

SIGNIFICANCE OF INDIGENOUS KNOWLEDGE TOWARDS A GREEN ECONOMY AND ECOLOGICAL SUSTAINABILITY: A CROSS CULTURAL STUDY IN NORTH EAST INDIA

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Abstract

In India most of the tribal people are dwelling in the high hills, isolated forest covered region. Their entire livelihood is very much depended on the forest based natural products. In this context the present study has been done on the Karbi tribal group who are the early settlers of Karbi Anglong district in Assam and on the Garo tribal group of Meghalaya. The study has been done in the selected villages on the basis of primary data which was collected through empirical field work by applying anthropological research methods. It has been noticed that the livelihood and traditional economic organization of them are intimately depended on natural resources and it is related to the perspective of their ethno-ecology. It is intimately related with their traditional calendar and the perspective of their utilization of land.

Keywords: Environment, Culture, Traditional Economic Organization.

[I] ETHNO-ECOLOGY AND TRIBAL LIVELIHOOD

Cultural ecology points about an intimate relationship between culture and its surrounding environment. Man is influenced by his environment and in turn influences the environment. It is believed that environment determines a culture and environment limits a culture. By ethno-ecology we mean the conception of ecological relationships held by a group of people and their culture from the participants point of view which is known as ethno-science or cognitive ethnography or cognized environment. Rappaport 1968, in his Ecosystem-based Model focused on the relationship of specific human population to specific ecosystem. Geertz 1963, in his System Model stated about the interaction between ecosystem and social system, where the latter includes social organization, nutrition, health, economy, religious values etc (Sarkar and Dasgupta, 2000: 9-23).

In our country, the tribal people are dwelling in the high hills, isolated forest covered region. Their entire livelihood is very much depended on the forest based natural products. They collect their foods from their environment. They primarily consume the fruits, roots and tubers of the locally available plants. Moreover, they collect the honey from their surroundings. In the concerned areas there a number of local rivers and other water resources. Those provide them the fishes and other aquatic animals as a source of animal protein. Thus, the prime requirement of food of the concerned people is totally depended upon environment. Moreover, the environment not only provides food to the human society, rather it is the major source of animal fodder too. Meanwhile, being closely associated with forest and environment, the concerned people are very much depended on the natural products for their dresses. For this purpose they collect the raw materials from their surroundings and weave it by their own hands. The economic aspects of the simple societies are intimately related with their environmental perspective. They collect the fuel from their surroundings. Moreover, a number of forest based products like latex, honey are major economic pursuit for them. Most of the communities in the North–Eastern states are depended

on the shifting hill cultivation by utilizing the natural resources and climatic conditions in a proper manner. A number of communities are depending on the handicrafts by utilizing the natural resources like bamboo and cane. Ultimately, the ecological and surrounding environmental consequences are deeply co-related with economic feature of the human being. One of the basic requirements of the human being is the habitation and it is very much depended upon the environment. They collect the wood, bamboo and other raw materials from the natural surroundings to build up the houses.

The religious aspects deserve a special attention in the livelihood of the human society. The people of the simple societies are primarily animists. Being closely associated with the nature, they have a number of deities related with their forest and environment. For them all spots and places are holy as they are the seats of spirits. Animals, plants, trees, rivers, stones, hills or mountains are all abodes of spirits. Apart from nature as a whole the people of simple societies have also cognated themselves with the animals and plants in the form of totem (Vidyarthi, 1977:236-244). They believe to be the descendants of the totemic plants and animals and forbid to kill them or to harm them in any sort. Their livelihood in the lap of nature is made up of a strong community sentiment. Another major cultural aspect of the simple societies is their folk cultural heritages (Vidyarthi,1977:308-330). These are not merely for their recreation but they are performed to reflect the beauty of the nature. Another major aspect of their folk based tradition is the environmental sustainability. They have a common sentiment to use the natural resources equally and only according to the need. They do not misuse those and also they have a strong desire to preserve them as precious material.

In the multifarious relationship between man and environment, one of the major aspects lies in the domain of health. Every culture, irrespective of its simplicity and complexity has its own beliefs and practices concerning health, disease and treatment. The health care system and traditional treatment are based on their deep observation and understanding of nature and environment. The concerned people use a number of plant and animal resources for the ailment of their different types of diseases and in this regard they have their indigenous knowledge which is carried out from generation after generation. From the overall discussion it can be summarized that, the role of environment upon the livelihood of the human being has a multidimensional aspect. Roy Burman opined in 1982 that “ directly or indirectly in the tribal mind forest symbolizes life in its manifold manifestations i.e. home, worship, food, employment, income and entire gamut. Tribals can in fact be regarded as children of forest.

The contemporary world is deeply concerned with environment as well as ecological issues. At present the world is facing a tremendous environmental crisis, because in different ways a continuous environmental degradation is happening and increasing the crisis of survival. In this regard accelerated land degradation and soil erosion is a serious matter or problem. More than 50 per cent of the total area of India is affected deleteriously by land degradation resulting from soil erosion (Seghal and Abrol, 1994). Deforestation is also another major issue related with environmental degradation. Officially the forest in India cover an area of 7, 43,584 sq.km. Between 1951 to 1980 India had lost 4.3 million hector of forestland which means 1, 40,000 hector annually and it was converted to non forest uses. Forest and environment help to maintain a balance ecosystem and provide sufficient food to the people. So any type of degradation of the forest environment and ecological set up is likely to affect the whole balance and thereby create an adverse effect on the concerned people. Thus,

environmental degradation can cause a rapid change to the socio-cultural, socio-economic as well as religious life of any tribal community in the world. In this context the present study has been done on the Karbi tribal group of Assam in Northeast India to know about the significance of different environmental resources in their livelihood and cultural sustainability and emerging issues and challenges in this regard.

