

**MANPOWER PLANNING AND ECONOMIC
DEVELOPMENT IN ARUNACHAL PRADESH**

**A DISSERTATION
SUBMITTED IN FULFILMENT
OF
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OF
DOCTOR OF PHILOSOPHY**



By
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**TO
THE DEPARTMENT OF GEOGRAPHY SCHOOL
OF
HUMAN AND
ENVIRONMENTAL SCIENCES**

**NORTH EASTERN HILL UNIVERSITY
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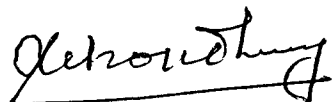
**MANPOWER PLANNING
AND
ECONOMIC DEVELOPMENT
IN
ARUNACHAL PRADESH**

Certificate

The North-Eastern Hill University
July, 1999

I Ranjit Kumar Daschoudhury, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the North-Eastern Hill University for the degree of Doctor of Philosophy in Geography.


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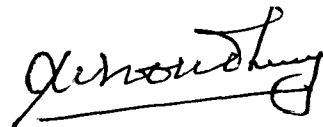
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(R. K. Daschoudhury)

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GLOSSARY

Inner line :- To facilitate administration, maintain peace and to regulate relations with the tribal people of North East India, the British laid down a restrictive line under Regulation I of 1873, what came to be known as Inner Line. The term Inner Line however, originated from the suggestion of Arthur Hobhouse who observed in his draft for the Regulation of 1873 that the line to be prescribed under the Regulation might be called 'Inner Line'. Under this Regulation, the local Government was also empowered to prohibit all British Subjects, or any person from going beyond such Line without a pass under the hand and seal of the executive officer or such officer as might be authorised to grant such pass.

Posa : - Posa is defined as allowance paid to certain hill tribes inhabiting the hills on the Northern Frontier of Assam bordering Darrang (Sonitpur) and Lakhimpur on account of commuted 'blackmail' or in consideration of the abandonment by them of their claims . It was also stated that the word 'Posa' literally means a collection of subscription for a common cause.

Donyi Polo:- Donyi Polo, the Sun and the Moon God. Many tribal people like Adis, Akas, Apatanis, Bagnis, Nishis, Mishmis, Mijis, Thangsas etc are the worshipper of Donyi Polo and Abo-Tani.

Abo-Tani :- Abo-Tani, the mythical first man. The Daflas trace their descent from Abo-Tani. This legend of a common ancestor they share with the Apatanis, the Sulungs, the Miris, the Tagins and the Bangrus.

Sat Rajas :- Among the Monpa and the Sherdukpen setup there were Chiefs known as the Sat Rajas who were Subordinates to the Governor of Tawang.

Gallings :- In between the Governor of Tawang and the Sat Rajas of the different regions, there were some other Executives known as Gallings who were appointed by the governor of Tawang for three years.

Gam or Gaobura:- The Gam or Gaobura is the Chief or the Head Man of the village. In every tribal village there is a Gaobura who manages different affairs of the village.

Village Council:- The village Council consists of the elders of the village. The management of the internal affairs of the village or clan and its relation with the neighbours is vested with the village council. In such a Council, all members have equal powers and such council is independent of all external influences.

Kebang :- The village council of the Adi tribe is known as Kebang. This is very powerful and its members, known as Kebang Abus, are chosen for their experience, ability and capacity to present and decide cases according to the traditional customs and conventions of the tribe. The Kebang controls the entire village activities and punishes those who deviate from the right path.

Bango : - Bango is the inter-village council composed of all the Gams or Gaoburas of the member villages and such other members as have distinguished themselves in Kebang meetings and a Secretary . All inter village disputes are discussed and settled by them.

Bogum Bokang:- The inter Bango disputes are settled in the meeting of the institution known as Bogum Bokang. This is generally created temporarily for a particular case with members of all the Bangos

and some distinguished persons who do not have any interest in the dispute and are impartial.

Morang :-

Every tribe has club house or dormitory Known as morang where youths are trained in civic duties, tribal disputes are resolved in meetings of the village elders, youths sleep in the night and the guests are accommodated. Among some tribes there were separate Morangs for girls. Morangs also serve as meeting places for youths to select their marriage partners.

Bride-Price:-

The social organisation among the tribal people of Arunachal Pradesh is patrilineal and the oldest male member is regarded as the guardian of the family. Marriage usually negotiated and the groom has to pay a bride-price to the guardian of his wife.

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CHAPTER 1

INTRODUCTION

I ^E _A STATEMENT OF THE PROBLEM

‘Development’ as a concept and as a policy measure has been the central pull around which the ‘Universe’ and the ‘Project of Modernity’ has revolved since the industrial revolution. ‘Development’, ordinarily means a shift or change from a given level of structural and functional interdependencies to a higher levels of the same in a given ‘Social Space’. But, Development, as the ‘Ruling Ethics’ and ‘Dominant Ethos’ within the broad paradigm of ‘Modernity’ ensembles some of the most fundamental postulations of ‘Modernity’ itself. Thus, to be Developed means to be *rational, efficient, enterprising, legitimate, modern, liberated* and ultimately to be *just*. So, ‘Development’ is a very wide as well as the central concept within the ‘Modernist Paradigm’. And, perhaps, there is no single definition available to explain and conceptualise it. Thus, it is conceptualised and interpreted differently by scholars at different times. For, many it is synonymous to ‘Economic Development’ while for some, ‘Economic Development’ constitutes the basic structure and all other aspects of ‘Development’ are at the level of super structure. Yet, there are others, opined that ‘Economic Development’ is one of the many aspects of a multidimensional entity called ‘Development’. But, there are no two opinions among the scholars about considering ‘Economic Development’ the sole objective of a meaningful living and sound state policy. For the sake of simplicity, it is expressed in terms of the levels of material achievements both essential and desirable for majority of population on sustainable basis as far as possible.

The annals of human history reveal that the dreams of 'Developed Economy' as the minimum basis for the full realisation of the "Blessed Trinity" of 'Liberty, Equality and Fraternity' have become progressively elusive to majority of the people world over with the advancement from a less developed stage to more advanced one. The fully developed world radiates a disaster triumph of private opulence and public squalor, riches of a tiny minority at the expense of the vast majority. Economic Development could become feasible only by sacrificing culture, values and morals. Material prosperity has taken place at the cost of environmental degradation and ecological disasters. Economic Developed at a few places has been possible by subjugating larger areas and more people under colonial domination. Of all, it has caused generalised estrangement and universal alienation of mankind everywhere. Thus, it can be safely said that 'Development thy name is virtue' has always been the ruling class ideology world over. It is neither an inherent virtue, nor a self-regulating, self-righteous, self-justifying process, nor an inevitable stage and a historical imperative that every society must experiences in its life span. On the contrary, it is to be cultivated and achieved through perseverance and concerted efforts in a systematic way. Thus, planning occupies specific significance in Economic Development. It is particularly so, if development is to ensemble the 'Triple Virtue' of growth, social justice and regional balance.

Planning, as commonly understood, is the process of assessing the natural as well as *human resources and their systematic utilisation for getting the optimum benefit for the mankind*. According to Nehru, the main architect of Indian Planning, "planning is a continuous movement towards a desired goal and perspective planning is the essence of the planning process. Planning involves investment on men and material and to make it

successful, people have to possess courage and enterprise, the spirit of endurance and capacity for hard work and the vision of future” ⁽¹⁾ .

The idea of ‘Planning’ is deeply rooted in human psychology. It was about 2400 years ago, the Greek philosopher Plato for the first time formulated the plans for his **The Republic**. Thereafter, it was developed, shaped and moulded by a galaxy of other eminent thinkers and philosophers. However, the idea of ‘Economic Planning’ in its present form and content is of a later origin. Though, it seems to be an implicit postulation within the Marxian concept of ‘Scientific Socialism’, yet, it was a Norwegian theorist **Kristian Schonheyder** who has been credited with making the first systemic exposition on this particular theme in 1910. The idea was given some practical shape during the First World War when it was used by the Germans as an effective technique for carrying on the war administration. It was however, in 1921 that the Soviets gave the idea of ‘Economic Planning’ a real shape and it was incorporated in the State Policy ⁽²⁾ . The rise and domination of the Soviet Union over the world economic, social, political and scientific space for over seven decades since 1921, was the testimony to the miracle that ‘Economic Planning’ could bring about in transforming one of the most backward agricultural society into one of the modern industrial and scientific power.

The experiences of the Soviet Union can be important guide to many backward and underdeveloped post colonial country like India. Of course, without committing the folly of its blind imitation. India, is unique in its poverty as well as affluence. It is rightly called a ‘Nation of unity in diversity’. No, alien model can be applicable to India. Of all the aspects of its unique character and diversified personality, its rich heritage and great sense of antiquity is of great significance particularly from the point of view of present

research. These are preserved and carried on by various culture groups since ancient times. There are a few parallels available in the world history to be equated with the level of endurance shown by these culture groups in shaping the civilisations called Indian. This had been possible because India, has always relied on its immense human strength. It is no wonder that Four of the world's most important religions, and numerous social reform movements had originated in India. It has always been at the forefront of fight against all kinds of oppression, and emplacement of human dignity. But, unfortunately, the land of Buddha, Mahavir, Nanak and Kabir etc. has highest number of illiterates, handicaps, underfed, illclad and sick people in the world. Majority of the Indians are still languishing for want of basic necessities of human existence. The situation is much worse in the areas inhabited by the tribals and other marginalised groups.

It is therefore, imperative that if India has to come out of this vicious circle than it will have to think of 'Development' with a human face. So, the emphasis of economic planning should be to invest on human capital. Such a perspective on development is ontological to the life of the nation itself and particularly to the states inhabited by the tribal.

The tribal people of our country are mainly hill dwellers and live in separate groups. They are pre-dominantly agriculturists and depend on agriculture, free collection from neighbouring forests and hunting . The difficult terrains and stringent geographical conditions of the hills coupled with the low level of technology available with the mountain dwellers had always restricted inter and intra regional interaction in the hills.

As a result most of the tribal cultures and material conditions have evolved under the conditions of relative isolation. Through the ages, they have developed their own social, economic and political institutions and met their requirements by themselves. For the first time the British administrators made concerted efforts to understand the nature of tribal social organisation in India. They came to realise that the tribesmen are very conscious of their independence and possession of their own land. They could also understand that, territories under tribal occupation had their specific problems which need special administrative approach to solve and any law unsuited to their primitive conditions and is contrary to the spirit of their customs and religion may lead to dissatisfaction and pave the way for rebellion. After independence, the Government of India too gave special attention on the problems faced by the tribals and adopted a special approach for the development of tribal people. ⁽³⁾

About tribal people, the first president of India, Rajendra Prasad said, “nothing should be imposed on tribal either by way of religion, language or way of living and custom. Facilities for education and general improvement in their economic life should be provided to them and it should be left to them to choose whether they would like to be assimilated with and absorbed by the surrounding society, or would like to maintain their own tribal existence” ⁽⁴⁾. Similar views were also expressed by Nehru. He said “the tribes are our own people and we should develop a sense of oneness, unity and understanding with these people..avenue of tribal development should be pursued within the broad frame work of five fundamental principles, commonly known as Panchsheel” These are ⁽⁵⁾

- i) The tribal people should develop along the lines of their own genius and we should avoid imposing anything on them. We should try to encourage in every way their own traditional arts and cultures.
- ii) Tribal rights in land and forests should be respected.
- iii) We should try to train and build up a team of their own people to do the work of development and administration. Some technical personnel from outside will be

needed in the beginning. But we should avoid introducing too many outsiders into tribal territory.

- iv) We should not over administer those areas or overwhelm them with a multiplicity of schemes. We should rather work through and not in rivalry to their own and social institutions.
- v) We should judge results not by statistics or the amount of money spent, but by the quality of human character that is involved.

Planning Commission in their proposals for the second five year plan emphasised that, tribals themselves must play their part in schemes of their own development. Development programmes should be formulated in consultation with members of Advisory Councils, Leaders of tribal community and institutions engaged in the study of tribal problems. If the programmes are implemented with popular support, that will give the tribal people a sense of partnership and integration with the nation as a whole ⁽⁶⁾. Towards the end of the second Five year Plan, a Committee under the chairmanship of Verrer Elwin was appointed to study the work of the Tribal Development Blocks. Verrer Elwin expressed similar views as that of Nehru, and the committee recommended a cautious approach in the introduction of multiplicity of schemes in the tribal areas ⁽⁷⁾.

Thus, it can be said that, planning in the tribal areas should be a continuous process of 'mankind' and for the 'mankind'. Further, it can be said that 'man is the cause and development is the effect'. The main objective of economic planning is to bring about a structural transformation of the economy so as to achieve a high and sustained

rate of growth and progressive improvement in the standard of living of the people. To achieve this objective, first step is to evolve a standard classification by which all the natural and physical resources can be classified exhaustively within their quantitative as well as qualitative aspects and the next step is to find out the input-output matrix and utilisation of these resources for different sectors of economy. The success of this objective requires massive efforts towards manpower planning and development. Planning for an adequate supply of manpower to meet the demands of the economy in various sectors is as important and crucial as the fixing of priorities based on a realistic assessment of the development needs of a region. Keeping these points in mind as well the suggestions made by Rajendra Prasad, Jawahar Lal Nehru, Planning Commission, V. K. Rajwade and others in view, the present study attempts to study the problem of economic development and manpower planning in the context of Arunachal Pradesh, which is a tribal state. For this purpose the following objectives are placed for consideration and scientific investigation:-

II. OBJECTIVE OF THE STUDY

1. *to identify the important causes for low levels of development in the study area.*
2. *to critically evaluate the nature and amount of fund allocation to the state under different plans, particularly in relation to, the growing needs of a strategically sensitive backward tribal state.*
3. *to analyse sectoral performance in relation to economic growth and manpower planning under different plans.*

4. *to study the nature of peoples participation at the grassroot level planning and development.*
5. *to make an objective assessment of the total manpower potentials needed for the development of the state.*
6. *'to evaluate the nature of availability and non-availability of infrastructural facilities for manpower development.*
7. *to investigate into the employment and un-employment situation and facilities available in the state.*

It is evident from the objectives of the study that the aspects of the study area are likely to assert greater influence on its objectivity. For this purpose, the selection of study area and its aspects have acquired enhanced significance.

III. STUDY AREA

Arunachal Pradesh is a thinly populated mountainous state situated roughly between latitudes 20°28'N and 29°30'N and the longitudes 91°30' E and 97°30'E on the North East extremity of India. It has a total area of 83,743 sq. km. forming India's international boundaries with Bhutan in the West, Tibet in the North-West, China in the North and North-East, Myanmar in the South-East and the state of Assam in the South. The heights of the mountain peaks increases from west to east. It shows a great variations in the altitudes ranging approximately 1829mt. in the west to 6,400 mt. in the east. Similarly there are large intra state variation from south to north. The foothills in the south has an altitude of approximately 350 mt. and it reaches over

6000 mt. in the north. Corresponding to these variations the associated environmental aspects like precipitation, vegetation, soil types, population density, animal lives etc. also vary ⁽⁸⁾.

Arunachal Pradesh is one of those states of India that has tribal population in majority. There are about 20 major tribes and more than 100 sub-tribes in the state. Its total population was estimated to be around 8,64,558 according to 1991 census. Peripheral location, rugged topography, extreme climatic conditions, relatively low population density, lack of infrastructure and difficult accessibility etc. have played important role in slowing down the process of development in the state. So, it is included among one of the most neglected and Backward states of the country. It is also an important reason for the overwhelming majority of scheduled tribe population in the state. These and many other factors have added their own share in complicating the problems of economic development in the state. But, due to its strategic location, it is one of the most sensitive states of India. This is perhaps the reason in attracting the attention of planners and scholars alike. For the first time British acknowledged the significance of this region and introduced a restrictive line of regulation popularly known as the ' Inner Line ' in the year, 1874 along the Assam - Arunachal (the then North-East Frontier Tract) border. This is still in operation though in a modified form ⁽⁹⁾. The aim of this was to restrict the free access of the people from other parts of the country to Arunachal Pradesh. And after the independence, the Government of India paid special attention to the economic development of this state and its people. But, even after over four decades of planned development the pace of development of the state is much slow

as compared to the other parts of the country. The natural barriers created by difficult hilly terrains continue to hinder in the development of communication and transport linkages thus, reinforce the relative isolation of the tribals from each other and also from the people from the main land. Majority of the people here are still practising the primitive type of **Jhum** cultivation. Spread of modern production techniques particularly in the field of agriculture has been lackadaisical. Limited flat land for permanent cultivation, inadequate facilities for irrigation, low level of literacy and education etc. have made it more difficult to successfully implement the developmental plans. Moreover, nonavailability of adequate number of technical and skilled manpower has also proved detrimental in the development of the state.

In view of above it is imperative to attempt a serious and concerted effort in this direction. To begin with, it is necessary to take advantages from the studies and opinions expressed by various scholars, political leaders, technocrats and administrators those were concerned with the planning and development of the tribal areas.

IV. SURVEY OF LITERATURE

The state of Arunachal, the erstwhile NEFA launched her first Five Year plan in the year, 1951 along with the other parts of the country. Since then the state has passed through eight Five Year Plans and six Annual Plans and now stepped in to the ninth Five Year Plan. The information about both physical and financial achievements made during these plans are available in the plan documents and other Government publications. Though, these documents are rich and authentic in providing factual information about

the plans and development under different plans in the state but, they present one sided i.e. government view only. Most of these are highlighting the achievements of the government in terms of numerical increase in the availability of schools, colleges technical institutions, students, teachers, number of Government employees and the data on the over all employment situation in the state. Thus, one needs to take utmost care while accepting the claims made in theses data sources. Therefore, it has become all the more essential to rely on alternative source of information and data. One of most important source in this regard is the published materials in the form of books, journals, reports, research papers, reports of the commissions, and researching findings of individuals and other non-government organisations.

Of all these, the book published by the Director of Information and Public relation, Arunachal Pradesh, Arunachal 1947-72, presents a pictorial descriptions of the life and culture of the people of the state along with a brief description of their wealth and industries. This book also gives an account of the availability of essential amenities and expenditures right from 1947-48. The merit of the book lies in providing enough data on base to start with ⁽¹⁰⁾. A. K. Agarwal in his book, *Economic Problems And Planning In North-East India*, gave an appraisal of the First Five of the Five Year plans of Arunachal Pradesh. There he indicated some of the priority sectors and problems of economic planning along with expenditure and achievements of some of the major heads of development in quantitative terms, in different periods. The author mentioned that there is an acute shortage of trained manpower in various technical fields which puts

hindrances in effective utilisation of natural endowments and also in executing the developmental objectives ⁽¹¹⁾.

Regarding manpower, the census records though give an account of the occupational classification of the population, but the multi-dimensional classifications in different age groups are not available. D.N. Barthakur mentioned that Arunachal Pradesh and Mizoram have the lowest number of trained personal particularly at the professional level in entire North-Eastern Region ⁽¹²⁾. Ms. J. Dasgupta observed that due to dearth of skilled manpower in Arunachal Pradesh the planning process, implementation of plans etc. were seriously affected in the initial stages. She also mentioned that human resource development need to be co-ordinated with the existing educational patterns of society, and the size of the population in different age groups to be covered for development under different programmes⁽¹³⁾. The Institute of Applied Manpower Research (IAMR) in a recent study made an estimation of demand and supply of manpower upto 2000A.D. The findings indicated the areas of availability as well as the deficiency in educational and training facilities of Arunachal Pradesh along with other state of the North-Eastern Region. It also suggested suitable measures for the development of manpower of this region⁽¹⁴⁾. *The Working Group Report On Manpower Development* upto 2000 A.D. of the North Eastern Council (NEC), while analysing the report of IAMR in its proper perspective, recommended some suitable measures for the development of manpower in N.E. Region ⁽¹⁵⁾.

Planning is a continuous process and there is no end or limit of development. But, there may be some variations of development depending on the situation at different time periods. To study the development process of an area for a longer time, the achievement in physical and financial terms is perhaps not enough. For a meaningful study, it is also necessary to know the trend of development, relation between allocation and expenditure or expenditure and physical achievement, rate of change, per unit cost, how and to what extent the benefit of planning is reaching to the common people in different plan periods. Regarding manpower planning, much attention is generally given on the educated manpower, but little attention has so far been given to the uneducated or less educated or the child labourers which constitute the vast majority of the manpower in the tribal areas. The state, though has a system of accounting the state income, but so far, there is no systematic procedure of accounting the manpower who are creating the wealth in the state. Conspicuous absence of literature on these important aspects demands immediate attention from the scholars.

The present work seeks to provide a more comprehensive picture of the under-development in the state of Arunachal Pradesh. For this purpose, the researcher proposes to place the following hypothesis for critical analysis.

V. HYPOTHESIS

1. Regional planning presupposes maximum homogeneity in terms of its socio-environmental factors. Single plan model for a heterogeneous region is likely to make marginal impact in the success of such plans -

Data on sections like :-

Sections

Sources of data

a) Agriculture and allied activities

Reports on Agriculture Census, other reports of the Directorate of Agriculture, AH & Vety, Fisheries and plan documents Government of Arunachal Pradesh.

b) Industry

Progress Reports and the Report on Industrial policy: Directorate of Industries Government of Arunachal Pradesh, Plan documents of the State Govt.

c) Infrastructure

Reports of the state PWD, RWD, PHE, Postal Department and plan documents, Government of Arunachal Pradesh , Publications of the Directorate of Economics and Statistics.



d) **Manpower**

Census Hand Books, Economic
census Reports, NSS Reports of
NSSO, Sarvakshana of the NSSO,
Reports of IAMR and NEC.

2. Higher literacy will show positive relations with economic and social development. Areas with relatively better educational facilities will be more developed than those with shortage of these.

Data on sections like : -

Sections	Sources of data
a) Literacy and sectoral development at different levels	Reports on population census, plan documents and other statistical reports.

Areas with higher level of interaction will have higher levels of economic and manpower development. Areas situated in the remote parts, from the point of view of spatial interaction, will show low levels of development.

Data on sections like : -

Sections	Sources of data
a) Road length and density	Reports of PWD, RWD, Census Hand Books and other statistical reports.

- | | |
|--|--|
| b) Connectivity and communication facilities | Reports of State Transport, PWD, P & T Department and other reports of the Government |
| c) Levels of human and economic development. | Census Hand Books, Economic census reports, plan documents and other Government publications |
4. Higher restriction on the social interaction due to strategic and cultural reasons will indicate a sense of exclusiveness leading to low levels of development.

Data on sections like : -

Sections	Sources of Data
a) Speakers of other languages	Reports and books on Socio Cultural aspects.
) Religious and linguistic groups	Census Hand Books, other publications and reports of State Govt, Books by individuals and Organisations

5. Planning being a continuous process, is likely to show better results with higher participation of people and greater regional equality. On the contrary, a bureaucratic central planning will reinforce regional disparities and low peoples' participation in the planning. Grassroot level planning is more sustainable in the tribal areas than sectoral planning.

Data on sections like :-

Sections

Sources of data

a) Decision making Bodies

Reports on Panchayat Raj system, plan documents and other reports of the Government.

b) Planning at District and Block levels and sectoral development.

Plan documents, Census Hand Books, Block level publications and other published reports.

It is evident from the above that the aspects of research covered will need sufficient and adequate data and factual information in order to make the research objective. Thus data collection, processing and presentation of data has specific significance in the work.

VI. DATA BASE AND METHODOLOGY

Data Base:

By the very nature of the study it is explicit that it will use considerable large data and information. Considering the paucity of data about the state of Arunachal Pradesh and particularly on aspects like Manpower Planning and Economic Development the researcher tries his best to explore all the possible data sources. Most of the data used is from the secondary sources. However, wherever it was necessary, data from the primary sources have also been used. Thus, the two main data sources used in the research are:-

a. Secondary Data Sources:- A tabular presentation of the Secondary data sources have been given along with the respective hypothesis. However, it is worth to mention some important secondary sources like;-

- i) *books, periodicals, journals, gazettes, newspapers, etc.* for a historical as well as socio-economic background of the study area; ii) Central and State Government's plan documents and planning reports of the North-Eastern Council for the availability of resources, planning process, allocation and expenditure, achievements etc. at different point of times;
- iii) *Census Publications, District census handbooks* for reports on vital statistics, demographic and populations statistics and other socio-economic aspects.
- iv) *District and State Statistical abstracts and handbooks* for all types of statistical information of the state.

- v) *National Sample Survey reports* for manpower and human resource development, employment and unemployment etc, for guidance and assessment of manpower of the state.
- vi) Reports and publications of the state and central election commission for peoples representation and election results etc.

However, wherever it was necessary primary data collection was done in collaboration with the national Sample Survey Organisation.

b. Primary Data Sources: It is evident from the survey of literature and the nature of data available from the secondary sources that there is paucity of required data. Therefore, it was necessary to generate requisite data through primary sources. Moreover, it was also essential for establishing the authenticity of the published data. In this research work field survey was conducted on sampling basis for estimation of manpower potentials. Estimation of manpower resources of the state on the multidimensional classification has been the special feature of the survey. A detail of the methods of data collection and presentation has been included in the sixth and seventh chapters. To estimate the human capital at the state level for analysing the relationship between skill formation and economic development, primary data of the 50th round of NSS has been used and details of the methodology used has been discussed in the seventh chapter.

Methodology:

It is said that for a scientific study availability of factual information is a must. But, simple collection does not make the study scientific. For that equally appropriate methodology is required. In the present thesis the methodology used included the following aspects:-

- a. selection and choice of indicators;
- b. study unit and collection of data for these indicators; and
- c. data processing and presentation.

a. selection and choice of indicators:- Data and information collected from different sources needed to be transformed according to the requirements of the objectives of the study. Thus, these information were transformed into indicators. Use of ratio, percentage, average and proportion etc. were used to transform data into indicators, a detail justification of the choice of indicators has been given in different chapters of this thesis.

b. collection of data for these indicators:- The present state of Arunachal Pradesh has passed through many stages before it emerged as fullfledged state of India on the 20th day of February 1987. During its long journey it experienced a series of administrative changes. Right from the nomenclature of Frontier Tracts to Frontier Agency to Union Territory and finally to the state there had been significant changes at the level of the lower order administrative units. To study the levels of development, the Community Development Blocks have been taken as the unit of

study. The need to take the block level study was felt because these are also the lowest level planning units in the state along with the latest addition in the grass root level planning. However, in other cases, the state as a whole has been considered as the study unit and data collected accordingly.

