Working Paper Series

IMPACT OF AGRICULTURAL TRANSITION ON SOCIO-ECONOMIC STRUCTURE OF THE TRIBALS: A CASE STUDY OF THE ADIS OF ARUNACHAL PRADESH

04

Omeo Kumar Das Institute of
Social Change and Development
Guwahati : Assam

Ratna Bhuyan

Working Paper 04

IMPACT OF AGRICULTURAL TRANSITION ON SOCIO-ECONOMIC STRUCTURE OF THE TRIBALS: A CASE STUDY OF THE ADIS OF ARUNACHAL PRADESH

Ratna Bhuyan*

Omeo Kumar Das Institute of Social Change and Development
Guwahati, Assam

*Research Assistant, Centre for Northeast India, South and Southeast Asia Studies [CENISEAS], Omeo Kumar Das Institute of Social Change and Development.

WORKING PAPER SERIES of
OKDISCD
Guwahati, Assam, India.

WP No. 04

First Published:
August, 2004

Published by:
Omeo Kumar Das Institute of Social Change and Development
39, Sapta Swahid Path, Dispur, Guwahati, Assam
E-mail: dkdscd@yahoo.co.in;
Website: www.okdiscd.org; www.okdiscd.net

Price: Rs. 40/-

Printed at:
Everywhere, Dispur, Guwahati-6
Cell: 98640-82516
E-mail: everywhere_ghy@yahoo.co.in

"Natural Resources determine the course of development and constitute the challenge which may not be accepted by the human mind".

- W. Arthur Lewis[1]

[1] W.Arthur Lewis, The Theory of Economic Growth, p. 52, Allen and Unwin

PREFACE

The present work is a year's effort undertaken as a Junior Research Fellow under the Omeo Kumar Das Institute of Social Change and Development, Guwahati during the session 2002-2003. This work is a humble attempt to relate the socio-economic changes to the agricultural transition taking place in the tribal societies of the Adis of Arunachal Pradesh.

I am deeply indebted to Omeo Kumar Das Institute of Social Change and Development, for providing me the opportunity to conduct this study. My heartfelt gratitude goes to the Director of the Institute, Professor Abu Nasar Saied Ahmed for giving me this opportunity to carry out this project.

I am extremely grateful to my supervisor Dr. Bhupen Sarmah, Reader, OKDISCD, for his whole hearted cooperation and guidance throughout the study.

I would also like to thank the respondents of my study area for their help and support. Special thanks to Mr. and Mrs. Enya Riba and Nyajum Riba for their assistance in the field work.

I thank Mr. Gajendra Ballav Devchoudhury, the Librarian of the Institute for his help in finding the various source materials for the study.

Last but not the least, I express my sincere gratitude to my family members, fellow research scholars and the staff of OKDISCD for their support.

Guwahati
19th August 2004

Ratna Bhuyan

CONTENTS

LIST OF TABLES

CHAPATER – 1

TRIBAL DEVELOPMENT – A SOCIO-ECONOMIC PERSPECTIVE

A tribal community is said to represent stage of socio- economic life with hunting and food gathering as the chief occupations. In the words of A. B. Bardhan, a tribe is a "Course of a socio-cultural entity at a definite historical stage of development. It is a single endogamous community with a cultural and psychological make-up going back into a distant historical past" [George, Sreekumar: 1994]. These tribal societies are self–contained units, but, they have moved from homogeneity to a considerable degree of heterogeneity. In this context, the first important fact about the contemporary tribal situation is the socio-economic transformation of a single system into a complex one [Das: 1993]. But, despite the process of social and economic transformation being a universal phenomenon, the pace of change and development has been different at different times in different communities. "Social change moves like underground river, obeying its own laws or those of economic changes..." [Mibang: 1994]. Change is the law of nature, like most things in this world, societies also undergo changes of various types and seldom remain static in a fast moving universe. Social and economic changes become necessary to enable people to march with the times and register progress.

The tribal population is found in almost all parts of the world. India has the largest concentration of tribal population. The tribes are the autochthonous population of the land who are believed to be the earliest settlers in Indian peninsula. They are generally called the adivasis, implying original inhabitants. There are more than four–hundred groups in Indian society which are officially designated as scheduled tribes. These groups have all been undergoing changes. The social organisation of the tribal people is concerned with social activities, relations and behaviour which can be seen through their social institutions like family, marriage, clan, village council, customary practices and the dormitory system. These social organisations of the tribals are experiencing the impact of the process of change leading to fast socio–economic structural transformation.

1.1 Role of agricultural transition in socio-economic transformation

Land is the mainstay of most of the tribal communities at their present stage of

development and more than 90 percent of them are dependent on agriculture and allied activities. Their economy is primarily agro-based. Land is believed to be the only tangible asset of a tribal family. They have emotional attachment to land. In the past, they resorted to shifting cultivation, but many of them have become primarily settled cultivators in the recent past. However, shifting cultivation as the subsidiary means of livelihood is also widespread. In all the tribal societies, "shifting cultivation marks a stage of transition from hunting and food–gathering to settled agriculture" [Gohain: 1994]. Since independence, the process of transformation has intensified in the tribal communities of India. Of particular interest is the extension of agriculture technology into the tribal economies of North –East India.

In the hilly sub–region of North-East India consisting of Arunachal Pradesh, Nagaland, Mizoram, the North-Cachar hills, the Mikir hills, the Khasi–Jayantia hills, most of the producers practised jhum cultivation. Such a system of production was a typical case predominantly for self–consumption only and the system of exchange was almost non–existent. There was no production and accumulation of effective surplus and as such no development and growth. The prevailing means and methods of production held the producer, as it were "in iron fetters fast in his trucks". With the introduction of new technology, shifting cultivation is increasingly combined with terrace and wet–cultivation. It is a common knowledge that within a relatively short span of time, this part of the country, the land and its people have experienced phenomenal change. Change has prominently touched those inhabiting the hills as well as those in the valleys. The technological innovations have brought about a change in social relationships. Hunting, food-gathering and shifting cultivation technologies were associated with the communal or collective ownership of land and wet-cultivation are associated with the emerging trends of private ownership of land, increased use of inputs and labourer and the role of markets [Singh: 1982]. It is passing through a dynamic phase of change. The new mode of production and new production relations, the new market, the culture of consumerism, almost every aspect of life has brought a tremendous amount of change in the society of North-East India.

Within the process of social change, the implications of change in social institutions and the structural base of the society are some aspects which are important. The agriculture of the tribals is very closely associated with many social, cultural customs, patterns and even habits. There are a number of social and religious rituals connected with agriculture which explicitly disclose their emotional relation with land and crops. A tribal community generally regarded as a self-contained group may be at shifting cultivation stage or at a gathering and hunting stage. An alternative use of natural resource or a new technology can change these societies. The new technology may have its own logic in terms of social organisation or economic organisation and so on.

The tribal societies may have socio–economic transformation partly by juxtaposition of the traditional communities with other communities or even by autonomous transformation. Not all change is spontaneous and internal to a society. The crux of the present study is to find out the socio-economic transformation through which the tribal societies are passing, is, in any way, influenced by the transition in agriculture, even partly, as agriculture is a tradition, a way of life in these tribal societies.

1.2. A glimpse of the study area based on the issues raised

The tribal societies of the different parts of the country, particularly of Arunachal Pradesh are undergoing a process of transformation from their erstwhile seclusion and backwardness. The people, along with their age-old economic traditions are adapting themselves harmoniously to the fast-changing socio-economic conditions. Agriculture evidently being the mainstay of the people, it determines their socio-economic relations and cultural life.

The state, Arunachal Pradesh of the India Union is the easternmost state and borders the state of Tibet on the North, China on the North and Northeast and Burma on the East. Arunachal Pradesh is extremely rural barring a few towns and is full of hills and valleys. She cradles the habitation of a large number of tribes of mutually unintelligible languages and distinct ways of life.

The Siang Valley, the home of different tribes of Arunachal Pradesh, which occupies the central part of the state is a mountainous region. It is named after the river Siang and is almost entirely populated by the Adi Tribe. This tribe is again sub-divided into different groups, such as, Pasi, Padam, Minyong, Gallong, Bori, Bokar, Karko, Shimong, Pangi, Millong, Ramo, Pailebo and the Tagin. Of these, the Padam, Minyong and the Gallong are the largest groups. Some smaller tribes like Mombas and Khambas inhabit only in parts of Mechuka and Singa circles and the area around Gallong to the far North. A small number of Idus live in the extreme Northeast corner of Siang.

Siang has about 21 percent of the total villages. These villages are very small that contain about 34 percent of the rural population. Almost all the Adis live in villages, and so, agriculture is evidently the mainstay of the people, and it determines the socio-economic relations and cultural life [Dutta Choudhury: 1994]. Jhum or shifting-cultivation is the most common method of agriculture followed widely by the Adis throughout Siang. Jhuming is a co-operative venture in which the villagers assist one another in felling the trees, fencing, etc. The whole fabric of their society, the custom, religion and culture, in short, the ways of life of the people, is interwoven with jhuming, and, the economy based on agriculture has mostly determined the course of their socio-economic structural development.

Adi-Abik, as jhum cultivation is known here, is done extensively. Their calendar year is basically focussed and regulated by jhum-cultivation. However, they are undertaking wet-rice cultivation and also terrace-cultivation in certain pockets. The Gallongs and the Minyongs have made considerable progress towards the development of wet-rice cultivation in their respective areas.

Ownership of land varies extensively across the state. They have individual ownership, clan-ownership and communal or village ownership of land. There is a strong tendency of individual ownership of land which has been further encouraged through the implementation of wet-rice cultivation, terrace-rice cultivation, etc. Moreover, agriculture- both sedentary and shifting cultivation denote important variations in the modes of production. Their significance is in terms of production forces- relief, climate, flora and fauna, production relation, and social-political legal superstructures, organizations and institutions in the state. The interaction of and between the geographical phenomena and succession of productive modes introduced a social change in the state. Again, this transition in agriculture may be one of the dominant factors responsible for the tribals of the Siang district to be drawn into the vortex of market forces.

The Adis have a socio-political institution called the Kebang. It is a village council of elders. There also exists in certain parts of the district a dormitory for the boys which is called the Moshup. With the change in the modes of production and with the surge of socio-economic transformation, these social institutions are on the verge of extinction and decline.

The women hold their own position in the Adi-society. The women are as active in the working fields as their male counterpart. The possession of area under cultivation is not only limited by the family's immediate consumption and replacement needs but also by the family labour. More particularly, it is limited by the number of adult women in the family, who infact are the backbones of agricultural operations, from land preparation and sowing to harvesting of crops. In this way larger is the house community, larger is the area it cultivates. This adds to its social-status [Mishra: 1993].

The Adis are a progressive tribal community, vigorous and resourceful. There is no caste system among these tribals. But a certain type of class distinction did exist in the society. In the Adi society there were slaves who were deprived of political and economic rights. However, this system was abolished a few years back. There is no social hierarchy among the various Adi-groups. The sub-groups are divided into a number of clans. Although economic differences are there, the members of a sub-group enjoy the same social status.

The genius of the indigenous people, the Adis in particular, is an important contributory factor of the remarkable achievements that have been made in various sectors of development. It appears that despite several problems and prolonged backwardness, this tribe is moving on the path of economic and social development.

1.3 Objectives of the study

In view of the preceding discussions, the following objectives have been taken up for study:

- To have an analysis of whether the changing art of cultivation has brought about any changes in the mode of production from archaic form of tillage to mechanised methods of cultivation.
- To analyse whether the change in the art of cultivation has brought about the market forces to play a more dominant role in the Adi society.
- To see the changes which have been introduced in the concept of private property by the changes in the land-use patterns.
- To reflect whether the social institutions and the role of women in the socio-economic structure have undergone any changes with the changes in the mode of production.

1.4 A vivid description of the two villages taken up for the study

The two villages Magir and Siji selected for the study falls under Likabali circle of the West Siang district of Arunachal Pradesh. The Likabali- Gensi foot hill region of the West-Siang district of Arunachal Pradesh has an estimated area of about 1584 sq.km with nearly 72 settlements concentrated on the side facing Assam. It is bounded by parts of Along and Basar circles in the North, Assam in the South and the Siang river and East Siang district in the East. The lower Subansiri district lies in the West and the Upper Subansiri district lies in the North-west.

The two villages Magir and Siji respectively are purposively selected based on their distances from Likabali, the primary focus of movement. Likabali is the gateway to reach the major towns of the West Siang district of Arunachal Pradesh. Magir is situated at 10 Kms and Siji is situated at 19 Kms respectively from the nearest circle headquarters, i.e. Likabali. It is not long since Likabali has been made a separate circle for administrative convenience. Both these villages lie on the way to one of the important towns of Arunachal Pradesh namely, Along.

Surrounded by hills from three sides, Magir is situated a few yards away from the Likabali-Along highway. The road leading to the village is a non-pitched one. The village is comprised of thirteen households. A river called the Gai-nadi runs beside

the village. The people residing in the village are the Gallongs of the Adi-tribe. The houses are scattered at uneven distance without any well-defined boundaries. As no local buses run between Magir and the circle headquarters Likabali, the communication facility is indeed worse. A bus running from Likabali to Gensi is very often used by the villagers to reach their village. Besises, the villagers use the Arunachal State Transport buses and Arunachal State Co-operative buses running long distances as a means of communication to and from the circle headquarters to the village.

