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## AN ANTHROPOLOGICAL PERSPECTIVE ON SHIFTING CULTIVATION : A Case Study of Khoriya Cultivation in the Arun Valley of Eastern Nepal

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Shifting cultivation, in general, is a system of farming in which fields are prepared by cutting down the natural vegetations, letting it dry and burning it off. This technique serves to clear the field and enrich the soil with nutrients from the ash. Shifting cultivation fields are generally used not more than two years at a time, after which the farmers move to a new area and repeat the same process.

The practice of shifting cultivation is accepted as an early stage of the agricultural evolution. This form of cultivation is still widely practised in different parts of the world. As this practice dates back to the earliest times, it is thus regarded as primitive and archaic, and thereby it is said to have 'survived longest' (Rolwey-Conewy 1984:85).

The shifting field agriculture is characterised by a rotation of fields rather than of crops, with short period of cropping alternating and long fallow period, and clearing by means of slash-and-burn. The practice of shifting cultivation is also referred to as slash-and-burn, swidden agriculture and, so on. In contemporary anthropological work, the term 'swidden' (An old English derivative of 'Swithen', meaning to singe or to burn the surface) has been revived to replace 'shifting cultivation' which connotes the nomadic nature of swidders.

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In Nepal, the shifting cultivation<sup>1</sup> has various local names, such as *Khoriya*, *bhasme*, *lhose*, *jhum*<sup>2</sup>, and, so on. In this study, I have used the local term '*Khoriya*' and the general term 'shifting cultivation' interchangeably. In this article, I intend to review different approaches and perspectives to study the shifting cultivation. Finally, I would present some arguments as the major findings of my own field study (Dhakal 1999) in the Arun valley of eastern Nepal<sup>3</sup>.

The study, as I expect, will shed some light on how the shifting cultivation has been approached and studied. It further intends to enhance the way of understanding how possibly the practice of shifting cultivation might be approached in a particular context.

### Background of the Study

Spencer (1966) observed that 'it is culture and cultural history, rather than physiography, which dictate the broad environmental location of shifting cultivation as a cropping system' (Spencer 1966:29). And many have argued and agreed upon that it is 'a special stage in the evolution from hunting and food gathering to sedentary farming' (Geertz 1974:15), hence, it is an 'ancient', 'primitive system', therefore a 'remnant of the past...' (Spencer 1966: 2,58, Found 1987: 2, Keesing & Strathern 1998: 89). Spencer further maintains that 'there are evidences to suggest that it spread progressively across almost the whole of southern and eastern Asia, Europe, and humid Africa in the early stage of settlement of these regions by agricultural folk' (1966: 4).

Although there is a long history of the practice of shifting cultivation, very little has been studied or explored in the anthropological context. Even up to the present, very little is known about the geographical range, characteristics, socio-cultural as well as ideological contexts, and diversity and dynamics of shifting cultivation. This is because the studies of shifting cultivation have

been limited to simple description of practices and its ecological consequences. There has been very little attempt to compare, analyse, and classify them.

In Nepal very few studies have been carried out with regard to the shifting cultivation (Shrestha 1989, Bajracharya et. al. 1993, Subedi 1994). These studies are basically concerned with the ecological and economic aspects of the shifting cultivation. These studies hardly look shifting cultivation as an integral part of social cultural practices with a cultural historical perspective. Therefore, efforts have yet to be made in order to understand shifting cultivation as a whole system of deriving a living from a particular environment

### Shifting Cultivation and Evolution of Agriculture: An Overview

It is certainly not an easy task to trace its historical background. However, it is argued that this type of agriculture was the simplest form of agriculture and was practised by the earliest farmers. Today, such a different type of agricultural system can be observed throughout the globe in the tropical areas. The practice, however, varies greatly from place to place and from one group of people to another. Terry B. Grandstaff (1981) argues that the people who have used this form of cultivation for a long time have developed a highly rational system.

Generally, the practice of shifting cultivation is viewed as 'a technology that was practised in virtually every arable area of the earth during earlier historical periods but today survives as a major food-producing method only in tropical region' (Padoch & Vayda 1983:302). Some even view that in terms of land use pattern shifting cultivation evolved to circumvent major problems of tropical agriculture like soil erosion, low nutrient status and pest pressure (Spencer 1966). In defence of this line of logic, Subash-Chandran maintains that the brief period of utilisation, small size of the plots and far-reaching preservation of the original surface roughness and soil texture due to residual tree stumps, absence of levelling prevent intensive erosion (Subash Chandran 1998:675).