- c. data processing and presentation:-* Use of statistical techniques like correlation, regression, and measures of central tendency and dispersion like mean, median, standard deviation and coefficient of variation etc are common in the social sciences. In this thesis too these have been used. However, to find out the levels of economic development at the block level, composite index has been calculated on the basis of Z score, and finally quartile methods was used to classify the blocks in terms of their position. Use of cartographic techniques like bar diagram, and pie diagram etc have been used.

VII. CHAPTER SCHEME

The following chapter scheme is proposed for the study:-

Chapter 1:

Introduction -

- I) Statement of the problem
- II) Objective of the study
- III) Study area
- IV) Survey of literature

V) Hypothesis

VI) Data base and Methodology

Chapter 2:

Personality of the study area

Chapter 3:

Concept and Previous works on Manpower Planning and Development.

Chapter 4:

Review of Planning and Development Activities in Arunachal Pradesh.

Chapter 5:

Review of Manpower position in Arunachal Pradesh.

Chapter 6:

Levels of Economic Development: A Methodology Interpretation (Data by Blocks)

Chapter 7:

Skill formation and Economic Development: (state level Estimation Method and Analysis)

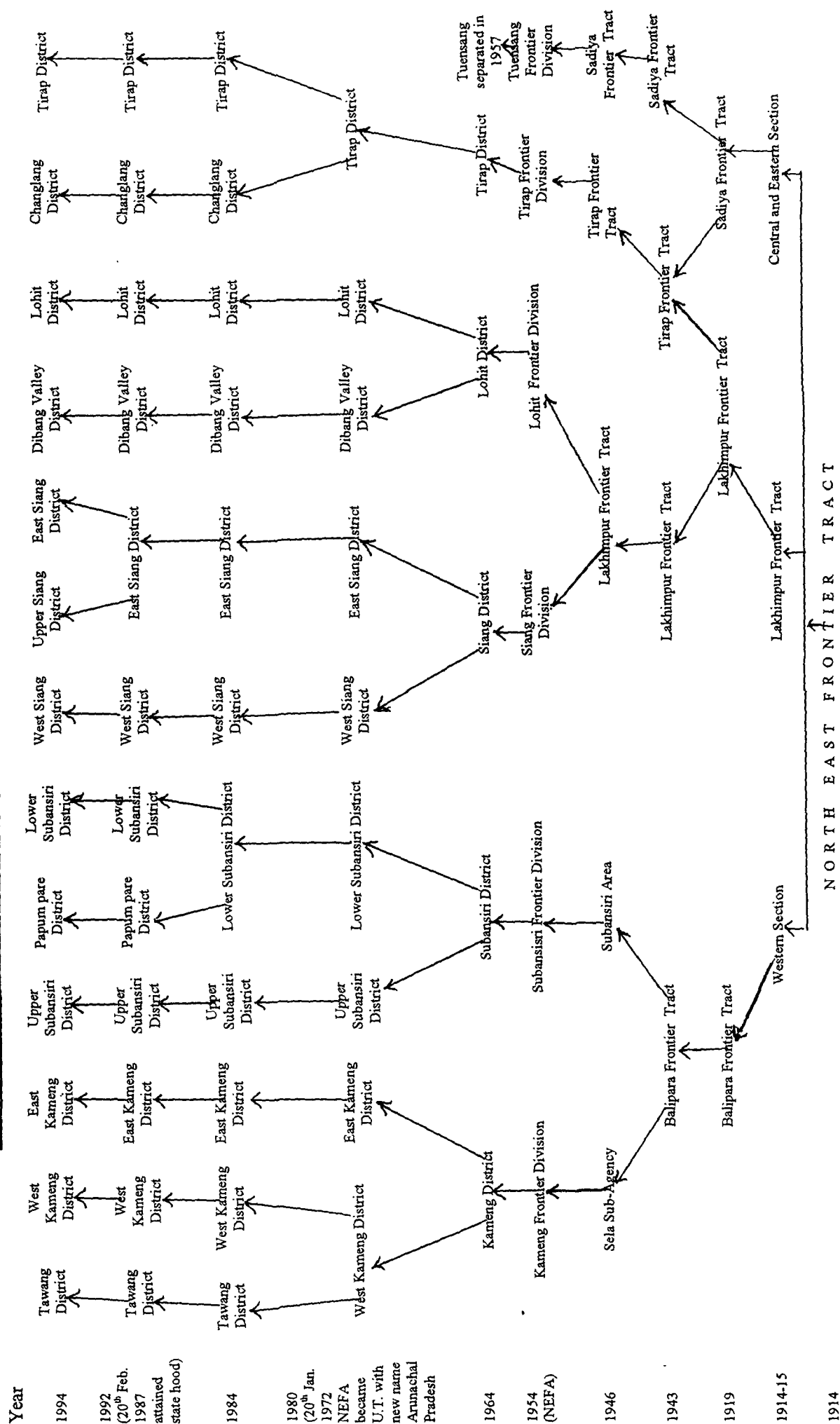
Summary of main conclusions and recommendations.

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EVOLUTION OF ARUNACHAL PRADESH AND ITS ADMINISTRATIVE CENTERS



CHAPTER 2

PERSONALITY OF THE STUDY AREA

Development unlike economical growth represents a synthesis between man as a social being in his entirety interacting with the natural environment in most harmonious relations. Organic and compatible relationship between man and environment is an imperative in societies that are in the initial stages of development. The state of Arunachal Pradesh does not only lie in the geographical periphery of India but, it also shows its marginalised status in every other sphere of the life and history of its people. These particular aspects had played significant role in the development of the state in the past and the situation is not significantly different even after fifty years of independence and planned development. Scholars have attributed various reasons for slow pace of development in the state. In this chapter attempts have been made to analysis the role of :-

1. The Physical setting
2. The Geographical Personality of the state.
3. Historical experience of the state and its people.
4. Changing social profile of the state
5. Economic status of the state in terms of economic development particularly in relation to manpower planning and economic development.

PHYSICAL SETTINGS

Arunachal Pradesh, the erstwhile North Eastern Frontier Agency, popularly Known as NEFA is a thinly populated mountainous state. It was mentioned in the last chapter that the state of Arunachal lies roughly between 26°28' N and 29° 30' N latitudes and 91° 30' E and 97 ° 30' E longitudes on the North East extremity of India. The state is comprising of a total area of 83,743 Sq. Kms forming India's international boundaries with Bhutan in the West, Tibet in the North-West, China in the North and Myanmar in the South-East. From the South it is bordered by the state of Assam. The overall hilly features of the state shows that it gradually rises from about 350 metres height in the foot hills in north bank of river Brahmaputra to mighty convolutions of mountain ranges and spurs over 6,000 metres in the Greater and Trans Himalayas. It is a tangle of deep gorge like valleys, densely wooded mountain slopes, dissected by numerous torrents and rivers, deep river valleys and a belt of tropical rain forest.⁽¹⁾

GEOGRAPHICAL PERSONSLITY OF THE STATE

The state of Arunachal Pradesh is part of the mighty Himalayan mountain system. Thus, in terms of its geological history it is of relatively recent origin and consequently the Geomorphological processes are very active in shaping and reshaping the land forms in the state. These have played active role in shaping the geographical personality of the state. Some of the important characteristics features of its topography being highly undulating relief. The elevation of terrain particularly heights of the mountain peaks increases from the western end to the easternmost corner. It has large

intra regional variation ranging approximately 1,829 metres to 6,400 metres. Corresponding to these physiographic variations the other associated attributes like rainfall, temperature, vegetation cover and soil types etc. also changes within the state. Of all, the most significant variation is noticed in terms of vegetation cover. The State. Arunachal Pradesh is one of the very few States of the India that has over 61.55 per cent of its geographical area covered under forest. The rich forest cover of the state are also vivid in terms of variety of plant species and vegetation. It is most significant for the economic development of the state. It ranges from swampy rain forest at the foothills and low-lying areas in the eastern part of the State to the tropical and subtropical vegetation cover up to the height of approximately 2,134 metres. This vegetation zone is distinguished by valuable trees of great size, plentiful climbers and abundant undergrowth. Among the climbers cane is the most noticeable. Orchids of numerous varieties are also in abundance. Beyond 2,134 and upto 2,743 metres, there are deciduous and mixed deciduous forests comprising mainly of walnut, oak, chestnut, pine, spruce and rhododendron. Beyond it and upto an altitude of 3,658 metres the wide stretch of area is generally claimed by conifers. Going still further up, the flora yields to plentiful rhododendrons of dwarfish stature and wild strawberry bushes. Above 4,877 metres and right upto the snow line, is the region of alpine meadow.

Since most parts of Arunachal Pradesh falls within the altitudes ranging from of 500 to 1,524 metres. These areas are relatively more populated than others. The higher areas experience snow-fall during the winter months from November to March. But, the duration and intensity of winter depends on the location and particularly height and slope of specific place. The state of Arunachal Pradesh also

forms part of heaviest rainfall regions in India. But, the incidence and condition of precipitation varies from one part to other, there are great contrasts in temperature between the low-lying areas and place at higher altitudes.⁽²⁾ Similar differences are also witnessed in case of precipitation. The rain normally starts from the month of April and continues upto the end of September. However, June and July are said to be the months of heaviest rain in the state. Though, the amount of rainfall is considerably high yet, the topography of the state does not provide much scope for retention of water. Tanks, ponds, jheels etc. are negligible in number and the rain water quickly runs down the hill through innumerable swifts flowing river and rivulets in the plains of Assam. These drainage & channels cause large scale landslides in the state and frequent floods in the neighbouring states.

Like the flora, the deeply wooded terrains of Arunachal Pradesh are also rich in fauna. Among the great variety of wild life in the state, the most commonly noticed are tiger, black panther, black deer, leopard, wild elephant, barking deer, musk deer, monkey and langur, wild buffalo, wild goat, flying fox and many kinds of birds.⁽³⁾ Apart from these, the state is very rich in natural resources like water and hydroelectric power potentials. Moreover, the unexplored and adventurous terrain of this strategically sensitive state has vast potentials for the development of tourism industry. The socio-cultural diversity of the state has further enhanced the scope of new areas and avenues of economic development. There are various reasons behind the rich cultural tradition and social diversity in the state, but among the most significant one is the process of peopling and historical evolution of the state.

CULTURAL PERSONALITY OF THE STATE

The state of Arunachal Pradesh is the homeland of about 20 major tribes and more than 100 sub-tribes. The major tribes are Sherdukpen, Monpa, Aka, Miji, Khoa, Bagni, Mishi, Hill Miri, Sulung, Apatani, Tagin, Memba and Khamba, Adi, Mishmi, Khamti, Singpho, Nocte, Wancho, Tangsa, Lisu etc. According to historians and other scholars, the tribal people of the state with Mongoloid characters had a South East Asian origin and their migration to Arunachal Pradesh took place in prehistoric times.⁽⁴⁾ The racial affiliation of the people of this state has been described by scholars as Mongoloid, Palio-mongoloid, Proto-mongoloid and so on. But Anthropologist also noticed deviation in racial type among different sections of the same group, particularly among the ethnic groups spreading along the Central parts of the state. These are considered to be the earliest migrants to this area.

The tribal people of Arunachal Pradesh are predominantly agriculturists. The rural people mostly depend on agriculture, free collection from surrounding forests; use of vegetation and wild life constitute the major portion of their livelihood. Since the area is not much exposed to the agricultural development as compared to other areas of the country the age-old traditional methods are still prevalent in the agricultural pursuits. Limited availability of flat land, lack of protective measures for land development, paucity of irrigation facilities has offered limited choice before these people. As a result of this they follow primitive method of shifting (jhum) cultivation throughout the state. However, the Apatanis of lower Subansiri district, gifted with some amount of flat land, have been pursuing settled rice cultivation in an improved manner for a long time. Improvements have also been noticed among the Adis of

Pasighat, Mebo, Roing, Dambuk, Khamtis of Chaukham and Namsai, Monpas of Tawang and Dirang in this regard. However, the situation is far from satisfaction. There are various reasons for the same. But of all the most pertinent one is the historical factor in the life of the people.

Paucity of significant written historical records and evidences have always been the major hindrances in constructing the history of the tribal population. The situation in the case of Arunachal Pradesh is in no way different. Though, the state and its people have rich resource for constructing history by using tools of alternative history, but, unfortunately not much have been done so far in this regards. Therefore, the present study is compelled to make an abrupt beginning about the history of the state with their encounter with the British in early 19th century.

HISTORICAL BACKGROUND

The historical accounts of Arunachal Pradesh and its people dates back to the late Ahom period in the eighteen century. Since then it has changed so much that the relatively neglected and unchanging life of the people galloped with brisk pace. For the purpose of gaining proper understanding about the changes experienced by the people and state in the past their history can be divided in to following important phases :-

AHOM PERIOD

To get a proper historical perspective of the North East Frontier Tracts, the homeland of numerous tribal groups, it is essential to go back to Ahom Period and

particularly for understand the inter-tribal relations in the past. The importance of this reference point lies in the legacy of these relations that formed the basis of British policies in the region. In fact as far as the history of the state is concerned the British period also coincided with the end of Ahom rule.

It appears from the historical evidences that “**Sukapa**” the founder of the Ahom kingdom came across the Patkoi hills in early thirteenth century. He first carved out a principality for himself in the south-east corner of the present **Sibsagar** district. The conquest of this area subsequently force submission on the aborigins of the region. Since then the policy of the Ahom rulers towards the frontier tribes largely depended on the relative strength/weakness of the ruling monarchs and also dictated by political exigencies. The Ahom rulers were always ready to exploit any opportunity that presented itself to extend their sovereignty over the neighboring hill tribes. But, the Ahoms generally pursued a policy of conciliation. In order to regulate relations with and to keep the bordering tribes under control, Ahom rulers appointed frontier officials designated as Salal Gohain, Marangi Khowa Gohain and Sadiya Khowa Gohain and since the time of **Susengpha** alias **Pratap Singha** (1603-41) Katakis were also appointed to keep watch on the movements of the hill tribes and to keep the authorities informed of their intentions.⁽⁵⁾

After the conquest of Assam by the Ahoms, it was found that the **Akas**, **Daflas**, **Miris**, **Mishmis**, **Nagas** etc. living in the mountains to the North and East of the Brahmaputra valley were in the habit of coming down in the plains contiguous to their respective hills and taking by force whatever they found before them. These rapacious

attacks were a source of constant worries to the Ahom rulers. At first the Ahom rulers tried to protect the interest of their subjects with the help of their armed forces, but ultimately they realised the futility of giving such protection and later on introduced the policy of keeping the tribesmen living in the frontier areas in good humor. Payment of **Posa** (allowance) constituted the most significant aspect of the Ahom-Hill tribesmen relationship. **Posa** is defined as allowances paid to certain hill tribes inhabiting the hills on the northern frontier of Assam bordering Darang (Sonitpur) and Lakhimpur, on account of commuted 'blackmail' or in consideration of the abandonment by them of their claims. It was also stated that the word '**POSA**' literally means a collection of subscription for a common purpose. ⁽⁶⁾

It has been found that the decline of the Ahom monarchy dates back to the middle of the eighteenth century. During this period, great confusion and chaos prevailed in the Ahom kingdom vitiated by palace intrigues and assassinations. It was found that *Badan Bar Phukan* who became jealous of the power of the *Bor Gohain*, the Ahom Prime Minister, first sought the help of the British to oust the *Bor Gohain* from his position. But, having failed to persuade the British, he went to the Court of the king of *Ava* in Burma and succeeded eventually in getting his support. As a result a huge Burmese army came to Assam towards the end of 1816. At this critical juncture, the Ahom Prime Minister died and all responsibility fell on his eldest son who was quite inexperienced in conducting the affairs of the state. The Burmese then continued with their triumphant march, and the new *Bor Gohain* fled away to Guwahati. The *Bor Gohain* who suspected the Ahom King Chandrakanta, having conspired to throw him over to the enemy, invited an Ahom prince Purandar Singha and put him up as a

pretender to the Ahom throne. In the meantime, the *Bor Phukaan* who enjoyed momentary glory, was assassinated in another court intrigue. But, at one stage, both Chandrakanta and the Pretender Purandar Singha sought British help for driving out the Burmese occupation army. Meanwhile, the invading Burmese army created great havoc by its indiscriminate slaughter of innocent people, destruction of property, desecration of temples and burning down villages. The Burmese at last succeeded in enticing Chandrakanta to leave British protection. He was then immediately seized and confined. The Burmese also continued to give offense to the British across the border and demanded surrender of fugitives who had sought shelter in the British territory. The British finally declared war against Burma on the 5th March 1824. The war lasted for about two years and ultimately the Burmese army retreated before the superior might of the British which put an end to the Burmese occupation of Assam. The British finally annexed the whole of Assam in 1838 and constituted it into a Non-Regulated Province of the British Empire in India.⁽⁷⁾ Thus, thereafter, the region was brought under direct British rule.

BRITISH PERIOD

To regulate relations with the tribal people of North East India, the British at the very beginning realised that the tribesmen are extremely zealous of their independence and possession of their land. They also understood that territories under tribal occupation have their specific problems which needed special administrative approach . Depriving them from their rights and privileges that were enjoyed by them under the Ahom and enforcement of alien laws were not only unsuited to their primitive conditions but these were also contrary to the spirit of their customs and religion. Thus,

they realised that forceful enforcement of these may lead to dissatisfaction and pave the way for rebellion. Keeping this in mind and to facilitate administration, the British laid down a *restrictive line* what came to be known as '*Inner Line*' in 1874. Such lines were drawn in the district of Kamrup and Goalpara towards Bhutan, in Darrang (Sonitpur) towards the Bhutiyas, Akas, and Daflas; in the Lakhimpur towards the Daflas, Miris, Abors, Mishmis, Khamtis, Singphos and Nagas, in Sibsagar towards the Nagas.

The main purposes of this were:-

- (i) To bring under control the commercial relations of the British subjects with the Frontier Tribes and to prevent encroachment of tea gardens beyond the fiscal limits of settled areas and lay down rules for the possession of land and property beyond this line.
- (ii) To promote trade relations with the tribes like the Ahoms. The British also organised a number of fairs in the foothills areas to build their links with the locals. There was a great demand of the forest produce at that time which the hillmen brought down. Some of the important local products like rubber, mujista, mishmitater, deer musk etc. were in great demand to the British Traders. It was observed that many of the tribes were extremely trade-minded and the importance which the fairs acquired could be judged from the available fact that in 1876 as many as 3,600 tribesmen attended the Udalguri fair, and about 3000 hillmen came down to the Sadiya fair-in the same year.

- (iii) Further, to bridge the gap between the administered areas and the Inner Line through extension of political control the Dibrugarh Frontier Tract was created in the year 1882.⁽⁸⁾ In 1912, a western section of the North East Frontier Tract was also created under the charge of the Deputy Commissioner Darrang (Sonitpur) mainly with the idea of controlling the depredations of the tribesmen in the plains areas.

The then Government of India, extended the Assam Frontier Tracts Regulation of 1880 to the hills inhabited by Abors, Miris, Mishmis, Singphos, Nagas, Khamtis, Bhutias, Akas, Daflas and other tribes in the year 1914. It was done through a notification issued by its Foreign and Political Department. As a result of this notification the hills inhabited by the tribes mentioned above were separated from Darang and Lakhimpur districts of Assam and constituted into the North-Eastern Frontier Tract. The important clauses of this notification included:

- i) The first clause defined the extent of the tract inhabited and frequented by Abors, Miris, Mishmis, Singphos, Nagas and Khamtis, and constituted it into the **‘Central and Eastern Sections, North-East Frontier Tracts’** after separating it from the Lakhimpur district.
- ii) The second clause similarly defined the tract inhabited by Singphos, Nagas and Khamits and named it as the **‘Lakhimpur Frontier Tract’** after separating the tract from Lakhimpur district.

- iii) The third clause marked out the extent of the territory inhabited by Bhutias, Akas, Daflas, Miris and Abors and having separated it from the Darrang and Lakhimpur districts of Assam, constituted it into the '**Western section, North East Frontier Tract**'.

After the changes introduced by the notification of 1914, the administrative set-up of the reconstituted North East Frontier Tract was thus divided into three political and administrative units viz;

- (i) The Central and Eastern section
- (ii) The Lakhimpur Frontier Tract, and
- (iii) The Western section.

The southern boundaries of the Eastern, Central and Western sections as well as the Lakhimpur Frontier Tract were at the same time formally defined along the 'Inner Line' in the districts of Darrang and Lakhimpur. The Central and Eastern sections were placed under a political officer with headquarters at Sadiya. The Western section was placed under a Political Officer with its headquarters at Charduar while the Lakhimpur Frontier Tract continued under the charge of then Deputy Commissioner of the Lakhimpur district of Assam. However, the nomenclature of different units further changed and the Central and Eastern sections were re-designated as the *Sadiya Frontier Tract* and the Western section as *Balipara Frontier Tract* while *Lakhimpur Frontier Tract* retained its nomenclature.⁽⁹⁾

In the meantime, an important phase in the political development of the country as a whole and the hill areas in particular followed in the wake of the Montague-Chelmsford Report of 1917. This report suggested exclusion of the typically backward areas from the jurisdiction of the then proposed Reformed Council. The recommendation implied that the administration of these areas should be carried on as hitherto entirely by regulations made by the Governor -General-in-Council under provisions of the Government of India Act, 1915. The Government of India Act 1919 which eventually emerged out of the Montford Report authorised the Governor-General-in-Council to declare any territory in British India to be backward area. Finally in 1921, the Governor-General, acting under the act of 1919, designated all tribal areas in Assam as 'Backward Tract'. This was accompanied by an instrument of instructions to the Governor of the new province of Assam enjoining upon him to initiate measures as he thought proper for the advancement and social welfare of the tribal areas under his exclusive charge. One particular provision of this Act, in effect, barred both the Central Indian Legislature and the Legislative Council of Assam from enacting legislation for the tribal areas without the express consent of the Governor General or the Provincial Governor. Thus, while the North East Frontier Tract was politically made a part of Assam, the Government of Assam was denied direct participation in the administration and governance of the tribal areas.⁽¹⁰⁾

The Indian statutory Committee, popularly known as the '**Simon Commission**' appointed in 1928, sought to introduce a new principle with regard to the administration of the hill areas under tribal settlement. It suggested that the tribal areas should be marked out as 'excluded' and 'partially excluded' areas in consonance with respective

stage of advancement in the scale of literacy and political consciousness. The suggestions were widely debated by scholars, administrators and leaders of public opinion prior to the enactment of the Government of India Act, 1935, which marked the most important phase in the history of constitutional development of the country .

However, the position with regard to the Frontier Tracts remained unchanged till 1937. The Government of India Act 1935, which granted some measures of provincial autonomy and introduced certain constitutional reforms, kept the Frontier Tracts out of its purview. But, the order issued in March, 1936 and called 'The Government of India (excluded and partially excluded areas) order 1936, classified the Balipara, Sadiya and Lakhimpur Frontier Tracts of the North East Frontier as 'excluded' areas and the administration of these areas was vested in the Governor of Assam who administered them in his discretion through the Political Officers and the Deputy Commissioner of Lakhimpur in respect of Lakhimpur Frontier Tract.⁽¹¹⁾

The administrative set up witnessed further changes from the year 1943. In order to make working more viable and effective a new administrative charge was created with certain portions of Lakhimpur Frontier Tract and Sadiya Frontier Tract and was called the Tirap Frontier Tract which was placed under a separate Political Officer with his headquarters at Margherita. In 1946, the Balipara Frontier Tract was divided into the Sela Sub-Agency and the Subansiri Area with their headquarters at Charduar and Lakhimpur respectively. But, both the units remained under the jurisdiction of the political officer of Balipara. In 1948, Sadiya Frontier Tract was similarly divided into two separate units namely the Abor Hills and the Mishmi Hills (which are known as

Siang District and Lohit District) each with their own Political Officer, stationed at Pasighat and Tezu respectively.⁽¹²⁾ In the year 1947 the independence of India from the British rule had made significant impact upon the formation of this state

POST INDEPENDENCE PERIOD

Immediately after the independence of India in 1947, the Governor of Assam was divested of his discretionary powers with respect to the North East Frontier Tracts and the Government of Assam assumed administrative jurisdiction over the area by virtue of the provisions of the Indian Independence Act, 1947. The administration, however, continued to be carried on by the Governor on the advice of the Chief Minister, but the question about the discretionary power of the Governor of Assam with regard to the tribal areas of the North East India continued to be a point of debate in the Constituent Assembly which formulated and approved the constitution of Independent India. Right from the beginning the sentiment of resentment and opposition had become quite significant among the tribals in the region as they were against their incorporation under the Government of Assam. However, with the introduction of constitutional rule in 1950 the constitution virtually re-enacted the provisions of the Government of India Act, 1935 as far as North Eastern Frontier Area was concerned. According to this the authority of the Governor of Assam acting in his discretion over the North East Frontier Tracts as Agent to the Central Government was restored. On 26th Jan, 1950, the Adviser to the Governor of Assam assumed direct charge of the administration of the North East Frontier Tracts.⁽¹³⁾

The administrative framework devised by the British for the North Eastern Frontier Tracts though initially retained by the new constitution of Independent India, yet the approach and policy of tribal administration underwent a radical change. Instead of adopting the British method of sending expeditionary forces into the hills, causing indiscriminate destruction of villages accused of breaking peace, and other punitive measures, regular network of administrative centers were established to understand the tribal problems and to bring a permanent solution to the inter tribal feuds or village rivalry or occasional depredations caused by tribal incursions into the plains.⁽¹⁴⁾ Thus, efforts were made to institutionalise the reconciliation and incorporation process. As a result it was thought to raise a permanent administrative set-up in tune with the all India pattern. This also initiated the process of formalising a separate tribal territory for the hill tribes men.