[II] THE STUDIED AREA AND THE STUDIED PEOPLE

The Karbi Anglong District is situated in the central part of Assam. The district with dense tropical forest covered hills and flat plains. The population of the district is predominantly tribal. Karbis are the indigenous community of the said region. According to Census 2011, there were total 421,156 Karbi people among whom the male and female population was 212,996 and 208,160 respectively. It has the total geographical area of 10,434 sq. K.M.s. It mostly consists of undulating and hilly terrain with numerous rivers and streams. The district can be broadly divided into two physiographic units viz. hills and plains. About 85 percent of the district is covered by the hills. As per the State of Forest report 1999 of Forest Survey of India, Dehradun, 6044 sq. Km of the district are under dense forest cover while 2776 sq. km are under open forest cover. According to the Forest report of 2011 total 152945.852 hectre of land in the district are forest covered. The important forest types found in Karbi Anglong District are:-

1. Moist semi-evergreen forests.
2. Moist Mixed Deciduous forests.
3. Riverrain Type.
4. Miscellaneous type with scattered pure or mixed patches of bamboos.

It was noticed that the studied people dealt their livelihood by utilizing different natural resources. Even they practiced their traditional economic organization and their socio-cultural practices particularly related to material culture, religious organization, traditional health care system were nourished in the lap of nature.

The present study has been done on the basis of empirical field work in two parts. In the first part it is done among a few selected villages under the Diphu sub division of Karbi Anglong district. The studied areas were one of the earliest settlements of the Karbi people. The second part was done in Garo Hill region of Meghalaya to know about the traditional land holding pattern It has a prime objective to focus on the issue of their traditional land holding system. Further, it was focused to analyze the impact of Globalization and civil administration on their traditional land holding system and to what extent it has generated individualism as well as class formation within the concerned society. The study was conducted among 300 families with a total population of 1653. Among them there were 852 males and 801 females. The study was conducted during the period of January 2023 to September 2023.

Methodology Applied: In this study Preliminary Census schedule was applied to collect data about their period of present occupational pursuits, daily working schedule, demographic composition, concept of health, disease and treatment and their daily food habit. Further, interviews were taken from the key informants to know about their traditional cultural practices particularly focusing on the issue of folk culture. Thereafter, case studies were taken on the people who are involved with different occupational pursuits and in this regard, their resources of economy were given a

major emphasis. Case studies were also taken on their traditional health care practices and in this concern the prime importance was focused on locally available medicinal plant resources and their way of utilization by the studied people.

In the second phase The study is mainly based upon secondary sources and the pilot survey related to empirical field work is going on in the selected villages of Garo Hill district.

Aims and Objectives of the Study: The prime objective of the present study is-

- 1) To know about the concept of ethno-ecology and cultural cognition of the Karbis and Garos.
- 2) To know about the significance of different environmental resources in the traditional economic organization of the Karbi and Garo people.

[III] LAND HOLDING SYSTEM, TRADITIONAL ECONOMIC ORGANIZATION

A] Jhum Cultivation of The Karbis

The Karbis traditionally practice Jhum cultivation (slash and burn) in the hill areas and gross varieties of crops. The people who are dwelling in the interior areas which is covered with the natural forest and the hills areas performed the Jhum cultivation for their survival with the application of simple technology. The whole operation starts at the fall of winter. The herbs and Serbs and trees are cut down at the month of February and left the rubbishes for dry for more than a month and set it on fire. It is observed from the opposite (bottom of the hill) hill. The burning is done mostly at the late afternoon. The next phase of Jhum is waiting for rain. During this time the entire half burn rubbishes are collected and re-burn and clean the place for Jhuming purpose. The shovels and hoe are used to dress up the field. The seeds of the maize are plants as maize grows quickly at the first start of rain. Paddy seeds are broadcasted with cotton or Sesame. There are three kinds of seeds are broadcasted in a place at a time- maize, paddy and sesame or cotton. At that time sesame and jute is broadcasted in a separate plot and it is not mixed with other crops. The harvesting of crops is done in the month of September and October. The sesame which is broadcasted as the last item, thus comes last in the month if December.

The stages of the Jhum cultivation are-

1. Hawar kelang:- selection
2. Rit kepan:- the felling (cutting) of trees, herbs and serbs for Jhum field.
3. Meh kekai:- burning the rubbishes.
4. Re karhi:- the clearance of half burnt logs or rubbishes.
5. Rit kenong:- broadcast of different seeds with dressup the field by digging with spade or hoe.
6. Sok karlu:- the picking of unwanted herbs and serbs from the crops field.
7. Sokthe kehon:- guarding the crops from the wild animal at night by preparing hemtap (house on the tree top).
8. Sok kerot:- harvesting.