Siji is the other sample village located at a distance of 19 Kms from Likabali. The village has been unofficially divided into two parts–Siji and Soi. The lower part of the village located on the left-hand side of the Likabali-Along highway is called Siji. While the upper part, beyond the Gai-nadi is known as Soi. Soi is situated around one and a half Kms away from Siji. A concrete bridge that runs over the Gai-nadi connects both parts of the village. From the highway, one has to walk around half a kilometer to Soi. Soi is situated a top a hill with ups and downs in the gradient. Soi has only six households scattered unevenly. Siji, on the other hand, is situated on the foot-hills. The whole village has thirty households without being demarcated by any boundaries. The only means of communication to and from this village are also the state and the co-operative long distance buses.

1.5 Sampling and methodology

Since the two villages taken up for the study have a few scattered households in each, the study is based on complete enumeration of the two villages. The study is based on both quantitative and qualitative methods. A detailed structured questionnaire has been prepared for the study. Besides, direct interaction with the village head-gams and other elderly people and the younger generation was taken up.

1.6 Review of literature

Tribal studies have come a long way. They are deep, penetrating, analytical and at the same time revealing. In the book Contemporary Society–Tribal Studies volume (2) (1997) edited by George Pfeffer and Deepak Kumar Behera discuss the transition and change in various tribal settlements like those of Karnataka, West Bengal, Assam etc. In Dynamics and Dimensions of Tribal societies: Regional and Indian Perspective (1998), K. N. Sahay discusses the change of identity in some tribal groups in Chotanagpur. In the article Tribal Peasants in Transition: Chittagong Hill Tracts (1979), B. K. Jahangir has tried to give a detailed description of the tribals of Chittagong, the factors behind their transition and their results. One of the dominant modes in which the transformation of the tribal society has been conceived is in terms of the tribe getting absorbed into a society that represents civilization. The

writers have conceptualized diversely the processes of socio-economic changes experienced by the various tribes in contact with non-tribal societies. Besides representing a language, each tribe represents a set of customs, a social organisation and a way of life. A tribe in transition faces problems of various kinds. S. N. Tripathi in his book Tribals in Transition (1999) portrays and evaluates tribal problems and policy paradigms to tackle the problem of backwardness in tribal regions. Rural Transformation in Asia (1991) edited by Jan Bruman and Sudipto Mundle discusses the internal dynamics of rural transformation and the external linkages of rural transformation. It throws light on the changes brought in by the omnipresent role of the state and the class struggle and changing physical possibilities, i.e. changes in natural conditions and endowments as well as the development of productive forces including changes in technologies of production. In Tribal Development in India (2000) M. Soundarapandian selects some tribes like the Paliyars, Badagas, Kotas, Gonds etc. He throws light on their economy, social and cultural life. According to him in order to adjust with the changing situation, they have undergone various socio-cultural changes at the same time retaining their core culture.

Arunachal Pradesh, one of the hill states in India is more exposed to the national and international economy today. In Tribes of Arunachal Pradesh (1995), Padmashri S.S. Shashi, in History and culture of the Adis (1993) written by Dr. Tai Nyori and in Arunachal Pradesh (Land and People) (1994), R. Gopalakrishnan give a vivid description of the state of Arunachal Pradesh and her people and also highlights the role and importance of agriculture in the state. The patterns of change leading to development in the state have been highlighted by B. B. Pandey in Patterns of Change and Potential Development of Arunachal Pradesh (1993). He also tries to explore the development potentiality of the state. These writers in their books have tried to bring into focus one of the beautiful states of North-East India, i.e. Arunachal Pradesh. The various tribes of Arunachal Pradesh, rich in culture, have all traits of rapid and sustained modernization yet retaining the core elements of their rich culture.

Socio-economic change is brought about by internal as well as external factors. A. P. Sinha in his book Changing North-East India (1986) has tried to analyse the social change in North-East India. According to him, the different sources of change influence quality of life of Man and society. Quality of change in society is determined by the structural base of society, social institutions and ogranisation of social activities and diversification of economic activities. B. K. Roy Burman in Problems and Prospects of Tribal Development (1989) says that a tribe can outgrow its primitiveness and retain its social boundary, an essential feature of its identity. Within this conceptualization of the tribals, he tries to analyse the constraints to their development in North-East India. According to him land-man ratio in most areas of North-East India is such that by reorienting production schedule many of the basic needs

can be satisfied locally. If after ensuring that, massive commercialization is attempted, the population will be less vulnerable to market manipulation by outside forces.

Shifting cultivation is a way of life for the hill people. In the article Shifting Cultivation among the Abors by B. C. Gohain, in Tribal Life in India (1994) edited by Devendra Thakur and D. N. Thakur, and M. Dasgupta in the article Shifting Cultivation and Economic Development of North-East States (1997) throws light on the nature and importance of shifting cultivation among the hill tribes, especially among the Abors. They also bring to light that some of the Abors living on the foot hills are taking up wet-cultivation and with good results. They deliberate on the question whether shifting cultivation can be replaced by wet-cultivation in order to give them a better economic-footing as well as to raise their standard of living.

With the onslaught of new modes of production, the tribal relations in all walks of life are fast changing. Sarthak Sengupta in his book Tribal Situation in North-East India (1994) deals with subjects like tribal social formation, agrarian situation and emerging stratification, customary land laws, issues related to shifting cultivation and agricultural development and status of women. Customary land laws though still are part and parcel of most of the tribal societies in North-East India, the concept of individual ownership is very much in. The customary laws usually decide the type of cultivation undertaken and also the whole gamut of social formation. However, certain changing trends can be seen in the status of women in these societies. There is a symbiotic relationship between the tribals and forests. Forests are closely associated with the tribal economy and culture. In the past, the tribals enjoyed considerable freedom in the use of forest resources. However, with times, the relationships between the tribals and the forests have undergone considerable changes. Vidyut Joshi in Tribal Situation in India (1998) deals with issues like forest, land, tribal administration, finance and rehabilitation of tribes. Walter Fernandes, Baidyanath Saraswati, L. K. Mahapatra, S. B. Chakrabarti and C. Changsan and others deal with the subjects like the relationship of the tribals with the forest, customary rights of the tribals on the forest and question of their continuity and change in North-East India in Continuity and change in Tribal Society (1993) edited by Mrinal Miri. A study entitled the Tribal Societies of India (1998) written by B. B. Kumar highlights the system of slavery among the North-East Indian tribes and the spread of Morung Institutions among the Indian Tribes. The old system of slavery is no more in vogue. The Morung Institutions are slowly dying and those still continuing are on the verge of extinction, losing their spirit.

The tribal societies are assimilating with the national economy but at the same time are trying to retain the core elements of their tradition. They are infact on the path of transition from a secluded state to a more open state.

1.7 Organisation of the study

The first chapter is an introduction to the subject of study. This chapter seeks to highlight the objectives of the study, the methodology adopted and a vivid description of the sample villages taken up for the study.

According to Organski, the study of demography is indispensable if one wants to know the rate of modernization of an economy. The second chapter, therefore, deals with the demographic profile of the two sample villages.

Without proper infrastructure, no economy can progress. Social and economic progress of a society can take place only if the society has a sound infrastructural base. The third chapter tries to give a vivid description of the infrastructural facilities available in the study area.

Tribal economies are mostly agriculture based economies. Agriculture and its allied activities form the backbone in these economies. The fourth chapter looks into the changing scenario of agriculture in the study area.

Agricultural transition very often brings in changes in the socio-economic structure of the tribal societies. The fifth chapter analyses the changes which have been brought about by agriculture in the socio-economic structure in the two villages.

The sixth and the final chapter analyses the whole study and tries to put forward certain policy prescriptions.

CHAPTER – 2

DEMOGRAPHIC STRUCTURE OF THE TWO VILLAGES

Demography is said to be the numerical analysis of the state and movement of human population in regard to their physical, social, intellectual and moral conditions. This chapter tries to give the demographic profile of the two sample villages.

The Adi villages are basically small. The basic reason for the villages being small lies in agricultural practice. The Adi people are used to jhuming. The customary laws regulating the ownership and use of land are rigid, and, therefore, small groups of families have to remain as close as possible to the agricultural land required to be cleared for jhuming year after year. Another reason being that if the fields are located far away, the women and children who are required to work in the jhum fields may find it difficult to reach the fields crossing over the turbulent rivulets and other natural hazards on the way.

2.1 An overview of the demographic profile

Table: 2.1

No. of households and population of the villages

Villages	*Circle*	*District*	*No. of households*	*Total population*
Magir	Likabali	West Siang	13	102
Siji	Likabali	West Siang	36	241
Total			49	343

Source: Field Survey.

Both the villages, Magir and Siji has few households (*Table 2.1*). Magir has 13 households with a population of 102 and Siji have 36 households with a total population of 241. Both the villages together have 49 households.

Table: 2.2

Population composition of the sample households by sex

Villages	*Total no. of households*	*Population*		
		Male	*Female*	*Total*
Magir	13	52 (50.98)	50 (49.02)	102 (100)
Siji	36	136 (56.43)	105 (43.57)	241 (100)
Total	49	188 (54.81)	155 (45.19)	343 (100)

Source: Field Survey

Note: Figures in the parenthesis indicate percentage to totals.

In Magir, the females constitute 49.02 percent and in Siji they constitute 43.57 percent (*Table 2.2*). That is, there is not much of a difference between the male and female population in Magir but there is a little difference between the two in Siji. The sex ratio, therefore, is more favourable in Magir compared to Siji. The two villages Magir and Siji have a population size of 343 people of which 54.81 percent constitute males and 45.19 percent constitute females. Therefore, both the villages are small in size with male population exceeding the female population.

In Arunachal Pradesh, the sex ratio was unfavourable and was falling during the nineties which stood at 859 per thousand males. However, 2001 Census shows it to have increased to 901 per thousand males. The same was the case with the West Siang district for which the sex ratio rose from 873 per thousand males in 1991 to 913 per thousand males in 2001.

Table: 2.3

Family size of the sample households

Family Size	*Number of households*		
	Magir	*Siji*	*Total*
1-3	1 (7.69)	4 (11.11)	5 (10.20)
4-6	5 (38.46)	15 (41.67)	20 (40.82)
7-9	3 (23.08)	11 (30.56)	14 (28.57)
10-12	2 (15.38)	6 (16.67)	8 (16.33)
13 and above	2 (15.38)	—	2 (4.08)
Total	13 (100)	36 (100)	49 (100)

Source: Field Survey

Note: Figures in the parenthesis indicate percentage

In the two villages of Magir and Siji, taken together, 45.19 percent constitute females and 54.81 percent constitute males i.e., female population is lower than its male counterpart which of course is in keeping with the status of sex ratio found in almost the country as a whole.

Arunachal Pradesh usually has households with big family size. But the Gallongs among the Adis do not prefer big families. Under normal circumstances, it is a tradition that the sons after their marriage build separate houses. Therefore, the mean family size is not large in the Gallong society.

In the two villages, Magir and Siji (*Table* 2.3), 25 (51.02 percent) families are in the Size group of 1-6. This is followed by 14 (28.57 percent) families in the size group 7-9. This is in keeping with the trend of having small families in the Gallong society. The rest of the ten families fall under the category of 10-13 and above. Most of the families have members in between 4-9. In the post modern structure, without there being the proper intrusion of the concept of 'Family Planning' in these tribal set ups, one really needs to appreciate their nuclear concept of existence and natural practice of small family norms which in many developed countries have been prescribed as a policy measure to be promoted with incentives involved.

Table: 2.4

Age composition of the population in the two villages

Age group	Magir			Siji		
	Male	Female	Total	Male	Female	Total
0-4	3	9	12 (11.76)	8	5	13 (5.39)
5-15	19	11	30 (29.41)	38	34	72 (29.88)
16-45	22	19	41 (40.20)	67	54	121 (50.20)
46-59	4	7	11 (10.78)	13	8	21 (8.71)
60 and above	4	4	8 (7.84)	10	4	14 (5.81)
Total	52 (50.98)	50 (49.02)	102 (100)	136 (56.43)	105 (43.57)	241 (100)

Source: Field Survey

Note: Figures in the parenthesis indicate percentage

Age distribution of population is one of the most significant aspects of any society. The age distribution has its impact on the social, cultural and economic life of a country. The economically active population of a country may be found out on the basis of age distribution of population. Generally, people in the age group of 20 to 59 are considered to be economically active. In under developed countries, however, deep and wide spread poverty forces even individuals below 14 years to get engaged in some sort of occupation. The dependency ratio, is therefore, related to the age composition.

In both the villages, maximum population is concentrated in the age group 16–45 (*Table* 2.4). In Magir, 40.20 percent of population lies in this age group, while in Siji, 50.20 percent of the population constitutes this group. This is followed by the age group 5–15. This shows that in both the villages, the population constituting the active group is fairly large.

Table: 2.5

House types in the two villages

Village	House type		
	Traditional	Non-traditional	Total
Magir	13 (100)	-	13 (100)
Siji	34 (94.44)	2 (5.56)	36 (100)
Total	47	2	49 (100)

Source: Field Survey

Note: Figures in the parenthesis indicate percentage

Shelter constitutes one of the basic needs of a man. House type is considered to be one of the basic parameters of development in any economy. In Magir, all the 13 sample households have traditional houses made of bamboo (*Table 2.5*). While in Siji, 34 households have traditional type of houses made of bamboo, the other two houses have semi-concrete structure with thatched roofs. All the traditional houses have been build three to six feet high above the ground. Wooden and bamboo ladder like structures are used to get inside the houses.