Geertz summarised the distinctive features of shifting cultivation as, i. it is practised on a very poor soils, ii. it represents an elementary agricultural technique which utilises no tool except the axe and the hoe, iii. it is marked by a low density of population, and, iv. it involves a low level of consumption (Geertz 1974:15).

This type of cultivation is thus associated with traditional societies of low population density in regions of low soil fertility, such

<sup>1</sup> In this article, the term shifting cultivation should not be understood as crop shifting, i.e. a different crop is cultivated each year on the same plot. The term should neither be taken as the settlement shifting as in the case of the nomads who keep on moving from one place to another and finding new cultivation areas along with the new settlement. The term shifting cultivation in this study refers to the way the permanent settlers use different plots each year on rotation basis for crop cultivation.

<sup>2</sup> Italicised words refer to Nepalese or local Sherpa terms. However, these terms are defined and explained in English as well, wherever they are used for the first time.

<sup>3</sup> The fieldwork was carried out in the Mude of Num Village Development Committee of Sankhuwasabha district of Eastern Nepal. The data were basically used for my M Phil thesis submitted in the University of Bergen, Norway in May, 1999.

as the Amazon rainforest. Though recent theories have suggested that the system of shifting agriculture combined with hunting and gathering strategies may, in fact, permit much greater population densities and a greater degree of sedentarism and varying degree of intensification of labour input than was previously believed (Found 1987:3, Keesing & Strathern 1998:103).

However, shifting cultivators are considered to be one of the primary agents for transforming the forested landscape into cultivable and cultural one. Historically, therefore, shifting cultivation has been one of the processes transforming wild, forested landscape into cultural landscape.

In a strict epistemological sense, we can not understand the past except via our present knowledge of process and events operating in the present (Watson 1979:1). This does not mean that every trait that existed in the past must have an analogy in the present. Nevertheless, the study like this can provide a wider socio-cultural context to analyse and explain archaeological data from specific sites. In the similar manner, the study might be used as a case study to test the hypothetical explanation of processes and procedures thought to have occurred in specific prehistoric communities.

#### **Shifting Cultivation and Ecological Issues**

In ecological terms, shifting cultivation is said to be highly integrated into the natural tropical forest ecosystem (Seymour & Smith 1996:272). It has thus been described as a 'mimetic' system, with principles radically different from those of intensive agricultural strategies that act to transform totally the natural landscape. However, it is the only ecologically viable agricultural strategy to have been developed thus far on a large scale in the tropical rainforest or in similar ecological conditions. And, attempts to apply intensive agricultural techniques brought from other regions have generally been failures, resulting only in the destruction of the ecological balance of the natural rainforest (*Ibid*).

The recent ecological studies have started appreciating the resource management system of traditional societies (Cf. Subash Chandran 1998:689). Similarly, other numerous studies have shown that in many instances swiddening does neither exhaust soil nutrients nor leads to excessive erosion. Increasingly, new field studies suggest that the shifting cultivation is a way of farming particularly well suited to the conditions often characteristic of humid tropical areas: rather infertile soils, biotic stores of nutrients, intense competition of weed

species and attacks by pests and diseases and unavailability of animal manure as well as of chemical fertilisers and pesticides (Padoch & Viadya 1983:302).

Hence, the most distinctive positive characteristic feature of swidden agriculture is that it is integrated into the pre-existing natural ecosystem. It has been argued that the shifting cultivation practice maintains a state of dynamic equilibrium with the natural environment (Geertz 1974:16, Found 1987:13, Keesing & Strathern 1998:91). According to Geertz, 'any form of agriculture represents an effort to alter a given ecosystem in such a way as to increase the flow of energy to man, but a swidden through a canny imitation of it' (1974: 16). Thus, in most of the cases, shifting cultivation is usually a highly effective and balanced ecological adaptation. It merely alters the indigenous ecosystem, but on the other hand, efforts to introduce intensive agriculture in tropical forest have usually been disastrous. Ecological balance is crucially important in swidden agriculture.