According to the report of Agriculture department of Karbi Anglong autonomous council (2010-2011), the total farm families of the district are 1,25,139 among them 24,050 are Jhum cultivators. The total areas under cultivation is 2,32,650 hacter out of which 26,850 hacter is under Jhum cultivation. The following tables can elaborate the fact in more detail-

Table 4.1: Year Wise Category of Jhum Cultivation

Category	2008-2009	2009-2010	2010-2011
Jhum area	31,207	27,500	26,850
Jhum families	28,562	24,050	22,960

Table 4.2: Crop Production through Jhum Cultivation in 2011

Category	Quantity (in quintal)	Covered area	Families covered
Paddy	1650	4125	41250
Mustard	200	1333	5000
Potato	450	24	2250
Pea	100	160	1250
Sesamum	30	300	1500
Maize	10	44	333
Total	2440	5986	51583

Table 4.3: Traditional Jhum Calender of the Karbi People

Sl. No.	Traditional Month	English Month	Climatic Condition And Natural Indicator	Activities Related To Jhum
1.	THANG-THANG	FEBRUARY	DRY	Suitable land in selected. Bushes will be cleared.
2.	THERE	MARCH	DRY AND WINDY.	Bushes are left to dry. After drying, it is burnt.
3.	JANGMI	APRIL	MODERATE CLIMATE WITH VERY LITTLE AMOUNT OF RAINFALL.	Left over bushes are cleared and seeds are sowed. Eg. Maize, tubers, brinjal, etc.
4.	ARU	MAY	MOSOON STARTS.	Rice is cultivated.
5.	VOSIK	JUNE	HEAVY RAINFALL WITH LOTS OF HUMIDITY.	Weeds are removed from the cultivated area.
6.	JAKHONG	JULY	HEAVY RAINFALL WITH LOTS OF HUMIDITY.	Seasamum (til) can be sowed. Maize are collected for consumption.
7.	PAI-PAI	AUGUST	HEAVY RAINFALL WITH LOTS OF HUMIDITY.	Rice are collected.
8.	CHITI	SEPTEMBER	AMOUNT OF RAINFALL DECREASES.	Rice are collected.
9.	PHRE	OCTOBER	MONSOON RETREATS CLEAR SKY.	Seasamum (til) are collected.

Technology Applied

The Karbi people dwelling in the remote, interior or backward areas. Due to the backwardness of the areas the use of simple technology is mostly noticed. The people worked hard in the process of crops production. The utilization of modern complex machinery technology is lacking. The karbis used simple and limited tools in their

agricultural work. The works are completely depend on the manual labour, so the production level also very low, which is not able to fulfil their livelihood. They used different tools for different purposes. They used nopak (big knife) for cutting herbs, serbs and trees. Collect the half burnt logs with hands and cut it with knife to clear for the preparation of crops field. The seeds of the crops is carry with the hoton or hakso (a kind of basket) to broadcast the seeds and digging the soil with hoe (ku).the chumleng is used to dig the soil and put the seeds at the digging place to grow plants from the seeds. They used the chingjor (crowber), nokek rangso (sickle) which is used to harvest the croupes, and some material handicraft is used as different purposes in Jhum cultivation like, clasp knife, knife etc.

Some tools technologies used in the Jhum cultivation are-

1. Nopak :- big knife for cutting trees, herbs and serbs.
2. Cho:- an axe, to cut the big trees in Jhum field.
3. Ku:-spade, used for digging the soil.
4. Chumleng:- digging stick, used for seeding the seeds of crops.
5. Chingjor:- crowbar, for digging the soil to picked-up the potatos.
6. Tari ,nokek:-knife, clasp knife, used to harvest the crops.
7. Nokek rangso:- sickle, to harvest the crops.
8. Ingtong:- a kind of basket to carry the crops and othermaterial.
9. Khangra:- a kind of basket to carry the harvest crops and other materials.
10. Hoton:- a basket , used as a container at the time of broadcasting of the crops.
11. Hak:-a kind of basket having legs to keep-carry seeds or used as a container at the time of harvesting of sesame.
12. Phanki (baria):- bamboo made stick to carry harvest crops in soldier.
13. Jintaak:- a bamboo rope to tie up the harvest crops and other material.

Crop Production

The Karbis mainly depended on Jhum cultivation for their survival mainly who are dwelling in the interior, hilly or forested region, which is far away from the urban centre. Those people are entirely depended on their crops production for the survival. They performed the Jhum cultivation for the crops production. They grows varieties of paddies like soksu(paddy which is cultivate in earlier season)or the chubok (which is the late variety of paddy). The Karbi people primariliy grows the maize (thengthe), kremalu, tomir, nempo,mora, varieties of potatos like- ruidok, ruipharkong, ruidok sudo, rui bihu, rui sanglang,ruihanso, rui bihu etc. Instead of these, the Karbi people also plants the vegetables like hanjang,lai, mula,hanserong, hipi-birik,thoithe, thoithe bonghom, bonghom,bonglang, thekek, hanserong,behendi, hantharvo, thengbon, thepak, riho, kangkoroietc. Besides these crops and vegetables the people grows, the other crops like ginger, turmeric,and spicy called lopongbiric, vorek jokasu and dhania etc.

Change of Land

In the Jhum cultivation the hilly trape is selected for the cultivation. they performed one or two year in a place and change the land of cultivation for the next year. So it is regarded as the shifting hill cultivation, because they changed the cultivational lands every year. They do so because after a year or two years the land will lost its natural fertility and give the mear production.