EMERGENCE OF NORTH EAST FRONTIER AGENCY (NEFA)

With rapid expansion of administration in the interior of the Frontier Tracts spatial interaction at the intra and inter regional levels increased manyfolds. Moreover, it was realised that an efficient administrative machinery is a must for executing various developmental program. Accordingly, momentous reorganisation took place in the year 1954. The promulgation of the North East Frontier (Administration) Regulation, 1954, inaugurated a full-scale and integrated administrative structures for the entire area under the name of North East Frontier Agency (NEFA) for the first time. In the same year, the erstwhile Frontier Tracts were redesignated as Frontier Divisions, and a realignment of the administrative topography also took place with the division of Balipara frontier

Tract into two separate divisions viz.- the Kameng Frontier Division and the Subansiri Frontier Division. As a result of the reorganisation the whole administrative area was divided into six frontier divisions as follows:-

1. The Kameng Frontier Division with headquarters at Bomdi-La
2. The Subansiri Frontier Division with headquarters at Ziro.
3. The Siang Frontier Division with headquarters at Along.
4. The Lohit Frontier Division with headquarters at Tezu.
5. The Tirap Frontier Division with headquarters at Khela.
6. The Tuensang Frontier Division with headquarters at Tuensang.

Each division was placed under a Political Officer. Thus, there were six Political Officers for the Six Frontier Divisions. In addition to that, eight Assistant Political Officers were appointed under respective Political Officers both at headquarters and in-charge of important Administrative Centers. Apart from this, a number of Base Superintendents were also put incharge of various administrative circles spread over the divisions. The technical departments such as education, public health, engineering, forest, agriculture, community development, cottage industries etc., headed by offices at the divisional headquarters with smaller units at the administrative centers either on a permanent basis or deputed touring officers to initiate and supervise development programme in the far flung areas.

Thus, the question of integration of the Frontier areas with Assam was always under dispute between the Central Government and the public opinion in Assam, but

NEFA continued to be centrally administered . Thereafter, however, the Naga movement for a separate Naga state brought about a minor change and the Tuensang Frontier Division was separated out from NEFA in the year 1957. ⁽¹⁵⁾

When every effort was being made by the Government to consolidate the gains of administration and enhance the quality of life of the tribal people of the region, China mounted a massive attack across India's Northern border on 20th October, 1962 and over-ran the Kameng Frontier Division and also occupied some areas of three other Northern Frontier Divisions of NEFA. However, later on, China withdrew her troops beyond the frontiers. ⁽¹⁶⁾ Due to this aggression, the efforts to streamline administration and to bring about changes in the set-up received fresh impetus. The size of the cadre, both in the political and technical wings of the administration was expanded and new administrative units were carved out of the existing divisions and placed under the charge of Additional Political Officers who were given enormous powers. These new units were in fact sub-divisions under the respective Frontier Divisions. These were as follows: ⁽¹⁷⁾

1. **Kameng Frontier Division :**
 - (a) Bomdila under Political Officer.
 - (b) Tawang under Additional Political Officer.
 - (c) Seppa under Additional Political Officer.
2. **Subansiri Frontier Division :**
 - (a) Ziro under Political Officer
 - (b) Daporijo under Additional Political Officer.
3. **Siang Frontier Division**

- (a) Along under Political Officer
- (b) Pasighat under Additional Political Officer
- 4. Lohit Frontier Division**
 - (a) Tezu under Political Officer
 - (b) Anini under Additional Political Officer
- 5. Tirap Frontier Division :**
 - (a) Khonsa under Political Officer.

In the year 1965, further developments in the administrative evolution of NEFA took place. As a result of the recommendations of the Daying Ering Commission, appointed by the Government Of India, the North East Frontier Agency was transferred from the charge of the External Affairs Ministry to that of the Home Ministry on 1st August, 1965. Further on 1st December of the same year, the nomenclatures of the administrative divisions were also changed. The Kameng Frontier Division renamed as Kameng District, the Subansiri Frontier Division became the Subansiri District, the Siang Frontier Division became the Siang District, the Lohit Fronteir Division became the Lohit District and the Tirap Frontier Division was called the Tirap District. Correspondingly, the Political Officers, the Additional Political Officers and the Assistant Political Officers were redesignated as Deputy Commissioners, Additional Deputy Commissioners and the Assistant Commissioners respectively.

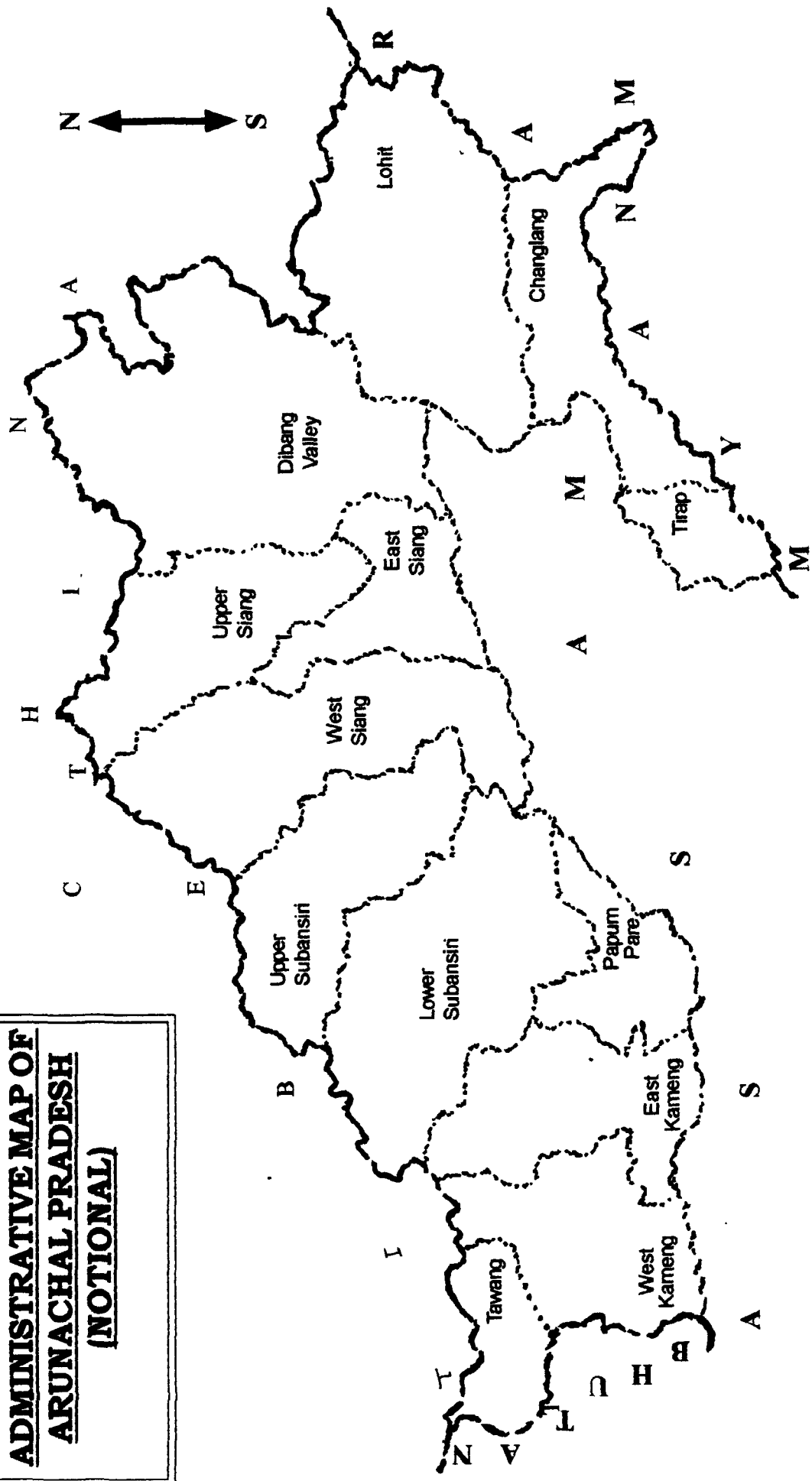
In the meantime, the process of streamlining the administrative machinery was initiated in order to bring it closer to the all-India pattern. Splitting of districts into sub-divisions and establishment of more administrative circles under Circle Officers

proceeded simultaneously. Additional Deputy Commissioners, Assistant Commissioners and Extra Assistant Commissioners took charge of the sub-divisions and important administrative centers. These administrative as well as territorial change were necessitated due to political and strategic reason.⁽¹⁸⁾ And ultimately proved important steps in the evolution of a full-fledged state within India.

ATTAINING THE STATUS OF UNION TERRITORY AND STATE

The political and constitutional developments that have been taking place during later sixties, lead NEFA towards a separate status. On 21st January, 1972 NEFA attained the status of Union Territory under the provisions of the North Eastern Areas (Regulation Act 1971(8) of 1971) with a new name of Arunachal Pradesh. Thereafter, it was placed under the charge of a Chief Commissioner with his headquarters at Shillong. The headquarters of the Union Territory was later on shifted from Shillong to the newly built capital complex at Itanagar in the year 1974. On 15th of August, 1975 the Union Territory of Arunachal Pradesh was endowed with a Legislative Assembly with a Chief Minister and a cabinet of four Ministers. Initially these were created and to assist the Lt. Governor appointed on the same day as the Administrative head of the Union Territory. The first General Election to the 30 members Arunachal Pradesh Assembly was held in 1978. Finally, on 20th February, 1987 the Union Territory of Arunachal Pradesh attained the status of a full-fledged state and at present it has 60 members Legislative Assembly along with the Governor of the state to run the administrative and political matter of the State.

ADMINISTRATIVE MAP OF
ARUNACHAL PRADESH
(NOTIONAL)



It was mentioned that till May, 1980, Arunachal Pradesh consisted of five districts. But under the Arunachal Pradesh Reorganisation of District Act, 1950, four more districts were formed by dividing the areas of Kameng, Subansiri, Siang and Lohit districts. On 1st day of October, 1984, two more districts were created by carving out West Kameng and Tirap Districts.⁽¹⁹⁾ Finally one more district with the name of Papum-pare was formed on September' 92. It included the areas of Itanagar and Naharlagun with its headquarters at Doimukh. In November 1994 yet another district named upper Siang was created with its headquarter at Ying Kiong. Thus as shown over the Administrative Map of Arunachal Pradesh, there are at present thirteen districts in Arunachal Pradesh. These are : 1) Tawang (2) West Kameng (3) East Kameng (4) Lower Subansiri (5) Upper Subansiri (6) West Siang (7) East Siang (8) Diang Valley, (9) Lohit (10) Tirap (11) Changlang (12) Papum-Para and (13) Upper Siang.

The entire area of Arunachal Pradesh was treated as rural upto 1961 census. But in 1971 census, only four district and sub-divisional headquarters i.e. Bomdila, Along, Tezu and Pasighat were treated as towns. In 1981 Census, two more places viz., Itanagar and Naharlagun were declared as towns. But, in 1991 Census, the total number of towns went upto 10 (ten) with the new addition of Ziro, Roing, Namsai and Khonsa in the list of urban areas of the state of Arunachal Pradesh.

The graduation of North Eastern Frontier area to the status of full fledged state within Indian Union is a saga of negotiation and settlement. And all these have greatly influenced the social composition of the State.

SOCIAL PROFILE OF THE STATE

The State of Arunachal Pradesh is a hilly area of varying altitudes and the people generally live in relatively isolated groups. The physical features of this area do not only restrict the movement and inter mixing of people of different groups and hinder the easy growth of awareness among them, but also favour retention of local culture and identity to some extent. The people of the upper regions had little contact with the people of lower regions, particularly of the plains. It was observed that the upper north western side of the state was greatly influenced by the Indo-Tibetan Culture. It was believed that for the past many centuries many of the Tibetan traders came down for trading and settled down in the valleys of the Greater and Trans Himalayas. Thus, many Buddhist Settlements came-up, particularly in the upper regions of Kameng and Siang districts. As a result the Buddhist ways of life became visible amongst the people of these areas.⁽²⁰⁾ But, the people of the north eastern region of the State is said to have their origin in Myanmar (Burma) and Thailand and many of them were influenced by those cultures.⁽²¹⁾ However, the people of the lower regions had the opportunity of mixing with the people of the plains of Assam and some of them adopted even their language, clothing, food habits, agriculture and the other ways of life. Another interesting aspect of the life of the people of Arunachal Pradesh is that besides their own languages, many of them can understand and speak Hindi and Assamese. Thus, Trilingualism is very common cultural feature of the people in the state. In educational institutions too, along with English, Hindi and Assamese are also used as medium of instruction.

In the backdrop of these changes the social composition also changed significantly. Broadly speaking the people of Arunachal Pradesh have been divided into three broad groups on the basis of their Socio-cultural affinities.

- (1) The first group consists of mainly Monpas and Sherdukpens of Tawang and west Kameng districts who are the followers of Buddha. They follow the Lamaistic tradition of Mahayana Buddhism.⁽²²⁾ Many beautifully decorated Buddhist monasteries commonly called Gompas, form part of their rich cultural heritage in these areas. The monastery of Tawang, which was founded about 400 years ago is considered to be the biggest Buddhist monastery in India.⁽²³⁾ Buddhist art is also much in prevalent in these areas. Reflection of it can be seen in the art, crafts and in the decoration of the houses of these people. Traditionally they are cultivators and generally practice terrace cultivation along with rearing of yaks and mountain sheep. Culturally similar to these are the Membas and Khambas of Subansiri and Siang Districts who live in the high mountain regions along the northern border. Some of the important tribal groups inhabiting these area are Khamptis and Singphos of Lohit and Tirap districts. They belong to the Hinayana sect of Buddhist Tradition.⁽²⁴⁾
- (2) The second groups of people are the Akas, Mijis, Adis, Apatanis, Bangnis, Nishis, Mishmis, Tangsas etc. inhabiting the hills from Se-La in Tawang district to greater parts of upper Subansiri, Siang, Lohit and Tirap district. They are different from the Buddhists, and worship the Sun and the Moon God, namely *Donyi-Polo* and *Abo-Tani*, the mythical first man who is believed to have been

the original ancestor for most of these tribes.⁽²⁵⁾ Their rituals, generally coincide with the turning of agricultural cycles. They invoke nature deities and make animal sacrifice. Traditionally, they practise jhum or shifting cultivation. Though, these tribes have different traditions, yet, they are culturally similar because of their attachment to weavings, wood carving and a degree of excellence in fine works of cane and bamboo.

- (3) The third group is confined in district Tirap and Changlang and it is comprised of Tangsas, Noctes and Wanchos tribes. All these tribes have wide contacts with their brethren across the Patkai hills in Mynmar (Burma) and have been influenced to a great extent by them.⁽²⁶⁾ They are very much industrious and are known for their strictly structured village society in which the village chief plays a vital role. They generally practise the traditional methods of Jhum or the shifting type of cultivation.

The Tangsa women are famous for their weaving skill. They have preference for geometrical designs on their cloths. But, the Tangsas lack proficiency in wood - carving. This is a marked contrast between them and their neighbours, particularly the Noctes and Wanchos, who take special delight in wood - carving. On the contrary, the Tangsas are, rather more proficient in cane and bamboo crafts.⁽²⁷⁾ The Wanchos are well known as hunters of the region. Their dresses too are quite simple. According to Verrer Elwin, “the Wancho traditionally are not fond of clothes, but make up for this by use of splendid ornaments of ivory, horn shells and heads while the more ephemeral grace of features and flower distinguishes their ears and hair.”⁽²⁸⁾ The Noctes, however, from the

ancient days are very much closer with the people of the plains of Assam. From historical evidences it appears that from the days of the Ahom Kings, they maintained close contact with the plains not only for trade, but also in exchange of cultural traits and social customs. This is evident from the spread of Vaishnavism, which they imbibed from the many Vaishnava Satras of Assam.⁽²⁹⁾

In spite of the cultural diversification, the tribes of Arunachal Pradesh have some common social features. The social organisation among them without any exception is patrilineal and the oldest male member is regarded as the guardian of the family. Marriage is usually negotiated and the groom has to pay a bride price to the guardian of the bride. Members of the same clan cannot marry within it, but it is permissible with members of other clan. polygamy is permitted but monogamy is the usual practice. Polyandry is restricted to only some Adi tribes and is practically dying out. Though, it is a patriarchal society yet, women in general enjoy a good deal of respect in society.⁽³⁰⁾

Tribal community in the State generally live an exclusive life of their own. Difficult terrain condition and poor means of transport and communication are responsible for low levels of interaction. However, the Tribes are divided into endogamous and exogamous groups or clans. The Mishmis are endogamous and are divided into sects rather than clans. The Daflas are divided into exogamous groups; clan divisions hardly exist among them. On the other hand, the Adis are sub-divided into exogamous clans, which are further subdivided into smaller clans or families among which endogamy is strictly forbidden. The Khamptis, Singphos, Wanchos, Noctes and Tangsas are also divided into exogamous clans.⁽³¹⁾ One clan is made up of numerous

families. In most of the cases one family consists of husband, wife and their children. A grown up son, when married, sets up a separate house unless he is the eldest and becomes a member of the village community. It is only after that the village community allocates a plot of land for their subsistence. Families of the same clan may live in separate villages over which there is one chief or Gam or Gaobura. The villages in the Apa Tani Plateau and Wancho and Tangsa area are the largest and houses are built close to each other. But, the smallest villages are sometimes seen in the Mishmi areas, where a village is practically the home of a single family.⁽³²⁾

Though, the social habits and customs are peculiar to a particular tribe yet there are some basic similarities amongst all in spite of differences of minute details from group to group. Every tribe has Morangs or Dormitories or Club house where youths are trained in civic duties, tribal disputes are resolved in meetings of the village elders. The Morangs are used as sleeping place for the youth at night but sometimes guests are also accommodated in these Morangs. The accommodation of the youths in the Morangs serve many other useful purposes. Particularly, when the village is in danger and the youths are required to be mobilised to face the emergency, then the youths from the Morang could be given instructions at a short notice. In some areas like Siang and Triap, there are separate Morangs for girls and these Morangs serve as meeting places for the youths to select their marriage partners.⁽³³⁾

Traditionally, each village or clan has its own head known as Gaonbura and village council. The village council consists of elders of the village. Such councils are independent of external influences and all members have equal powers. The

management of the internal affairs of the village or clan and its relation with the neighbours is vested in the village council. Among the Adis, this council is known as **Kebang**. Its members are known as *Kebang Abus* and are chosen by the elder members of community depending on their experience, ability and capacity to present and decide cases according to the traditional customs and conventions of the tribe. The *Kebang* is very famous and powerful and it controls the entire activities including allocation of jhum plots and residential sites. It also settles all disputes and punish those all who deviate from the right path. In setting disputes, the views of both the parties are taken into account after a careful hearing. Inter-village disputes are discussed in the meetings of the inter-village council known as **Bangos**. It consists of all the Gaonburas and secretaries of the member villages and such other members as have distinguished themselves in *Kebang* meetings. The inter-Bango disputes are settled in the meeting of the institute known as **Bogum Bokang**, which is temporarily created for a particular case with members of all the Bangos and some distinguished persons who do not have any interest in the dispute and are impartial. The money collected in *Kebang* or in Bangos as fine are spent for the welfare of the village or villages under its jurisdiction.⁽³⁴⁾

The composition and function of the village council though differ from one tribal community to another, but it is the main administrative, judicial and political institution throughout the state of Arunachal Pradesh. Among some tribes, like the Wanchos and Noctes of Triap, the Khamptis and the Singphos of Lohit, the Akas of Kameng, the chief of the tribe or clan is hereditary and possess more power and influence over their tribesmen. The Dafla chiefs are less influential as compared to the Tagin chiefs. Among these tribes, inter village disputes and political decisions are

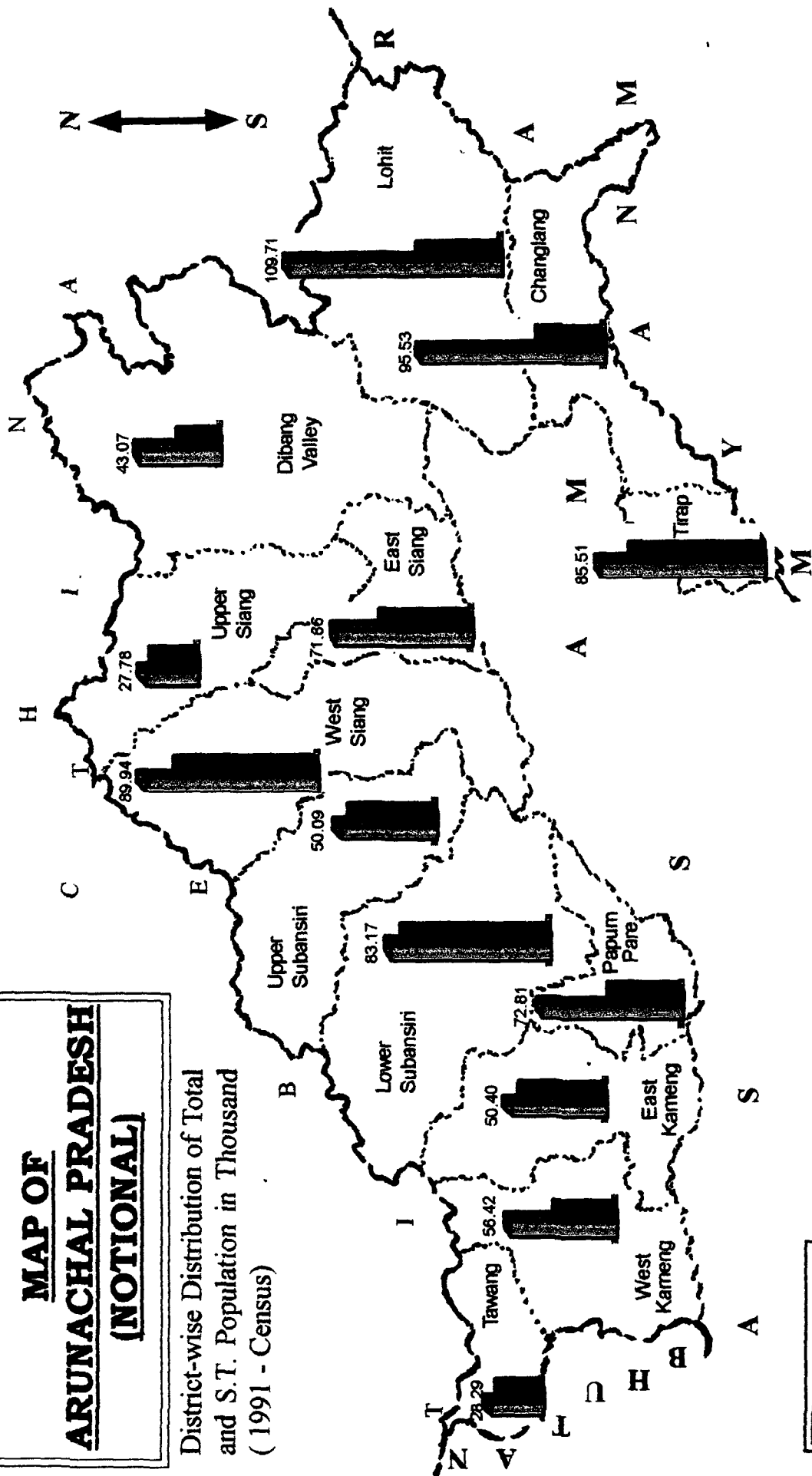
within the jurisdictions of the chiefs. However, the Monpa and the Sherdukpen set-up is little different from other. According to their belief there were chiefs known as the Sat Rajas who were subordinate to the Governor of Tawang. In between the Governor of Tawang and the Sat Rajas of different regions, there was some Gellings who were appointed by the Governor of Tawang for three years. Under the Sat Rajas operated the village council (Tsorgens) in different areas. The villagers elected the village council for a term to manage the affairs of the village according to the tradition of the tribe. But inter-village disputes and political decisions lay in charge of the Sat Rajas and their superior, that is, the Tawang Deo.⁽³⁵⁾ However, constitution and functioning of the village councils of different tribes of Arunachal Pradesh are gradually changing or are being modified according to necessity with the passes of time.

The tribal of Arunachal Pradesh normally celebrates various festivals with much enthusiasm and gaiety. Generally these festivals are connected with sowing and harvesting of crops, marriage, New Year, on the occasions of births and deaths etc. The Sherdukpens and Monpas of Tawang and Kameng celebrate the Losar, which is a kind of new year's festival on the occasion of Buddha Purnima. The Adis celebrate Arau and Mopin festivals for a good harvest. The Khamptis and Singphos celebrate Buddhist festivals. The Boori-Boot of the Hill Miris, Dree of Apatanis, Sidonyi of Tagins, Nyokum of Nishis, Reh of Idu Mishmis etc. are the other famous festivals. Drinks and animal sacrifice are common in most of the festivals of the tribal people.

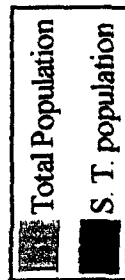
Dances constitute an important part of the social life of the tribal people, particularly of the younger generation for entertainment and recreation. Traditional

MAP OF ARUNACHAL PRADESH (NOTIONAL)

District-wise Distribution of Total
and S.T. Population in Thousand
(1991 - Census)



N. B :- Figure given on the top of the bar indicates the total population only



dances are generally of group form and individual dances are practically unknown to the tribal people. The Monpas and Sherdukpens are the most skillful dancers. People in colorful make-up and gorgeous costumes perform dances in religious and other functions. The Adis and Hill Miris of Siang and the Wanchos and Noctes of Tirap and Changlang perform community dances or folk dances during community feasts.⁽³⁶⁾ However, with the passes of time, the tribal people are becoming more and more advanced not only in education, but also in the cultural sides and there are many individual and group artists in the fields of song and music. It is also observed that with the growth of urban centres the social composition as well as the cultural profile of the state is coming very fast. Most of the cultural practices are rural based as these are gradually disappearing in the urban culture. Apart from urban centres, the other significant factors that seem to have played important role in changing the social profile of the state is the spread of literacy. It is observed that with increase in literacy there is considerable decline in the traditional and cultural practices among the literates.

Apart from the above mentioned aspects of the life and history of Arunachal Pradesh and its people, there are some aspects that are of great significance from the point of view of the present research. Included here are the distribution of tribal population and the levels of literacy and urbanisation in the state.

