These papers dealt with the problems of jhumming in the North East India and the ways and means to resolve some of the problems that this mode of cultivation poses. We examine some of these papers in the ensuing paragraphs.

Malabika Das Gupta discusses the problems of rehabilitation of jhumias in Tripura in her paper entitled "Rehabilitating Jhumias on Rubber Plantations - An Assessment of the Tripura Experiment". She opines that the commercial viability of rubber plantation had already been established in Tripura. Therefore, rubber plantations were considered to be an attractive alternative to jhum. It was decided to resettle those whom she calls landless jhumias in rubber plantations. But who these landless jhumias are? These are those persons who do not own the lands on which they work and who get wages for the services rendered to the owners of the land. Thus, they are really landless agricultural labourers. This resettlement programme is, at best, designed to withdraw the supply of labour of the resettled person to the owner jhumias. The benefits if any of resettlement accrue to the jhumias who may hire the labour of persons other than those settled in this fashion and who are willing to sell it.
Thus, the very design of the project does not seem to us to address itself to the real problems of jhum cultivation. Its failure is, therefore, inbuilt in the design itself. However, she fails to take cognisance of this aspect.

The paper entitled "Integrated Approaches as Alternative to Shifting Cultivation" by R.P. Awasthi, R.N. Gupta, R.N. Verma, S.K. Gangwar, M.D. Singh, B.K. Mandal and A. Varma, dwells on the research findings by the scientists of the I.C.A.R. on the important land use-systems.

B.N. Reddy and N.V. Rao presented an interesting paper on "Shifting Cultivation: Attitudes, Constraints and Approaches", wherein they have studied four villages of West Garo Hills District. The respondents of these villages have favourable attitude towards shifting cultivation, but they are not averse to Modern Agricultural Practices. They have suggested that instead of highlighting the adverse effects of shifting cultivation and looking for alternatives improving the positive aspects of shifting cultivation and conserving the resources within the system will be rewarding in the long run.

P.C. Bhattacharjee in his paper "Impact of Jhumming on Wildlife of the North-Eastern Region" says that the North Eastern region of India is the key constituent of the South
East Asian forest complex and it is the second largest forest complex to hold rich biological diversity. But a systematic onslaught in the form of habitat destruction, has threatened the very fabric of the survival of the wild life and the ecosystem in the region. He says that to protect the wild life of the region certain drastic measures are needed, but he has not suggested what these measures should be.

The paper entitled "Shifting Cultivation or Jhumming Practice in Meghalaya" by P.R. Mawthoh, Director of Soil Conservation, Meghalaya; highlights the disadvantages of shifting cultivation in Meghalaya and the measures taken by the Soil Conservation Department through schemes like the jhum control scheme and rehabilitation of jhumias scheme. The scheme comprises of components like, provision of developed permanent cultivation land wet or dry (terracing, reclamation) at 2 hectares per family; provision of irrigation facilities to the developed lands wherever feasible; supply of inputs like seeds and plants, manures and fertilizers and cultivation cost as follow-up programme; provision of cash/horticultural crop cultivation at 1 hectare per family, provision of drinking water supply; construction of link roads.

The schemes have proved successful to a certain extent because in 1974-75 35% of the total population was dependent on
jhum cultivation, whereas it came down to about 20% in 1981. Thus there was a general decrease of about 15% in about 8 years time.

P.C. Goswami in his paper "Control of Shifting Cultivation in North-East India - Certain Basic Issues", states that it is not possible to abolish jhumming in the near future not at least for another 50 to 100 years; and so what is needed is a better understanding of the existing farming system in order to identify the key bottlenecks and to reform and modify it. He says that the existing situation of shifting cultivation in North East India calls for schemes of afforestation, horticulture, poultry, etc. Simultaneously efforts should be made to reclaim and improve valley land in the tribal areas to extend settled cultivation thereby decreasing the number of people practising shifting cultivation. If this can be done, the jhum-cycle will be longer and the natural process of regeneration will be rapid. He also suggests that setting up of some organisations for the upliftment of the tribal society at the village level with full right of these organisations on village land to ensure proper management of village land may improve the existing pattern of jhum cultivation. All this should be done without disturbing the socio-economic life of the tribal village people. He says that although industrialisation may appear to be a viable alternative to shifting cultivation, it will
actually do more harm than good. This is because indus-
trialisation will not lead to abandonment of shifting
cultivation, as large number of people would still continue
to practise it. Large scale industrialisation on the hill
slopes may encourage deforestation, soil erosion and enhance
ecological imbalance. He therefore says "it is not possible
to prescribe any remedial measures outside the village
surroundings by prescribing certain new forms of economic
activities without adequate thoughts and study".