Generally the Jhum cultivation is performed for one year at a place. in the modern days, due to the increase of the population and the decreases of the forest areas the place for Jhum cultivation got decreases. With the emergence of new economic organization the people gives the concentration on the increasing of production. Nowadays some people started to performe Jhum at a place for more than a year, due to the decreasing of the natural forest. With the changes of time the thinking of people also changed. Now the people used modern technology is every work and everywhere. Generally the field is left to grow a jungle for numbers of years. When the jungle is grows for numbers of years than the land gradually got their natural frtility. Nowadays the place of Jhum cultivation is left very less. So the people left the place to grow a jungle are only two or three years. Yet they change the land they again cultivate that land in after every three or four years.

The phases of alternation of land during the shifting cultivation can be represented through the following diagram-

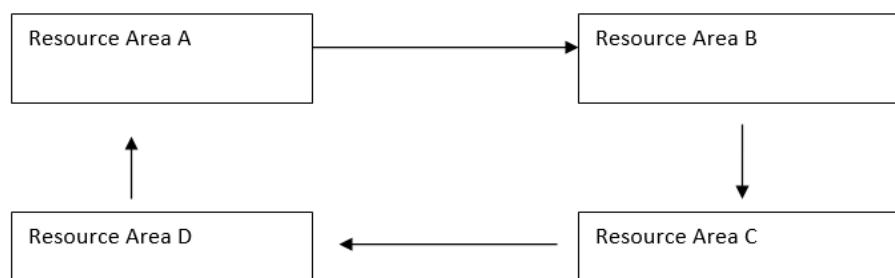


Figure 1

Generally a portion of land or resource area was being cultivated for a period of 2 to 3 years. Thereafter it was shifted and such shifting goes to higher altitude of land in general.

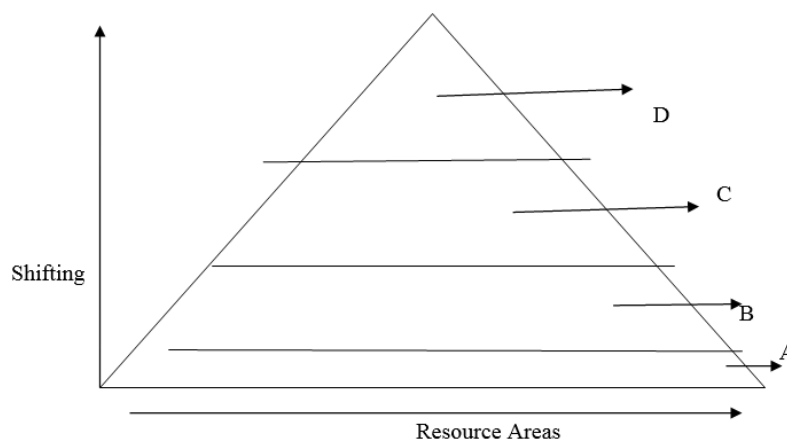


Figure 2

When the cultivation work was done in the lower altitude then due to the availability of larger cultivable land the quantity of productions were high and it was more variable in nature. The concerned people used to fulfil their daily livelihood requirements through the Barter exchange method. However in the higher altitude the amount of production used to become less due to comparatively smaller area of cultivable land. On the other hand the variability of productions were also lesser in nature. In such cases the Barter exchange method was practised with the plain land settled cultivators. Among the Karbis the method of Barter exchange and distribution of productions were collectively done in community consensus to maintain the egalitarianism in society. Although the village headman was present during the process of distribution but he had no claim of some special perviledge on the productions.

Change of Settlement with Changing of Jhum Land

In Jhum cultivation one hilly trape is selected for cultivation. They cut down all the trees and clean the place for cultivation. They perform the Jhum at a place only one or two years and select another area for the next year. Every year they changed the land side for the Jhum cultivation. The ang-ui arit (the dense forest area where the big trees are located) have the more natural fertility of land. So, the people always want select ang-ui arit. The ang-ui arit gives more production. At that areas the herbs and shrubs grows very less. The people in search of the ang-ui arit their cultivable land got far away by every year. Year after year the Jhum field got far away from their settlement and the problem of communication arise. It is very difficult to performed the work by travelling so far and it is difficult to protect their crops from the wild animals. After the harvesting it is difficult to carry their crops from the Jhum field to he household. Due to the numerous problems some people changed their settlement with the changes of their Jhum lands.

Participation of People

Jhum cultivation is the prime source of the livelihood of the Karbis, they give the major importance on the Jhum and every members are directly or indirectly associated with Jhum. In the Jhum the selection of site is performed by the male members only, which is decided by the village head man. Among the youth klengsarpo(youth head) leads all the works related to Jhum or the other ceremonial or ritualistic performances. Klengdun is next head to the klengsarpo. Among the all the works of the village is controlled by the klengdun and klengsarpo.

The rit kecham and rit kepan(cutting of jungle) is conducted by the male folk only, the females are not allow to go to cut down the jungle. When the entire rubbishes are burnt, the half burnt rubbishes are clean by both males and female by collectively participation of the entire family members. The entire villagers select a particular area for the Jhum, but they performed their agricultural works separately. The entire villagers help each other in every works. Among the youth they have a youth council which is headed by klengsarpo and assisted with klengdun. This youth council is composed by the unmarried boys and girls member only. This group performed the exchanged of work system. All the group members performed each other work like cultivation works by rotating one after another house works. Besides helping each other in agricultural works they collectively do the work of the villagers by taking minimum amount from the concerned person. The amount taken by the group gives the financial support to the council. In this way the entire villagers help each other in the cultivation works. In the Jhum the entire family members takes part in the work.