#### **Anthropological Perspectives on Shifting Cultivation**

Shifting cultivation finds many expressions among different peoples. There is thus no single best way to classify shifting cultivation. It is practised from sea level to 4,000 m above the sea level elevation; in parts of south-eastern Tibet and the upper main land of Southeast Asia (Spencer 1966:13). Therefore, classification as well as other subsequent studies must be done in relation to the problem identified with each type.

From an anthropological perspective, however, two general points of view can be made. First, the normative view, which focuses on the negative aspects of shifting cultivation, i.e. low productivity, extensive lands requirement, and unwanted environmental effects.

And, second focuses on shifting cultivation as a rational response to the prevailing ecological and cultural and economic conditions (Sandburkt: n.d.). The two points of views need not be contradictory, as the first focuses on the desirability and rationality of shifting cultivation from society's view point, and the second focuses more on the rationality from the individual farmer's view.

On the basis of these viewpoints, there have been three distinct approaches applied to the study of shifting cultivation (Found 1987). They are ecological or environmental approach, cultural-historical approach, and, as a response to economic factors.

The first approach, i.e. the common ecological approach is based on the premise that shifting cultivation exists in a state of

balance with the natural environment (Found 1987:13). Some areas of Southeast Asia have experienced shifting cultivation as productive, practical and adaptive to the physical environment (Spencer 1966:20). Many studies with this approach (e.g. Found 1987, Keesing & Strathern 1998, Spencer 1966) have been pointed out both negative and positive consequences with regard to the production in relation to labour input and land requirement, and its impact on the ecology.

Anthropologists often study shifting cultivation with the cultural-historical viewpoint and relate shifting cultivation to types or stages of human culture. They point out that most shifting-cultivators use primitive tools, and that they belong to cultures that are otherwise primitive in a number of ways. Some view slash and burn agriculture more as an ancient practice, rooted in history, than a contemporary means of coping with the need to produce food (Found 1987:17-18).

It is possible, therefore, to explain the current extent and location of slash and burn agriculture through an analysis of their history and culture. And, such people who have a long experience of the cultivation will have the appropriate tools, the organisation and the knowledge needed to operate effectively over the long periods (Grandstaff 1981:28).

The third approach, i.e. economic analysis of shifting cultivation, on both levels the entire land economy or on the individual farmer/decision maker. Angelsen's economic model and case studies from Indonesia can be presented as a good example of economic analysis of shifting cultivation (see Angelsen: 1996). However, I would argue that a different but a combined approach could be appropriate to address the issue in question.

Researchers are of the opinion that agricultural encroachment by shifting cultivators occupies a central position in the debate on tropical deforestation. Shifting cultivators are often seen as the primary agents of tropical deforestation in developing countries; estimates of their share range as high as 45% (UNEP 1992) to 60% (Myers 1992) (c.f. Angelsen 1994:1). From 6.5 million ha. in 1964, the total forest area is estimated to have declined to around 5.5 million ha. in late 1980s. Thus, the current extent of shifting cultivation has been calculated to be about 8.3 percent of the tropical land area (Found 1987: 1). The practice is also increasing, by over one percent in land area per year, according to the FAO (Ibid.).

The higher rate of deforestation and degradation in Nepal is attributed to encroachment upon forested land for agriculture,

settlement and shifting cultivation. The deterioration of micro-biological conditions, surface runoff, ground water runoff and loss of soil fertility are said to be some of the obvious consequences of the slash-and-burn cultivation in Nepalese hills (Shrestha 1989:64).

Shifting cultivators are accused of the subsequent loss of biodiversity maintenance and carbon storage (Angelsen 1994:1). And, a general attitude prevails that burning is just an ill practice, which destroys organic matter on the land (Found 1987:3). The practice of shifting cultivation in Nepal is characterised by a highly labour intensive and land extensive form of cultivation. It is said to have been most detrimental to forest ecology and contributes to total extinction of a large number of biological species (Shrestha 1989:63).

But arguments presented by Eckholm (quoted by Grandstaff 1981) pointed out that in many areas of tropics "no alternative food production system to shifting cultivation has yet biologically and economically proven workable" (Grandstaff 1981:28).