Table: 2.6

Educational status of the households in the two villages

Education status	Village		Total
	Magir	Siji	
Illiterate	32 (31.37)	59 (23.65)	89 (25.95)
Primary (I – IV)	23 (22.55)	64 (26.56)	87 (25.36)
Middle School (V – VI)	8 (7.84)	32 (13.28)	40 (11.66)
High School (VII - X)	19 (18.63)	59 (24.48)	78 (22.74)
Higher Secondary (XI – XII)	5 (4.90)	11 (4.56)	16 (4.66)
Under graduate	2 (1.96)	5 (2.07)	7 (2.04)
Graduate and Above	1 (0.98)	1 (0.41)	2 (0.58)
Too young to study	12 (11.76)	12 (4.98)	24 (7.0)
Total	102 (100)	241 (100)	343 (100)

Source: Field Survey

Note: Figures in the parenthesis indicate percentage

Education is helpful for evolving a new civilization. In Magir, it is found that 56.98 percent of the population is literate and 31.37 percent are illiterate (*Table 2.6*). However, most of the populations among the literates are under graduates except one person. In Siji, 71.37 percent are literates and 25.95 percent are illiterates.

Therefore, it is found that literacy rate is high both in Siji as well as in Magir. Siji shows a brighter picture as her literacy rate is even higher than the National Literacy rate of 65.17 percent.

Table: 2.7

Place of defecation of the sample households

Village	Type of Latrine			Total
	Insanitary	Sanitary	Open	
Magir	10 (76.92)	-	3 (23.08)	13 (100)
Siji	25 (69.44)	-	11 (30.56)	36 (100)

Source: Field Survey

Places of defecation reflect the quality of life. A society's attitude towards a healthy and hygienic living is very much indicated by the place of defecation. They also indicate the level of income, education, etc. attained by the people in a society. In Magir 10 (76.92 percent) households have insanitary latrines. 3 households (23.08 percent) have no proper place of defecation (*Table 2.7*). In Siji, 25 (69.44 percent) households have insanitary latrines, 11 (30.56 percent) households do not have any proper place of defecation.

Table: 2.8

Classification of defecation places with literacy rate

Name of the Sample villages	Sample households	Type of defecation places			Literacy
		Sanitary	Insanitary	Open	
Magir	13	-	10 (76.92)	3 (23.08)	58 (56.86)
Siji	36	-	25 (69.44)	11 (30.56)	172 (71.37)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

The level of literacy in any society can reflect the degree of an all encompassing awareness of the inhabitants. From what follows from above (*Table 2.8*), while relating the literacy rate to this awareness in the field of sanitation in the villages, it has been found that in both the villages although the literacy rate is above 50 percent, cent percent households in Magir and more than 75 percent of the households in Siji use insanitary latrines. This reflects that despite their literacy rate being high, people have continued with the unhygienic sanitary practices. However, the poor sanitation practices cannot be related only to literacy rates in these tribal societies. A plausible explanation for this can be that since they have been accustomed with their co-habitation with the scavengers like the pigs from time immemorial perhaps, these societies have failed to adopt proper scientific sanitation facilities. This of course is observed across all hill tribal cultures as a 'symbiotic behaviour'[2]. As it is observed by John Fiske "Culture is a living, active process...it can be developed only from within, it cannot be imposed from without or above"[3]. Most of the households allow the excreta in the insanitary latrines to be cleaned by the pigs. Although the respondents seemed hesitant to reply this query, in Magir, 5 households replied that they do leave the excreta for pigs, and, in Siji 16 households replied that they very often allow the pigs to clean their excreta.

2. Key Words, London Fontana, p. 16, 1976.

3. John Fiske has cited the quoation on cultural habits which are hard to break in 'Understanding Popular Culture', p. 23, 1996. It has been published by Routledge, London and New York.

It may be interesting to note that the households in the two villages were also unwilling and hesitant to disclose this sanitation practice which perhaps indicates their awareness on the unhealthy and unhygienic aspect of the whole process.

Table: 2.9

Occupational distribution of the people by primary, secondary and tertiary activities

Activities	*Magir*	*Siji*
A. Primary		
(i) Cultivators	43 (87.75)	119 (83.80)
(ii) Agricultural labourers	-	-
B. Secondary		
(i) Household industry	-	1 (0.70)
(ii) Other than household	-	2 (1.41)
C. Tertiary		
(i) Services	4 (8.16)	4 (2.82)
(ii) Trade and commerce	-	1 (0.70)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

In underdeveloped societies, structural rigidity is reflected on occupational pattern. Occupations may be divided into three main classes – (i) agricultural or primary, (ii) industrial or secondary, and (iii) services or tertiary. As economic development progresses, more people are shifted first from agriculture to industry, and then from industry to services.

Colin Clark[4] argues that there is a close relationship between development of an economy on the one hand, and occupational structure on the other and economic progress is generally associated with certain distinct necessary and predictable changes in occupational structure. A.G.B. Fisher also argues in the same line when he states, "We may say that in every progressive economy there has been a steady shift of employment and investment from the essential 'primary activities'…to secondary activities of all kinds and to a still greater extent into tertiary production". Both the villages–Magir and Siji are agrarian in nature depending heavily on the natural forces rather than mechanized ways. (*Table 2.9*). In Magir, 87.75 percent of the working population depends on agriculture and in Siji 83.80 percent of the working population earn their livelihood from agriculture. A very minimal percentage of the active population is engaged in secondary activities in Siji, while in Magir none is involved in the secondary activities. A very few persons in each village are engaged in the tertiary activities. From Clark's observation it can be said that though there is a slight visibility of diversification in the occupation structure in the villages, they are yet to follow the path of development in the real sense. It is further observed that though in Magir none is involved in the secondary activities, yet 8.16 percent of the populations are engaged in the tertiary sector. In Arunachal Pradesh as a whole the share of the tertiary sector is much higher than the secondary sector. In 1999-2000, the share of the tertiary sector in the Net State Domestic Product (NSDP) stood at 42.84 percent as compared to 21.88 percent of the secondary sector. Notwithstanding the close resemblance in this respect between the national scenario and the State of Arunachal Pradesh it remains a fact that growth of tertiary sector in Arunachal Pradesh has been mainly on trade and construction activities. The trade and construction activities in Arunachal Pradesh has been induced by the growth in public administration which required large investments in construction and this also paved the way for linkages in trading. Thus, opportunities for occupational diversification have been restricted in the state owing to its sluggish secondary sector growth and a clear focus on the agriculture sector and development of agro-based industry.

2.2 Conclusion

Having an overall profile of demography in the two tribal villages reveal that the tribals in these villages are mostly dependent on primary activities for their livelihood which are essential for their existence. This implies that their needs are yet to diversify. Some of the parameters like the male-female ratio, age composition of the population, the attainment of educational level, small family norm do reflect a better position of these societies vis-à-vis most of the other societies in different parts of India. However, the education system has failed to instill the sense of health and hygiene among the tribals. The tribals in these villages seem to be fairly satisfied with the natural way of scavenging (by the pigs). What they require at this stage is an exposure to the more scientific ways of maintaining health and hygiene through proper sanitation measures. But access to a latrine, if not supported by appropriate changes in behaviour, limits the potential health gains and wider benefits associated with sanitation improvements[5]. Hence there is a need for moulding their practices only after fully realizing the fact that the tribal psyche is basic to tribal development.

4. Colin Clark, The Conditions of Economic Progress (1940), p. 182

5. This is express in a WELL Study 'Sanitation and the Poor'. The study was taken up by Rebecca Scott, Andrew Cotton and Beenakumari Govindan of the Resource Centre Network for Water, Sanitation and Environment Health. The study is available in the website www.1bodo.ac.uk/WELL

CHAPTER – 3

A GLIMPSE OF INFRASTRUCTURAL FACILITIES

The prosperity of a country depends directly upon the development of agriculture and industry. The agricultural sector, like any other sector requires, power, credit, transport facilities, marketing facilities, input-service centres, educational institutions, etc. for attaining the desired level of growth and development. All these facilities and services constitute collectively the infrastructure of an economy and the development and expansion of these facilities are an essential pre-condition for increasing agricultural production. "The link between infrastructure and development is not a once for all affair. It is a continuous process, and progress in development has to be preceded, accompanied and followed by progress in infrastructure..." [Rao: 1996].

3.1 Source of lighting

Both the village Magir and Siji project a dismal picture as far as electricity supply is concerned.

Table: 3.1

Availability of electricity in the sample households

Village	*Availability of electricity*		*Total*
	Available	*Not available*	
Magir	11 (84.62)	2 (15.38)	13 (100)
Siji	31 (86.11)	5 (13.89)	36 (100)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

Although 11 households in Magir and 31 households in Siji i.e., above 80 percent of the households in both the villages have the provision of electricity, its practical utility is nil (*Table 3.1*). Mostly the households go for the kerosene lamps as electricity supply is available only during the late hours at night. Both the villages do have the provision of electricity supply for twenty-four hours a day. But they hardly get the supply of electricity during the working hours. What they enjoy is the supply of electricity when the two villages are fast asleep and this little enjoyment vanishes in their sleep in the wee hours of the morning even before the sun rises sometimes. It was therefore a well expected response from the inhabitants of both the villages that availability of electricity in their villages has no practical role whatsoever.

3.2 Source of drinking water

Both the villages under survey have been covered under the Rajiv Gandhi Drinking Water Supply Scheme. However, the sample villages do not have proper water supply.

Table: 3.2

Availability of water supply in the sample villages and the sources

Village	*Source of accessing drinking water*			*Total*
	Stream	*River*	*Piped water*	
Magir	4 (30.77)	1 (7.70)	8 (61.54)	13 (100)
Siji	7 (19.44)	5 (13.89)	24 (66.67)	36 (100)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

In Magir (*Table 3.2*), 61.54 percent of the households have community piped water supply. In Siji 66.67 percent of the households enjoy this facility. In this respect they seem to be fairly conscious of the government schemes for water supply. In addition to this piped water supply, the households also collect potable water from the natural sources such as the streams and rivers.

3.3 Educational and health facilities in the two sample villages

In Magir and Siji there is only one primary school each located at a distance of one to one and half kilometers away from the villages. For higher education, they have to attend the Government High School at Likabali and the other private schools at Likabali. Most parents prefer to send their children to the colleges at Along and Pasighat for further studies.

The health care scenario is no better. Siji could take pride in the Primary Health Centre it had a few years back. But to their utter disbelief that too was shifted to Likabali, the circle headquarters. The respondents had no clue whatsoever to the cause behind its shifting. Magir on the other hand has the least to worry and ponder

as she does not have any health centre. For all the minor and major illness, the people of both the villages have to visit the doctor at Likabali.

3.4 Availability of agro-service centres

There is an agro-service centre at Likabali. People, both from Magir and Siji have to come down to the circle headquarter Likabali, in order to take the required help from the agro-service centre.

Besides, there is also an Inter State Livestock Check post at Likabali under the National Project on Rinderpest Eradication. There is also an office of the North-Eastern Rural Area Integrated Development Society at Likabali. People from Magir and Siji often take the help of these centres. No veterinary hospital facility is available in these two villages. The villagers, if need arise, come to Likabali to make themselves avail the veterinary services.

3.5 Availability of markets

There are no local markets in the two sample villages. People from the villages have to visit the markets at Likabali in order to buy and sell any commodity. A weekly market sits every Saturday at Likabali. Of course there is an arrangement of a regular market of vegetables and other commodities at Likabali.

However, Siji has one shop where certain necessary goods like rice, pulses, potatoes, sugar, salt, detergent, soap etc. are sold. People of Siji usually buy these commodities from this shop.

3.6 Availability of road, transport and communication facilities

If agriculture and industry are regarded as the body and the bones of the economy, transport and communication constitute its nerves which help the circulation of men and materials.

Communication and transport facilities are in nascent stage. Magir does not have an all-weather road; Siji which is located on the lower part of the hills can be reached by using the National Highway that connects Likabali and Along. To reach upper part of Siji, i.e., Soi, one has to walk through a kutcha road.

No regular buses run between the circle headquarter Likabali and the two villages. The villages mostly cover the distance on foot or use the long distance buses of Arunachal State Transport and State Co-operative.

There is no telephone and post office facility in the villages. If required, the villagers have to come down to the post office at Likabali. Telephone facilities are also available only at Likabali.

The nearest Railway Station is at Silapathar in Assam which is about at a distance of 10 Kms from the circle headquarter Likabali.

3.7 Availability of banking facility

Agricultural credit is one of the most crucial inputs in all agricultural development programmes. For a long time, in the tribal societies, the major source of agricultural credit was the private moneylenders. Since independence, a multi-agency approach consisting of co-operative, commercial banks and regional rural banks known as institutional credit-has been adopted to provide cheaper and adequate credit to cultivators in these societies. Despite this, it is interesting to find that although the expansion of the banking facilities in Arunachal Pradesh is taking place impressively, the number of commercial bank branches standing at 69 in 2002, it is the private money lenders who constitute the highest source of money lending both among the institutional as well as the non-institutional sources in the state.

In Magir and Siji there are no bank facilities available. However the villagers are availing this facility from the two banks-the State Bank of India and the Regional Rural Bank located at the circle headquarter Likabali. Again, the government under various schemes like that of Block Development has been extending financial help to the villagers.