Rituals Associated To Jhum

The Karbis traditionally performed the Jhum cultivation for their survival. During the cultivable period they performed different ritualistic performances for the safety and security of their crops. The ritualistic performances are different in accordance of time and situation. Every ritualistic performances are quite different with each other, but all the ritualistic performances are concerned with the worship if their deities.

The first steps of ritualistic performance are botorkekur (welcoming the rain). This festival is performed to give appropriate rain for the crops in the year. The people worship, offer to satisfy the god of rain to give the appropriate rain in the entire year which gives the good production of their crops. When paddy is grew in the crops field the people performed the soklim kangthur, which is performed for the safety and security of the crops. This ritualistic performance belief to support to grow the crops and protects the crops from the insects and other animals.

Next step is the Longle ahi-i karkli. In this ritual they worship and offer the local deities which are present in jungle, river, mountain etc. this ritual is performed for the wellbeing of the people and the safety and security of the people, who performed the Jhum. They belief that with this ceremonial performance the concerned local deities not harm the people and protect them. If the crops got damaged due to insect than the Karbi people performed the lokhi chekama to prevent the damages from the insect and also protect from the affect of insects and other wild animals.

The hawar rongker which is performed by the people in a community basis. This collection of donation from every household performed the Jhum within particular Jhum areas. This is celebrating before the harvesting of the paddy in this ceremony the people performed the worship or offer to deities which is related to the Jhum. And all the other worship which are kept to offer to their deities during the year related to Jhum. In this ceremony local deities like longri sarpo (deities of lands), the than- local deities like jungle, river, inglong(mountain) arlok(land between two hills) etc. are worship by offering, cock-hen, and duck to them. All these deities is responsible for the welfare of the longri (kingdom of jurisdiction). Rit anglong the deity in charge of agriculture.

After performance of hawar rongker the people individually performed the rit anglong karkli. Rit anglong is the worship of the local deity in charge of the Jhum land. In this worship the people offer a pair of birds(a cock and a hen). This worship have three section like- ritpi anglong, ritso anglong and hempi arnam. Each section needs a pair of cock and a hen.

After harvesting of paddy one ceremony is performed this is called as Hacha Kekan. When the paddy crops is carry to the home from the Jhum field than the last evening hacha kekan is performed.

Animal Sacrifice During Jhum Cultivation

Jhum cultivation and its associated rituals among the Karbi people are intimately related with the religious dimension of economic organization. During the field study the people informed that Jhum cultivation first came among the karbi People, when the karbis first started to walk on this earth. May be this beleive has passed on to the contemporary generation through this ancestral ideas and generation.

Jhum cultivation mainly starts in the month of February or March. At this time a suitable portion land is selected then bushes are cleared and burnt when they are dry enough. The plot is thoroughly cleaned up with the help of spade, the land is kept prepared for sowing of the crops. During April crops like Rice, Maize, Turmeric, Ginger, Cucumber, Pumpkin and Tubers etc are sowed. In the month of August or September all the crop products are collected. They used both for own consumption and the rest are sold in the local market.

Most of the Jhum cultivation is carried out in the hilly tract. The soil should be a fresh one. After inspecting the soil, if it is found that the soil has no fertility then another plot of land is selected. Such cultivating plot is usually at a distant place from the village area. Also now-a day such cultivating plot are owned by individuals only. During the cultivating process there is no division of labour among the people. Both male and female together works in the field. Heavy works are usually carried out by the male. Even children are associated in the process. They help in chasing away the wild birds and small animals. They also lend their helping hand to their elders.

Animal sacrifice ritual for Jhum Cultivation has been incorporated in the Karbi society since from their ancestral times. It is their believe that if animal sacrifice is conducted then they can expect a good result from the cultivation as well as in their daily livelihood activities. Such rituals are conducted by the Shamans. They uses Chicken, Goat, Piegion and duck to offer the sacrifices to the super natural power. They believe that by offering such sacrifices the super natural power will be appeased, so in return he will safeguard the cultivated plot and would give them good production from the crops. During this ritual they are also appeased, so that the individual may be blessed with a trouble free life through the year. It is conducted before the start of the cultivation and in some cases after the harvest of the crops. During pollution period like death, no such performance are performed. The Karbi people believe that there are many souls and spirits who are responsible for different kind of fortune. Some of the spirit takes care of the cultivation while the other takes care of the individual in their daily activities. During this ritual performance females are strictly prohibited from the workshop place. Also they are not even allowed to consume the sacrificed meat.

As environment plays an important role during jhum cultivation, the studied people greatly depends on nature. It starts from the selection of the land plot, checking its fertility etc. amount of rainfall also determines the quality of crops. Even wild animals and birds also hamper the cultivation.

The studied people are mostly confined to subsistence economy. By Jhum cultivation they redress their daily food intake. Among this people Jhum cultivation has now become as a cultural tradition, because the people have been following since from their ancestors era. It gives peace and harmony in their livelihood.

Many scholars have different opinion about the impact of Jhum cultivation in the environment. Some states that it leads to forest degradation and migration of the people. They also say that it reduces the fertility of soil. This people can also collect firewood from the cleared plot.