The effects of shifting cultivation differ in accordance with the varying practices. The lack of knowledge of the characteristics of its several types has proved to be the principal obstacle in determining the extent of ecological problems caused by the shifting cultivation. Padoch and Vayda (1983) maintain that 'criticism of the traditional resource use patterns in tropics as wasteful and inefficient was predominant of the past, but in recent years there have been views to praise of the stability and conservativeness of these technologies. Such revised views of primitive man as conservator are not surprising and are at least partially justified. They reflect the realisation that traditional resource users usually allowed tropical forest to survive or at least to regenerate largely, whereas modern fossil fuel-using man is expected to destroy these forest within the next century' (301).

The specific form that a practice of shifting cultivation may exhibit within a given geographical or cultural province depends on the extent of available land, labour and capital; the local settlement pattern and the degree of political and social integration with the other segments of the larger society. A large number of such variables, more specifically agronomic variables, such as the kinds of principal crops raised, type of crop associations and succession, crop fallow time rotations, the dispersal of shifting cultivation, the presence of livestock, the use of specific tools and techniques including special methods of soil treatment, the vegetation cover of land cleared,

climate, soil conditions, and topography determine the types of shifting cultivation (Conklin 1961:27).

Shifting cultivation is nevertheless a response of the tribal people of the hill areas to the problem of erosion of fertile topsoil from steep slopes. This technique is perhaps more practical than actual ploughing and tilling on steep slopes, where any mechanical disturbances will result in washing away of the fertile top-soil. Besides it has also been experienced by downhill farmers, that the slash-and-burn practice on mountain-tops enriches their fields (Shrestha: 1989).

However, it is not an attempt to overlook the fact the greater the increase in population, the greater the demands for fuel, the desire to extend cultivation, cutting down forests. And to a little extent this particular type of agriculture is being used as a transitional step to opening up land that should rationally be brought under permanent cultivation.

Hence, it is evident that the study and analysis of the complex relation in shifting cultivation can profit greatly from a combined ethnographic and ecological approach. Therefore, it is appropriate to approach the topic through an ecologically-oriented investigation in an ethnographic context.

#### **Major Findings of the Case Study: Some Discussions**

In the following paragraphs, I will present some of the findings of my own study conducted in 1997-98 in the Arun Valley of Eastern Nepal (Cf. Dhakal 1999). The data were collected in three small settlements of Sherpas. On the basis of empirical evidences, I have tried to understand the shifting cultivation practice in a broader socio-cultural context of the Sherpas. In the course, of study certain observations appear prominent. These observations are, as they appear to me, of anthropological significance.

My intention to present these finding here, therefore, is to argue that shifting cultivation in Nepal, or any geographical area for that matter, should be studied in its particularity and specificity.

##### **i. Limitation of Evolutionary Model of Agriculture**

The crop cultivation could have entered into Nepal and consequently to the study area some 2000 years ago at least from two frontiers; from the southern plain and the northern border (See Dhakal 1999). The earliest stages of cultivation could have been shifting cultivation, which was followed by a more complex technology of cultivation known as the permanent cultivation.

As I have observed in the study area, there are a few cases of transforming the shifting cultivation land into the permanent cultivation land, which is not a common practice in the study area. On the other hand there are several cases of abandonment of once cultivated *bari* land, and is eventually used for *Khoriya* cultivation.

It is also possible that, as Rowley-Conwy (1984:89) argues for European case, slash-and-burn could be viewed as one of the series of technical solution to a particular problem, like, problems posed by their immediate ecology and so on, - not as a remnant from some once - universal stage of agriculture.

Thus, the farmers not necessarily shift from one particular type of cultivation practise to another in either way. The empirical evidences in the study area show that the shifting cultivation as well as the permanent type (rain-fed or and irrigated) of agriculture are practised simultaneously by the same cultivators.

##### **ii. Shifting Cultivation is not Necessarily a Function of Population**

Several anthropologists, for example, Boserup (1965 & 1981) and Geertz (1974) argue that the transition from shifting cultivation to the intensification of agriculture is brought about by the growing population pressure, technological development and non-human environment.