Table: 3.3

Nature of institutional assistance received by the households

Village	*No. of households who received assistance*	*Source of assistance*		*Form of assistance*
		Government	*Banks*	
Magir	3 (23.08)	-	3 (8.33)	Cash
Siji	9 (25.0)	2 (5.56)	7 (19.44)	Cash
Total	12 (24.48)	2 (4.08)	10 (20.41)	Cash

Source: Field Survey

Note: Figures in parenthesis indicate percentage

It is found that 23.08 percent of the households in Magir have availed themselves of the loans provided by the banks. In Siji, 25.0 percent of the households have taken loans from government as well as the banks (*Table 3.3*). Hence, a very few house-

holds from Magir and Siji have come forward to avail themselves the credit assistance given by the government and banks.

3.8 Conclusion

The field survey reveals that the villages are yet to receive proper supply of electricity and water. Educational facilities are poor. People have to cover a long distance to avail themselves of market and bank facilities. Although both the villages are agriculture based no proper agro service centre has yet come up in the villages. Therefore, it is found that in many respects, the villages Magir and Siji are lagging behind in the availability of proper infrastructural facilities.

CHAPTER – 4

AGRICULTURE: THE LIFELINE OF THE TWO VILLAGES

The tribal villages of India are usually isolated and self-sufficient units which form an enduring organisation. Jhum practice in these villages has been continuing since time immemorial.

In Arunachal Pradesh, it has been seen that though the Abors have been practising jhum cultivation but by nature they are settled agriculturists. They have been living in their permanent villages varying from as low as ten to as high as 400 houses for more than 100 years and have been carrying on their age-old shifting cultivation within their village boundaries without any detriment to their tribal economy. Their method of tillage on rotational basis which varies from 9 to 15 years or more (now of course the jhum cycle has drastically shortened), allows time for the regeneration of forest growth in the fallow lands and when their turn comes up again for re-cultivation, they are suitable enough for raising crops by burning the felled trees which serve as an important manure. However, with times most of these tribal villages have adopted new technologies and are no more isolated units.

Magir and Siji, the two sample villages are also no exceptions. Today they too have come into contact with the outside world and are no more secluded. There have been certain and definite agrarian changes in the two villages.

4.1 Type of cultivation

Agriculture is the most important economic activity in Arunachal Pradesh. It plays an important role in the overall socio-economic progress in the state. Moreover, agriculture-both sedentary and shifting cultivation denote important variations in the modes of production in the state.

Magir and Siji, both the villages being located at the foothills have taken up wet-rice cultivation along with shifting cultivation. Before the later part of the twentieth century, these two villages mainly depended on shifting cultivation. Previously, the jhum cycles which were of a longer duration has today been reduced to 4-6 years or even less. Interactions with one of the village gams revealed that the jhum cycles have been reduced significantly in the recent years and as a result the soil fertility has also declined and thereby the yields from these jhum fields are falling over the years.

Though no satisfactory reason could be cited for the shortening of the jhum cycles, the extension in the family size down the generations could be one of the most plausible reasons.

Since 1960, however, there has been a change in the type of cultivation in the two villages. A few households have taken up wet-rice cultivation along with shifting cultivation.

Table: 4.1

Distribution of sample households by their practice of settled and shifting cultivation

Village	*No. of households having cultivable land*	*No. of households practising*		*Both settled and shifting cultivation*
		Only settled cultivation	*Only shifting cultivation*	
Magir	13	3 (23.08)	4 (30.77)	6 (46.15)
Siji	35	1 (2.78)	10 (27.78)	24 (66.67)
Total	48	4 (8.16)	14 (28.57)	30 (61.22)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

In Magir (*Table 4.1*), six (46.15 percent) households practise both shifting and settled agriculture whereas in Siji, 24 (66.67 percent) households produce crops by practising both the types of cultivation, i.e., shifting as well as sedentary. Out of 48 households (including one which does not possess any land of its own), 30 (61.22 percent) households are found to practise both types of cultivation.

Four (8.16 percent) households in both the villages practise only settled cultivation and 14 (28.57 percent) households practise only shifting cultivation. Therefore, it is seen that a number of households are still engaged in shifting cultivation. The adoption of settled cultivation, it seems is slow in both the villages because of the typical geographical terrain in the villages.

4.2 Cropping pattern in the two villages

By cropping pattern is meant the proportion of area under different crops at a point of time. A change in cropping pattern implies a change in the proportion of area under different crops.

In both the villages of Magir and Siji, paddy, maize, vegetables, roots and fruits form the main crops which are raised.

Table: 4.2

Types of crops raised in the two sample villages

Village	*Type of agriculture*	*Main crops*
Magir	Wet rice cultivation	Paddy
	Shifting cultivation	Paddy, maize, vegetables, roots, fruits
Siji	Wet rice cultivation	Paddy, Maize, vegetables
	Shifting cultivation	Paddy, maize, vegetables, roots, fruits

Source: Field Survey

It is seen that in both the villages, maximum area under shifting cultivation is under paddy. Maize and chillies also occupy a large portion of the jhum fields. Besides, subsidiary crops like leafy vegetables, ginger, potato and some roots are also grown along with the paddy. But they do not follow any definite pattern of crop sowing. Vegetables and others roots and tubes are grown intermittently along with the major crop. In the jhum fields, bananas and pineapples are abundantly raised.

In the settled fields, people in both the villages mainly cultivate the paddy known as 'Baj dhan'. Besides, one or two households also grow maize and vegetables on these settled agricultural fields. The households at times raise both the summer paddy as well as the winter paddy in the settled plots.

4.3 Land holding pattern

In the rural sector, land is the principal source of income. Land holdings–the fountainhead of income often decides the whole structure of land distribution in the economy.

During the village survey, an attempt has been made to assess the size of holdings of the sample households. The villagers did not reveal clearly the size of their holdings with regard to their homestead land. Moreover, for lack of proper demarcation of the boundaries of the households, it is hard to assess correctly the size of their homesteads.

Table: 4.3

Land holding pattern in the two villages in terms of households

Size classes in acres	Magir			Siji		
	Homestead	Cultivation		Homestead	Cultivation	
		Shifting	Settled		Shifting	Settled
.025 – 2.5	13	1 (10.0)	2 (22.22)	32 (88.89)	11 (32.35)	13 (50.0)
2.5 – 4.5	-	6 (60.0)	5 (55.56)	1 (2.78)	12 (35.29)	10(38.46)
4.5 – 10.0	-	3 (30.0)	2 (22.2)	2 (5.56)	11 (32.35)	3 (11.54)
10.0 – 25	-	-	-	1 (2.78)	-	-
Total	13	10 (100)	9 (100)	36 (100)	34 (100)	26 (100)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

It is found that in Magir (*Table 4.3*) maximum households have lands between 2.5-4.5 acres for shifting and settled cultivation. 60 percent of the households possess land between 2.5-4.5 acres for shifting cultivation and 55.56 percent of the households have land of 2.5-4.5 acres for settled cultivation. All the 13 households in Magir possess only around .025-2.5 acres of land under homestead.

In Siji also maximum households possess jhum land under the size class of 2.5-4.5 acres. 35.29 percent of the households possess land under this size class. 50.0 percent of the households in Siji possess land for settled cultivation in the size class .025-2.5. 32 households of Siji possess homestead land in the size class of .025-2.5 barring the other four households which fall under the other size classes larger than 2.5 acres.

Therefore, most of the households possess marginal and small holdings in both the villages. These marginal holdings have prevented the households in the villages to go for mechanised farming in their settled plots.

4.4 Agricultural production in the two sample villages

Agricultural production depends on a variety of factors-geographical, economical and institutional the interplay of which can make agricultural production to rise and fall.

In the villages Magir and Siji, most of the cultivators raise paddy, maize, vegetables like colocasia, brinjals, potatoes, beans, leafy vegetables, spices like ginger, chillies etc. and certain fruits like pineapples, bananas, etc. in their shifting cultivation plots. On the other hand, paddy is grown on the settled wet rice plots.

On an average, it is found that on one acre of wet-rice plot, 15-20 quintals of unhusked rice is produced. On the other hand, on a jhum plot, 1 acre of land produces around 6-10 quintals of unhusked rice. The yield per acre in jhuming is much less than that of wet-rice cultivation. Because of this low productivity in jhuming a higher land-man ratio is needed in the jhum plots than in the settled plots.

Besides paddy, the villagers also grow vegetables on the jhum plots. The production of vegetables varies throughout the different seasons of the year. Usually, 5-20 *Egins* (*1 Egin measuring* 15-20 Kgs) of vegetables, spices and fruits are produced on the jhum plots of various size classes.

A few households in Magir and Siji cultivate the settled plots both in the summer as well as the winter months. Hence, two crops are raised in a year. In Siji a few households also use the wet-rice plots to cultivate certain vegetables and maize.

4.5 Use of mechanised and scientific agro inputs

Progressive agriculture will demand, among other things (i.e. favourable institutional and organisational structure), improvement in inputs and methods. Irrigation, high yielding seeds, better manures and fertilisers, land reclamation and soil conservation, planned production, use of mechanization etc. – these are various aspects of agricultural inputs which have to be considered.

Irrigation facilities

Water is indispensable to agricultural production. The river Gai flows very near to these two villages–Magir and Siji. People of these two villages do not have proper irrigation facility. But they have economically utilized the river and stream water to irrigate their settled plots. Their dexterity in this regard can be seen when one sees the way they have succeeded in bringing this river and stream water to their fields. Bamboos split into two halves are joined together and are placed below the source of water. These bamboos then help in carrying water to their cultivation sites. They have successfully utilised this traditional way of carrying water to the fields. Since this part of Arunachal Pradesh has good monsoons, the cultivators face no shortage of water in their fields. Only when the monsoons are over, the streams get dried up that they face difficulties in supplying the required water in their fields. This, they compensate by carrying water to their settled plots from the Gai Nadi. No arrangement of government irrigation facility is found in the two sample villages.

Use of seeds

The quality and type of seeds very often decide the amount of produce raised. After the Green Revolution, the high-yielding variety seeds have increased the food pro-

duction in the country. However, the cultivators of Magir and Siji are yet to adopt these high yielding varieties. Some respondents did reply that they tried the high yielding variety seeds of maize, but their crops failed miserably. This, the respondents fear could have been because of the lack of proper water supply in the fields. But it has been found that the production and area of the HYV seeds of maize in Arunachal Pradesh as a whole fell by 4.60 percent in 1999-2000 over the previous year. So far no particular explanation has been rendered for the failure of the HYV seeds of maize in the state. For paddy cultivation, mostly the traditional varieties of seeds are used both in the shifting as well as the settled plots in the two villages. The cultivators in the villages are reluctant to try the new high yielding varieties. Here a major but interesting finding comes up. In these societies the tastes and preferences of the local inhabitants go a long way in conditioning the demand for the various scientific high yielding agro inputs[6].

Use of fertilisers

In any scheme for boosting agricultural output, the use of chemical fertilisers has an important role. But the fertiliser consumption in Arunachal Pradesh stood drastically low at 2.12 kg per hectare as compared to 77.55 kg at the national level in the year 1998-1999.

The use of chemical fertilisers is not common in the two sample villages either. These fertilisers are yet to find a place in their cultivation process. It is found that as most of the households depend on shifting cultivation, they hardly feel the need of chemical fertilisers. Their jhum fields get natural manure from the ashes when the fields are burnt and cleared for cultivation. Even in the permanent wet-rice cultivation, they seldom use artificial fertilisers. However, a few households do use some pesticides procured from the Agro Service Centre at Likabali to protect the vegetables and maize. A little effort on the part of the extension services from the government can therefore go a long way in educating these tribal villagers about the beneficial effects and utilities of these fertilisers and therefore boosting their necessary use.

6. One elderly responsent in one of the sample villages replied that the hill people do not prefer the us of the high yielding variety seeds and other artificial manures in their fields as they do not find taste i the crops grown out of these seeds. They therefore have ground for not using the HYV seeds in th crops grown for self consumption. Further, the extent and size of the markets being limited for thes tribal villages, they fear that using these HYV seeds will lead them to lose their share in the 'loca markets' catering to the 'local demand' for the 'crops grown locally' by sowing the indigenous seed with the help of natural manure.

Table: 4.4

Use of fertilisers by the sample households

Village	*No. of households using fertilisers*
Magir	2 (15.38)
Siji	5 (13.89)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

Only two (15.38 percent) households in Magir and five (13.89 percent) households in Siji replied that they do use pesticides to protect their vegetables from insects. (*Table 4.4*). However, they could not exactly specify the quantity of pesticides used in the fields.

Use of agricultural implements

The tools and implements used by the Indian farmers, particularly in the hilly regions are primitive, crude and antiquated. This is because of the fact that most of the hilly regions are still dependent on shifting cultivation which does not require improved and scientifically developed techniques and mechanization.

In the wet-rice plots, the cultivators of the two villages take the help of cows and oxen in ploughing their plots. The highly mechanized implements like winnowers, thrashers, power-tillers, etc. have not made inroads in these two sample villages. The weeding of rice and other food crops is done with the help of a horse-shoe shaped bamboo scraper which is held tight at the joint and is moved forward and backward and also sideways to scrap the soil of the weeds. The use of sickles is very much known to the villagers. They use them in reaping paddy from their wet-cultivation fields. Generally, paddy grains are stripped from the stock by hand straight into a large conical basket called the *Egin*. They also use the traditional implements like the daos, kurs, belsas and raches.