Shifting cultivation is a form of agriculture in which the cultivated or cropped area is shifted regularly to allow soil properties to recover under conditions of natural successive stages of re-growth. In a shifting cultivation system, at any particular point in time a minority of 'fields' are in cultivation and a majority are in various stages of natural re-growth. Over time, fields are cultivated for a relatively short time, and

allowed to recover, or are fallowed, for a relatively long time. Eventually a previously cultivated field will be cleared of the natural vegetation and planted in crops again. Fields in established and stable shifting cultivation systems are cultivated and fallowed cyclically. This type of farming is called jhumming in India.

Fallow fields are not unproductive. During the fallow period, shifting cultivators use the successive vegetation species widely for timber for fencing and construction, firewood, thatching, ropes, clothing, tools, carrying devices and medicines. It is common for fruit and nut trees in fallows to be planted in fallow fields to the extent that parts of some fallows are in fact orchards. Soil-enhancing shrub or tree species may be planted or protected from slashing or burning in fallows. Many of these species have been shown to fix nitrogen. Fallows commonly contain plants that attract birds and animals and are important for hunting. But perhaps most importantly, tree fallows protect soil against physical erosion and draw nutrients to the surface from deep in the soil profile.

The relationship between the time the land is cultivated and the time it is fallowed are critical to the stability of shifting cultivation systems. These parameters determine whether or not the shifting cultivation system as a whole suffers a net loss of nutrients over time. A system in which there is a net loss of nutrients with each cycle will eventually lead to a degradation of resources unless actions are taken to arrest the losses. In some cases soil can be irreversibly exhausted (including erosion as well as nutrient loss) in less than a decade.

The longer a field is cropped, the greater the loss of soil organic matter, the reduction in the cation-exchange-capacity and in nitrogen and phosphorus, the greater the increase in acidity, the more likely soil porosity and infiltration capacity is reduced and the greater the loss of seeds of naturally occurring plant species from soil seed banks. In a stable shifting cultivation system, the fallow is long enough for the natural vegetation to recover to the state that it was in before it was cleared, and for the soil to recover to the condition it was in before cropping began. During fallow periods soil temperatures are lower, wind and water erosion is much reduced, nutrient cycling becomes closed again, nutrients are extracted from the subsoil, soil fauna increases, acidity is reduced, soil structure, texture and moisture characteristics improve and seed banks are replenished.

The secondary forests created by shifting cultivation are commonly richer in plant and animal resources useful to humans than primary forests, even though they are much less bio-diverse. Shifting cultivators view the forest as an agricultural landscape of fields at various stages in a regular cycle. People unused to living in forests cannot see the fields for the trees. Rather they perceive an apparently chaotic landscape in which trees are cut and burned randomly and so they characterise shifting cultivation as ephemeral or 'pre-agricultural', as 'primitive' and as a stage to be progressed beyond. Shifting agriculture is none of these things. Stable shifting cultivation systems are highly variable, closely adapted to micro-environments and are carefully managed by farmers during both the cropping and fallow stages. Shifting cultivators may possess a highly developed knowledge and understanding of their local environments and of the crops and native plant species they exploit. Complex and highly adaptive land tenure systems sometimes exist under shifting cultivation. Introduced crops for food and as cash have been skilfully integrated into some shifting cultivation systems.

Taboos Related to Jhum

Among the Karbi society, Jhum cultivation is mostly prevalent. But there is no such taboo regarding to the work and division of labour, while practicing Jhum cultivation. Each and every male and female members can work together and can share each other part of work. Therefore, the cutting down the trees, clearing up the weeds, reeds and burning up the straws can be done by both male and female members. So, no such taboo is related while jhum cultivation is practiced.

During Jhum cultivation, a pregnant women cannot work in the paddy field, because the place of paddy cultivation are far away from home. So it is for the precaution purpose, not a taboo. And a woman can also work in the paddy field during her pollution period. But whenever a person is died in the village, the entire villagers will not go to the paddy field. Because, it is a pollution period for the entire village. They had to visit the deceased person house and help the family in every aspects until the last rituals is completed, which is why it is regarded as taboo to go to the paddy field and work on it during such pollution period.

Therefore after the harvesting of the paddy, there is important rituals to be performed called 'Rit Anglong'. During the performance of these rituals only male members are allowed to attend. And this ritual is usually performed near the paddy cultivated area. However, no females are allowed to attend the rituals or even eat the sacrifices meat of the fowl. All the necessary work related with the rituals are done by male members only. They had to pound the paddy and take the hay to the 'Dovan' (Sacred place for performing rituals) and the rice also had to cook by male members for the offerings to such particular deity.

During settled cultivation or paddy cultivation, the females are not allowed to till or plough the soil with that of oxen. It is strictly prohibited. But she can dig or dug the cultivated area with spade or other implements. Ploughing or tilling the soil with oxen is totally prohibited because it is an ancestor belief that if a female plough or till the soil then the production of paddy will not increase and the consumption may not last for long. Therefore, a female is not supposed to touch the ploughing implements called "Lang-noi" and "Mui". But the other part of work related to settled agriculture can be done all together. Therefore, during a settled cultivation also a woman can work in the paddy field during her pollution period. There is no such restriction regarding the division of labour among the Karbi society. A pregnant woman is not supposed to work in the paddy field because she had to take care of herself so she can't move out and work accordingly.