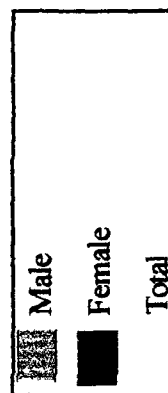
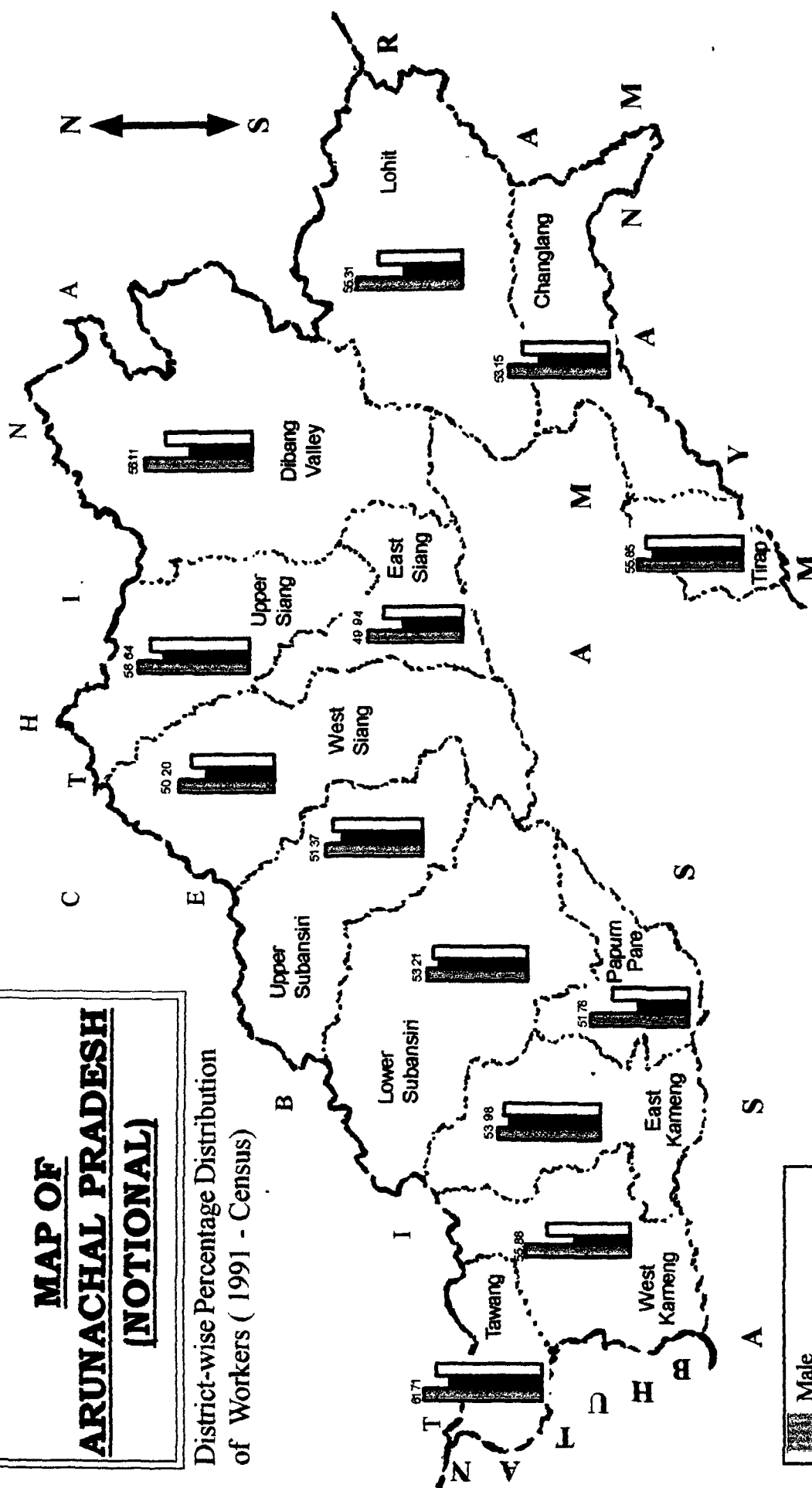
It was mentioned earlier that the state of Arunachal Pradesh is a tribal state having a total population of 8,64,558 (5,50,351 Scheduled Tribe & 3,14,207 others) spreading over an area of 83,743 sq.km as per 1991 census,. However, the concentration of population in general and the tribal population in particular were not uniform in all

the 13 districts. Lohit districts accounted for the highest population with 12.69 percent of the total tribal population of the state, but the density of total population was only 10 persons per square km., whereas, the density of the tribal population was as low as 4 which was the second lowest in the state. The Tirap district on the other hand showed a unique feature. This district was though having only 9.89 percent of the total population, but the density of the total population and the density of the tribal population, both were highest among all the districts and were of the order of 36 and 29 respectively. Population concentration in general as well as the concentration of the tribal people, both were also high in Papum Pare and East Siang districts. In Papum-Pare district the density figures were 25 and 13 and that of East Siang district were 18 and 12 respectively. The Diabang Valley district on the other hand showed another unique feature. This district though accounted for 4.98 percent of the total population, but the density of population in general as also the density of the tribal population, both were lowest among all the districts and were of the order of 3 and 2 respectively. (Details are in Annexure (2.1))

In Arunachal Pradesh, all the villages are generally inhabited by the local tribal people with a few exceptions of some settlements of non-tribal population like the village level Government and non government employees, workers, business communities etc.. However, the urban areas as well as the major administrative centers have mixed population. The 1991 population Census shows that the percentage of Scheduled Tribe (ST) population in urban areas was comparatively less but not the least significant aspect of all these is seen in the economic profile of the state. It is observed that there is a remarkable shift in the economic activities of the people in the State with

MAP OF ARUNACHAL PRADESH (NOTIONAL)

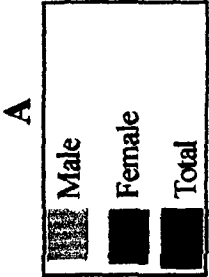
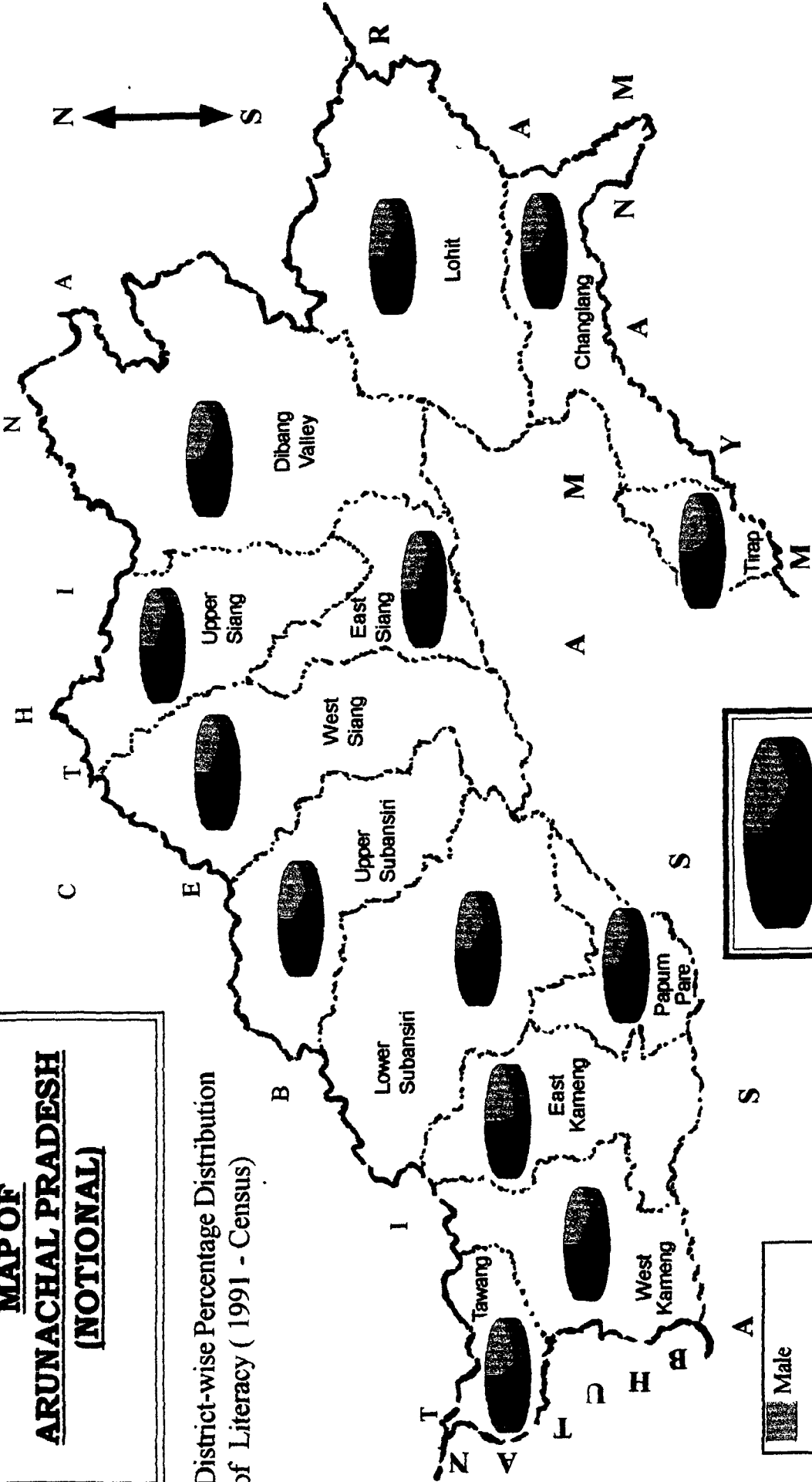
District-wise Percentage Distribution
of Workers (1991 - Census)



N. B :- Figure given on the top of the bar indicates the percentage of male only

MAP OF **ARUNACHAL PRADESH** **(NOTIONAL)**

District-wise Percentage Distribution
of Literacy (1991 - Census)



the emergence of urban centres and spread of literacy. The other important aspect is that the percentage of total worker to total population in each of the urban areas was less than the percentage of each of the rural area of all the respective districts as well as of the state as a whole. It ranges from the lowest of 34.90per cent of East Siang District to the highest of 40.43per cent of Tirap District, while the state position was 36.39per cent. This indicates that in urban areas, the non-working population, particularly housewives, children of the lowest age category and the students who are busy with their studies, formed a considerable part of total population.

As far as literacy is concerned, it appears that, though as per 1991 population Census, the percentage of literacy of Arunachal Pradesh was 41.59, but there are some districts, namely, East Kameng and Tawang, were lagging much behind with 26.20per cent and 29.80per cent respectively. However, it is evident that:

- i) The percentage of literacy in urban areas was comparatively more than the rural and
- ii) The percentage of literacy of females in comparison to males was much less in all the districts for both rural and urban areas. These two characteristics have been found to be 'true' in cases of total as well as tribal literacy. This again reveals two things: a) in urban areas, educated persons are more than rural and b) the educated females are comparatively much less both in rural as well as in urban areas. This is perhaps a cause of concern and it requires attention of the appropriate authority. Further, it is also required to find out the reasons for such happenings and to take suitable measure so that the girls can also attend educational institutions without discrimination. In modern age, the education of females is very essential not for

their benefit alone, but also for the benefits of the society or the nation. They are the persons who are giving birth to children and playing a very vital role in bringing them up and making citizens of tomorrow. It needs hardly any mention that educated mother can make educated children and thereby good citizens for the country. However, Annexures 2.2 and 2.3 will help to form an in-depth idea about the population, workers and the literacy position of each of the districts of Arunachal Pradesh with its rural and urban break-up.

Finally to sum up the forgoing discussion it can be stated that the present status of Arunachal Pradesh has evolved mainly due to various changes in the history of the North Eastern Region as a whole. Initially, the state of Arunachal Pradesh was a part of Assam. But, extension of the Assam Frontier Tracts Regulation to northern hills inhabited by the tribal people in 1914, separated these areas and constituted into the North Eastern Frontier Tract. In 1921, the Governor General, acting under the act of 1919, designated all tribal areas in Assam as Backward Tract. But the position of the Frontier Tracts remained unchanged till 1937. Later under the Government of India order, 1936, classified Balipara, Sadiya and Lakhimpur Frontier Tracts of the North East Frontier as 'excluded' areas and the administration of the area was vested in the Governor of Assam.

The administrative set up of the state witnessed further changes from the year, 1943. In order to make working more viable and effective, Frontier Tracts were further divided and each unit was placed under separate political officer. With the rapid expansion of administration and introduction to various development programmes in the

post independence period, reorganisation of the administrative machinery was again felt necessary. In 1954, frontier Tracts were redesignated as Frontier Divisions and promulgation of the North East Frontier Regulation, 1954, provided a full fledged recognition and integrated administration for the entire area under the name of North East Frontier Agency (NEFA) for the first time.

However, the political and constitutional development of late sixties, lead NEFA towards a separate direction and on 21st January, 1972, NEFA attained the status of Union Territory with new name of Arunachal Pradesh. On 15th August, 1975, the Union Territory was endowed with the Legislative Assembly and the first general election was held in 1978. The Union Territory of Arunachal Pradesh, finally attained the status of a full-fledged state on 20th February, 1987.

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CHAPTER 3

CONCEPT AND PREVIOUS WORKS ON MANPOWER PLANNING AND DEVELOPMENT

Human beings are the most wonderful creation among all the living beings on the Earth. They can think, work and change the surroundings according to their choice and needs. The early humans had to pass through various stages of development to reach the present stage. While undergoing these changes, they could realise the need of increasing their size and strength for securing food, shelter, security, technological and other development. Which in a broad sense are included within the concept “Human Development”.

The word ‘manpower’ can be described as the ‘store-house of energy’ which is required for lighting the educational, social, cultural, political, industrial, technological and economic lamps of a nation. But, the quality of benefit from this energy depends upon the proper utilisation of manpower potentialities. In other words, improper use of the same results in tremendous indiscipline and secular decline in development ethics. Therefore, the most important task before a nation, state and region is not only to tap such sources of energy at the beginning, but also to build up necessary infrastructural facilities for channelising it in right direction. Along with this, it is also necessary to see that the flow of such an important energy form its source to its destination remains uninterrupted as far as possible.

Human beings may be physically weak as compared to many other living being , but they are endowed with mental qualities which give them unique capacities to act as director, planner and designer. It is mainly by their specialisation in mental work, that they invent effective ways and means of their survival. For high quality mental work, they must be physically fit and healthy as well as properly educated and trained. Thus, an educated and trained human is the asset of all other assets. But, unlike most other assets, if they are not productively engaged, they instantaneously turns into liabilities. Human beings are an asset that cannot be kept in a frozen state to be used at a convenient time in future⁽¹⁾. Humans are not only the creator of all forms of national wealth, but also the ultimate goal of whole gamut of economic and social activities. Human beings today occupy a central position around which all other activities like economic, social and political - etc. revolve. They are the point of reference from which all other elements are observed, and from which they all, singly or collectively, derive significance and meaning⁽²⁾.

The early human though, could realise the need of raising their size and strength, but, the use of manpower in a systematic way could have been realised at a much later stage. In olden days public concern for human resource development was expressed only during national emergencies like war, flood and other natural calamities. But, with the passage of time the need for human resource development was felt even in times of peace and prosperity. However, it is important to know that the first conscious and concerted effort for the human resource development was done during II World War. It was the United States of America which realised for the first time a need for comprehensive long

term human resource development programmes. The Employment Act of 1946 was a major step in this direction. It was a major departure from traditional way of thinking and it dealt mainly with the use of fiscal and monetary policies to promote the Act's goal of full employment, economic growth and stability. In the aftermath of the War it was increasingly realised that there is an urgent need to develop the conceptual as well as the political acumen for proper man power planning.

CONCEPT OF MANPOWER PLANNING

Manpower planning has been defined as "the process of developing and determining objectives, policies and programmes that will develop, utilise & distribute manpower so as to achieve economic and other goals. It includes developing the necessary organisations and institutions required to execute manpower programmes." The concept "manpower planning" is still in the process of evolution and it cannot be treated as absolute and final. The ambit of manpower planning has enlarged with the passage of time and now a days the concept has become wide enough to ensemble almost every aspect of economic and social development. According to Harbison, 'In the broadest terms, manpower policy should be concerned with development, maintenance and utilisation of actual or potential members of labour force, including those who are fully and productively employed as well as those who experience difficulty in getting work. The development of manpower is the process of man's acquiring the skills, knowledge and capacities of work The maintenance of manpower is the process of preservation and continuous renewal of man's capacities for work..... The utilisation of manpower is the process of matching men and work in accordance with their level of

developmentThus, a comprehensive manpower policy would encompass all programmes or activities directly related to the development, maintenance and utilisation of the labour force and a cohesive manpower policy would call for a logical and consistent strategy to guide all activities along these lines”⁽³⁾ .

In an economic sense, manpower planning includes the development and effective utilisation of the managerial, scientific, engineering and other technical skills which are used for creating, designing and developing organisation, managing and operating productive services, enterprises and economic institution. It further includes identification of the human skills required for every major activity such as determination of the magnitude and timing of such requirements. It would, therefore, involve intensive use of existing institutions along with setting up of new institutions to impart proper skill in right quality, time and place. It would also mean careful and cautions integration of various training institutions so that they produce people possessing skills and knowledge necessary for the nation’s all round development including economic, technological, intellectual and social. Manpower planning cannot be independent by itself. It must necessarily form a part of the general plans of economic development of the country. Consequently, the concept must be flexible enough to accommodate the changes at each and every stage of development of the country⁽⁴⁾.

NECESSITY OF MANPOWER PLANNING

In order to achieve desired goals, manpower requirement needs to be assessed, located and harnessed. Manpower planning not only requires a simple quantitative assessment of men required for specific purpose but also proper assessment of their qualitative aspects like skill, ability and efficiency. Otherwise, improper planning may lead to either over-staffing or under-staffing resulting into gross misutilisation. Over-staffing not only increases direct cost (salary) but also enhances indirect costs of training, housing, amenities etc., alongwith production cost. Similarly, under-staffing too affects production morale and therefore, industrial relations. Therefore, optimum manpower planning assumes great importance⁽⁵⁾.

The knowledge or the power of man is generally dormant and it cannot be seen from outside. The effect of this power can be seen only when the right man is placed to do right work. There are people who are not getting job or the job they are getting is not according to their qualification. Therefore, sufferings and frustrations have become contingent upon work or employment. Due to this they are gradually losing their interest, skill and efficiency which could have been utilised and improved manifold had they been provided with the job according to their potentials or choice. Sometimes, they think that, they are rather deprived of what they deserve and even become vindictive. On the other hand, it is seen that there are people who are getting the opportunities of being placed in such a position for which they do not have the requisite qualification or skill and as such the quality of work is not only deteriorating but even affecting both efficiency and over-all development. In the words of Robert Heller, "if people of poor

calibre are hired, nothing much else can be accomplished and Gresham's law will work -the bad people will drive out the good (or cause them to deteriorate)'⁽⁶⁾ .

Manpower planning is very vital for the economic development of a country. The main objective of economic development is the application of scientific and technological knowledge in such a way that there is an appreciable increase in employment, per capita income, and capital formation. The creation of new knowledge in the domain of science and technology and its application to the best advantage of people as a whole depends largely upon the availability of persons with requisite skills in adequate number. It is evident from the rapid progress made by countries in Europe and America in terms of their monopoly in the field of scientific and technological know how to the other countries of the world. On the contrary, paucity of scientific and technological know-how and improper application of the limited knowledge for increasing agricultural and industrial production, in a poor country is an important cause of their underdevelopment. It is a fact that a country possessing huge manpower in terms of large population along with sufficient number of its people equipped with scientific and technological knowledge can attain a fairly high level of economic development even without huge natural resources.

A glance at the history of economic development of countries like Japan, Switzerland and Netherlands etc. would be enough to prove that a country equipped with a highly skilled workforce can attain economic self-sufficiency even if it does not possess adequate natural resources. The material resources can bear fruits only when

persons possessing necessary technical and managerial skills are available for putting them to effective and productive uses. If a country possess skilled and highly motivated manpower, it can embark upon an ambitious programme of economic development by borrowed or imported raw materials and machinery. On the other hand, a country with ample and vast natural resources with limited skilled and trained manpower cannot achieve the goal of economic development on the basis of borrowed technicians, engineers and scientists. Therefore, planning and development of the human resources of a country is indispensable for its over all as well as economic development⁽⁷⁾.

It is particularly significant for the developing countries like India to integrate economic planning with educational and manpower planning. The experiences of the developed countries show that the skilled manpower is no less rare a commodity than capital. Therefore, the aim of manpower planning should be to develop human resources and it should correlate the total manpower requirements with the total material and human resources available⁽⁸⁾ in any region.

IMPORTANCE OF MANPOWER IN THE DEVELOPING COUNTRIES

The problems of underdeveloped or developing countries are many. The main hurdles for them are their ever-increasing population, ignorance, illiteracy and ill-health along with the shortage of material, skilled manpower and machinery. A poor, ignorant, illiterate and less healthy population can hardly sustain the required motivation which is so essential for accelerating the process of economic development⁽⁹⁾. Therefore, investment in human capital is indispensable and must be given top priority in every plan

for economic development . Any amount of investment in material capital would be wasteful unless proportionate investment is made in human capital. According to H.D. Gideouse, “If we include the fact that labour is a productive force derives its value from the investment of capital in the form of inservice training and formal education, it is impossible to understand comparisons of economic development in the USA and the USSR”⁽¹⁰⁾.

The planners cannot think of putting the economy on the track of development unless they have the knowledge about the available manpower needed for formulating the plans and running the factories. Moreover, the planners must, in the initial stages of economic development, try to develop and expand the industries for which skilled manpower is available in the country. For perspective plans, there should be proper balance between natural resources and manpower potentials . In short it can be said that, “Any nation committed to rapid economic development must plan for the development of its manpower resources as an integral part of the planning for the development of the other resources”⁽¹¹⁾.

It is particularly important in the developing countries which have embarked on a large scale programme of economic development. In these countries manpower planning should constitute the first step for achieving economic development. The need of such an enhanced importance for manpower planning have broadly two objectives namely:-:

- (i) transformation of an agriculture-based economy into an industry-based economy and;
- (ii) to raise the level of productivity and per capita income, comparable to the “developed countries” along with high level of consumption, health and social welfare etc.

The major problem facing any developing country is that of planning and to multiply skilled man power within a shortest possible time period ⁽¹²⁾.

To ensure availability of the requisite manpower in required number with a view to meet the needs at successive stages of economic development of a country, it is essential that a well thought plan is conceived about every steps of the plan. Broadly speaking these steps can be:-

- (i) An initial appraisal of available manpower based on current demand and supply of labour as well as the future relationship of these two factors in relation to the objectives set in the plans for economic development of the country,
- (ii) Organisational and governmental machinery available for the planning and;
- (ii) Preparation of a detailed programme for the training of required type of manpower.

- (iii) This would require a detailed study of the programmes essential for the proper conditioning and preparation of the workforce.

Moreover, the success of a plan depends upon the aptitude and attitude of the people those implement it. It is, therefore, essential that the bodies and minds of the workers responsible for economic progress must be conditioned and prepared to meet the challenge of the changing environment. There is no disagreement among the economists about the fact that development involves changes in the allocation of resources, techniques and organisations of economic activity and economic and social institutions including cultural values. “The manpower policy therefore, must be comprehensive and it must take into account the vocational, technical and cultural dimensions of the relationship between economic development and manpower development”⁽¹³⁾.

MANPOWER AND HUMAN RESOURCES

The concept of ‘human resources’ has many meanings. Both ‘manpower’ and ‘human resources’ refer to people. Human Resources can be equated with ‘Labour’ in the sense of a factor of productions. Human resources may also be viewed as a kind of natural resource just as we have mineral and forest resources⁽¹⁴⁾. In a narrow sense, human capital or resource can be defined as the “sum total of knowledge, skills and aptitudes of the people inhabiting a country.” In the broader sense it includes the

initiative, resourcefulness, capacity for sustained work, right values, interests and attitudes, and other human qualities conducive to higher out-put and accelerated economic growth”⁽¹⁵⁾ .

For human resource development the most important aspect is the investment in health, intelligence and character of people. But, there is a controversy that, whether ‘human resources’ should be explicitly treated as ‘capital’ or otherwise? Though, some of the economists opined against considering human resources as capital, yet, in recent years, a number of economists, particularly in the United States of America, have strongly advocated the use of the concept ‘human capital’, and the importance of investment in human resources for accelerated economic growth. Among them some of the prominent ones are, Theodore W.Schultz, Simon Kuznets, Edward F.Dension, Gary S. Becker, Jacob Mincer and B.A. Weisbrod etc.

However, an interesting question has been raised to the fact that to what extent, is it justifiable and meaningful to treat the expenditure on education, health, social services and civic amenities as investments on human resources? Some economists, like T.W.Schultz, believes that much of what is called ‘consumption’ constitutes investment in human capital. It appears logical that some of the direct expenditures on technical and vocational education, on the job training, or internal migration which enables workers to find better job opportunities, have a direct relation with workers’ productivity and his capacity to contribute more towards the national out-put. Hence, it should be treated as investment in human capital. Similarly, it could also be regarded that part of the

expenditure on food, housing and clothing, which maintains workers' efficiency and productivity should be treated as current investment.⁽¹⁶⁾

"Human resources have both quantitative and qualitative dimensions. Characteristics like the size, composition and distribution of the population and labour force, the number of working hours, the output and earnings per head etc., are quantitatively measurable, therefore, can be treated through statistical techniques. The qualitative characteristics like knowledge, skills, aptitudes, values, motivations etc., often lack conceptual clarity and precision, and do not lend themselves as easily to statistical treatment as the quantitative characteristics⁽¹⁷⁾ .

CONCEPT OF HUMAN DEVELOPMENT

Human development is a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But, at all levels of development, the three essential ones are: for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living. If these essential choices are not available, many other opportunities remain inaccessible. However, human development does not end there. Additional choices, highly valued by many people ranging from political, economic and social freedom to opportunities for being creative and productive, and enjoying personal self respect and guaranteed human right are also important to it.

Human development has two sides: the freedom of human capabilities - such as improved health, knowledge and skills- and the use people make of their acquired capabilities for leisure, productive purposes or being active in cultural, social and political affairs. If the scales of human development do not finally balance the two sides, considerable human frustration may result.