Even though, people have been practising shifting cultivation in a particular area for generations, they may adopt other means or strategies of coping to support their growing population over the course of time. Farmers incline towards cash crops, e.g. cardamom farming in the study area, they keep herds of sheep or cattle as their important economic activity and other seasonal wage labour and so on.

Thus, any particular farming community practising shifting cultivation may seek the other alternative to cope with their growing population. It is thus not necessarily true that they put more pressure on land, which ultimately compels them to abandon the shifting cultivation or turn the field into permanent or intensive cultivation field.

Empirical evidences do not seem to validate the predominant notion of unilinear advancement of agricultural development (Cf.. Boserup: 1965&1981, Geertz: 1974, Sherratt: 1994, Whittle: 1994, Renfrew & Bahn: 1993 etc). According to the prevalent unilinear evolutionary model, the shifting cultivation is eventually outmoded and replaced by the permanent cultivation, technically, technologically

and historically. The empirical evidences in my study seem to contradict with this model of explaining and understanding the development of agriculture.

### iii. Two Types of Cultivation Systems not Necessarily Have to Have Two Exclusively Corresponding Social Forms

Geertz (1974) has pointed out that two types of agricultural systems, shifting and permanent are essentially related to two exclusively different forms of society. According to this approach, the communities practising shifting cultivation have primitive and elementary forms of technology and simple forms of social organisation. On the other hand, the communities with the permanent cultivation have the advanced form of technology and a complex form of social organisation. His studies tend to suggest that one form of society excludes the practice of the other type of cultivation, and vice versa.

It is evident in my study that the practice of these two different types of agriculture has been carried out by the same community at the same time. For instance, the same labour/ social institution, in particular the *parma* system, conduct the agricultural tasks for both the permanent and shifting cultivation.

### iv. Abolition of Communal Rights Over Land and Declining of the Shifting Cultivation

The land tenure system in the area under study used to be a communal land, or *Kipat*. There used to be a common ownership over the land but individual ownership of the crops, until very recently. The government decided to abolish the communal right over the land in 1964 AD, and ultimately the law was implemented effectively in the study area only after the latest land survey which was concluded in 1995 AD, long time after its promulgation. According to the law, people could own only the limited amount of land.

For the people in the study area, there used to be communal ownership over the land, but the abolition of communal rights over the land made them limit their *Khoriya*. They think the land now may not be sufficient for the rotation for the shifting cultivation. Therefore, many of them have already reduced their *Khoriya* cultivation land. Thus, not due to the technological, economic or population factors, but due to the state-led land tenure policy which limited the farmers' right over the land, reduced the shifting cultivation in the study area.

### v. Socio-cultural and Ritual Contexts of Shifting Cultivation

The evidences from the field show that shifting cultivation is not only an agro-economic activity or utilisation pattern of resources like forest and land, rather it is also closely integrated with the wider socio-cultural systems.

Hence the shifting cultivation practice is bound to cultural practices and beliefs. If we keep the cultural and social context aside, we cannot understand the shifting cultivation system fully. Here, I shall discuss some of the socio-cultural contexts of the shifting cultivation in general.

#### a. The Sherpa Time Scheme Corresponds to Shifting Cultivation Activities

According to the Sherpa time scheme, there is a cycle of twelve years period. And, there used to be a fallow period of twelve years corresponding to the twelve years cycle. Most of the elderly people even today recall their past events either connecting event with the shifting cultivation plots they had cleared in that particular year or simply associating the events with the animals that stands for that particular year.

The time scheme of the Sherpas also regulates certain activities in certain time period of the year. For examples, they are not allowed to clear their *Khoriya* plots during spring, because wood activities, there by, cutting and slashing, are not allowed in spring. Similarly, burning activities are prohibited in summer time. That means, they can neither clear, i.e. slashing and cutting, nor can they burn their *Khoriya* plots during spring and summer respectively. Thus for them activities are not only confined within space but also within time (cf. Dhakal 1999).

Thus, the phenomenon of shifting cultivation has remained as an integral part of their socio-cultural processes. As we observed that shifting cultivation also is regulated and ritualised by their own time schemes. *Khoriya* becomes the point of reference to other social and cultural as well as personal events. It is tempting to suggest that shifting cultivation is not merely an economic (food) production activity, but also generates, enhance and maintains the cultural knowledge.