Whenever a person is died in the village, not only the agricultural work but any auspicious ceremony also can't be performed in the village. Because it is regarded as the pollution period in the entire village. After the last rituals and purification is completed then the agricultural work or settled cultivation can be continue. Therefore the rituals which are to performed are same in Jhum and Settled cultivation. All sort of restriction and prohibition which had to be maintain and the types of rituals to be performed are similar with that of Jhum cultivation.

Selling of Crops

In the Jhum the Karbis produces varieties of crops. The livelihood of the people is completely depending on the Jhum cultivation so they grow every crop which is required in their livelihood. They grow paddy, maize, sesame, and varieties of crops for their requirement. Generally their production is mainly for their consumption purpose. With the emergence of modern economy the people aware about the

importance of economy in the livelihood and they started to keep the wealth for future use.

Basically the Karbi people cultivate for their requisite consumption. But with the monetary economy the people started to sell the crops in the market. Generally the paddies are entirely consumed by them. But some crops are cultivated for the selling motive like- maize, sesame; jute and mustard etc. are the cash crops. Besides these the vegetables are also good item for the earning the money. Some of the cultivator sold their production by themselves. They picked the crops and brought to the market by ingtong, basically by the female and the males are primarily carrying with by-cycles. Those people who are not able to go to the market are sold their crops productions are given to the middle man to sell the crops. In this system the middle man earns the profit, so the farmer doesn't have the actual prizes. The middle man earn the more profit in this system.

The prizes of the crops are not similar or equal. Every crop has different in prizes. The prizes of some crops are higher and some are lower in prizes. Again the prizes of the same crops may be increase or decrease according to the market demand. So there are no fix prizes of any crops.

B] Land Holding System of the Garos

The Community versus Individual Based System

The tribal community management belonged to the informal system that is based on the concept of resource, i.e. livelihood controlled by the community (CPRs), to be used according to its present needs and preserved for posterity. Sharing and equity are its foundations. The principle behind this system is that the resource belongs to the community that includes the present, the past and the future members. So it has to be treated as renewable, i.e. as a livelihood that has come down from the ancestors to be used according to present needs and preserved for posterity according to ecological imperatives. Such systems existed around land, water and other resources (Fernandes 1998: 83-84). The principle of such community based tribal natural resource management systems was inter-generational and intra-generational equity or sustainable use. That is the reason why it had to be treated as livelihood or a resource coming from the ancestors, to be used according to present needs and preserved for posterity i.e. as renewable. This relationship is also called constructive dependence on the resource.

Individual rights are basic to the formal system of property ownership. This system depends on an individual written ownership document which confers on that person the right to use the property according to his/her will, with no obligation to anyone else unless it goes against the right of another individual. Literacy and access to the formal administrative and legal structures are essential to it.

Post-Independence and Interface of Community Ownership to Individual Ownership

From the colonial age the productive capacities of the tribal economy were destroyed through the onslaught of the commercial forces let loose by the British. The Indian State, since independence, has continued this approach in the name of national development. After independence this individual-community interface has taken the form of the Sixth Schedule or recognition of the customary law through amendments to the Constitution. In the Sixth Schedule areas the village court or the District

Autonomous Council (DAC) deals with civil offences. The DAC exists in two districts of Assam and the whole of Meghalaya.

Introduced as a protective measure, the Sixth Schedule has been superimposed on their tradition. It recognizes community ownership and does not allow non-tribals to acquire land in these areas. However, the administration that is in charge of these areas has an individual orientation. Its main reason is that though on paper any alienation needs the consent of the community, in practice the administration treats the *gaonburah* (village leader) as the owner and negotiates land deals only with him. Secondly, the State bodies introduce commercial crops for which they give subsidies and financial institutions give loans only to individuals, understood as heads of families. In most cases they are men.

That lays the foundation of land alienation. Within the tribe it takes the form of land sale or mortgaging to others from the same community, thus sharpening the class divide among them. It has even given rise to absentee landlordism. Thus with the intensification of the commercial processes and globalization, such alienation is likely to grow leading to greater hardships. Outside the tribe it involves non-tribals taking over land either through mortgage or through encroachment (Fernandes and Pereira 2005: 126-127).

Consequences of Interface

In the course present study it was found many examples of the ill effects of such an interface. In the Garo Hills, for example, the tradition was of community ownership. Their matrilineal system is built on land inheritance through the female line. By issuing *pattas*, the modern institutions recognize man as the landholder and that affects the very foundation of the matrilineal system. In the early 1990s, the administration encouraged the people to plant rubber. The financial institutions and banks give loans only to *patta* holders. Those without the *pattas* are not given subsidy and financial help. Even the DAC that should have safeguarded the *A-king* land, supported this approach and issued *pattas* liberally to the CPRs thus depriving the poor of their livelihood. The transfer of *a-king** land to any individual or even to the State goes against the Garo customary practices (Marak 2000: 185-186). In this case the administration recognized the individual owner as man and considered him the head of the family. That strengthened the process of male domination.

Thus class formation and strengthening of patriarchy go hand in hand. A recent study of changing land relations (Fernades and Pereira 2004: 148-149) showed that 79 of the 100 families studied in East Garo Hills had *pattas* against only one out of 20 in West Garo Hills where the community tradition remains strong. This shows that the process of individualization is strong among the Garos.