According to this concept of human development, income is clearly only one option that people would like to have albeit an important one. But, it is not the sum total of their lives. Development must therefore, be more than just the expansion of income and wealth. Its focus must be people.⁽¹⁸⁾

It is seen that though the policy measures of human development were widely understood, even then some misunderstanding still prevails. There was a fear that the concept of human development may become more a fashion than a practice, more a slogan than a blue print for action. Some people even described that human development focuses on the distribution rather than the generation of income and it is a social rather than developmental concern. Another misconception was that human development is primarily sectoral-concerned with investment in education, health and other social services. Its strategies are valid only for the poorest societies, with the primary goal of satisfying basic needs.

The human development is however concerned with developing human capabilities and using them productively. It also means development for people, including

the creation of economic opportunities for all. The human development goals can range from the most basic ones of human survival to the most advanced human agenda of modern science and technology.

The Human Development Report, 1992 states that “Human development is thus a broad and comprehensive concept. It covers all human choices in all societies at all stages of development. It broadens the development dialogue from a discussion of mere means (GNP growth) to a discussion of the ultimate ends. It is as concerned with the generation of economic growth as with its distribution, as concerned with basic needs as with the entire spectrum of human aspirations, as concerned with the human dilemmas of the north as with the human deprivation in the south. The concept of human development does not start with any predetermined model. It draws its inspiration from the long term goals of a society. It weaves development around people, not people around development”⁽¹⁹⁾. The Report furthers the exploration of human development by considering the interaction between people and their natural environment. If the objective of development is to improve people’s choices then, it must do so, not only for the well being of the present generation but also for future generations. In other words, development must be sustainable.

Universalism of life claims is the common thread that binds the demand of human development today with exigencies of development tomorrow, especially with the need for environmental preservation and regeneration for the future. The strongest argument for protecting the environment is the ethical need to guarantee to future generations

opportunities similar to the ones previous generations have enjoyed. This guarantee is the foundation of 'sustainable development'.

Human development and sustainability are thus essential component of the same ethics of universalism of life claims. There is no tension between the two concepts, for they are a part of the same overall design. In such a conceptual framework, sustainability is, in a broad sense, a matter of distributional equity of sharing development opportunities between the present and the future generations. There would, however, be something distinctly odd if we were deeply concerned for the well being of future generations as yet unborn generations while ignoring the plight of the poor today. The ethics of universalism clearly demands both intra and intergenerational equity. This equity of opportunities is necessarily not the final achievements however, it is decidedly the essential requirement for proper human development. Each individual is entitled to just opportunities for making the best use of his/her capabilities. So is each generation. How they actually use these opportunities? What are the possible results they are likely to realise? etc. are a matter of their own choice. They must have such choice now and in future⁽²⁰⁾.

The problem of human development is different in countries having different historical experience. India though, has very vast potentials of human resources but, lack of planning has reduced these vital resource potentials into equally large liabilities. And, in future, if any thing has to be gained meaningfully it is necessary to plan for manpower

development. For that it is essential to critically evaluate the efforts taken in this direction so far.

MANPOWER PLANNING IN INDIA

Pre-Independence Period

In India, the need for classification of available manpower according to different occupational groups and proper utilisation of this resources was recognised much before its independence . It is seen that in the earliest Census of 1872, 1881 and 1891, the population was classified under broad activity and occupational groups. For this purpose, the income concept was adopted for determining the economic status of an individual. The question of persons those were not directly participating in the productive activities but, getting the work done by some others e.g. employers, rentiers and pensioners were also taken care of and treated as economically active. In the next three censuses of 1901 to 1921 all persons were divided into categories like actual workers and dependants, engaged in principal or subsidiary occupations, or basis of subsistence of workers etc. In case of the dependent, the occupations or means of subsistence of those workers on whom they dependent were collected. However, many additions and alternations were made in the subsequent censuses according to necessity.

Manpower planning in its true sense started in the year 1887, when the Indian National Congress resolved that, "Having regard to the poverty of people, it is desirable that the Government be moved to elaborate a system of technical education, suitable to the conditions of the country..... and to employ more extensively than at present the

skill and talents of the people of the country”⁽²¹⁾. Not much could however be done in this regard until the outbreak of the Second World War. It was only after the War that some specific measures were taken as a part of the post-war reconstruction plans. It was realised that problems of poverty, unemployment, national defence and economic regeneration could not be solved without planned large scale industrialisation. Accordingly, a large number of industrial panels were set up to prepare short and long-term plans, to fix up targets and to recommend measures for achieving those targets. About the same time, two expert committees were also set up to prepare long term plans of development of National Educational System and National Health Organisation, viz., the Sargent Committee on Education (1944) and the Health Survey and Development Committee - Bhore Committee (1946). The Sargent Committee was concerned only with the structural reorganisation and expansion of the education system and did not care to make any attempt to quantify the manpower estimates. The committee recognised the need to diversify the secondary education courses and to establish technical high schools with a view to meeting the needs of the industry and commerce at craftsman and foreman levels. The Bhore Committee recognised the need of medical doctors and related personnel and prepared a perspective plan for their courses. They also suggested certain ratios of medical manpower population which were to be kept as targets to be attained within a stipulated time period of 25 years, 1946-71.

In order to ensure that the implementation of industrial development projects was not hampered for want of scientific and technical manpower, the Government of India appointed the Scientific Manpower Committee in 1947. This Committee was required to

suggest, inter-alia, long term plans of development of technical and scientific education. Regarding the methodology, the Scientific Manpower Committee made comprehensive surveys and collected information regarding the nature and level of activity, growth, productivity and its value, the number of trained personnel employed under broad occupational categories and other details in the existing establishments of industry. The scope of survey encompassed all the government departments including the scientific and technical institutions. It was on the basis of these information that the committee developed empirical ratios about the levels of production and requirements of Scientists and engineers etc⁽²²⁾ for the country as a whole. Thus, it was a first concrete step towards the realisation of a dream in the independent India.

Post Independence Period

At the time of the independence of India in 1947 its economic condition was not only bad but, it was rocked by multiple of problems both with in and with out. There was virtually no scope to make an objective assessment about the physical, financial resources and the material wealth of the country. Thus, the task to plan their proper utilisation for the benefit of the poor and growth of economy was one of the most difficult one. It was Jawaharlal Nehru, the first Prime Minister, who took initiative on this matter along with P.C. Mahalanobis and prepared a detailed plan. This, made the beginning of planning era in India in which manpower planning assumed great importance.

The First-Five year Plan, (1951-56) started with the most well defined objectives of maximum utilisation of manpower of the country. Creation of employment

opportunities in rural areas through improvements in agriculture, development of cottage and small scale industries and extensive programmes of public works, especially for the poorer sections of the society were some of the special features of this plan. Accordingly, two aspects of employment were emphasised viz. (i) the maximum use of the idle labour; and (ii) increasing productivity of labour with a view to increasing employment and raising levels of rural income⁽²³⁾.

Further, this plan recognised manpower as a fundamental economic input required to match other resources in a balanced way. The plan, therefore, emphasised the need for collecting and disseminating information regarding (a) manpower resources; (b) organisation of an efficient employment service; (c) appraisal of types of skill required and (d) training facilities needed. It also emphasised the importance of improving existing educational institutions and increasing enrollment in engineering and technical courses⁽²⁴⁾.

However, the planners, by 1953 could realise that the development efforts were suffering very badly owing to shortage of certain types of manpower. Accordingly, the Government of India appointed a Working Group on Manpower Studies in 1953, which requested the Central Ministries to prepare estimates of the manpower requirements for the programmes of the First and the Second Five Year Plans. The Working Group prepared a 'Classified List of Occupations for collection of Manpower Data in respect of Development Schemes'. It however, failed to identify the programmes which were likely to be retarded by manpower shortages, and for which education and training facilities should be adopted to relieve the distress of the educated unemployed.

To provide guidance to the Government regarding formulation of suitable educational and training programmes, various adhoc Committees were set up. For example, the Engineering Personnel Committee (1955) and the Agricultural Personnel Committee (1957) were constituted to meet the requirements for the development of technical manpower in general and agricultural in particular. The former committee was required to assess, among other things, the shortage of supervisors and higher grade engineering personnel expected by the end of the Second Five Year Plan. The committee made several recommendations for setting up a permanent machinery to consider the development and utilisation of trained manpower. It also recommended that a high level Technical Manpower Committee of the Cabinet and Working Group on Technical Education and Vocational Training may be set up for proper guidance on manpower development in the country. The recommendations of this committee formed the basis for the expansion of technical education during the Second Five Year Plan.

The Agricultural Personnel Committee proceeded on the assumption that even as a minimum programme, it would be necessary to provide for natural expansion of agricultural production at the rate of about 5 per cent in the Third Five Year Plan period. The Committee, therefore, felt that a great deal of effort and efficient organisation would be required in areas, such as research, education, extension in agriculture, animal husbandry and allied fields. Accordingly, the Committee examined the manpower requirements at different levels. It emphasised on the need to gear the administrative set up for catering the likely demand of new research and experimental stations,

experimental farms, model organic farms etc. They further recommended the need for strengthening the village level personnel both in numbers and in educational/training preparation⁽²⁵⁾.

Recognising unemployment as a permanent problem, the Second Plan clearly stated that in an underdeveloped country like India, the problem can be solved only after a period of intensive development. It further suggested that the employment potential of various projects to be implemented during the plan period should be examined and the labour-intensive industries should be favoured especially in construction and agriculture sectors. The Second Five Year Plan, to a large extent adhered to the findings of the Engineering Personnel Committee. It endorsed the recommendation of the Cabinet of Technical Manpower committee. For meeting the shortage of technical personnel, the Second Plan document suggested the following measure:-

- (i) creation of three more higher technological institutes,
- (ii) diversion of College entrants from liberal arts courses to technical courses,
- (iii) the creation of 90 junior technical schools; and
- (iv) that all agreements involving foreign technical collaboration in connection with public sector projects should contain a special provision regarding the training of personnel.

In 1956, the Engineering Personnel Committee on Manpower was set up under the Chairmanship of the Prime Minister, and a Manpower Division of the Planning

Commission was also established. In October, 1956, a Manpower Directorate was created within the Ministry of Home Affairs. The role of the Directorate was to serve as a Secretariat for the Cabinet Committee and to co-ordinate the efforts of the various Ministries in implementing the manpower policies formulated by the Cabinet Committee. It was also entrusted with the responsibility of carrying out manpower research activity and for advising the states on programmes relating to their specific manpower problems. To facilitate this overall co-ordination, each Central Ministry appointed a manpower officer, and the Cabinet Committee requested each state government to establish a Manpower Planning Organisation to deal with the problems faced by the states and to collaborate with the Manpower Directorate.

Realising the urgent need for studying the expected requirements and availability of various types of higher level manpower, the Government of India, between October, 1956 and February, 1957, created two agencies:

- (i) a *Manpower Steering Committee*, comprising representatives from the principal manpower using ministries and agencies, to formulate a manpower programme and present it to the Cabinet Committee for consideration; and
- (ii) a *Manpower Advisory Committee*, comprising the management, representing both the public and private sectors, organised labour and educational authorities, to advise the cabinet Committee on Manpower studies and Programmes.

In addition to these, an Informal Steering Group on Manpower was established in 1957. It was comprised of the representatives from the Planning Commission, Education, Labour, Cultural Affairs, Commerce and Industries Ministry and Ministry of Scientific Research. Its function was to devise a comprehensive and integrated programme of manpower study and action. The Agricultural Personnel Committee was also appointed in the same year for evaluating the manpower problems of the agricultural sector during the Third Plan Period. The Committee suggested certain staffing pattern for all Government programmes for agricultural education, resource extension, and recommended the size of education, and training facilities consistent with projected manpower requirements. The Government of India accepted the recommendations in toto. From 1956 to 1960, the perspective Planning Division of the Planning Commission assumed the primary responsibility for manpower research in the country. The Division published a series of manpower studies dealing with the educational characteristics and employment pattern of various groups of professional manpower including doctors, engineers, chemists, physicists etc. The Division also made a tentative forecast of engineering personnel required during the Third Plan Period. The Scientific and Technical Manpower Division of the Planning Commission established in 1957, was merged with this Division for the purpose of assessing this manpower studies. By 1958, all states appointed manpower officers and nine states had created Cabinet Committees on Manpower⁽²⁶⁾.

In connection with the preparation of Third Five Year Plan, a Working Group on Technical Education and Vocational Training was set-up in 1959. To determine the

future requirements for engineers and technicians, it emphasised on the creation of technically trained workforce in the country. For their purpose it was also decided that an Institute of Applied Manpower Research (IAMR) would be created to "provide a broad perspective of requirements of trained manpower for economic development in different fields" and among other things "secure the most effective utilisation of the country's human resources". The Third Plan, therefore, emphasised programme for technical and vocational education, improvement of Science teaching etc. In order to implement, it had three main policy proposals for man power planning⁽²⁷⁾ :-

- (i) to spread employment effects more widely ;
- (ii) to undertake a large programme of rural industrialisation, and
- (iii) to organise a rural works programme.

Subsequently the Institute of Applied Manpower Research (IAMR) was set up in the year, 1962 by the Government of India to conduct research on problems of manpower planning. The main objectives of the Institute are :

- i) to advance knowledge about the nature, characteristics and utilisation of the human resources in India.
- ii) to provide a broad perspective of requirements of trained manpower for economic development in different fields with due regard to the probable impact of technological changes on the pattern of employment.
- iii) to develop improved methods and techniques for dealing with :-

- a) training and development of the existing work force;
- b) educational preparation for employment;
- c) vocational guidance;
- d) identifying and developing highly talented persons;
- e) forecasting demand and supply of manpower and connected matters⁽²⁸⁾ .

The IAMR, therefore, became the apex body in the field of manpower planning in the country. It identified the following aspects for collection of correct and up-to-date information to a depth (disaggregated level) with regards to the level at which planning is attempted.

- i) *Population statistics* - with distribution by sex, age, literacy and level of education both for rural and urban areas.
- ii) *Labour force Statistics* - the labour force with distribution by sex, age, literacy and level of education, skilled and unskilled workers, categorisation by types of technical education.
- iii) *Migration statistics* - stock of educated/skilled manpower in the region and the likely out-migration from and likely in-migration to the region.
- iv) *Educational Statistics* - general trend of literacy, output of educated persons with different levels of education, either annually or over a period as against some bench mark data for a base year-output of technically educated persons with estimated stock at any point of time.
- v) *Utilisation of educated and skilled manpower within the region,*

- vi) *Statistics on labour market behaviour*-job openings, recruitment in different industries/occupation etc.-training facilities-wages and income etc.-job seeking and willingness to work.
- vii) *Unemployment Statistics* - number of job seekers with qualifications and preferences.

Along with this the Planning Commission, was also keenly interested in manpower planning and improvement in data system. In the field of employment & unemployment statistics, the Planning Commission examined the situation and appointed Dantwala Committee. This Committee examined the employment & unemployment data available with different organisations with special reference to National Sample Surveys (NSS) on employment & unemployment which are conducted quinquennially by NSSO and suggested a number of steps to improve the quality of such data and to develop concepts and methodologies, which were utilised later by the NSSO in its surveys. Moreover, this committee also suggested to conduct a number of studies for collecting relevant data. This test was carried out by different agencies in the subsequent years⁽²⁹⁾.

As per Sixth Five Year Plan, the estimated net addition to the labour force was of the order of 34 million in the age group of 5 plus during 1980-85 and the backlog of usual status unemployment at the beginning of March, 1980 was estimated at around 12 million. These two together indicated the magnitude of employment which was to be created during Sixth Plan. However, the overall employment was expected to grow from 151.11 million Standard Person year (SPY) in 1979-80 to 185.389 million SPY in 1984-

85, i.e. an increase of 34.28 million SPY. However, later on, it was estimated that the employment in 1984-85 would have been of the order of 186.705 million SPY implying an increase of 35.60 million SPY. The growth rate of employment generation during Sixth Plan, was however, worked out to 4.32 per cent per annum.

It is seen that, in addition to the sectoral investments during the Sixth Plan which have resulted in an expansion of employment opportunities through the process of growth, there has been in operation some of the important employment/beneficiary oriented programmes for the specific target groups for rural development. some of the relevant ones from the point of view of manpower planning were: Small Farmers Development Programmes (SFDA), Marginal Farmers and Agricultural Labour Programme (MFAL). Drought Prone Areas Programme (DPAP), National Rural Employment Programme (NREP), Integrated Rural Development Programme (IRDP), Rural Landless Employment Guarantee Programme (RLEGP), the Training Scheme for Rural Youth for Self Employment (TRYSEM) and the Scheme for providing Self Employment to Educated Unemployed Youth etc.

The employment and manpower planning was given priority during Seventh Five Year Plan too. In formulating the employment strategy, a key role was assigned to the growth of Agriculture sector. A steady growth in agricultural production through the expansion of irrigation, increase in cropping intensity and the extension of new agricultural technologies to low productivity regions could create a large volume of additional employment. It was envisaged that with the development of the country changes in its economic structure will follow and this will open up new avenues for

employment. In their turn, it will generate continuous demand for improvements in the status of the workforce. Thus, the work of IAMR had not only increased over time but it also provided vital information particularly in improving the levels of technological know how in the country.

During the 8th plan this institute had concentrated mainly in the following five major areas of research:-

- i) Employment and unemployment
- ii) Science, Technology and Industry,
- iii) Human Resource Development,
- iv) Social concerns and
- v) Manpower information system⁽³⁰⁾.

According to the latest available NSS data (1987-88) the total employment at the beginning of 1992-93 was estimated to be 301.7 million on 'Weekly Status' basis and the labour force was estimated to be 319 million. Thus, the backlog of open unemployment according to 'Weekly Status' was estimated to be 17 million on 1st April, 1992 i.e. at the beginning of Eighth Five Year Plan. As per the NSS data, about 2 percent of those recorded employed by 'Weekly Status' had work for half or less than half of the time. Taking them as unemployed for the purpose of employment planning, the total number of persons in the labour force on 1st April, 1992, those were seeking full time new employment opportunities were estimated to be around 23 million. However, the labour force was proposed to increase by about 35 million during 1992-97 and by another 36 million during 1997-2002 i.e. during Ninth Plan Period. Thus, the total number of

persons requiring employment would be 58 million during 1992-97 and 94 million over the ten year period, 1992-2002. Thus, the employment growth in the aggregate will have to be about 4 percent per annum if the goal of providing employment to all is to be achieved by the end of Eighth Five Year Plan, and around 3 percent per annum, if it is to be attained by 2000 A.D. However, past experiences suggest that the goal of 4 percent rate of employment growth will rather unrealistic, but an average employment growth of around 2.6 to 2.8 per cent per annum might be within the realm of feasibility, which if achieved over the next ten years will bring the economy to a near full employment situation by 2002 A.D.⁽³¹⁾.

In the back drop of all these effort on the part of Government of India and its various agencies for improving the manpower it is interesting to study the situations in a peripheral and backward state like Arunachal Pradesh.

MANPOWER PLANNING IN ARUNACHAL PRADESH

In Arunachal Pradesh, the era of Planning started in 1951 along with the other states of India. Since then it has experienced development during the Annual and Five Year Plans. But, it is suprising that not much has been done in the field of manpower planning in the State. Paucity of information is the main obstacle in making an objective assessment of manpower position in the State. However, attempts have been made by some scholars in this regard. The first and foremost by A.K. Agarwal, Economic Problems and Planning in North East India. In this book the author gave an appraisal of the First to the Fifth Five Year Plans of Arunachal Pradesh. He indicated some of the

priority sectors and problems of economic planning along with the expenditure and achievements of some of the major heads of development in quantitative terms under different periods⁽³²⁾. He also mentioned that there is an acute shortage of trained manpower in various technical fields which puts hindrances in⁽³³⁾. D.N. Borthakur mentioned that Arunachal Pradesh and Mizoram have the lowest number of trained personnel particularly at the professional level in North Eastern Region.⁽³⁴⁾ Mrs. J. Dasgupta mentioned that initially, implementation of plan schemes were seriously affected due to dearth of skilled manpower in Arunachal Pradesh. She also mentioned that human resource development need to be co-ordinated with the existing occupational patterns of society and the size of the population in different age groups to be covered for development under different programmes⁽³⁵⁾.

Recently, some of the institutes, like NERIST, NEC and IAMR etc. have attempted to conduct studies particularly with respect to educated and skilled manpower in the region and particularly in the state of Arunachal Pradesh. Among other things, they have made an assessment about the availability and shortage of educated and skilled manpower in different fields in Arunachal Pradesh for a longer period of time. They also identified some of the areas of deficiency and suggested many remedial measures for over all development of manpower of the States. The main highlights of their contributions are:-

STUDIES ON TECHNICAL MANPOWER (NERIST)

The Government of India has set up a National Technical Manpower Information System (NTMIN). With the help of this, it is possible to know the state of demand for and supply of different categories of engineering manpower at a point of time. The system consists of a network of 21 nodal centres spread all over the country. The North Eastern Regional Institute of Science and Technology (NERIST), Itanagar is one of such nodal centres.

The Institute has prepared a review report showing the demand and supply situation relating to fresh degree and diploma holders in engineering for the period 1982-85 for the Northern Eastern States. The results of this study was based on the data obtained from:

- (i) the fresh graduates and diploma holders of 1982 batch who passed out from various engineering educational institutions,
- (ii) the institutions imparting engineering education, and,
- (iii) the major establishments employing technical manpower in the States.

The reference period for the first source of data is mostly 30th June, 1984 while for the other two, it is the year 1983-84.⁽³⁶⁾

For analysing engineering labour market a survey of the engineering labour market of the industrial establishments and government organisations functioning in the states was also conducted and the employment in teaching institutions have been covered separately. The data were collected mainly in terms of main activity, sector of employment, levels of technical education and disciplines etc. For this purpose, in case of Arunachal Pradesh, only three organisations, two were Central Government Departments (one engaged in construction and the other in other services) and the third one was the State Public Sector undertaking engaged in manufacturing activity were covered.⁽³⁷⁾

This survey report shows the ratio of degree (including post-graduate degree) holders to diploma holders was 1:7.3. But, in case of activity sector, this ratio was 1:7.5 in the construction activity and 1:1 in the manufacturing activity. However, 99.7 percent of total diploma holders were engaged in construction and the remaining in manufacturing activities. Out of 46 degree holding engineers, almost 98 per cent were engaged in the construction activity and the remaining in the manufacturing activity. The lone Post graduate engineer was engaged in the construction activity.⁽³⁸⁾ Virtually almost all diploma and degree holders were working in the State Government Departments.

WORKING GROUP REPORT ON MANPOWER (NEC)

In December, 1988 the North Eastern Council constituted a Working Group for the preparation of a perspective plan upto 2000 A.D. on Manpower Development in the North Eastern Region. The Working Group submitted its Report in September, 1989. In this Report, the Working Group highlighted the trend of growth of manpower from 1961-81 and projected trend upto 2000 A.D. The other important aspects covered in the report included the occupational classification and percentage of workers, age composition of population, educational facilities available and pattern of job seekers, number of establishments and employment in organised sectors and demand and supply of manpower etc., in the North Eastern States including Arunachal Pradesh. The demand and supply balance showed that in Arunachal Pradesh, there is a shortage in almost all categories of educated manpower for both 8th and 9th plan period. The Working Group further emphasised the need for introduction of new courses viz, surveyor, weaving, welding, electronic, tracer, stenographer, composition, type, printing technology etc. in the it is⁽³⁹⁾ for the development of manpower in the state.

STUDY OF MANPOWER BY INSTITUTE OF APPLIED MANPOWER RESEARCH (IAMR)

The Institute of Applied Manpower Research (IAMR) first conducted a study on manpower planning for the North Eastern Region in 1973 and the institute submitted the Report in 1978. This report provided estimates for various categories of manpower requirements of the North Eastern Region upto the year 1990. The IAMR again conducted a similar study for providing estimates of manpower requirements of the North Eastern region, for the 15 year period, 1985-2000 A.D. in order to provide a suitable background for the preparation of a perspective plan for the North East. The institute submitted the Report in February, 1993, showing particularly the estimated requirements of manpower according to educational level/speciality vis-à-vis the estimated out turn during 8th and 9th Five Year Plans (keeping out turn figures same for both the plans) separately for each state as well as for N.E.Region as a whole along with many important suggestions.⁽⁴⁰⁾

In case of Arunachal Pradesh, the report indicated that the total requirement of matriculates during the 8th Plan period could be more than the supply of matriculates that might be available if the annual out turn of matriculates remains the same as in earlier plan periods. Moreover, the supply of the general graduates at the existing annual rates of out turn could be much less than the number of such persons required during 8th and 9th Plan periods. A similar conclusion also emerged with respect to the ITI certificate holders. This State does not have facilities for any other form of

technical and professional education, whereas demand for all corresponding manpower categories have been noticed both for 8th and 9th Plan periods.⁽⁴¹⁾

The report further recommended that steps should be taken to increase the workforce participation rate of women and efforts should also be made to increase the participation of women in education so that the supply of educated manpower as a whole can be increased. The dropout rates at the school stage should be reduced and infrastructural facilities like residential accommodation etc. should be developed and other incentives should be given so that the students can avail educational and training facilities within the State. Since, the existing supply of educated manpower would be inadequate for meeting the requirements of educated manpower for supporting the programmes of development, alternative methods for producing graduates of various disciplines should be encouraged.

To conclude the forgoing discussion it can be said that manpower has been considered as the most valuable resource among all the resources. The speciality of this resource is that it can be developed according to the needs. And proper utilisation of this resource can bring about structural change in the over all development of a state, country or a nation. But, on the other hand, misuse of this resource may turn out to be a liability at any time. The country with adequate number of educated and skilled manpower can make rapid progress even if it does not possess enough of other resources. From the past experiences, it has been shown that the level and quality of educated human resource determine the pace of economic development. Therefore, the manpower planning has become an integral part of the economic planning. The success of any such

planning depends on how best the available manpower are assessed, developed and utilised in different facets of the whole process. For this purpose, collection of information on the multidimensional characteristics of the human capital and a thorough study of these characters for finding out the future trends are some of the pre-requisites for any type of manpower vis-à-vis economic planning.