A few respondents said that sometimes they do take the Rural Works Department's tractors on rent on a daily basis. This department located at Likabali often provides the three tractors which it hires on a minimum rent to the villagers.

4.6 Use of agricultural labour

In the tribal societies dignity of labour is held high. In families of average mean size most of the work in the field is done by the husband and wife and their children as well as any relative or servant who may be a member of the household. But there

are occasions when a family may require help from other members of the community and even hire labour from the other communities.

In both the villages of Magir and Siji, a few households with limited family members and relatively larger plots of land do hire labour on daily and monthly basis. This they do mostly during the peak season of harvesting and reaping.

Table: 4.5

No. of households using hired labour

Village	Hiring of labour		Total
	Hire labour	Do not hire labour	
Magir	4 (30.77)	9 (69.23)	13
Siji	13 (36.11)	23 (63.89)	36

Source: Field Survey

Note: Figures in parenthesis indicate percentage

It is found that (*Table* 4.5), 4 (30.77) households in Magir hire labour to work in the fields. While in Siji 13 (36.11) households hire labour. Most of the labourers who are hired in the two villages belong to the Nepali, Kachari, Bodo and Rabha communities. These labourers are drawn from both the sexes-male as well as female. The respondents replied that no Gallong in their villages work on hired basis as labourers in the fields. On an average, a male worker is paid around Rs. 60 and a female worker Rs. 40 for a day's labour.

4.7 Livestock particulars in the two villages

Livestock is an important source of income for a nation. In fact, pastoral production is far more resilient than crop production and, more remunerative too.

In Magir and Siji, there is hardly any household which does not possess some livestock or the other. Cows, pigs, ducks, chickens, goats etc. are found in the two villages. Semi domesticated animals like the Mithuns (Bos Frontalis) are also kept.

Table: 4.6

Possession of different livestock by the households

Village	Type of livestock (number of households)						
	Mithun	Ox	Cow	Pig	Goat	Duck	Chicken
Magir	1	-	8	11	2	3	9
Siji	3	2	22	30	7	4	23
Total	4	2	30	41	9	7	32

Source: Field Survey

Poultry is the next basis of income. Pigs are important to the Adis. Their livestock enterprise is characterized by presence of pigs in almost every household. Piggery in these villages is less expensive and gives them good income. Fowls like chicken and ducks are also popular. People in the two villages mostly rear these animals and fowls because they fetch remunerative prices in the market. These animals and fowls are mostly sold in the villages, at the markets in Likabali and sometimes they even transport their pigs to the markets in far away towns like Along, Basar, Daporizo in Arunachal Pradesh and Silapathar and Dhemaji in Assam.

4.8 Use of forest land

Forests occupy a central position in the tribal economy. Tribals collect both wood and non-wood forest produce as these cater to the basic needs of them by providing food for nutrition, timber, bamboo and grass for construction of dwellings and thatching, implements and tools from wooden poles and bamboo and fuel for cooking and even for cremation. Besides food and fuel, forest is accompanier in their sports, entertainment and relaxation. So, dependence of tribals on forest for their growth and livelihood is well marked and a majority of tribals– young, old and womenfolk are the traditional primary collectors and processors of non-timber forest produce, which are necessary for their sustenance. Even for the purpose of binding poles in the house construction, creepers, climbers and barks are used instead of iron-nails. The local people are well conversant with medicinal plants found in the forests.

A part of the forest land is supposed to be owned individually by the Gallongs of the two villages. Apart from these individual forest lands, some common forest village land also exist which is used for cattle grazing, rearing and hunting. The households in the two villages mostly collect and extract minor forest products like roots, tubes etc. for self-consumption, bamboos for house building and bamboo shoots for consumption and sale. Firewood is also collected from the forest by the womenfolk of the two villages.

Previously, forests were used for both the purposes–commercial as well as household consumption. The extraction of timber for sale was the main form of commercial use. Likabali being the main centre, there were three saw mills–Siang-Likabali Adi Saw Mill or the Kebang Saw Mill, Karmi Saw Mill and the Kardu Saw Mill. Timber trade grew as a lucrative business. The villagers replied that even large scale felling of trees was prevalent in the individually owned-forest. Since the villagers got in return lump sums, this trend introduced the grabbing of communal land by the individuals.

However, since the imposition of the government ban on timber trade all the three saw mills in Likabali closed down and since then the income generated from the timber business also stopped flowing into these village economies.

Table: 4.7

Use of forest products by the sample households for self-consumption and sale

Village	*Use of forest products*		*Total*
	Self-consumption	*Sale*	
Magir	5 (38.46)	8 (61.54)	13 (100)
Siji	24 (66.67)	12 (33.33)	36 (100)

Source: Field Survey

Note: Figures in parenthesis indicate percentage

However, in the two villages, the villagers do use the forest products like bamboo shoots, fire wood etc. for sale. In Magir only five (38.46 percent) out of 13 households reported that they do not sell the forest products. Whereas, in Siji, 12 (33.33 percent) out of 36 households reported that they do sell the forest products (*Table* 4.7). The income from these forest products varies in between Rs. 500- Rs. 20,000 per annum per household in both the villages.

4.9 Conclusion

New scientific methods of production, if not supported by appropriate changes in cultural refrain, limits the potential economic and social gains associated with improvements in technology of production. Both Siji and Magir have the potential to further growth through agriculture. What they need is the basic thrust within and the scope from institutional sources and the government to develop and diversify this sector to gain in the long run.

CHAPTER – 5

AN ANALYSIS OF THE IMPACT OF AGRICULTURAL TRANSITION

Agricultural transition is often accompanied by the changes in the socio-economic structure of any rural society. This chapter tries to look into this aspect in the study area.

Traditional agriculture indicates an equilibrium with art of cultivation remaining static for a long time. According to Schulz [Soni: 1998], problem of transforming traditional agriculture is basically a problem of creating new investment opportunities in agriculture. And, this is possible when the equilibrium of the traditional agriculture is disturbed through the introduction of new and at the same time more productive factors of production in agriculture. This also implies that the art of cultivation will undergo a change. And this will happen when more productive factors, in the form of a physical factor or a better agricultural practice or an improved skill are used in the productive process. Schultz's definition, in fact, equates traditional agriculture with a stagnant agriculture.

From the point of view of development, Mellor [Soni: 1998] divides agriculture into three categories:

Phase I-	*TRADITIONAL AGRICULTURE*			
Phase II-	*TECHNOLOGICALLY TECHNOLOGY*	*DYNAMIC*	*AGRICULTURE–LOW*	*CAPITAL*
Phase III-	*TECHNOLOGICALLY TECHNOLOGY*	*DYNAMIC*	*AGRICULTURE–HIGH*	*CAPITAL*

Phase I is a technologically stagnant phase in which production is increased largely through slowly increased application of traditional forms of land, labour and capital.

In Phase II, a complex of technological changes substantially increases the efficiency of agricultural processes and raises the rate of increase of agricultural production. There is constant generation and application of technology, which is facilitated by a complex institutional framework.

In Phase III, agriculture becomes highly mechanized. Agricultural development is due to the development of patterns and techniques of cultivation as well as of the social structure of agrarian communities governed by population growth. According to Boserup [Soni: 1998], from the point of view of technological change, agriculture, from the earliest times, has passed through various stages, namely, the Forest Fallow stage, Bush Fallow stage, Short Fallow stage, Annual Cropping stage and Multiple Cropping stage.

Transition in agriculture, therefore, implies a change in technique or art of cultivation leading to increased productivity. This in turn, affects the social life of the people. With the change in the stage of production, life becomes settled, and the period of cultivating a piece of land becomes longer. The average settlement becomes larger. Division of labour emerges. Village markets also appear. Surplus of crops grown start getting exchanged against non-agricultural goods. Non-agricultural activities also start expanding and a social framework with specialization between agriculturists and artisans develops. Thereby diversification enters into the livelihood scenario. In the same way, Boserup shows that the system of ownership of land is connected with the system of cultivation. She says, "Thus the attachment of individual farm ties to particular plots becomes more and more important with the gradual shortening of the period of fallow and the reduction of the part of the territory which is not used in rotation."

5.1 A glimpse of the traditional economic basis of the two villages

The two villages Magir and Siji are situated in the foot-hills. The data collected shows that prior to 1960, both the villages practised only shifting cultivation. Interactions with the village elders reveal that their lives revolved around *jhum-khetis* and hunting. The output of these jhum plots was low. These jhum plots after a few cultivations were left fallow for a long period. The jhum cycle was quite a long one, stretching from 9 to 15 years or even more. The crops cultivated mainly comprised the traditional Abor rice, maize and some vegetables. The implements used in the field were traditional ones.

The village used community effort in clearing the jhum plots. The produce raised was only for self-consumption, and, they had no relationship with the market. A very few of them ventured out of the villages for education and jobs.

In the social life, women were treated as economic assets. Hence, there was the tradition of having more than one wife. A change of this tradition had to wait, however, until the mid 60's. It was during the 1960's that both the villages of Magir and Siji started slowly adopting settled agriculture known as *Pani-Kheti*. Therefore, agricultural transition from shifting to sedentary cultivation was slowly gaining ground in the two villages.

In the two villages of Magir and Siji, it is found that maximum number of households possesses land in the category of 2.5 acres to 4.5 acres (*Table 4.3*). Therefore, most of the farmers fall in the group of small farmers in regard to both settled and shifting cultivation.

Table: 5.1

Total production of the main crop (paddy) in the two sample villages (in quintal)

Village	No. of households	Amt. of land (in acres)		Total production		Average production	
		Shifting	Settled	Shifting	Settled	Shifting	Settled
Magir	13	39.29	30.97	352	610	8.96	19.67
Siji	36	140.3	72.25	1080	1195	7.70	16.54

Source: Field Survey

Land plays an important role in agricultural production programme. It is seen that in the sample villages of Magir and Siji, average productivity in shifting cultivation is 8.96 quintal and 7.70 quintal respectively, while on settled cultivation the average productivity is 19.67 quintal and 16.54 quintal respectively. Transition in agriculture from only shifting to both shifting and sedentary has therefore increased the total output of crops in the villages. They are gaining as both the modes of tillage, shifting and settled are adding to their baskets of grains.

Table: 5.2

Amount of agricultural land holding according to the size classes in the two sample villages

Size Class of land holding in acres	Amount of land holding			No. of households		Average size of holding		Average size of holdings of both shifting and settled cultivation	Amount of land holding			No. of households		Average size of holding		Average of of holdings both shifting and settled cultivation
	Shifting	Settled	Total	Shifting	Settled	Shifting	Settled		Shifting	Settled	Total	Shifting	Settled	Shifting	Settled	
				Magir								Siji				
.025-2.5	1.34	2.68	4.02 (5.72)	1	2	1.34	1.34	1.34	12.73	21.03	33.76(15.88)	11	13	1.16	1.62	1.41
2.5-4.5	18.63	17.25	35.88(51.07)	6	5	3.11	3.45	3.26	47.02	34.67	81.69(38.43)	12	10	3.92	3.47	3.91
4.5-10.0	19.32	11.04	30.36(43.2)	3	2	6.44	5.52	6.07	80.55	16.55	97.1(45.68)	11	3	7.32	5.52	6.94
10.0-25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	39.29	30.97	70.26(100)	10	9	10.89	10.31	10.67	140.3	72.25	112.56(100)	34	26	12.4	10.61	12.26

Source : Field Survey
Figures in the parenthesis indicate percentage

5.2 Agricultural transition and the type of implements used

Beset with hilly nature and handicapped as they are like so many primitive tribes by the absence of any suitable agricultural implement, the tribals of both the villages still use the traditional implements even on their wet-rice plots. Therefore, the main economic basis of the Adi-Gallongs' life is agriculture which they raise mostly by jhuming and now even by wet-rice cultivation and the implements used are only the traditional ones. Sometimes though, a few households of the villages do go for the tractors on rent from the Rural Works Department at Likabali.

Since small-scale farming requires livestock, implements and considerable human labour, many implements such as crowbars, spades, hoes, speed drills, and charas are used. In case the cultivator does not own sufficient livestock or implements, he either borrows them or engages workers who bring their ownings for higher wages. In both the villages, the number of work animals and ploughs owned are thus closely related to the number of holdings and their size.

5.3 Market orientation of the two sample villages

The kind and degree of relationship with the market indicates the level of economic attainment and growth in any society. Only well organized networks of agricultural market, easily accessible to all the widely scattered producers will help overcome the difficulty which the agricultural sector faces because of the fixed location of the farms. A good network of agricultural market encourages specialization in crop production. If the market technology does not keep pace with the developing production technology in agriculture, development process in agriculture itself will come to a halt. In most of the tribal villages, the present method of shifting and upland cultivation is meant mainly for consumption by the producing households. In many tribal dominated regions, commercialisation has not yet taken place. If the tribal people can be induced to work for surplus, the income of the people will automatically increase.

The introduction of sedentary agriculture is however bringing the tribals closer to the markets. The same is true for the two villages of Siji and Magir. It is found that in Magir and Siji, most of the households have a direct relationship with the markets at Likabali. The households sell their vegetables, paddy, forest product and livestock in the market.