The first trend is a contradiction arising between the two systems and the ill effects of imposing the individual based laws and economy on the community based informal societies. Such an imposition results in an encounter of unequals. The individual-based administration encourages the processes leading to a *patta* that is alien to their culture. It is such modernization without protective measures that turns land that was their livelihood and the centre of their culture and identity into a commodity to be sold or leased to the highest bidder. Their communities begin to lose the sacredness attached to it in their tradition and a new worldview emerges that they are not familiar with, as seen among others, in the fact that much of the mortgaging and sale is within

the community. One of its results is class formation in their egalitarian societies. Imposition of such modernisation forces the tribal and other traditional communities to switch over to a new lifestyle based on a different set of norms, it results in their socio-economic and cultural degradation and depletion of the natural resources.

Role of Globalization in the Context of Land Holding Pattern

The forces of globalization have intensified these processes. It is the third phase that began with the colonial age and results in the further integration of the informal economy into the formal one on the terms of the latter (Amin 1999: 23-25). The first two phases had begun the process of turning land that is their livelihood into a commodity. We have also seen that it has resulted in their impoverishment. Globalisation in its present form strengthens the individual hold and results in monopolisation.

In other words, the first thrust of globalisation is massive land acquisition purely for private profit. Such privatisation is both of land and of water. So a large number of tribal and riverine communities will be affected. Equity cannot depend either on keeping tribal traditions intact or on processes that bring about impoverishment. That is where one needs to question the thinking behind globalisation that is presented as the market directed economy. Thus simultaneously consumerism became assimilated with individualism. It is resource intensive and the attack will be on the region's land, water and biodiversity that are the people's livelihood.

[IV] GENERAL OBSERVATION

Economy is considered as the backbone of any society. The distribution of economic resources fulfills the common minimum livelihood requisites of the people in any society. The productions related with the economic pursuits are intimately associated with the application of technological devices. A technology may be simple or complex, but it plays a key role in the context of harnessing energy, which ultimately generates the production. In this context environment plays a very crucial role. According to various ecological set up the natural produces become variable too. Particularly in case of simple societies and rural communities, such natural resources are utilized as the prime raw material for their traditional economic organization. It is mostly conducted and confined within their territory. If we think about the rural development in India, then foremostly the base of rural economy is needed to be strengthened. In this regard the natural resources can be utilized in a much wider context as the prime raw material to generate a major source of rural economic pursuit. As both the resource and the labour can be obtained within the local territory so it has obviously much higher prospect as a major source of income for the rural people. North-East India is recognized as the land of forest based natural resources. Every aspect of livelihood and settlement, particularly in case of the tribal people are intimately associated with the forest and natural resources. The bamboo and cane are one of the most abundant natural produces of the said region. It is used by the concerned people in multifarious ways. In one hand it is used as household material cultural implement and on the other hand it provides the scope of cash earning for them. In many cases it is the main source of income for the studied people, particularly to them who are devoid of any agricultural land or they were not in a situation to conduct the daily agricultural work. In such cases the cottage industry and handicraft work generates a major alternative source of earning for them. It used to provide them the

daily livelihood requisite both in the form of usable objects as well as in the mode of cash earning. In rural India unemployment and several other problems have emerged as a major hindrance to social development. In this context, regional resource based traditional occupational pursuits can generate a major source of self earning for them. To a certain context it may secure the economic backbone of the concerned families. In Northeast India the traditional economic organizations of different tribal groups like the Garo, Khasi, Mishing, Naga, Kuki, Adi, Nishi, Apatani, Riang, Dimasa etc. were intimately depended upon locally available environmental resources. In such societies the production was intimately associated with hard manual labour and the entire family used to work as a productive unit.

Particularly in case of the Karbis it has been noticed that, the concerned people had utilized the natural resources to generate their own source of income. It had given them a major scope to support their family economically. Thus, it can be summarized that, particularly among the tribal societies, the utilization of natural resources are intimately associated with their traditional economic organization with the help of indigenous technology. Both the male and female folk of the said society played a crucial role in it. Such produces generated a regular source of income for them and may play a vital role in their economic empowerment.

It can be summarized that, the traditional land holding system of the Garos was associated with the egalitarian social practise and sustainable utilization of resources among the community members. Their economic organization was also intimately associated with the social institution and the cultural tradition prevalent through the lineage system. Their traditional land distribution system, economic organizations are an integral part of their cultural tradition which ultimately maintained the spirit of egalitarianism in their society. However as society is regarded as a dynamic process, thus it consequently generates the cultural dynamism to a greater context.

Among the studied people matrilineal system and community ownership of land was the cultural tradition. However due to the impact of colonial rule and thereafter due to the capitalistic perspective of Globalization, as well as certain modern administrative system, a number of changes can be noticed in their traditional economic organization, particularly associated to their land holding system. It generated the profit motive in their economic organization and simultaneously created a major transformation in the traditional land holding pattern from the community ownership to the individual ownership. Further, it had started to confine the economic authority primarily among the male members of the family. Moreover, it had started to generate the class formation on the basis of ownership of land even within their clan and lineage members. At the familial level it has subjugated the position of women. Thus it can be concluded that, among the studied people Globalization has emerged as a major force which generated a gradual process to change their traditional land holding pattern and simultaneously it had framed class distinction as well as gender discrimination within the studied people to a certain extent.

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