However, it appears that, even after so many years of economic planning in India, the infrastructural facilities for proper manpower planning are still inadequate. The system of collection of manpower data and the institutions that are engaged in the study of applied manpower are very limited. The position of Arunachal Pradesh in this regard is far from satisfactory. There is conspicuous absence of a separate institute for manpower studies in the state. It has been found that, except a few studies, that were conducted by IAMR for Arunachal Pradesh along with the other states of North Eastern Region, no other meaningful study has been done for the state so far. Some of the Government departments though, bringing out periodical reports on manpower, yet, these are mostly numerical in nature and analytical studies are almost non-existent. The information system for collection of manpower data too are highly inadequate. Though, there are provisions for recording the information of job seekers in different districts of the state, but, the Employment Exchange in its true sense has not yet developed here. Dissemination and up-keeping of employment information are the other important aspects of information system which are required to be developed properly for meeting the growing needs of the people. On the other hand, perspective planning is also required to be done for development of private sector enterprises as well as of absorbing the

available manpower in these sector so that the job seekers need not always go only for the white colour jobs as these are limited and are unlikely to increasing at the same rate as that of the increase in the number of job seekers.

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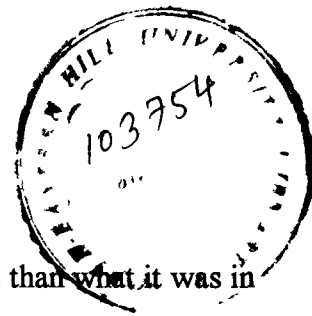
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CHAPTER - 4

REVIEW OF PLANNING AND DEVELOPMENT ACTIVITIES IN ARUNACHAL PRADESH

The state of Arunachal Pradesh is a hilly tribal state situated in the North Eastern part of the country. The people, particularly the villagers are mainly dependent on agriculture for their sustenance and livelihood. Majority of these are still pursuing the age old method of **Jhum** cultivation largely due to stringent environmental constraints including scarcity of flat land and higher gradient. Moreover, slow pace in the adoption of modern cultivation techniques on the part of the **Jhumias** has also contributed in the continuation of the present methods of cultivation. However, due to continuous efforts of the Government as part of its strategy of planned development carried under various five years plans, it is noticed that the people are gradually taking up settled cultivation and the economic scenario is rapidly changing in the state. It is difficult to make an accurate assessment about the magnitude of this transition mainly due to paucity of data even after over five decades since the independence of the country. Moreover, there was practically no account about the economic development in the state for many years. The only thing known to the outside world about the tribal societies in the state was that they are most backward and are dependent on non-monitised subsistence economy marked by conspicuous absence of basic infrastructure like road, school, medical facilities etc. Therefore, the planning process in the state had to start from scratch.

The planning process in the state was initiated right from the inception of planned development in the country with the introduction of First Five Year Plan 1951-52 along

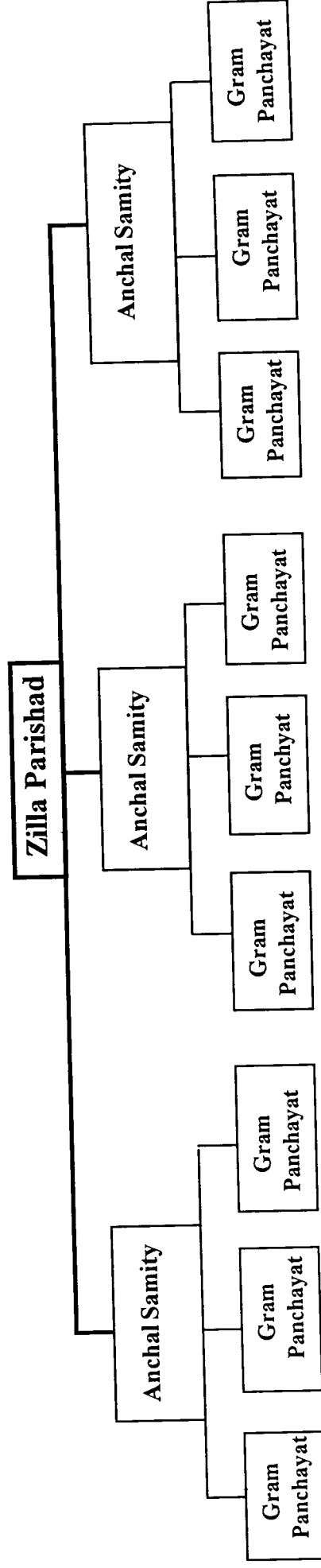


with the other parts of the country, but the task was far more difficult than what it was in the other states. In the initial stages the activities were mainly concentrated on laying down the basic infrastructure for development of transport and communication, agriculture, education, public health and cottage industries etc. The process of development continued within this frame-work till early seventies and the planned development in its proper perspective started from the Fifth Five Year Plan onwards.

Initially, there was conspicuous absence of a planning machinery in Arunachal Pradesh. The Planning and Development Department in the state used to function under the supervision of the Development Commissioner supported by a Joint Secretary (P & D), one Under Secretary (P & D), two office Superintendents and some ministerial staff. The Evaluation and Monitoring Cell which was created in the Planning and Development Department with some technical staff used to perform the technical work of Planning Department, besides their normal work of monitoring and evaluation. In the year 1988, a separate post of Secretary (Planning and Manpower Development) was created. And since then, systematic efforts are being made to strengthen the planning machinery in the State. Meanwhile, the Evaluation and Monitoring Cell of the Planning and Development Department has suitably been strengthened by appointing a Director along with other officers and staff members those are looking after the activities relating to the planning in the state.

The State Planning Board is the Apex Body for plan formulation in the State. The implementation of these plans is done by various Government Departments. The State Planning Board consists of the Chief Minister as Chairman, one Deputy Chairman, as

STRUCTURE OF DISTRICT PLANNING BODY



N.B.

- i Each District has 1 (one) Zila Parishad
- ii Number of Anchal Samity in each District is not fixed
 - a Lowest number of Anchal Samity is 2 (two) in Papum Pare District.
 - b Highest number of Anchal Samity is 12 (twelve) in Lower Subansiry District.
- iii Number of Gram Panchayat in each Anchal Samity is not fixed. It depends upon the Area of Anchal Samity, Population and other factors
- iv Reference Year 1996-97

may be appointed from amongst the sitting MLAs. Amongst the Members, there will be Six Cabinet Ministers including Minister (planning) as would be nominated for a period of five years, two independent/opposition MLAs as may be nominated on a year to year basis. Chief Secretary, Development Commissioner, Commissioner (finance), Vice Chancellor, Arunachal University (AU), Head of the Department of Economics, AU, Head of the Department of Tribal Studies , AU and Dr J.N. Debnath, retired DHS, Government of Arunachal Pradesh and the Commissioner/Secretary (Planning) as member Secretary {Notification No. PD (P) 12/95, Dated 17th Jan, 96, Government. of Arunachal Pradesh}.

There has been a long felt need of decentralised planning in the state so that the people at the grassroot levels like village and block can take part in the planning process. Accordingly, the government of Arunachal Pradesh set up a committee to suggest a Model' for decentralised planning in 1988 and subsequently the state Cabinet passed the resolution making Zilla Parishad as the Planning Body at the District level. In Arunachal Pradesh, the three-tier Panchayat system is prevalent (from 1997 it is not functioning as panchayat election could not be held). The Gram Panchayat at village level, - Anchal Samity at Block level and Zilla Parishad at the District level. The Anchal Samity Vice-Presidents and the Zilla Parishad Members from various Anchal Samities constitute the Zilla Parishad. The President of Anchal Samity is the Extra Assistant Commissioner or the Block Development Officer, whereas, the Deputy Commissioner is the president of the Zilla Parishad. The Zilla Parishad and Anchal Samities discuss various schemes to be taken up in the District and make their suggestions. These suggestions are though in the nature of recommendations, but the District Heads of Department keep these suggestions

in view while preparing the Draft Plans. However, after the introduction of decentralised planning in March, 1990, the Zilla Parishad are functioning as the District Planning Body.

The District Planning Body consists of the Deputy Commissioner as Chairman, Vice President of Zilla Parishad as Vice Chairman, other Zilla Parishad Members and the District Rural Development Officer as Ex-Officio Secretary. The delegation of financial power is closely linked with the concept of decentralised planning. The process of decentralised planning made its beginning in the state by way of giving autonomy to the districts to formulate development schemes for the district. Funds for these were provided under the 'Untied Fund Scheme'. Initially the scheme started as a Pilot Scheme during 1988-89 wherein Rs. 6 lakhs were given to each of the three Districts identified for the purpose. The state Planning Department issued certain guide lines indicating broad areas and schemes which could be taken by the Deputy Commissioner. The results were quite encouraging and in the next year i.e. during 1989-90, each of the three Districts were given Rs. 18 lakhs under 'Untied Fund Scheme' and this procedure continued to be followed in subsequent years. Upto 1988, the Deputy Commissioner was empowered to accord administrative approval and expenditure sanction to an amount of Rs. 1 lakh for 'Work Schemes' and Rs. 25,000/- for 'Other Schemes'. Later on, it was felt necessary to increase the financial power of the Deputy Commissioner so that the Deputy Commissioner can have more power in implementing development schemes at the District level without waiting for the approval of the higher authority. Accordingly the State Government enhanced the financial power of the Deputy Commissioners/ Additional Deputy Commissioner by an order issued in 1989 and in further modification in June 1992. Now, these officers have the powers to sanction up to RS. 5 lakes in

respect of works in each case and RS. 50,000/- in respect of Schemes other than works in each case. However, the exercise of the above mentioned financial powers shall be restricted to district sector works/schemes covered under head "Untied Fund". (Memorandum No. FIN/B-50/80 vol.-I dated Itanagar, the 6th June, 1992, Government of Arunachal Pradesh). The District Planning Body in each of the District of Arunachal Pradesh has already been set-up (except in the new Districts) and steps have been initiated to set up of District Planning Unit in each district. The schemes implemented under the 'Untied Fund' at District level are approved by the Zilla Parishad in its capacity as District Planning Body. In addition to that, the Panchayat institutions also plan and implement the schemes of Rural Development Department. Some of the important ones are Area-cum-Community Development Projects and Gram Vikash Kosh. Under the Area-cum-Community Development Project, funds are released to Panchayat Bodies for planning and implementation of area specific projects to promote the interest of community as a whole. The funds are generally made available on the basis of certain principles and norms for providing higher investments per household to the remote Anchal Samities/Gram-Panchayats in comparison to the relatively soft and developed ones. For the successful implementation of this programme, the Blocks have been divided into several cluster of villages with clear demarcation of area/units for the purpose of investment of funds through Panchayat Bodies. The infrastructural requirements are identified by the representatives of the villagers of the individual cluster under the educative and technical guidance of the Government Agencies. This programme also lays emphasis on involvement of the local villagers as workers during

execution of various schemes so that they could earn wages through project based employment.

In case of Gram Vikas Kosh, the Government. is providing an amount of Rs. 50,000/- to each Anchal Samity for opening of Gram Vikas Kosh in the form of Fixed Deposit Bank Account for a period of 5 years. The Anchal Samity also deposits matching amount to the account from its own resources. The main objective of this is to use this fund as a security against Bank loan to be obtained by individual Anchal Samity for financing bigger projects in the rural development sector. (Draft Annual Plan, 1993-94, p-14 and Annual Plan, 1995-96 pp47 - 48, Government. of Arunachal Pradesh.)

The planning process in the State has passed through more than four decades and many changes in the socio-economic life of the people have taken place by now. In order to have a broad idea about this, an attempt has been made to assess the stages of achievement/development during different plan periods since beginning. It is a known fact that, an objective and detailed study of socio-economic development is not an easy task. Moreover, such study requires a huge quantity of statistical data for the entire period under study, which in its turn depends on the availability of relevant reports/records and an intensive search. However, all out efforts have been made to collect as much information as possible through various reports, publications, plan documents, books, news papers and magazines etc. apart from these personal contact and observations have been used to review the whole process of planning in respect of some of the Major Heads of Development. While doing this, an attempt has been made to show the average achievement/average increase per year during a plan period in

respect of many items along with the average outlay and expenditure for that period. There are two main reasons for this. It is true that the allocation of fund, expenditure as well as the physical achievement of different items are not uniform in different years of Five Year Plan and it does not provide any scope for comparison. Whereas, the average achievement/average increase per year provides the scope for knowing per unit cost as well as the scope for comparing the position with preceeding and succeeding plan periods.

The position of some of the Major Heads of Development has been reviewed separately, first in a descriptive manner and then added the details of achievement of some of the important items in a tabular form in numerical term at the end. However, due to non-availability of information in some cases, the position could not be included in the table. Moreover, while calculating the average achievement for some items, achievement for all the years under a plan period could not be found out. In such cases, the average has been calculated on the basis of the number of years for which the achievements were available. In addition to that, the position at the end of the terminal year of each plan period for different items, wherever applicable, has also been shown giving the actual achievement figure within bracket under the average figure for the benefit of the readers. Moreover, the position on the overall allocation and the corresponding expenditure incurred during different plan periods have been shown in the Appendix-4.11 in order to have a general idea about the performance of the Planning Process in Arunachal Pradesh. Based on these methodological premises the sector wise performance during the plans has been discussed below:-

AGRICULTURE

It was mentioned earlier that Agriculture in the form of Shifting Cultivation is the main stay of the people in Arunachal Pradesh. According to the anthropologists it is one of the oldest form of cultivation practiced any where in the world. The findings of the Scientists arrived on the archeological and paleontological data and radio-carbon dating placed the origin of shifting cultivation some where around 7000 B.C in the Neolithic period. From the distribution of prehistoric sites of the early food-producers, it was seen that the Neolithic farmers were hill or highland dwellers. On the hill slopes, they used to clear the patches of jungle by cutting the trees, grasses and creepers with the help of stone tools and axes and then setting them on fire while it is dried up. The ash so collected was then spread over the entire patch of land before the on set of rains which works as manure. They used a digging stick which was a pointed tool of stone, wood or bamboo for making holes in the ground and for planting seeds in the cleared hill slopes. At the time of germination of seeds, they noticed that, weeds also grow along with the seedlings and every shower of rain washes away the fertile top loose soil of the hill slope exposing the roots of the seedlings. Thus, the removal of weeds and covering the exposed roots of the seedlings would have become the main activity of the highland cultivators. From this, they could learn the necessity of taking protective measure of soil erosion and changing the place after cultivating it for a few consecutive years so that it can recoup its fertility through the natural process, and the same plot of land could be used again for cultivation after a gap of a few years which ultimately came to be known as **Jhum Cycle**. Such a form of agriculture is most prevalent in the state.

Shifting cultivation is a world wide phenomena and it is known under different names in different parts of the world. This is also described as the slash-and-burn or swidden method of cultivation as the burnt clearing were known in the English Country Side as Swiddens. This slash-and- burn method of cultivation is known as 'Milpa' in Mexico and Central America, "Conuco" in Venezuela, "Roca" in Brazil, "Masole" in central Africa, "Ladang" in Indonesia and "Ray" in Vietnam. Even in India, this primitive form of cultivation is known by different names in different parts. It is called "Bewar" or "Dahuja" in Madhya Pradesh, "Podu" or "Penda" in Andhra Pradesh, "Pama Dabi" or "Koman" or "Bringa" in Orissa, "Kumari" in Western Ghate, "Valra" or "Waltra" in South Eastern Rajasthan , "Khil" in the Himalayan belt "Kuruwa" in Bihar and "Jhumming" in the North Eastern Part of the country.⁽¹⁾

There are various reasons for the continuation of this particular form of agriculture even today. However, it is understood that due to non availability of the modern means of cultivation, shifting cultivation is the most easiest and cheapest means of earning ones livelihood particularly to the hill people. Moreover, stringent environmental conditions including scarcity of suitable flat land for permanent cultivation has also contributed in prolonging the stay of this form of agriculture in Arunachal Pradesh.

The State of Arunachal Pradesh is a mountainous State and most of the inhabitants are tribals. The mountain ranges show a great variation in altitude with limited flat land in the river valleys. The average height of theses ranges varies from 6400 metre in bordering areas with Bhutan to 1829 metres in the Lohit and Tirap Districts.

Most of the areas lying above the altitudes of 1524 metres experience alternate snowfall and rainfall. Most of the snowfall is experienced during the winter months from October to March. The state though considered within the regions of heaviest rainfall in the country, but the topography of the area does not provide much scope for retention of water by the soils and rough structure. Moreover, the availability of flat land with assured water supply for development of Permanent or Terrace cultivation is available only at a few places mostly on the valleys. As such, most of the rural indigenous tribal people are always depended on the primitive method of shifting (Jhum) cultivation except the Apatenis of Lower Subansiri who have been pursuing for long the settled rice cultivation in the flat land available to them, in an improved manner. The Adis of Pasighat, Mabo, Roing and Dombuk, Khamties of chaukham and Namsai, Monpas of Tawang and Dirang are also to some extent doing settled cultivation in the first land available in these areas.

The geographical area of the state is 83743 sq. km of which 51540 sq. km i.e. 61.55 percent presently under forest and the remaining of 32203 sq.km i.e. 38.45 percent is other then forest areas. Therefore most of the agricultural activities are carried on the hill slopes. Moreover, the ownership pattern of land has also played significant role in the present status of agriculture in the state. Arunachal Pradesh is one among those few states of India where proper land survey particularly cadastral survey has not been conducted so far. As a result of this conspicuous absence of land ownership records it has become difficult for the researcher to conduct proper study about the agriculture in the state. However, generally it is observed that the Ownership of land and other related resources lies with the community among the tribals of the state. And the individual's

right to use these resources is determined by the village council headed by the **Gaonboora** according to the traditions and customs of the people. Whenever, any dispute arises, the traditional village Council interprets it clearly on the basis of their tradition and the decision of the Council becomes a binding for everyone. These *unconfined customary laws, are effectively applied since olden days, without variation.* Though, each tribe has its own distinct customs and traditions yet, there exists a broad similarity among them at the aggregate levels.

Based on these broad generalisation the land tenure system prevailing in the state can be classed under three major groups:-

- (i) village and community land,
- (ii) Clan land, and
- (iii) Individual land ⁽²⁾

The first Agricultural Census was conducted in Arunachal Pradesh in the year, 1970-71 and thereafter, four more Census were conducted between 1976-77 to 1990-91. These Census provided many valuable information about operational holdings, land use and cropping patterns etc. An operational holding is defined as "all land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others without regard to title, legal form, size or location. An operational holding might be fully owned or fully rented or partly owned or partly rented or cultivated under any other arrangement" ⁽³⁾ Appendix 4.1, prepared on the basis of

different Census results, will give an account of the land use and Cropping pattern of Arunachal Pradesh during different Census years.⁽⁴⁾

Though, the information about operational holdings and land use patterns were not available before 1970-71, yet, it appears that systemic steps for the development of agriculture in Arunachal Pradesh, the then North East Frontier Tract were initiated much before the independence of India under the British. It can be proved by the fact that it was way back in 1946 that a separate Department of Agriculture headed by an Agricultural Officer with its headquarters at Shillong was established by the British to promote agricultural development in Arunachal Pradesh. This was followed by appointing an Assistant Agricultural Officer in 1947, but the post was subsequently transferred to Pasighat in 1950. Till 1951-52, the posts in the interior were manned mainly by officers in the rank of Agricultural Inspectors and Assistant Agricultural Inspectors. The first two District level Officers' posts were created in the year 1951-52 and two more posts of such level were created in the succeeding year. And with that the total strength of District level Agricultural Officers reached to 11. In the year 1956 the Department was upgraded to the level of a Directorate. Later on, to assist the Director and also to have better control and supervision of the expanding activities of the Directorate a post of Joint Director was created in the year, 1963.⁽⁵⁾

The hills of Arunachal Pradesh though not very suitable for permanent or settled cultivation, yet, they are endowed with enormous potentials for development of horticulture. From the point of view of the climatic conditions and available land the higher areas of the state are suitable for growing temperate fruits while the lower

regions are suitable for growing of citrus and other tropical and sub-tropical fruits. The Directorate of Agriculture through initially took some schemes for development of Horticulture, but soon they could realise that, it would be difficult for them to cope-up with expansion programme on Horticulture with the limited staff available to them. Therefore, it was felt necessary to create some more posts of officers and staff and accordingly 1(one) post of Deputy Director (Horticulture), 5(five) posts of Horticulture Inspectors and 10(Ten) posts of Horticulture Field Assistants were initially created during 1975-76 for the systematic development of Horticulture.⁽⁶⁾ However, over the years, the Department has expanded manifold and taken up various schemes for the adoption of latest technology and available resources for enrichment of knowledge on one hand and development of Agriculture as well as of Horticulture on the other in the state.

The efforts for development of Agriculture though started even before independence, yet, the land available for cultivation, at the initial stages was much less as compared to the vast geographical area of the State. From the available records, it is seen that a total of only 329 Hectares of land could be developed for permanent cultivation during the year 1947-48. But, due to continuous and concerted efforts, the situation slightly improved and ultimately a total of 1288 Hectors of land could be developed for permanent cultivation during 1950-51 i.e. at the beginning of the First Five Year Plan. Further, it appears that, in the year 1955 the total area under cultivation of Paddy, Maize, Millet and other Crops was 11030 hectors and the total production of these crops was 12127 tones from the two Frontier Divisions of Kameng and Lohit.⁽⁷⁾

The food production at the beginning was not enough to cater to the needs of the people of this area. There were many pockets which were mostly dependent on supply of food grains and other essential commodities through Air dropping. Therefore, from the beginning of planned development, the Government took special care for increasing food production with the objective of achieving self sufficiency so that the people do not suffer for want of food. This objective of the Government was very clearly mentioned in the revised Second Five Year Plan document where it was stated that “increased agricultural production plays a vital role in bettering the living standards of the people, more so in North East Frontier Agency, where food shortage is a serious problem. The principal objective of the planning has, therefore, been to ensure increased agricultural production by the introduction of better techniques, new crops, seeds and implements, use of manure etc” .⁽⁸⁾ The physical and financial achievement made with respect to some of the major items during different plan periods are in the Appendix 4.2.

ANIMAL HUSBANDRY AND VETERINARY

Livestock is an integral part of human-being from time immemorial. This not only helps people in farming, but also meets up a part of food requirements, sacrifices and also as bride price in many societies. The livestock rearing provides an alternative means of livelihood and economic development as well. But, like some other industries, development of animal Husbandry takes long years of carefully planned programme. At the beginning, it was found that the topographical condition of Arunachal Pradesh, availability of resources, diseases, poisonous plants etc. were not much favourable for

development of livestock. Particularly, the agricultural products, feed and fodder, which are essential for management of exotic or Improved Indian breeds of cattle were deficit in this area and as such, opening of big livestock farm was therefore not possible. The livestock owned by local people was the only available resources at the beginning.

In a careful study, it was revealed that annually about nine to ten thousand cattle were being purchased by the people of Arunachal Pradesh from various areas of Assam costing about six to seven lakhs of rupees. Bullocks worth several thousand of rupees had to be purchased every year for ploughing the land and milk was also a rare commodity in many areas. Hence, foremost attention had to be paid for improvement of the existing stock of cattle of the area. To begin with, demonstration and multiplication were undertaken and incentive was given to villagers by paying certain amount of remuneration for allowing to milk their cows. This gave an impetus to villagers to keep their cattle near homesteads in large numbers and also marked the beginning of upgradation work by Sindhi and Thari bulls in some developed areas like Tezu and Pasighat. The success and acceptability on the part of the progressive villagers contributed in a big way to this programme. Gradually, rural dairies came up around the Administrative Centres and steps were taken to extend financial assistance to villagers desirous of opening rural dairies. The villagers too from time to time showed their interest in multiplication of cattle and use of milk.

Within a few years, there was a notable increase in the number of local livestock and milk production on the one hand and simultaneously, there was a significant decline in the import of cattle from outside, on the other. However, with the gradual increase of

livestock in the state, improvements in the production of fodder and cereals were felt necessary. So small fodder production units were provided to some of the upgrading centres and livestock farms. Along with this the villagers also took interest in rearing poultry and pigs. To develop poultry and piggery further, improved breeds of pigs and poultry birds were introduced in some villages. To popularise and to improve the quality of the livestock a Scheme for large scale sheep breeding farm was taken up at Shergaon in West Kameng District during Fourth Plan Period. Rearing of the exotic breed imported from the former U.S.S.R was introduced both for upgradation and increase in production.⁽⁹⁾ But, later on this was amalgamated with the Regional Sheep breeding farm at Sangte.

Till Fourth Five Year Plan the Animal Husbandry and Veterinary Department remained as a wing of Agriculture Department and there was no suitable central agency to formulate a well thought of plan for coordinated development of Animal Husbandry.⁽¹⁰⁾ However, during the Fifth Five Year Plan, the Animal Husbandry and Veterinary Wing was separated from the Department of Agriculture and a fullfledged Department headed by a Director was created during 1975-76. To improve the activities of the Department and to implement Development Schemes, additional technical and other staff were also added.⁽¹¹⁾ Further, to assess the livestock wealth of the State, the first Livestock Census was conducted in the year 1978-79. The physical and financial achievement made under some of the major items during different plan periods are given in Appendix 4.3.

FISHERIES

Like Agriculture and Animal Husbandry, Fishery is another way of life and an important constituent of diet of many people. Fish is the most efficient converter of protein into flesh amongst plants and animals. The state of Arunachal Pradesh has a vast potential of Pisciculture. But the development of fisheries on a scientific line started in the state during the Third Five Year Plan. The intensive Development of Fisheries Programme was originally sponsored by the Ministry of Food and Agriculture with the objective of intensifying fish production in strategic border states. In Arunachal Pradesh it was taken up at Along in West Siang District though in a modified form suiting to local condition. It started at an initial cost of Rs 65,900.00. The scheme proved very much successful and there was encouraging response from the villagers. This marked the beginning of fisheries development in the state in a scientific manner.⁽¹²⁾

During the Fifth Five Year Plan, the scheme of Intensive Fish Farming was implemented with the active participation of the farmers wherein they contributed 50 per cent and remaining amount was contributed by the Government as subsidy. To cater to the increasing needs of fish seeds, the existing fish seed multiplication farms, wherever possible, were expanded and improved as far as practicable. The paddy Cum Fish culture which was undertaken mainly in the Subansiri District, became very popular among the villagers because of its quick economic return and as such farmers from other districts too got interested and took up such activities. During this period the Organisational set-up was also strengthened suitably and arrangements were made at GTC, Pasighat for imparting training to the Gram Sevaks and Farmers on modern techniques of

Pisciculture.⁽¹³⁾ Though, the fishery development programme remained with the Agriculture Department, yet, for the systematic development of Pisciculture the fishery wing was separated from the Directorate of Agriculture and a new Department was created in 1980. It was headed by the Chief Fishery Officer.