Table: 5.3

Market orientation of the households

Village	Number of households selling			
	Paddy	Vegetables	Forest products	Livestocks
Magir	5 (38.46)	13 (100)	8 (61.54)	11 (84.62)
Siji	16 (44.44)	36 (100)	12 (33.33)	32 (88.81)

Source: Field Survey
Figures in the parenthesis indicate percentage

In case of vegetables, it is found that each and every household of Magir and Siji has a relationship with the market (*Table 5.3*). 11 (84.62 percent) households in Magir and 32 (88.89 percent) households in Siji sell their livestocks in the market which often fetch them a good price. The households also take the forest products to the market for sale. Eight households (61.54 percent) in Magir and 12 households (33.33 percent) in Siji sell their forest products.

Paddy, being the main crop, the amount of paddy sold in the market can give a clear picture of the two sample villages' orientation towards market.

Table: 5.4

Sale of paddy in the two sample villages

Size class (in acres)	Number of households			
	Magir		Siji	
	Paddy not marketed	Paddy marketed	Paddy not marketed	Paddy marketed
.025-2.5	3 (23.08)	-	8 (22.22)	1 (2.78)
2.5-4.5	3 (23.08)	2 (15.38)	8 (22.22)	5 (13.89)
4.5-10.0	2 (15.38)	3 (23.05)	4 (11.11)	10 (27.78)
10.0-25	-	-	-	-
Total	8 (61.54)	5 (38.46)	20 (55.56)	16 (44.44)

Source: Field Survey

Figures in the parenthesis indicate percentage

Table: 5.5

Percentage of paddy marketed in various size class (correlation between total sales and size class)

Size class	Percentage of sale (Magir)					Percentage of sale (Siji)				
(in acres)	<25%	25-50%	50-75%	>75%	Total	<25%	25-50%	50-75%	>75%	Total
.025-2.5	-	-	-	-	-	1	-	-	-	1
2.5-4.5	1	-	1	-	2	1	4	-	-	5
4.5-10.0	3	-	-	-	3	-	8	2	-	10
10.0-25	-	-	-	-	-	-	-	-	-	-
Total	4	-	1	-	5 (38.46)	2	12	2	-	16 (44.44)

Source: Field Survey

Figures in the parenthesis indicate percentage

It (*Table 5.5*) reveals that in the size-class .025-2.5 acres, no household in Magir sells its paddy in the market, while in Siji, one household sells its paddy in the market. Both in Magir and Siji, with the increase in the acres of land possessed, the number of households selling paddy is also seen to be increasing. Three (23.05 percent) households in Magir and ten (27.78 percent) households in Siji, concentrated in the size-class 4.5-10.0 acres, sell their paddy in the market.

To survive every individual needs money. The relationship of the two sample villages with the market reveals that these two tribal economies are now fairly well acquainted with monetised transactions. Thus 38.46 percent of the households in Magir and 44.44 percent of the households in Siji sell their paddy in the market (*Table 5.5*). However, this also reveals that in both the villages majority households are yet to adopt a market oriented approach to agricultural production. What is required is the inducement among these hill tribes to appreciate the concept of market surplus without damaging their indigenous set up at the same time.

Table: 5.6

Earning level of the sample households

Village	No. of households	Monthly income level (in Rs.)				
		<900	900-1600	1600-2500	2500-4000	>4000
Magir	13	4 (30.77)	4 (30.77)	4 (30.77)	1 (7.69)	-
Siji	36	11 (30.56)	13 (36.11)	7 (19.44)	2 (5.50)	3 (8.53)

Source: Field Survey

Figures in the parenthesis indicate percentage

Based on the definition of poverty line given in the IXth plan period, the poverty line has been estimated at Rs. 19,650 per year and accordingly the income levels of the households have been classified.

Since it is held that a household whose income is less than Rs. 900 per month is living below the extreme poverty line, four (30.77 percent) households in Magir and 11 (30.56 percent) households in Siji are living under extreme poverty line. Four (30.77 percent) households in Magir and 13 (36.11 percent) in Siji have income levels between Rs. 900-1600, and are living below the poverty line, as a family earning less than 1600 a month is said to be living below the poverty line. In both the villages, more than 60 percent of the population lives below the poverty line (*Table 5.7*).

Table: 5.7

Distress sale in the two sample villages

Village	Number of households	Households marketing surplus	Households actually having marketable surplus	Distress sale
Magir	13	5	4	1 (7.69)
Siji	36	16	13	3 (8.33)

Source: Field Survey
Figures in the parenthesis indicate percentage

Therefore, a few households do go for distress sale when they fail to meet their bare minimum requirements from their income, and it is found that 7.69 percent in Magir and 8.33 percent in Siji go for distress sale (*Table 5.6*).

But most of the other families living under poverty line in the two villages still continue to meet their needs from agriculture and its allied activities. It is seen that their economy is not diversified, and, mostly income flows from primary sector like agriculture proper and its allied activities like forest, livestock rearing, etc. Salary, wage, income from trade, constitute a meagre percentage in both the villages. This is revealed in the table below.

Table: 5.8

Source of income in the two sample villages

Village	Income from primary sector			Income from secondary sector	Income from tertiary sector	
	Agriculture	Forest	Livestock	wage	Salary	Trading
Magir	5 (38.46)	8 (61.54)	11 (84.61)	1 (7.69)	5 (38.46)	-
Siji	16 (44.49)	12 (33.33)	32 (88.89)	3 (8.33)	5 (13.89)	2 (5.56)

Source: Field Survey
Figures in the parenthesis indicate percentage

Therefore, it is seen that a transition in agriculture from shifting to settled cultivation has although brought about a change in the attitude of the people towards the monetised economy, they are still far behind as far as attaining diversification in their income generating sources are concerned.

5.4 Agricultural transition and in road of consumerism

The Adi community of Arunachal Pradesh is undergoing a process of transformation from a state of seclusion and adherence to a traditional economy towards a multi-faceted socio-economic development. The emergence of the process of economic development from the stage of the static circular flow of economic activities involves the mobilization of the surplus from agriculture for procuring modern assets and household items of life. Taking these modern assets as proxy variables, an attempt has been made to test the diversification in the needs of these tribal villages.

Table: 5.9

Households possessing modern assets

Types of goods	No. of households possessing goods	
	Magir	Siji
Motor vehicle	-	1
Scooter, Motorcycle	1	4
Bicycle	4	2
Television	2	4
Tape recorder	-	1
Radio	4	6
Modern looms	-	-

Source: Field Survey

Only a few households in Magir and Siji are found to possess certain modern household items (*Table 5.9*). Also it has been observed that the income of the households possessing the consumer goods vary widely from as low as a monthly income of Rs.900 to more than Rs.4000. One can therefore conclude that the transition in agriculture has not succeeded in luring these simple tribal people to adopt the comforts of life and hence their basic needs or for that matter their material needs are yet to diversify beyond necessities.

5.5 Agricultural transition and role of credit

During the days of hunting and food-gathering, barter economy prevailed in these tribal societies. As time passed, people took to shifting cultivation. The barter economy then slowly passed through many phases and ultimately monetised economy came into being. With the adoption of permanent cultivation, money culture has taken over these tribal economies and credit now plays a major role in these economies.

In Magir and Siji, as the transition in agriculture has come about, the role of credit in the two villages has also gained prominence. In Magir, three households have been found to have taken loans from banks, while in Siji, nine households have availed themselves of the credit facility from the government as well as the banks (*Table 5.10*).

Along with the change in the type of production from shifting to settled agriculture, the agricultural activities have also diversified to an extent and hence the activities financed by the credit institutions have also diversified.

Table: 5.10

Type of activities financed in the two sample villages

Type of activities financed	*No. of households*	
	Magir	*Siji*
Agriculture	-	7 (19.44)
Pisiculture	1 (7.69)	-
Plantation	-	-
Animal husbandry	2 (15.38)	2 (5.56)
Business	-	-
Small scale industry	-	-
Total	3 (23.08)	9 (25.0)

Source: Field Survey

Figures in the parenthesis indicate percentage

It is found that in Magir, one person has taken the help of the credit facility for developing pisiculture and two persons have taken loans for animal husbandry. In Siji, seven persons have taken the help of institutional agricultural credit mostly for settled cultivation and animal husbandry.

Beyond agriculture as there is no diversification in the economic activities as such, it is not surprising that the amounts of credit taken by the farmers of both the villages are minimal.

Table: 5.11

Values of assistance received by the households

Value (in rupees)	*Magir*	*Siji*
Less than 1,000	-	-
1,000 – 2,000	-	3
2,000 – 3,000	-	4
3,000 – 4,000	1	-
4,000 – 5,000	1	-
5,000 – 6,000	-	1
10,000 and above	1	1
Total	3	9

Source: Field Survey

While in Siji, the amount of financial credit taken varies between Rs. 1,000 and Rs. 10,000 and above, in Magir, the amount varies between Rs. 3,000 and Rs. 10,000 and above.

Most of the sample households are reluctant to take loans as they are afraid of defaults in returning the loans on time. Therefore, the pervading fear of default has prevented many households from entering the credit market. Mostly because of the unintelligible 'Forward Accounting System' the villagers are reluctant in going for institutional credit. None among the respondents are ready to take risk by going in for lump sum credit for secondary activities. Yet, some of the households feel that the rate of interest charged by the financial institutions is high. Most of the households in the two sample villages also have no idea regarding the land mortgage aspect. Moreover, being self-contained communities, the mind set which they have formed over the years by living in seclusion is that of the 'risk averters'[7].

5.6 Transition in agriculture and the change in occupational pattern

Agricultural transition brings about a distinct change in the occupational pattern in any society. The tribal societies are in no way different. People are taking up different occupations as the tribals in these societies are shifting from jhum to settled cultivation.

The field survey reveals that in Magir 87.75 percent of the population are actively

[7] One particular respondent in Siji on being questioned about his interest in taking institutional credit replied from his previous experience of default that 'Freed dile bhi nolou.' Even if given free of interest, the respondent is not ready to take the risk of borrowing from the institutional

engaged in agriculture and only 8.16 percent is engaged in salaried jobs. In Siji, 83.80 percent of the people are engaged in agriculture, 2.82 percent is into salaried jobs, and only 1.41 percent is daily wage earners and employed in household crafts (*Table 5.12*).

This pattern of occupation distribution reveal that despite the transition taking place in the agriculture sector, occupation diversification has not taken place to a large extent in the two villages. People earn their livelihood mostly from the primary sector.

Table: 5.12

Occupational distribution of the sample households

Village	Agriculture	Non-agriculture					Others	Total
		Salaried job	Daily wage earner	Self employment in household craft	Other areas	Unemployed		
Magir	43(87.75)	4(8.16)	-	-	-	-	2(4.08)	49(100)
Siji	119(83.80)	4(2.82)	2(1.41)	1(0.70)	-	1(0.70)	15(10.56)	142(100)
Total	162(84.81)	8(4.19)	2(1.05)	1(0.52)	-	1(0.52)	17(8.90)	191(100)

Source : Field Survey

Figures in the parenthesis indicate percentage

Note: The table is based on the active population.

5.7 Influence of agriculture transition on the social structure

In traditional societies, economic development is greatly influenced by cultural life, social structure and institutional arrangements in which land and other natural resources is owned and cultivated. In the development and transition of tribal societies, social innovations and changes are equally important as technological innovations. Within the process of social change the implications of change in social institutions and the structural base of the society are some aspects which are important.

Transition in agriculture and changing status and role of women

Every society accords social status to women members as per its own perspective. It indicates a society's stage of development. Social attitudes and the institutions in a society very often decide the patterns of women's activity. These attitudes and institutions may vary according to the stages of economic development in a society.

In Arunachal Pradesh, women are considered to be assets. Women have been playing a key role in agricultural activities as well as in household chores. Among the various tribes of Arunachal Pradesh, the status and role of women in the Gallong society is also governed by their own norms and values with respect to interactions within the family and the family roles of men and women [Pandey, 1997]. The Gallong family is patrilineal and patrilocal. Kinship is recognized on the side of men. However, since agriculture is the main occupation and women play an important role in its operation, Gallong women enjoy a good position.

The possession of area under cultivation is not only limited by the family's immediate consumption and replacement needs but also by the family labour. More particularly, it is limited by the number of adult women in the family, who infact are the backbone of agricultural operations, from land preparation and sowing to harvesting of crops.

In both the villages of Magir and Siji, it is found that the contribution of women labour in the fields to their male counterpart is no less, sometimes even more. It has been found that a few households in both the villages have had the ritual of having more than one wife. According to the elders of the villages, having more than one wife adds to their social status. But a hidden aspect is that having more than one wife served the dual purpose of demonstrating one's property strength as well as the womenfolk serving as assets in the fields.

The early socialization experience in which youngsters begin to acquire the values and skills of their parents is the foundation for their latter adult behaviour, when they become parents and spouses. Hence, division of labour is culturally as well as biologically defined. Division of labour in the Gallong society is no exception to this. Even though agriculture has had the transition from purely jhum to jhum with settled cultivation, the Gallong women in the two sample villages still carry out tasks like gathering of wild vegetables, cooking and serving, fetching water, collecting firewood from jungle, pounding of rice, cleaning and washing cloths, utensils, upkeep of house, nursing and looking after infants and children, weaving and other jobs associated with the household. Again, the very success of agricultural operation depends upon women as they are the ones who carry out most of the work like sowing, weeding and harvesting. In both the villages, there is no division of labour as such between married and unmarried women. The work carried out by women in the two villages is never ending. There is no fixed period of holiday from work which occupies all the wakeful hours of women. It demands more endurance and is also unremunerative, be it household, or, agricultural activities.