### b. *Khoriya Pooja*: Worshipping of Shifting Cultivation

The *Khoriya Pooja*<sup>4</sup> (also called *Bali pooja*) is a major agricultural ritual among the Sherpas. When asked different men and women to explain these rituals, different persons explained it in different ways. However, a common explanation was - one has to be grateful towards the provider, the god of land. They explained that even if we toil hard to produce something, there has to be someone (the god) to reward our hard work and to protect the reward, the crops in this particular case. For them, there is only the *Lha*, the gods of land, who reward and guard their agricultural products. Therefore, they have to be thankful to the *Lha* in one or another ways.

Even though, I have limited my discussion to agricultural rituals, the other mundane activities of the Sherpas are also regulated and dictated by similar rituals and symbolism.

The ritual of *Khoriya Pooja* (or *Bali pooja*) also has other implications. For example, they think everyone regardless of sex and age, are equal. This ideology is well manifested in the ritual contexts of *Bali Pooja* (or *Khoriya Pooja*). All the members of the community, regardless of age and sex, will have equal share of contribution in the *pooja*, and are distributed equally whatever prepared on that day (Cf. Dhakal 1999). Thus, their egalitarian ideology not necessarily exists explicitly in the practise, but are preserved in symbolic level in the contexts of rituals.

Another noteworthy context of ritual with regard to the shifting cultivation is ritual of apology (Cf. Dhakal 1999). During the burning for the shifting cultivation, several animals and insects are killed by fire. The Sherpas, being Buddhist, have a profound belief that killing is an act of committing the sin. So, to get rid of such a sin, they offer butter lamps and ask for apology through a ritual of apology.

<sup>4</sup> *Khoriya pooja* is performed in one of the "Budhabars" (Wednesdays) of month of *Asahdh* (June-July). For the Pooja the Lama (a Buddhist priest) decides the date and all the households of the settlements are informed well in advance. *Pooja* is performed in a open public place which is not cultivated, but can be used for other purposes. On the day of *pooja* all the members of the households are gathered together from early in the morning. For the *pooja* a sample of everything that is grown in ones own land is brought to offer to the *lha*, i.e. god of land. *Pooja* is performed with drinking, merry makings, and sometimes making contracts for the land for the *khoriya* for the following year and other community matters.

This observation to me is an indication of how the cultivation practice has been incorporated within their religious and cultural practices. This is just an example of how the people justify their acts with regard to shifting cultivation through the means of ritual of apology.

### c. The Sacred and Secular: the Symbolic Constructions of Space

One major criterion for the site selection for the cultivation is based on cultural and religious practices of the people. For example, sacred groves and the place for *Khoriya Pooja* should not be brought under cultivation.

The sacred groves are considered to be absolutely sacred, utilisation of the area for other than religious purposes is not permitted. Whereas place for *Khoriya Pooja* is originally a non-sacred (secular) place. The place is turned into a sacred place during the *Pooja* or the ritual events.

The, ritual spaces appear to be in two categories, one absolute sacred place, which cannot be utilised for other normal activities, but religious rituals, e.g. sacred groves. Where as other spaces are provisionally defined as a ritual place, e.g. the area where *Khoriya Pooja* is performed.

From this, it can be suggested that the provisional sacred place can be both sacred or secular depending on whether the space is used for ritual performance. Thus a place is transgressed from sacred to secular or vice versa, through the religious experiences of the people or some specific ritual context. Therefore, a sacred place is more like a symbolically created space in a certain context in certain time.

### Conclusion

The empirical evidences from the Arun Valley of Eastern Nepal indicate that the understanding and explaining of shifting cultivation as the primitive, elementary and earliest stage of agricultural evolution, which is surpassed by the permanent cultivation, is inadequate.

Likewise, the study suggests, (in the similar line of logic presented by Lansing: 1991, Spencer: 1966, Conklin: 1961) that shifting cultivation is not merely an agro-economic activity. It is an integral part of the socio-cultural processes of that particular

community, and its rationale and meanings are inseparably interwoven with the cultural and social practices.

However, it is not my intention to maintain that possible implications of the study can be generalised in all the contexts of the study of shifting cultivation. But, certainly to provoke the researchers to look at the different dimensions of shifting cultivation, who wish to carry out a similar study in the future.

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