During the Sixth Plan Period,⁽¹⁴⁾ it was found that Pisciculture gained the confidence of the people to a great extent. It was noticed that even the farmers of the remotest parts were coming forward for taking the Pisciculture projects in mids of difficulties in transportation and communication. Under the rural agriculture programme, progressive farmers were provided 50 per cent subsidy for construction of Fish ponds/fish farms, production of quality fish, seeds and table fish. Initially, the paddy-cum-fish culture programme became most popular and successful amongst the Apatanis of Lower Subansiri District. Subsequently, it was expanded to other areas like Tawang, Dirang, Seppa, Daporijo, Basar and Namsat subsequently. It was aimed to provide additional source of income and employment generation to the farmers along with supplementing their diet with more protein. And, finally an integrated farming programme on Duck-cum-Fish culture was launched in all districts during Sixth Plan Period on extensive basis.

The main objective during Seventh Five year Plan was to transfer various technologies to the farmers and to involve them directly in the production programme in order to raise the level of fish production in the state. Keeping this in view, under Rural Agriculture Scheme, the farmer were motivated by giving 50 per cent subsidy in the form of labour and they were given training in rural agricultural technology so that, by its

adoption they can increase production of fish and their economic status.⁽¹⁵⁾ However, the shortage of fish seed has always been a problem in fishery development in the state. So, to bridge the gap between the demand and supply it was proposed to improve and modernise the existing seed farms. Special emphasis was laid during the Eighth Plan to complete the work of ongoing projects including maintenance and procurement of fishing gears of the existing farms.⁽¹⁶⁾ The physical and financial achievement made with respect to some of the major items are shown in the Appendix 4.4.

EDUCATION

Education is one of the basic needs of the human-being. It is required for gaining knowledge about oneself, one's surroundings and the world. In other words, it can be said that "more you read, more you learn". However, the educational activities in Arunachal Pradesh, the then NEFA, started at a later stage as compared to many other parts of the country. The pre-independence educational scenario of this area was very dismal. There was only 1(one) Lower Primary School at Pasighat with a capacity of 30(thirty) students.⁽¹⁷⁾ But, the independence of India dawned with 4(four) Primary Schools and effective steps were taken for the development of infrastructure for spreading education thereafter. In 1947 the Education Department was started under an Education Officer at Sadiya, which was later on shifted to Margherita and subsequently transferred to Shillong. In 1948, the Teachers Training Institute was established at Sadiya, which was also shifted to Margherita in 1955 and finally shifted to Changlang in 1956 with the new name '**Buniadi Siksha Bhavan**'.⁽¹⁸⁾

At the initial stages, the local people were not much aware of education and as such, the activities at the beginning were mainly concentrated to motivate people for sending their children to school. The continuous efforts bore fruits and the people gradually took interest in education. It can be said that, starting almost from 'Zero growth' the level of development in the field of educational institutions reached to 67 Lower Primary Schools with a total of 2377 students, 1(one) M.E. School with 7(seven) students (in the then Tuensang area) and 1(one) High School with 37 students (in Siang area) till 1950-51 i.e. the beginning of planning era.

The educational policy at the initial stages was not to force the spread of education or to create an artificial demand for school. The endeavor was to consolidate the existing position rather than to launch a programme of rapid expansion. It is a known fact that the efficiency in running the schools, depends to a great extent, on the quality of teachers. Therefore, the need was to train the teachers as per local requirements. Keeping this in view, the **Buniadi Siksha Bhavan** was established at Changlang in 1956 for imparting basic education on agriculture, social service and development of traits on tribal cultural education. The Institute was running courses viz 1) Teacher certificate Senior Basic and ii) Teacher Certificate Junior Basic. Moreover, the policy of the Government was to teach the local children in their mother tongue. In view of this, a programme was taken up to publish the text books in most of the major dialects of the state. But, since none of the dialect had a script of their own, so the books in 14 major dialects were printed in Devanagiri Script. However, many of the teachers specially in the Primary Schools could pick-up the local dialects and could teach the students through the medium of their mother tongue.⁽¹⁹⁾ In addition to that, two more educational

institutions viz i) Gram Sevak Training Centre (GTC) ii) Health Training Research Centre (HTRC) were also established at Pasighat during this period.⁽²⁰⁾

The main objective of Third Five Year Plan was to establish and to convert/upgrade different type of schools to meet the growing needs of the local people. Organisation of inter-village residential schools with all facilities of free education in educationally backward areas of NEFA was another important aspect. The production and printing of Tribal Text Books were carried out as usual and the Buniadi Siksha Bhavan was strengthened further. The most notable achievement of this period was the establishment of the first College in Arunachal Pradesh, the then NEFA at Pasighat, in 1965. It was named after the former prime minister as “Jawaharlal Nehru College”. It was affiliated to Guwahati University and initially with one class for the pre university arts students. The Director of Education, NEFA, acted as the Principal of the College in addition to his own duties at the initial stage, but after that, the Asstt. Director of Education, NEFA was temporarily appointed to hold the post of Principal of the college till final appointment of a Principal.⁽²¹⁾ The first batch of Pre-University (Arts) and B.A. (Part-1) students appeared for the final examination in the year 1966-67. The Science faculty was however, started from the year, 1973 and the first batch of students for Pre-University (Science) appeared for the final examination in the year, 1975.⁽²²⁾

However, under Secondary education, besides upgradation of Middle Schools to High Schools and strengthening of Science education, a few Girls' Hostels were constructed with adequate accommodation ^{and} other facilities for encouraging education of the girls' student. Moreover, special attention was given for sponsoring meritorious

students to various colleges/universities of the country to pursue their higher studies in academic as well as professional courses. Adult education was another important aspect of education in this period. So, to educate the illiterate adults, a few Adult Education Centres were opened.⁽²³⁾ As regards technical education, the first Industrial Training Institute (ITI) was established at Roing in the year, 1970. This institute imparts training on 5(five) technical trades viz i) Motor Mechanics ii) Plumbers iii) Carpentors iv) Electricians and v) Wireman.⁽²⁴⁾

The number of educational institutions though increased considerably at the end of the Fourth Plan, but the literate persons, particularly the tribal people were not much till that time. From 1971 Census, it was found that, the literacy rate among the tribal people was 5.2 per cent and for women it was as low as 1.7 per cent only. Keeping this background in view, suitable measures were taken up during the Fifth Five Year Plan for mobilising the resources to minimise the “Educational Gap” with the rest of the country. Lower percentage of literacy was recognised as one of the important factors which was affecting the pace of economic development. To over come this, the programme of “Non-formal Education’ and ‘Farmers’ Functional Literacy” was introduced and necessary infrastructural facilities were arranged. Pre-school educational facilities for the children below the age group of 6 years were provided. It was aimed at preparing them towards formal schooling which was felt essential for attaining higher and speedy development of the state. Therefore, opening of Pre-School Education Centres was taken up as a new scheme. Further with a view to increase enrollment of children in the age group 12-14 years, actions were taken to strengthen the Middle Schools and up-gradation of Primary Schools. Moreover, to improve the efficiency of the educational

institutions, arrangement for organising orientation training camps for the teachers were made and a phased programme was taken up for gradual conversion of the existing Buniadi Siksha Bhavan at Changlang, a primary Teachers' Training Institute, into a full-fledged State Institute of Education. In case of Secondary Education, upgradation work was taken up in a phased manner. The scheme of vocational education was reviewed for meeting the syllabus provided by the CBSE under 10+2 pattern for work experience upto Class X as well as vocationalisation at the +2 stage, one Government Degree College was established at Itanagar.⁽²⁵⁾ Moreover, to meet the requirements of adult education, the scheme of adult education was taken up. Tailoring and Embroidery was also introduced in the Adult Education Centres. However, to bring improvement in educational facilities as per the National Policy of universalisation of Elementary Education, priority was given during Seventh Plan on Elementary Education and Adult Education which came under Minimum Needs Programme and adequate efforts were taken for fulfilment of the objective.⁽²⁶⁾

In all these plans the results were so encouraging that it was responded enthusiastically by the local people. As a result, continuous increase in the strength of students at higher levels necessitated for opening of more colleges and universities. Therefore, to meet the requirements, two more colleges one each at Bomdila, West Kameng District and at Tezu, Lohit District were started and the first University of Arunachal Pradesh was established at Doimukh (Itanagar) of Lower Subansiri District (now Papum Pare), during this plan period. The state though made sufficient progress in the field of general education yet it is lagging far behind in respect of technical education. Uptill now, there is a conspicuous absence of an engineering college or medical college

in the state. But, in the year 1985, the Government. of India gave the approval for setting up of North Eastern Regional Institute of Science and Technology (NERIST) at Itanagar. The Institute was approved for running Diploma Course in 10(ten) disciplines and Degree Courses in 11(eleven) disciplines in Engineering/Technology and 4(four) disciplines in Applied sciences. The institute started its academic session in the year 1986 at Certificate levels, Diploma in 1988 and Degree courses in 1990.⁽²⁷⁾

During the Eighth Plan period, vocationalisation of education has been given high emphasis and it has been decided to develop a strong base of work experience for linking education with production and self employment. Decentralisation of educational planning process was another important aspect. In this connection, a District Board of Education has been set-up in every District with the responsibility for planning, implementation and monitoring of all educational programmes including Non-formal, Adult Education and schools upto the Higher Secondary level. This functions as a separate body with adequate participation and involvement of Zilla Parishad, Anchal Samity Members and Development Departments. Moreover, on the pattern of the Central Advisory Board of Education (CABE) at the National level, a State Advisory Board of Education (SABE) has also been established under the Chairman-ship of Chief Minister to formulate policy and programmes of Education for the State.⁽²⁸⁾ The Physical and financial achievement made under some of the major items during different plan periods have been given in Appendix 4.5

MEDICAL AND HEALTH SERVICES

Medical and health is one of the most essential services required for human-being for leading a healthy and cheerful life. There is a saying like "Health is Wealth" which means, one is required to be healthy for doing his duties and for reaching his goal. However, the medical services available in Arunachal Pradesh, the then NEFA during Pre-independence period was very limited. There were only 13 Health units as back as 1947 under the Chief Medical Officer. The headquarters of the Chief Medical officer was at Pasighat which was subsequently shifted to Shillong and in 1956, the Medical Department was made a Directorate. There was a Health Training and Research Centre at Pasighat which was giving training to Junior Nurses, Midwives and a Health Training and Research Centre also at Pasighat whcih was giving training to Junior Nurses Midwives and Health Assistants(Junior). Moreover, the staff Dispensary was established in Shillong in the Year 1957, for the benefit of the NEFA staff at Shillong.

Development of these medical facilities once seen in the light of the prevalence of diseases like Malaria, Syphilis, Gonorrhoea, Scabis, T.B. Leprosy, Giotre, Diarrhoea, Dysentery, Stomach, Respiratory and other skin diseases etc. in the state could be hardely called satisfactory.⁽²⁹⁾ Due to continuous efforts on the part of the government the number of Medical institutions reached to 44 during 1951 i.e. at the beginning of planning era and it reached to 74 with 172 medical personnels at the end of the First Five Year Plan.

The main objectives of the Second and Third Five Year Plans were to improve the general level of health of the people by expēding the basic health services including

potable water supply. Apart from this it was emphasised to bring medical facilities within the reach of people. For this purpose training in health matters, training of medical and health personnel, control of communicable diseases, improvement of environmental hygiene and increase in the number of hospitals were given top priority.³⁰

The main objective of the Fourth & Fifth five year plans were to consolidate the existing facilities in the curative and preventive fields and accordingly a Comprehensive Health Services proposal was taken up. But, due to difficult terrain, poor communication, age-old superstition, social taboos and poor literacy, the task of bringing the people to accept modern medicine was found to be extremely difficult. Therefore, the pattern of some of the schemes had to be changed to suit the local conditions so that the local people could get maximum benefit. In addition to this some of the essential new services like Health Intelligence Bureau, Health Education Bureau and Registration of births and deaths were taken up for the benefit of the people. Moreover, schemes for improving the nutrition status of children in the age group 0-6 years and pregnant and lactating mothers, Mid-day meals for school children were also taken up during this period.⁽³¹⁾

During Sixth Plan period it was decided to provide adequate Health services to all people at a reasonable distance through a hierarchy of Health Institutions with the Medics at the village level. Further, it was decided that each Medic would cover four to five villages and would give adequate supply of medicines. Accordingly, Medics trained in basic preventive medicines were pressed into service. Arrangements were made to train more Medics during this plan period. Besides these, the National and Centrally

Sponsored Schemes like Family welfare, Universal Health Care, Mother and Child health, National Leprosy Eradication and T.B. Control, Prevention and control of Blindness, NMEP, ICDS and the proposal of Health for all by 2000 A.D etc. were launched along with the other state schemes.⁽³²⁾

But, the hilly terrain, low population density and the climatic condition made the implementation of the programme 'Health for All by 2000 AD' more difficult. Keeping this in view and also for the overall improvements, adequate attention was given during Eighth Plan for improvement in:

- i) consolidation of Primary Health Care services with extension to high altitude and left out pockets,
- ii) Human resource development and technical manpower training,
- iii) Organised referral system,
- iv) Consolidation, augmentation and modernisation of existing resources,
- v) Education, motivation and effective community participation,
- vi) Inter-sectoral collaboration and,
- vii) population stabilisation.⁽³³⁾

The physical and financial achievement made in respect of some of the major items during difficult plan periods have been given in the Appendix 4.6.

INDUSTRY

The State of Arunachal Pradesh is very rich in the field of cottage industries and its products have an international reputation. The cottage Industries Department though started its activities in the year 1953-54 but, it was manned properly only after the appointment of the Superintendent of Cottage Industries as the Head of the Cottage Industries Branch in the later part of 1954-55. The post was subsequently re-designated as Cottage Industries Officer with headquarters at Shillong. In 1953, ten craft centres were set-up at different places in the state to promote the tribal arts and crafts and also to give training to the local artisans in various crafts so that an alternative source of income is made available to them. Further, to encourage local craftsmen, stipends were arranged and in addition, craft centre were also provided with the hostel facilities.⁽³⁴⁾

During the Second Five Year Plan some more crafts like masonry, carpet making, carpentry, black-smithy, wood carving, weaving and spinning etc. were introduced in various craft centres. The art of weaving is popular and well known in almost all the parts of the state and in some areas cotton is grown, spun and dyed by the local tribal people themselves. The work in cane and bamboo of a very high quality is practised throughout the State, while wood carving is a traditional craft in parts of district Tirap and in all the Buddhist areas. Therefore, to provide training facilities in the improved techniques of production in various basic industries, work for setting-up of Cottage Industries Training Centres and Mobile Weaving Training Schools were taken-up during the Second Five Year Plan. The crafts were selected according to the needs of the local people and availability of essential raw materials locally. Thus, maximum

possible efforts have been made for the development and growth of the Cottage Industries. With the introduction of weaving, the rearing of silk worms and endi worms were felt necessary and as such actions were initiated for setting-up of sericulture farms.⁽³⁵⁾

The Third Five Year Plan was marked by a period of misery. The Department though, tried to develop the industries sector by appointing District Industries Officers in the beginning of the plan period particularly to assist the District Administration in implementing the industrial schemes but, the Chinese aggression during November, 1962 very badly affected the programme of crafts training and production particularly at Tawang, Bomdila, Walong, Mechuka, Tuting, Along and Tezu. Almost all tools, equipments and raw materials were lost, the craftsmen had to flee away and the activities were suspended for quite sometime. However, after the retreat of the Chinese, the Department made continuous efforts to procure necessary tools, equipment, raw-materials and to rehabilitate the Craftmen. Within a period of 3 months, it could be possible to re-establish all the craft centres except that of Tawang which took a period of about 6 months to re-establish. Under the training programme, the craft centres started imparting training to local people in various basic industries. The activities were mainly concentrated on production of furniture, cane and bamboo products, agriculture tools, shoes, ornaments, woolen garments, articles of Tibetan origin required by the border people, stationary items like pin-cusion, paper weight, paper cutter, electric switch board, round block, soap, phenyle etc. Under the expansion programme, some more craft centres were established and the new crafts like painting, bell metal, silver smithy etc. were introduced. To facilitate procurement of raw materials for the tribal people as well

to purchase surplus finished products from the local craftsmen in order to promote sales in the market both inside and outside, the Emporium-cum-Sale Centres were established. Further, to encourage the Craftsmen, exhibitions were organised in Divisional and sub-Divisional levels and prizes were awarded to the best craftsmen. In addition to that many Chairpersons of Handloom and Handi Crafts Boards and also of social welfare Boards of the country were invited to visit NEFA and to offer their comments about the promotion and prospect of various handicrafts of the state.⁽³⁶⁾

During Fourth Five Year Plan, apart from normal activities, extension work of handloom industries were introduced particularly, in the boarder areas for inculcating the art of weaving among the local people. Special emphasis was given in those areas where it was less known to the people. Financial and technical helps were given to small scale industries and to Industrial Co-Operative units by way of granting loan, grants-in-aid, subsidy etc. Moreover, the programme for revitalising the traditional handicrafts of the tribal people by consolidating the handicraft centres and the production units by organising Comprehensive Production Programme in the border areas, was taken-up. The Sericulture programme also received attention and the work for upgradation of Sericulture centres and Eri seeds grainage with the installation of spinning and peeling units was initiated.⁽³⁷⁾

The industrial activities in Arunachal Pradesh was mainly confined to the development of traditional crafts, cottage industries and to some extent small scale industries till Fourth Plan period. However, during the Fifth Plan, action was initiated for setting-up a separate and independent Industrial Development and Financial Corporation

(APIDFC) for providing financial support and consultancy services to the entrepreneurs for the development of small scale industries on modern line. Further, to ensure supply of raw materials, one Central Raw-materials Depot at the state level and Sub-Depots in District Headquarters were established. On the other hand, to popularise the industrial products outside the state as well as to promote sales, actions were taken for development of existing Emporia and to open new Emporia in the big cities of the country. Moreover, to step-up the industrial development as a whole, the Department of Industries was up-graded to the level of a Directorate by creating one post each of the Director and the Deputy Director. In addition to this, the state Government in collaboration with the Government of India, initiated action to create District Industries Centres at District level as a centrally sponsored scheme. Finally the Directorate of Industries declared as a Major Department in the month of July 1980.⁽³⁸⁾

During the Sixth Five Year Plan period, among other things, priority was given on establishment of small and medium scale industrial units. Under this programme the Government of Arunachal Pradesh awarded a mining lease to Coal India Ltd. for Commercial exploitation of coal deposit discovered at Namchik and Namphuk area of Thirap District. For oil exploration, a prospective licence over an area of 550 sq. metres was given to Oil India Ltd. in addition, a Mini Cement plant with a capacity of 30 tonnes per day was set-up at Tezu. In the field of electronics, an electronic unit for assembly of T.V sets, quartz clocks, Mini Megaphone, Radio etc. was established in Itanagar in collaboration with the ETTDC. In rural areas, the work for establishment of a Rural Industrial Development Centre at Dirang of West Kameng District was taken up in collaboration with the HMT, Bangalore. Further, the APIDFC granted loans to many

entrepreneurs and industrialists for setting their industrial units and issued raw materials to the needy entrepreneurs.⁽³⁹⁾

The activities of the Handloom, Handicraft and Sericulture were initially looked after by the Department of Industries. But, later on the Government. gave special emphasis for further development of these activities with a view to improve rural economy and to generate employment in rural areas. To facilitate this, a separate Department was created by a Government notification on 4th April, 1995 by bifurcating the existing Department of Industries and also with intention that this would accelerate the development of cottage industries sector which is very vital for the growth process of the state.

In the field of Geology and Mining, the Government gave special emphasis for its development. The state though has large variety of mineral deposits but, systematic efforts for collection and analysis of basic data could not be taken up for their exploration. To facilitate such activities, the Government has created a Department of Geology and Mining with effect from 4th April' 1995 to deal with all matters related to mines and minerals including developmental utilisation, grant of liscence/lease for exploration, assessment and collection of royalty and fees, grant of certificate of approval for mining/certificate of mining etc⁽⁴⁰⁾ The physical and financial achievement made with respect to some of the major items during different plan periods have been shown in the Appendix 4.7.

TRANSPORT AND COMMUNICATION.

The Communication System plays a very vital role in human life as well as for the over all development of an area. The roads and paths can be called as the veins and arteries of a state/country which continuously work for improving the quality of life of its people. The first major attempt in planning for road development which was taken in India is popularly known as Nagpur plan 1943. The objective of that plan was to see that no village would be more than 5 miles (i.e. 8.05 km.) from a main road in agricultural area and 20 miles (i.e. 32.19 km.) in non-agricultural area. The target fixed was to obtain a density of 16 km. of road length per 100 sq. km. of area by 1961. The target was though achieved in other parts of the country, but the achievement was less than the target in N.E. Region due to its geographical conditions, remoteness, insufficient resources and climatic conditions. For the next 20 years (i.e. 1961-81) another plan, known as Bombay plan was drawn with the aim of achieving the following:-

Category of area	Distance of a village from	
	Metalled road	Any road
1	2	3
i) Developed and agricultural area	4 miles (i.e. 6.44 km)	1.4 miles (i.e. 2.25km)
ii) Semi developed area	8 miles (i.e. 12.87 km)	3 miles (i.e. 4.83 km)
iii) Undeveloped area	12 miles (i.e. 19.31 km)	5 miles (i.e. 8.05 km)

This gave an overall road density of 32.50 km. per 100 sq. km. of area. This target could not be achieved by all states except Tripura, mainly due to constraints of financial resources, technical manpower, scarcity of construction materials and machinery etc.⁽⁴¹⁾

The target fixed in Nagpur plan could not be achieved in Arunachal Pradesh even after over four decades of independence. It appears that the first Engineering Department in Arunachal Pradesh the then NEFA started functioning with only one Division in the year 1947, its Headquarters at Sodiya directly under the Adviser to the Governor of Assam. In the year 1948, a Superintending Engineer was posted and the Headquarters was shifted to Shillong. The Second working Divisions was created at Margherita and

gradually with the expansion of activities of the Engineering Department, more working Divisions were created at different places in NEFA.

It is mentioned previously that Arunachal Pradesh is a hilly and educationally backward tribal state. Dearth of qualified personnel was the main bottleneck in executing various development works in the initial stages. Great difficulties were experienced in filling-up many posts in various Departments including the department of construction. Therefore, this department was linked with the Central Public Works Department (C.P.W.D) and ultimately various posts ranging from the superintending Engineer down to the cadre of Sectional Officers were merged with the C.P.W.D with effect from April 1956 and the Engineering Department started functioning under the Administrative Control of the Engineer-in-Chief of C.P.W.D as well as the Adviser to the Governor of Assam. Later on, due to increase of work load as well as for the convenience of implementing development programmes, the whole of NEFA was divided into two Engineering Circles viz "C.P.W.D Circle (i) consists of Divisions-Kameng, Seppa (Sepla), Subansiri, Siang and Hydro Electric Division, and ii) C.P.W.D Circle (II) consists of Divisions-Lohit, Dibang valley, Pasighat, Tirap, Miao-Vijoy Nagar and Electric Division, Jorhat and another superintending Engineer was also posted in the year 1966.⁽⁴²⁾

The Communication system in Arunachal Pradesh, the then NEFA even at the time of independence was practically non-existent. Except a few **popter** tracts, there were hardly any road as such, therefore, the main task of the Engineering Divisions was to develop road communication in the hilly areas of the State for providing the basic

necessities of life eg. food, medical aids, education etc. The main objective of the First Five Year Plan was to connect the Divisional HQs with all-weather road and accordingly one such road for connecting Bomdila and Ziro ~~was~~, entrusted to the Army Engineers and provisions were also made for construction/improvement of road links to Khela and Tezu. But, the project for Along was given-up as it was found too much expensive and instead an all-weather Dakota Air-Strip was constructed. Moreover, a proposal for construction of road joining Murkongselek with Pasighat and also the work for construction of bridle paths, mule paths, porter tracts, bridges and culverts were taken-up to open up the interior. There were many areas which were absolutely inaccessible and road construction was very difficult and time taking. As such, air transport was considered to be the only possible means and accordingly two more, fair weather Air-Stripes to Ziro and Daporijo were constructed during the First Plan period.⁽⁴³⁾

The main objective of the Second Plan was to complete the left over work of First Plan and to develop air and road communication in conformity with the policy accepted by the committee for the progress of Air-Stripes and Road Communication in NEFA during January ' 1955 in Delhi. During this period, the work of electrification was also taken-up. To begin with, some of the places were identified and it was decided to provide these places with small Diesel generating sets since there was no provision of Hydel or Thermal power at that time. Availability of pure sources of drinking water were another major problem both in villages as well as in administrative centres. Therefore, to implement the water supply scheme, it was decided to cover initially some of the important Divisional Headquarters, and for improving village water supply, provisions

were made for hand-pumps and surface wells for villages in semi-plain areas, suiting to local conditions.⁽⁴⁴⁾

It has been found that till Fourth Five Year Plan, efforts were made mainly to make narrow and katcha roads in the hills to open-up the interiors at least for jeepable traffic. But, to make the development of interior areas from socio-economic point of view, it was felt necessary during Fifth Five Year Plan to widen jeepable roads for plying of buses and to provide proper bridges, drainage etc. to make the roads stable and serviceable during monsoon. However, at the end of Fourth Five Year Plan most of the District and the Sub-divisional Headquarters could be connected by metalled roads and there was public demand for regular transport system for the benefit of the people as well as for the development of the state as a whole. Therefore, to start with, the Arunachal Pradesh State Transport Services opened two routes, namely Itanagar-North Lakhimpur and Khonsa-Naharkatia in the year 1975-76 with two buses in each route. Further, in the year 1976-77 it was proposed to strengthened these routes by providing one more bus each and also to open additional routs namely North-Lakhimpur-Ziro, Miao-Marghenita & Tezpur-Bomdila.⁽⁴⁵⁾ In case of electricity, the work was going on. A number of Micro Hydel schemes were taken-up during Fourth Five Year Plan. In this plan a total of 7 Micro Hydel and 3 Medium size schemes were commissioned in the first part itself.⁽⁴⁶⁾

The basic infrastructure of road communication, inspite of all efforts remained very poor in Arunachal Pradesh and even at the beginning of Sixth Five Year Plan, the coverage of roads per 100 sq. km. of area was approximately 7 km. in the state which was the lowest in the country. Therefore, the main objective of the Sixth Five Year Plan

was to build-up the minimum net work of the road communication by development of major district roads including rural link roads and bridges connecting important areas, air-field stations and Administrative centres. In order to fulfill this demand, it was proposed to take-up construction of roads through North Eastern council plan as well as through the Programme of Border Road Organisation.⁽⁴⁷⁾

However, inspite of all these efforts, some areas and the Administrative Headquarters in the upper belt and near the borders could not be covered by road. As an alternative way of communication for these areas, fleet of Helicopters and small Air crafts are being used for lifting of essential commodities as well as for the movement of officials.⁽⁴⁸⁾ The communication system in Arunachal Pradesh could not reach the target of Nagpur plan even after completion of Seventh Five Year Plan and two subsequent Annual plans of 1990-92. The low road density is because of the fact that Arunachal Pradesh is a very big hilly state having an area of 83743 sq. km. and the terrain involves high cost of construction and transportation charges. However, the planning process till completion of first 4 years of Eighth Plan can be considered as satisfactory. It appears that on an average about 273.34 km. of road could be constructed per year during this period. There are only two National Highways in the State viz NH. 52 going through Jonai, Pasighat, Roing, Tezu, Wakro, Namsai to Dirok Gate and NH. 52-A joining Itanagar to Banderdewa on NH. 52. The State High Ways and Major District roads connecting District Headquarters to National High ways have been mainly constructed and maintained by Border Road Organisation and some other important roads funded through North Eastern Council (NEC) are either taken-up by State PWD or entrusted to

the BRO according to convenience while the village link roads are being taken-up by RWD.⁽⁴⁹⁾

But, in the absence of waterways and railway communication system, the state needs comparatively more and stable roads than the plain areas. However, due to continuous efforts on the part of the state and the central governments, the total road length reached to 12422.58 km. at the end of first 4 years of the Eighth Five Year Plan (1992-96), raising the road density to 14.83 km. per 100 sq. km. of area against the national average of 62 km. per 100 sq. km. as on 31st March'1991.⁽⁵⁰⁾ In respect of state transport, considerable progress has been made & the state Transport Department increased their fleet strength and was running a total of 169 buses on more than 102 routes covering a distance of 75.15 lakhs km. inside and outside the state during the year of 1994 -95 ⁽⁵¹⁾.