With the onslaught of change in the mode of production, since most girls and women are relieved from agricultural operations, more and more of them are taking up formal education as a necessity of life. Many new avenues of occupation for women

have emerged outside the state and changes are seen taking place. The only grocery shop in Siji is run by a young girl. Women from both the villages, Siji and Magir, visit Likabali to sell their vegetables and other commodities in the all women weekly market, held every Saturday. A few of them have joined a women co-operative society at Likabali.

Sex ratio

Sex ratio is an important demographic phenomenon which helps in studying the birth rate, death rate, etc. It is an accepted principle that male and female births and deaths are not equal. In India, male exceeds female population. So is the case in Arunachal Pradesh. However, among some tribes of Arunachal Pradesh, including Gallongs, the number of females does exceed that of males.

In both the sample villages of Magir and Siji, the sex-ratios are 966 females per thousand males and 722 females per thousand males respectively. Therefore, although the female ratio is low in Siji as compared to Magir, the sex ratio in both the villages are comparatively high (*Table 5.13*). Therefore, it can be summarized that the transition from shifting to settled agriculture has not lowered down the importance and status of females in the two sample villages.

Table: 5.13

Sex ratio in the two sample villages

Village	*Population*			*Sex ratio*
	Male	*Female*	*Total*	
Magir	52(50.98)	50 (49.02)	102 (100)	966
Siji	136 (56.43)	105 (43.57)	241 (100)	772
Arunachal Pradesh*	573,951(52.60)	517,166(47.40)	1,091,117(100)	901

Source: Field Survey

* India's billion plus population

Status of women in terms of ownership of property

As the Gallongs are taking up permanent cultivation, it seems that, the ownership o property has become more or less permanent. However, there is still a difference i the law governing inheritance between son and daughter. Gallong women canno inherit immovable property at all. A daughter is so restricted in the share of propert that she is almost excluded from its rights. However, she may inherit movable prop erty. Nevertheless, so long she lives with her parents she may be given a plot of lan or some livestock called riske.

Status in terms of marriage with special reference to bride price and its relation with agriculture

The important factor leading to the prevalence of bride-price is that a daughter is considered as an economic asset. Giving a daughter in marriage means a loss of helping hand. In order to compensate this loss, bride-price is taken in the Adi society.

In the sample villages, the ritual of bride price is still prevalent. It is despite the fact that the households have adopted permanent cultivation as well and women accordingly must not be given the due status as indispensable assets in the fields. This bride-price is determined by economic status of the girl's vis-à-vis boy's parents. It usually varies from one mithun and one cow to twenty mithuns and twenty cows and many brass utensils. Moreover, according to the elders, bride-price helps in strengthening the urge of the men folk to work more and thus increase productivity in return.

Status in terms of political rights

Every Gallong village has its council of elders, which exercise the legal and judicial powers, known as Kebang. In principle, although there is no restriction on women either being the member of the council or sitting in its proceedings, the women of both the sample villages do not actively participate in its proceedings. Therefore, it seems that the women have no say in political matters.

Table: 5.14

Educational attainment in the two sample villages according to age distribution

Village	Age group	Illiterate		Primary (I-IV)		Middle School (V-VI)		High School (VII-X)		Higher Secondary (XI-XII)		Undergraduate		Graduate and Total	
		M	F	M	F	M	F	M	F	M	F	M	F		
Magir	0-4	3	9	-	-	-	-	-	-	-	-	-	-	-	12(11.76)
	5-16	1	1	14	4	2	1	2	5	-	-	-	-	-	30(29.41)
	17-45	9	8	2	2	3	1	8	6	3	2	2	-	-	41(40.20)
	46-60	1	5	-	1	-	-	1	2	-	-	-	-	1	11(10.78)
	Above60	3	4	-	-	1	-	-	-	-	-	-	-	-	8 (7.84)
	Total	14(13.72)	18(17.65)	16(15.69)	7(6.86)	6(5.88)	2(1.96)	6(5.88)	13(12.75)	3(2.94)	2(1.96)	2(1.96)	-	1(0.98)	102(100)
Siji	0-4	8	4	-	-	-	-	-	-	-	-	-	-	-	12(4.98)
	5-16	3	6	15	19	11	3	8	6	1	-	-	-	-	72(29.88)
	17-45	9	8	15	15	9	8	24	19	6	4	3	1	1	122(50.62)
	46-60	9	8	-	-	1	-	2	-	-	-	1	-	-	21(8.71)
	Above 60	10	4	-	-	-	-	-	-	-	-	-	-	-	14(5.81)
	Total	39(16.18)	30(12.45)	30(12.45)	34(14.11)	21(8.71)	11(4.56)	34(14.10)	25(10.37)	7(2.96)	4(1.66)	4(1.66)	1(0.41)	1(0.41)	241(100)

Source : Field Survey

Figures in the parenthesis indicate percentage

Status in terms of education

With regard to education, Arunachal Pradesh as a whole had a late start. Prior to 1950, very little was done for spreading education in the region. There were a very few literate persons who had done their education in Assam. And, majority of them had only a few years of schooling. It has been found that the literacy rate of females is lower than that of males in Arunachal Pradesh as a whole. This is true for the West Siang district as well though the percentage of literacy rate of this particular district is higher as compared to the other districts in the state. This is because the parents see less functional utility of girls' education. Moreover, most of the agricultural activities are done by the females in the Gallong society. Hence, whenever a helping hand is needed girls are withdrawn from school to help their mothers in the fields at an early age. Even if there is any infant in the family to be looked after, girls are engaged when the mother goes to work in the field, hence, the females have a lower literacy rate. Thereby the reason for high dropouts among girls are that they are burdened with domestic work sparing very little time to do self-study, as a result they fail, most of them get married very early and hence discontinue the studies.

Although there is an Adult-Education Centre at Likabali but none of the females from the two sample villages come to attend the classes at the centre. They see very limited functional utility of it.

Table: 5.15

Gender wise literacy rate in the two sample villages

Village	Literacy rate		Total (in percentage)
	Male	Female	
Magir	34 (33.33)	24 (23.53)	56.86
Siji	94(40.25)	75 (31.12)	71.37

Source: Field Survey

Note: The literacy rate has been calculated excluding the age group (0-4) years

From the table, it is found that only 24 (23.53 percent) females in Magir and 75 (31.12 percent) females in Siji are literate in the age group 5 and above.

Table: 5.16

Classification of female literacy rate in the two sample villages in relation to agriculture practices

Village	*Number of households practising both settled and shifting cultivation*	*Total female population*	*Literacy rate of the female population*
Magir	6 (46.16)	41	24 (58.54)
Siji	24 (66.67)	101	75 (74.25)

Source: Field Survey

Figures in the parenthesis indicate percentage

Note: Both total female population and literacy rates have been calculated excluding the age group (0-4) years.

It is found that in Magir, where six (46.15 percent) households have both settled and jhum plots for cultivation, 24 (58.54 percent) females are literates. Whereas, in Siji, where 24 (66.67 percent) households practise both settled and shifting cultivation, 75 (74.25 percent) females are literates. Therefore, it is seen that in Siji where maximum households have both settled and shifting cultivation plots, the literacy rate of female is high. Whereas, in Magir where less than 50 percent of the households practise both settled and jhum cultivation, the jhum plots taking maximum hours of female labour, the literacy rate of the female is low.

Hence, as the transition in agriculture is taking place in the two sample villages, the female literacy rate is on the rise. There is therefore, a positive co-relation between the transition in agriculture from shifting to permanent cultivation and the status of women with regard to the literacy rate.

5.8 Transition in agriculture and land ownership pattern (land relations)

The Adi Gallongs are ardent cultivators. Their life is interwoven with land. They seem to be responsive to modern ideas and innovation and are oriented towards development. In this tribal society it is found that the command area under jhum cultivation is many times more than actual area under it in any particular year, depending upon the length of the jhum cycle and the period of continuous cultivation. They have accepted permanent cultivation with open arms, and the inclination to substitute jhum by permanent cultivation is one of their distinctive features. Along with this transition there has been changes evolving in land relations.

As this transition has been taking place, it is seen that from the point of view of land

rights, even the jhum plots of the Gallongs are permanently fixed. Every villager has his jhum plots well demarcated and well known to himself and others. Generally speaking, there is a strong tendency of individual ownership among the major tribal formations, particularly among the people residing in the foothills.

In the sample villages of Magir and Siji, each of the household moves in his own orbit of plots in case of jhum cultivation by the right of inheritance and never clashes with others. Within the area demarcated for each family, it does jhum cultivation. Jhum lands are very much heritable and transferable. Inheritance is patrilineal but no role of primogeniture is there.

House sites, though not properly demarcated in both the villages are not transferable. The forest land within the village boundary is divided among the individual families of the two sample villages.

Sub-letting is not in vogue, Adhi system is not found in the villages. However, a needy person of the village, having no cultivable land is given the excess jhum plots to be cultivated for a fixed period, free of cost guided by religious beliefs of the Bible. One such sample household in Siji with no cultivable land has been given by the villagers some jhum plots to be cultivated without any pre-conditions. Therefore, it is found that with the transition in the production process, the land rights in the two Gallong villages have become more or less permanent in nature.

5.9 Agricultural transition and the role of Kebang

Society acts as the enforcing agent of rules of conduct. These rules of conduct are mainly based on the ethical principles that have grown out of historical and economical circumstances, which have conditioned the development of the society. These go to form the conscience of the members of the society individually and of the group as a whole and so a sample standard is set up to which the society and individuals subscribe without any question and reservation. Since the primitive times of jhum cultivation, like the existing socio-political institutions in the tribal societies of Arunachal Pradesh, the Kebang, a socio-political institution has been playing a dominant role in the Adi society. Every village in the Adi society is an independent unit by itself and knows no extraneous authority. The Kebang is the court of tribal justice. It is so important in the Adi society that no aspect of their life is beyond its purview. The rules or norms of conduct are maintained by this tribal council.

In both the sample villages, the Kebang exercises a centralised authority over every important matter affecting the life of the community and also organises developmental functions. Expression of genuine democracy can be seen in the Kebang. Although certain powers of it have been curtailed over the years, still matters related

to land and property disputes are heard in the Kebang. In both the villages, matters related to agricultural disputes are fought and settled in the Kebang. On query, the village Gams replied that some of them act as political interpreters and are paid by the government for that. The Kebang is therefore, such an institution which has stood the test of time from the stage of hunting to settled agriculture.

5.10 Agricultural transition and the institution of slavery

Corporate egalitarian ethos and the changing mode of production are changing the slavery system in the Adi-Gallong society. There was previously wide prevalence of slavery in the Adi-Gallong society. The treatment which the slaves received from the masters was different from that received by a free man. The slaves were kept in stock for a certain period to ensure that they did not run away. After the period of confinement was over, they were assimilated in the general household of the masters. This institution of slavery reduced the status of man and created a socio-economic division. The economic prosperity of a family and its status depended on the number of slaves they possessed. These slaves gave their labour both in the household chores and in the fields.

This institution of slavery has changed and now it has become a thing of the past. The transition in agriculture has brought about a complete change of this institution in the Gallong society.

In both the villages of Magir and Siji, a few households keep domestic servants. These domestic servants are treated on an egalitarian basis without any major discrimination as such. They are treated on the same footing as in any other society in the country today. They are paid for the work rendered. These domestic servants mostly work in the kitchens and the fields.

Table: 5.17

Households possessing servants in the two sample villages

Village	*No. of households possessing servants*
Magir	2 (15.38)
Siji	2 (5.56)

Source: Field Survey
Figures in the parenthesis indicate percentage

Only two households each in Magir and Siji have been found to keep domestic servants. They mostly belong to the Bodo, Nepali and Santhal communities. On query it is revealed that the Gallongs do not prefer to work as domestic servants.

5.11 Conclusion

There is definitely a transition taking place in these hill economies. This transition is testified by the many reflections thrown open in this chapter. This transition is however within Mellor's first phase of traditional agriculture. But there is enough scope for the tribal villages to move into Mellor's second phase of technologically dynamic agriculture with low capital technology.

CHAPTER – 6

SUMMARY AND CONCLUSION

It has been observed that as man/land ratio increases, intensification imposes itself from extensive land use as under shifting cultivation there is a process of change towards sedentary agriculture and there from to more and more intensification through multiple cropping [Boserup: 1965]. This process touches upon the whole gamut of social relations and beliefs connected with agriculture.

It is seen that the tribe Adi-Gallong being one of the most progressive tribes of Arunachal Pradesh, has well embraced the transition from shifting to sedentary agriculture. But this economic process has not been able to take its natural course because of many social and cultural constraints and the rigid customary practices having bearing on the change.

Jhum cultivation, one of the archaic forms of tillage, widely practised by this hill tribe of West Siang district, is almost universal among them. However, the return from this type of cultivation is found to be very low. The average size of holdings of the jhum fields are found to be very small, even less than 5 acres or 2 hectares in the two villages of Magir and Siji. Not only these holdings are small but they are fragmented and situated far apart too.

Although more than 60 percent of the households in the two sample villages have taken up sedentary cultivation, the average output in this cultivation is around 16 quintals to 19 quintals of unhusked rice per acre. The size of these wet-rice plots often stands as an impediment to move an ordinary plough in certain wet-rice plots. Since the average holdings are small, no scientific cultivation with improved seeds, implements, etc. is possible. Arduent workers as the Gallongs are, these small size holdings lead to great waste of time, labour and cattle-power. Though the tribals in these villages are shifting towards settled cultivation, existence of small and fragmented holdings is, one of the prime causes for poor agricultural yield.

As a result of this transition in the art of cultivation, from shifting to sedentary agriculture, the old relations of production are in the process of breaking down. Along with private property relations, market and money have made inroads into these

tribal villages. Money has been well accepted by these people as a unit of account and a measure of value, besides being utilized as a medium of exchange and store of value. This money economy is creating demand for new consumption goods, unheard of in the traditional economy. A few households in Magir and Siji do possess certain modern goods like the television sets, radio, tape-recorder, scooter and vehicle. The women in both the villages are no more confined to their traditional looms. They have very well accepted the culture of readymade clothing.

The villages, Magir and Siji although are agriculture based, education is however becoming an important part of the people of these two villages. Unlike in the traditional economy, the children no longer attend fields only. Money incomes saved after having met the various expenditure is spend on children's higher education.

The tribal households of these two sample villages have been drawn into the vortex of market forces. The villagers sell their poultry, surplus paddy, vegetables and certain forest products.

This transition has liberated the women of these two villages to a large extent. They are more educated today. Women from both the villages are found to sell their produce in the daily and weekly markets at Likabali.

In the old economic basis, these tribal villages were self-sufficient. Today, they face food deficit on various grounds like siphoning off the educated as well as illiterate, unskilled labour for white-collar jobs, construction activities and other manual works. Moreover, the end of slavery and the slowly vanishing traditions of joint family system and having more than one wife are also responsible for the decreasing number of hands in the jhum fields. The food-deficit households of these two villages are found to buy rice from Fair-Price Shops.

This transition has slowly strengthened the private property formation in land and other assets. Although the tribals of the two sample villages do not possess any legal document of ownership, they have permanent rights over their ancestral jhum lands by virtue of right to cultivation on these plots of land over the generations. Moreover, "The attachment of individual farm ties to particular plots becomes more and more important with the gradual shortening of the period of fellow and the reduction of the part of the territory which is not used in rotation"[8]. Of late, this has been the picture in these Adi societies. Their traditional justice system- the Kebang is still in force, which settles the disputes on land.

[8] This is cited in E.Boserup's "The Conditions of Agricultural Growth" Chicago, Aldine Publishing Company, 1966.

It is therefore seen that these changes in the two tribal villages are spontaneous and are the result of the transition in the mode of production. The socio-economic transformation to some extent has hence become amenable to internal adaptation.

Economic transformation is, however, a difficult task and is an extremely slow process. There is also the question of individual initiative. It is generally held that unless individual acquires take in his land, through individual ownership, economic transformation is not possible. The tribals should be able to negotiate the process of socio-economic transformation without loss of their command. As such certain initiatives must be undertaken in the first instance to increase productivity on their lands.

i. New methods of tillage and new crops can be successfully introduced only when the required physical conditions of land and local use of new crops have been found for them. The fact that the Gallongs spend most of their energies on these jhum fields for rice and vegetables, which they use in all phases of their life, is one of the reasons why new methods of cultivation and new seeds are not catching up with them. It is seen that the villages of Magir and Siji are even reluctant to use the high yielding variety seeds of Maize offered to them by the officials of the Agro-Service Centre at Likabali. It seems that the locals find more taste in those crops that are grown out of traditional seeds. Therefore, the question of taste and preference comes in.

ii. Another important problem in transforming traditional agriculture into a dynamic agriculture is the physical supply of non-traditional inputs like fertilisers, insecticides, etc. The government has to take all possible measures to improve their supply through an extensive network of extension services in these interior tribal villages.

iii. One traditional input namely irrigation, will have to be extensively developed not only when the agriculture is in the traditional stage but also during the later stages if still there is any scope for its development. Lack of irrigation facilities is the major factor behind the low level of adoption of improved agricultural practices [Jaiswal Singh: 1968]. The returns from irrigation are very high. But the marginal and small farmers of Magir and Siji are not in a position to set up even minor irrigation projects like tubewells, which is beyond their capacity. The government, therefore, has to play a definite and positive role in this direction. Alternative intermediate support in technology like building of the reservoirs can provide the required water supply in the fields during the lean season.

iv. There is also the question of credit for development of land in this region. The concept of individual ownership in land should be given a legal status so that

individual cultivators can take advantage of agricultural credit facilities and improve their land and productivity.

v. Supply of non-traditional inputs and their acceptance by the farmers, in fact, needs many other supplementary policy measures and the consequent public sector investment. One such field is the development of infrastructure. This is simply because the super-structure of agricultural development can be raised only on a well developed relevant infrastructure. Development of roads, setting up of extension services, development of the power sector, setting up research institutions especially for the adaptation of non-traditional technology to suit the agro-physical requirements, etc. can set into motion a complex but potentially productive process of technological change in these tribal villages.

vi. Investment in human capital in the form of education and health care for those working in the agricultural sector is also necessary for transforming the traditional agriculture into a dynamic one. Government has to see to it that schools and primary health centres should be established in the two villages.

vii. The extension of markets can also help these villagers in diversifying the livelihood options. Poultry and livestock activities during the lean agricultural season can not only open up livelihood options but can also strengthen these tribal economies monetarily. It is also found that there is a growing market for vegetables. What these villagers need is a well developed marketing network with all infrastructural facilities.

There should be no attempt to transform the tribal people who are at various stages of development (from food gatherers to advanced ones) overnight into carbon copies of sophisticated plains men, but by fostering all that is good and beautiful in their culture, their aesthetic sense, honesty, zest for life [ST Commission: 1961]. These tribal societies being traditional knowledge based societies, they accept everything within their belief. They are a distinct product of colonial history, have an ethnic identity and they have a distinct world view and a unique grammar of life[9].

The involvement of the tribal people in the development process is most essential and this can only be achieved by strengthening their traditional institutions and assigning a progressive increasing role in modern development activities. A holistic approach, by taking the locals of the two villages into confidence and their active

[9] R.K Nayak, National Institute of Social Work and Social Science, Orissa has given this holistic interpretation of the tribals in the paper 'Identity, Development and Politics of Tribal and Indigenous Peoples of Eastern India: Some Reflections', 2002

participation would go a long way in making the transition in the two villages a success.

In the article Transformation of Tribes in India: Terms of Discourse, S. N. Mishra discusses the emergence of a new economic basis and its impact on the social revolution taking place in Arunachal. According to him, production relations including exchange and distribution relations are now coloured by shades of new emergent economic basis. The findings from the sample study in the two villages of Magir and Siji reflect a new gradual process of transition which can be roughly broken into two phases, the first being prior to 1960 till the time jhum or shifting cultivation was the only form of cultivation and the second phase starting since 1960 with gradual transition to settled cultivation. This second phase is an ongoing one in the two villages and interestingly the phases of Green Revolution and Economic Reforms are still a distant run for these two villages, despite penetration of the market forces in the economy of the two villages. The challenges therefore remain open:

- *Since the market economy has penetrated in these interior tribal villages, will this external factor help in diversifying their livelihood pattern beyond agriculture?*
- *Will the market economy help to ingrain the concept of marketable surplus among these tribes?*
- *What will be the role of the tribal traditional self-governing institutions in the context of changing socio-economic environment and penetration of market forces?*
- *Will this assimilation with the national economy via markets help these tribal economies to move up economically with a diversified livelihood pattern?*

These questions assume critical significance in the light of the ongoing liberalisation process in the Indian economy and the globalisation process in the world order.

*****

BIBLIOGRAPHY AND REFERENCES

Bhattacharjee, R. P. (2001) Efficiency of Share-cropping in Foot Hills of Arunachal Pradesh, *JNEICSSR*, No. 25: 2.

Bordoloi, B. N. (1994) Socio Economic Considerations in Enhancing Agricultural Productivity in N-E India: Problems and Prospects, *IASSI Quarterly*, No. 0970-9061, pp. 17-43.

Boserup, E. (1966) The Conditions of Agricultural Growth, Chicago, Aldine Publishing Company.

Bruman, I. and Mundle, S. (1991) Rural Transformation in Asia, Oxford University Press.

Choudhury, J. N. (1996) Arunachal Panorama, Spectrum Publications, New Delhi.

Choudhury, R. K. (1996) Agricultural Economic Development in North-East: Chief Areas of Constraints and Remedies, *JNEICSSR*, No. 20:2.

Clark, Colin (1940) The Conditions of Economic Progress, p. 182

Das Gupta, M. (1997) Shifting Cultivation and Economic Theory, *JNEICSSR*, No. 21:1.

Das, S. T. (1993) Tribal Development and Socio-Cultural Matrix, Kanishka Publishers Distributors, Delhi.

Datta, P. S. (1992), India's North-East (A Study in Transition), Har-Anand Publications in Association with Vikas Publishing House Pvt. Ltd., New Delhi.

Dutta Choudhury, S. (1994) Gazetteer of India: Arunachal Pradesh (East Siang and West Siang District), State Editor (Gazetteers), Gazetteers Department, Gazetteer of Arunachal Pradesh, Shillong.

Fiske, John. (1996) Understanding Popular Culture, p. 23, Routledge, London and New York.

Ghosh, G. K. (1992) Tribals and their Culture (Arunachal Pradesh and Tripura, Vol. 2, Ashish Publishing House, New Delhi.

Gohain, B. C. (1994) Shifting Cultivation among the Abors in Tribal Life in India ed. by Devendra Thakur and D. N. Thakur.

Gopalakrishnan, R. (1994) Arunachal Pradesh (Land and People), Omsons Publications, New Delhi.

Goswami, P. C. (1969) Rural Life in Assam Hills, Agro Economic Research Centre, Jorhat.

Jahangir, B. K. (1979) Tribal Peasants in Transition: Chittagong Hill Tracts, *Economic and Political Weekly*, No. II, pp. 597-600.

Kurien, C. T. (1980) Dynamics of Rural Transformation: A Case Study of Tamil Nadu, *Economic and Political Weekly*, No. 5-7, pp. 365-390.

Lewis, W. Arthur (1955) The Theory of Economic Growth, p. 52, Allen and Unwin

Mahapatra, S. (1978) Modernisation of Tribal Agriculture: Technological and Cultural Constraints, *Economic and Political Weekly*, No. 13, pp. 581-585.

Mathew, T. (1980) Tribal Economy of North-East Region, Spectrum Publications, Assam.

Mibang, T. (1994) Social Change in Arunachal Pradesh (The Minyongs) 1947-1981, Omsons Publication, New Delhi.

Miri, M. (1993) Continuity and Change in Tribal Society, Indian Institute of Advanced Study, Shimla.

Mishra, S. N. (1983) Arunachal's Tribal Economic Formations and their Dissolution, *Economic and Political Weekly*, No. 43, pp. 1837-1846.

Nair, P. T. (1985), Tribes of Arunachal Pradesh, Spectrum Publications, New Delhi.

Nayak, R. K. (2002) Identity, Development and Politics of Tribal and Indigenous Peoples of Eastern India: Some Reflections, National Institute of Social Work and Social Science, Orissa.

NEDFi Databank Quarterly (Agriculture) (2002, 2003) North Eastern Finance Development Corporation Limited

Nyori, T. (1993), History and Culture of the Adis, Omsons Publication, New Delhi.

Osik, N. N. (1992) British Relations with the Adis, Omsons Publications, New Delhi.

Pandey, B. B. (1993), Patterns of Change and Potential Development in Arunachal Pradesh, Himalayan Publication, Patna.

Patel, M. L. (1994) Tribal Research in India, Inter India Publications, New Delhi.

Roy Burman, B. K. (1989), Problems and Prospects of Tribal Development in N-E India, *Economic and Political Weekly*, No. 13, pp. 693-697.

Saikia, P. D. and D. Borah (1992) Constraints of Economic Development in North-East India, Omsons Publication, New Delhi.

Scott, R, Andrew Cotton and Beenakumari Govindan (2003) Sanitation and the Poor, WELL Study, Resource Centre Network for Water, Sanitation and Environment Health. The study is available in the website www.1bodo.ac.uk/WELL

Sengupta, J. S. (1994) Tribes of North East India, Gyan Publishing House, New Delhi.

Shashi, S. S. (1995) Tribes of Arunachal Pradesh, Anmol Publications Pvt. Ltd., New Delhi.

Singh, C. (1989) Emergence of Arunachal Pradesh as a State, Mittal Publications, New Delhi.

Singh, K. S. (1982) Transformation of Tribal System: Integration Vs Assimilation, *Economic and Political Weekly*, No. 33, 34, pp. 1318-1325 and 1376-1384.

Singh, K. S. (1995) People of India – Arunachal Pradesh, Vol. XIV, Naveen Kishore Seaguell Books, Calcutta.

Sinha, A. P. (1986) Changing N-E India, Gagan Publishers, Ludhiana.

Soundarapandian, M. (2000), Tribal Development in India, Anmol Publications Pvt. Ltd., New Delhi.

Thakur, D. and Thakur, D. N. (1990) Tribal Life in India (I), Annada Printing House, Jorhat.

Topal, Y. S. and Samal, P. K. (2001) A Study of Three Mountain Tribes of Uttaranchal, Economic Transition and Collapse of Sustainability, *IASSI Quarterly*, No. 0970-9061, pp. 15-30.

Verma, R. C. (1995) Indian Tribes Through The Ages, Director Publications Division, New Delhi.

Xana, Virginius (1999) Transformation of Tribes in India – Terms of Discourse, *Economic and Political Weekly*, No. 24, pp. 1519-1524.