The position of Air-transport has also been improved further. The landing grounds are now being used by AN- 32 Cargo plane as well as vayudoot and similar smaller Air crafts, while the Helipads are being used by MI-8 , MI-17, MI - 26 and chopper (chetak)Helicopters. Mi-17 and MI-8 Helicopters are mainly used for carrying passengers, construction materials, supply of ration commodities to interior areas and similarly AN.32 Cargo planes are in use for movement of passengers including transportation of materials and ration commodities in border areas ⁽⁵²⁾.

Regarding power generation though there are sufficient potentials of Hydel power, but, due to various reasons many of the sources could not be tapped for generation of power and on the other hand some of the schemes could not be

implemented fully in time. The demand of power is gradually increasing for household consumption as well as for growth of industry. The position of water supply schemes however, improved considerably. In Arunachal Pradesh the water supply schemes are being implemented by two Departments viz-Public Works Department (PWD) in urban areas and Rural Works Department (RWD) in rural areas. The urban water supply arrangements are generally made by tapping the water from streams and rivers by gravitation flow with treatment and filtration provision wherever possible. In case of rural water supply, the objective is to cover the entire rural population with potable water supply. In Arunachal Pradesh the villages are small and scattered over large hilly areas and in many cases supplies are to be drawn from long distance resulting overhead expenses for setting up water supply installation very high ⁽⁵³⁾.

For further details on the physical and financial achievement made in respect of some of the major items during different plan periods Appendix 4.8 has been incorporated at the end of the thesis.

CO-OPERATION

The Co-Operative movement in India and also in the state of Arunachal Pradesh started with a view to achieve socialistic pattern of society of the Indian type. The main objective of this movement was to deal with problem of rural indebtedness and to raise the standard of living of the people by increasing the state income and reducing the inequalities of income and wealth through peaceful, non-violent and democratic methods of even distribution. In India, the Co-Operative Credit Societies came into existence after the enactment of the 'Co-Operative Credit Societies Act' 1904. Though, the impact of this movement was not very significant in the beginning due to the absence of any plan for the rural development but, after the independence and with the launching of Five Year Plans, the Co-Operatives came to occupy a very vital role in the socio-economic development of the country. A systematic and integrated programme for development of Co-Operatives in the field of agricultural credit and supply of agricultural inputs were included in the Second and subsequent Five Year Plans at the recommendation of the All India Rural Credit Survey Committee Report 1954.⁽⁵⁴⁾

In Arunachal Pradesh, the Co-Operative Department was originally attached to the then NEFA Secretariat and looked after by a special Officer, Planning and Co-ordination. In 1956, the post of special officer was re-designated as Deputy Registrar of Co-Operative Societies. The Development Commissioner, NEFA acted as Ex-officio Registrar of Co-Operative societies. The Co-Operative Department had no field staff till 1962 and was looked after by Ex-officio Inspectors of Co-Operative Societies drawn from Agricultural Officers, Accounts Officers, Treasury Officers and others. It was only

in 1962, with the posting of the first batch of Deputy Co-Operative officers in the interior, the Department started directing the co-operative movement through their field staff. The District set-up was further strengthened in 1966 by creating five posts of Assistant Registrar of Co-Operative societies.⁽⁵⁵⁾

The Co-Operative movement in the state however made its beginning with the Organisation of the first Co-Operative society at Pasighat in Sept' 1957. The initial proposal was to organise ten multipurpose Co-Operative Societies at the first part of the Second Five Year Plan with a view to supply the essential commodities to the consumers at a cheaper rate through Co- Operative Societies and to protect them from exploitation of traders. During 1957-58, fifteen more societies were initiated in the N.E.S. Blocks and it was proposed to organise more societies in such Blocks at the end of the plan period⁽⁵⁶⁾
(56).

The Co-Operative movement in Arunachal Pradesh gained momentum from Third Five Year Plan. The Societies, besides supplying essential commodities, started their activities in various other fields due to increasing needs of the people. During this plan period, it was found that there were certain pockets which had surplus production of paddy and mustard seed. But, in absence of any marketing facility, the Co-Operative Societies took initiative and undertook procurement, processing and marketing of these surplus produces for the benefit of the local people. This inspired the farming community for Organising Processing and Marketing Society and to bring more areas under crops⁽⁵⁷⁾

Further, for the benefit of the school children, School Co-Operatives were organised and in order to provide transport facility for goods and passengers, two

Transport Co-Operative Societies were organised one at Bomdila and the other at Tezu. Moreover, for proper running of the Co-Operative societies and to maintain regular accounts, it was proposed to provide a manager to each institution. The cost of keeping a manager was born by the government at 75 per cent subsidy. In addition, a few Industrial Co-Operatives were organised and to provide training to all managers for better functioning, training centre was organised at Gauhati.⁽⁵⁸⁾

The Co-Operative movement along with the gradual advancement of communication system, increase of population and number of government employees, expanded its activities all over the State. But, the movement also suffered due to the shortage of working capital and godown facilities. Moreover, the turn-over was limited because the consumer's requirements, particularly in respect of Government employees were being met by the Central Purchase Organisation (CPO) and therefore, the Co-Operative institutions could not take the advantage of adequate number of purchasers and as such their viability has been adversely affected. In addition to that, the institutions could not always get the opportunity of large scale procurement as they, more or less, functioned in isolation. However, during Fifth Five Year plan, the decision of the Government of assigning the responsibility of Public Distribution System of essential commodities with Co-Operative Consumer's Stores, opened-up a new dimension in the Co-Operative movement of the state. The Government further decided to close-down the CPO Centres (State trading) started initially by the Government of Arunachal Pradesh to feed the Government servants, and to replace these by the Co-Operatives. As per this decision, the Co-Operative undertook the function of distribution of essential commodities and planned to take over all CPO centres including those of Air-fed and

other centres located in border areas. Gradually it started playing a very vital role in public Distribution System of Arunachal Pradesh.⁽⁵⁹⁾

During Sixth Five Year Plan, special emphasis was given for expanding Fair Price Shops under the Co-Operative Sector by organising new societies as well as opening of more branches of the existing societies to meet the increasing demand of the consumers and to bring the services nearer to the common people as far as possible. Due to sincere and continuous efforts, it could have been possible to cover all most all of the landfed stations by a net work of Public Distribution System under Co-Operative sector and even some of the Air-fed locations like Vijaynagar, Wallang, Anini, Maliney, Tuting, Mechuka, Marigong, Tato, Taksing, Kaloriang etc. To strengthen the Co-Operative movement in the state, the state Government has established the Arunachal Pradesh Co-Operative Marketing and Supply Federation Ltd., the marketing Co-Operative, Large Area Multipurpose Societies (LAMPS) and the Consumer's Co-Operative Societies etc. These play very vital role in procuring, processing and marketing of the surplus produces.⁽⁶⁰⁾ Further, due to increased activities of the Co-Operative movement in the state, the credit needs of the farmers and local artisans had been increasing gradually. To meet such growing demands, the Government established the Arunachal Pradesh State Co-Operative Apex Bank at Naharlagun in the year 1977 with a view to extend agricultural finance to the local people through the network of LAMPS. The Co-Operative Apex Bank played a key role in the socio-economic development and expanded its activities all over the state by establishing 12 branches in different places and issued loans and advances to the tune of Rs.160.00 lakhs during 1983-84.⁽⁶¹⁾

During the Seventh Five Year Plan, the first Co-Operative super market with self service facilities established at Itanagar under Arunachal Pradesh Co-Operative Marketing and Supply Federation Ltd. This received wide appreciation and there was demand for establishing more such market in capital complex as well as in the District Headquarters. Besides Public Distribution System, the Co-Operative movement also took care of the other needs of the poor people and was generating employment opportunities for them as well as for the unemployed youths. Under functional Co-Operative, it was decided to take-up various activities which could provide an alternative source of income for the needy people. To begin with, a society of weavers was started at Naharlagun which provided employment for about 200 women weavers. Moreover, the activities of State Co-Operative Apex Bank also increased its activities and opened-up more branches for the benefit of the local people. It has been found that the bank through its 27 Branches advanced loans amounting to Rs.1325.23 lakhs upto March'1992 in the form of short and medium term loan for agriculture, loan for procurement and marketing of agriculture produces through Co-Operative Societies, medium term loan to individual, Co-Operative Societies and other industrial Societies and I.R.D.P. loan.⁽⁶²⁾

The state Co-Operative Apex Bank, in the mean while became an integral part of the economic life of the local people. The Bank with the support of 30 LAMPS providing the financial support in the form of crop loan, medium term loan for procurement of tractor, power tiller and other agricultural implements through LAMPS besides other industrial and IRDP loans. This is a very big task involving huge financial involvement and the bank can not arrange the entire fund required for this purpose.

Therefore, a Memorandum of understanding was signed with the NABARD for providing required fund to LAMPS/Co-Operative Banks. Further, for successful implementation of various schemes, regular training of officials and education of members on Co-Operative matters are very essential and as such the Co-Operative Union is maintaining a Junior Basic Training Centre for training of staff of the Co-Operative Societies as well as of officials of the Department. Moreover, to bring down the activities of the union to District level, some District Co-Operative Unions have been registered and it has been proposed to organise such Unions in the remaining Districts. The Co-Operative Department on the other hand, has proposed to strengthen its set up with the addition of staff at all levels for proper implementation of NCDC and Departmental Schemes and to maintain proper audit and accounts in all levels.⁽⁶³⁾ The detail physical and financial achievement made in respect of some of the major items during different plan periods have been shown in the Appendix 4.9.

RURAL DEVELOPMENT

There is a saying that "India lives in villages". It is true that, even now, most of the people of our country are living in villages and producing the most essential things of human survival like cereals, pulses, vegetables, oil seeds etc. for themselves as well as for the people living in the urban areas. Perhaps, there cannot be two opinion on the fact that, the over-all development of a country or a state depends upon the socio-economic status of its villages. Development of rural areas, therefore, has always been a cause of concern, but a systematic beginning could only be made from the early fifties with

introduction of Community Development Programme. This Programme first helped to establish a network of basic extension and development services in the villages, thereby, creating awareness among the rural communities about the potential and means of development. Which in turn will be helpful for quicker adoption of new technological advancement. Later on, with the abolition of landlords and reform of land tenure system, adoption of various development programmes and investments in the successive Five Year Plans, paved the way for creation of essential physical and institutional infrastructure of socio-economic development in rural areas.

The Small Farmers Development Agencies (SFDA) programme was one of the programmes of rural development aimed at the target group of small and marginal farmers and agricultural labourers had been in operation since 1971. The objective of this programme was to assist persons specifically identified from this target group in raising their economic level through adoption of improved agricultural technology and acquiring means of increasing agricultural production like minor irrigation, diversification of farm economy by taking up subsidiary activities like animal husbandry, dairy, horticulture etc. The SFDA was to ensure that the needed inputs and credit were made available to these rural people. Similar to SFDA, there were many other programmes like Drought Prone Area Programme (DPAP), Desert Development Programme (DDP), Command Area Development (CAD) etc. those were in operation with the same objectives of improving the economic condition of the rural poor, but none of these programmes covered the whole country and many of the Community Development Blocks had more than one of such programmes operating simultaneously in the same area for the same target group. This not only created considerable difficulties in effective monitoring and accounting,

but, often blurred the objectives of the programme. Therefore, it was proposed that such a multiplicity of programmes for the rural poor operated through a multiplicity of agencies should be ended and it should be replaced by one single integrated programme, called the Integrated Rural Development Programme (IRDP) operative through out the country. Thus, the concept of IRDP was first proposed in the Central Budget of 1976-77 and a beginning was made with the intention to assist the rural population to derive economic benefits from the developmental assets of the area. The programme with some modification was introduced on an expanded scale in 1978-79 starting with 2300 Blocks through out the country, of which 2000 were under co-terminus coverage with SFDA, DPAP, CAD etc. Later on, with the addition of another 300 Blocks, its coverage went upto 2600 as on 31st March, 1980.

The IRDP had been conceived essentially as an anti-poverty scheme and was decided to implement in different states as a Centrally Sponsored Scheme with equal matching funding pattern between Centre and State. The main objective of the scheme was to evolve an operationally integrated strategy for the purpose of increasing production and productivity in agriculture and allied sectors based on better use of land, water and sunlight and also of the resource and income development of vulnerable sections of the population in all the Blocks of the country. Unlike other rural development programmes, the aim of IRDP was more specific with regards to agricultural workers, landless labours, rural artisans, unemployed youths and the approach was on identifying family, rather than individual on the basis of household survey by adopting certain norms in respect of family income for determining the status of the household. For proper implementation of this programme, the Rural Development

Department, headed by a Director at the State level, and the District Rural Development Agency, at the District level were set-up for executing the Schemes in the Development Blocks with the help of respective Block Development Officer and other officials of District level organisations.

However, the strategy and methodology for the accelerated rural development during Sixth Five Year Plan was :-

- i) increased production and productivity in agriculture and allied sectors;
- ii) resource and income development of vulnerable section of the rural population through development of the primary, secondary and territory sectors;
- iii) skill formation and skill upgradation programmes to promote self and wage employment amongst the rural poor;
- iv) facilitating adequate availability of credit to support the programmes taken up for rural poor;
- v) promoting marketing support to ensure the viability of production programmes and to protect rural poor exploitation;
- vi) provision of additional employment opportunities to the rural poor for gainful employment during the lean agricultural season through a National Rural Employment Programme (NREP);
- vii) provision of essential minimum needs and;

- viii) involvement of universities, research and technical institutions in preparing projects both for self employment and NREP and in preparing strategies for the scientific utilisation of local resources⁽⁶⁴⁾.

In Arunachal Pradesh, like other parts of the country, besides Community Development Programme and Integrated Rural Development Programme (IRDP), various other anti-poverty programmes like Assistance to Small and Marginal Farmers (ASME), National Rural Employment Programme (NREP), Rural Landless Employment Guarantee Programme (RLEGP), Integrated Child Development Services (ICDS), Training of Youth for Self-Employment (TRYSEM) etc. were implemented for raising the socio-economic status of the needy people of the State. The Community Development Programme first started in Arunachal Pradesh with the establishment of the Community Development Block on 2nd October, 1952 at Pasighat with the basic objective of developing infrastructural facilities. The number of CD blocks were gradually increased and reached to 48 till beginning of Sixth Five Year Plan. The IRDP was however launched in the state during 1978-79 in 10 CD Blocks selecting one Block from each District/ independent Sub-Division and subsequently by the year 1981-82, all the Blocks were brought under the coverage of IRDP. During Sixth Five Year Plan, the main activity of the Rural Development Department was to implement various schemes for eradication of poverty and generation of employment for rural poor. The first significant step towards this goal was to strengthen the organisational set-up and the administrative machinery in the state along with the establish of 11 District Rural Development Agencies for the 9 Districts and the 2 independent Sub-divisions of Tawang and Changlang for proper planning, implementation and monitoring of various

programmes of the Department. The District Rural Development Agencies are the Registered Societies and all these 11 societies started functioning formally as autonomous bodies from 1st October, 1983 under the chairmanship of the Deputy Commissioners of the respective district. He also acted as the Member-Secretary of the society. In addition, all the heads of the Technical Departments in the Districts, public representatives, such as MLAs, Vice-Chairman of Zilla Parishad and others also represented as Members of the District Rural Development Agencies⁽⁶⁵⁾.

During the Seventh Five Year Plan, all these anti-poverty schemes and the Community Development Programmes were also implemented. But, there were some difficulties in implementing the IRDP Credit Linked Individual Beneficiary Orientation Schemes due to non-availability of credit support, communication problems, lack of infrastructural facilities, absence of organised marketing outlets, reluctance of local people in taking loans etc. Out of the total of 48 Blocks, 16 blocks remained uncovered by Banks. At the end of Seventh Plan, the two programmes of NREP and RLEGP were discontinued and in these places, the new scheme of Jawahar Rozgar Yojana (JRY) had been launched during 1989-90 for providing employment to the rural poor. Further, the Council for Advancement of People's Action and Rural Technology (CAPART) had also been registered during the same year of 1989-90 as state counterpart of the Central CAPART with the proposition of starting its activities with Central assistance for involving the voluntary organisations in rural development projects efficiently.⁽⁶⁶⁾

However, the very approach of IRDP, which pre-supposes "exchange of money" was found to be less acceptable to the local people. Thus, it was not due to the

inaccessibility of such areas, lack of marketing facilities, non-availability of credit etc. that were responsible making the IRDP less popular in the state. Therefore, as an alternative to the IRDP, it was decided to implement such programmes which could be effectively implemented with people's involvement for building up the infrastructural base and in turn will contribute in generating greater wage earning avenues to the rural poor. Accordingly, it was decided that the Central and State Government share (on 50:50 basis) will be allotted to different Blocks by the State Government considering the constraints as well as feasibility of implementing the programmes in individual Block for developing the area and community as a whole. Further, it was decided that out of the 48 C.D. Blocks, IRDP would not be implemented in 27 Blocks which were either unbankable or having remote areas beyond access and instead IRDP grants would be utilised in the manner as decided by the State Government. for Area-Cum Community Development activities without credit linkage and the grant would be released to each Gram Panchayat on the basis of Annual Action Plan approved by the DRDA and this grant would be handled by the Gram Panchayat through a separate Bank Account in its name. On the other hand, in the remaining 21 Blocks, IRDP Schemes would, continue to be credit linked, but the amount of Credit would be obtained by each Anchal Samity for **relencing** to the eligible/identified beneficiaries after duly recommended by their Gram Panchayat. The corresponding matching subsidy would also be released to the Achal Samity by the DRDA. The individual beneficiary-oriented income generating schemes would be taken up in these 21 Blocks with the objective of pulling the assisted families above the poverty line ⁽⁶⁷⁾.

The Integrated Rural Development Programme continued to be implemented during 8th Five year Plan in accordance with the IRDP manual and with the decisions taken by the State Government from time to time. The detailed household surveys have been completed in all the Blocks during 1993-94 and according to this, the action for identifying the families to be assisted under this programme has been initiated. Further, it has been decided that the Credit component in financing the IRDP Schemes will be only in those areas where the blocks are in a position to advance loan, but in the remaining areas, the IRDP schemes will be financed mainly through subsidy only upto a limit of Rs.2000.00 per scheme representing the capital investment and the balance would be the contribution by the beneficiaries themselves in the form of labour, local materials and small cash inputs wherever essential. In the year, 1993-94, the new scheme of Employment Assurance has been launched at the instance of the Prime Minister with the funding pattern of 80:20 sharing basis by the Centre and State respectively. The new scheme though, broadly follows the modus operandi of Jawahar Rozgar Yojana, but, the significant difference lies with the Employment Assurance scheme, yet, it is to be planned and implemented directly by the District Administration through the DRDA/ Block Agencies and the Deputy Commissioner. The latter has been vested with all powers as the implementing authority. In case of the Jawahar Rozgar Yojana, Panchayat Bodies are solely responsible for its planning and implementation. Moreover, other new programme of Waste Land Development in non-forest areas has also been proposed to be implemented in the State by the Rural Development Department under the supervision of Ministry of Rural Development, Government of India. The terms of implementation are 50:50 funding share both by Centre and State government⁽⁶⁸⁾.

However, for meeting the training needs for proper implementation of various development schemes, the Women and Child Development Training Centre (WCDTC) already established in Itanagar for training of Extension Officers, Gram Sevikas, Anganwadi workers etc. In addition to that, the work for establishment of State Institute of Rural Development (SIRD), an apex training centre for rural development functionaries has been taken up at Itanagar with the Central Government assistance has come up in the recent years. Over and above, under TRYSEM infrastructure, the existing ITIs of Roing and Tabariso have been proposed to be strengthened for creating adequate training facilities for the existing trades as well as for new trades to be introduced in future. Moreover, two multidisciplinary training centres have also been proposed to be set up at Basar and Kalaktang.⁶⁹ The physical and financial achievement made under some of the major items during different plan periods have been shown in the Appendix 4.10 (A) 4.10 (B)

To conclude the foregoing discussion it can be said that, in Arunachal Pradesh the planning process though started during the First Five Year Plan in 1951, but it has been found that the planning in its proper perspective started from Fifth Plan onwards . At the initial stages, practically there was no account of economic development of the state. The hilly topography of the state not only made the tribal people to remain isolated from each other, but also stood in the way of developing the very basic amenities like communication, education, medical, drinking water, electricity, market etc. This ultimately resulted in keeping the people ignorant, illiterate, unhygienic and on the whole undeveloped. Therefore, the first priority at the initial stages of planning process was to create awareness among the people, encourage them for education, adoption of scientific

methods of cultivation, use of fertilisers and high yielding variety seeds for increasing productions etc. for their economic benefit and over all development.

The planning process in Arunachal Pradesh, therefore, had to start almost from the zero level and thus, it took considerable time to gain momentum. But, later on, due to continuous efforts by the central and state Governments, people gradually became aware and started taking part in the development activities. This ultimately helped them to bring about a change in their socio-economic life. Moreover, the decentralised planning, started in the state of Arunachal Pradesh in the year 1988-89, provided additional opportunities for direct involvement of the people in the planning process. Under this programme, besides district level planning, provisions have been made for formulation and implementation of some area specific projects by the people themselves for the development of the community as a whole. This programme also laid emphasis on involvement of the local people as workers particularly during the off agricultural seasons so that it is expected to provide them additional source of employment and income generation.

The state already passed through more than four decades of economic planning and made considerable progress in many respects. It also appears that there was no shortage in the allocation of fund except during the Third, Fourth and Sixth Five Year Plan periods when the state expenditure exceeded the limits of initially allotted amounts. But, in all other plan periods, the whole allotted amount could not be utilised and there was always a surplus. However, inspite of all these, it has been found that there are many remote and interior places where there is no proper facilities like communication,

medical, education and many other basic amenities even today. The rural areas are very much suffering from non-availability of marketing facilities. Due to lack of inter-village communication and transportation linkages the development of market centre is very slow. This is not only depriving the local people from the facilities of cultural exchanges but, to some extent, discouraging them from producing surplus agriculture and other commodities as there is little provision for selling their marketable surplus. This is also one of the important bottleneck in the development of forest and agro-horticulture based industries in the state. The state is also endowed with sufficient hydro power potentials, but mainly due to lack of communication and other infrastructural facilities, many of these sources could not be utilised for production of electricity. However, even after all these, there is no doubt about the fact that a hilly state like Arunachal Pradesh who attained its statehood only about ten years back, could make satisfactory progress in such a short period and the people are getting benefit from the planned development.

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CHAPTER 5

REVIEW OF MANPOWER POSITION IN ARUNACHAL PRADESH

It was mentioned in the earlier chapters that Arunachal Pradesh is a hilly state in the North Eastern part of India. It is populated by ethnic communities of which about 20 are major tribes and more than 100 sub-tribes. The total population of the state was estimated to be around 8, 64, 558 as per 1991 census. The main occupation of these tribal people is predominantly agriculture. It is more so in case of rural population. Apart from agriculture, free collection of food from products from forest in the form of animal and herbal food etc. are other important occupation of people in the rural areas. The villagers are mostly engaged in the age old **Jhum** cultivation, as there is hardly any flat land available for permanent cultivation. Moreover, due to its rugged topography, there is little scope of introducing modern farming methods as well as developing infrastructural facilities. However, because of continuous efforts on the part of State and Central Governments, the situation is changing for better in the State. Though, the changes are visible in many spheres yet, improvement in human capital is of specific significance.

THE HUMAN CAPITAL

It was mentioned in the previous chapter that the State of Arunachal Pradesh (then NEFA) started the processes of planned economic development in the year 1951. It was aimed at apart from other things obtaining increase in the standard of living of the common people. But, in the initial stages, it appears that, there was no clear idea about

the objective assessment of its total human capital in general, worker, non-worker and educated persons in particular. However, from the available records, it is known that the State had a population of 1,37,993 in 1951, except Subansiri area, the population of which was not available.⁽¹⁾ The detailed information about population, their age, literacy etc. was unknown till the first population census conducted in the year, 1961.

The full fledged Directorate of Census was however, established in the year, 1971 and for the first time, a complete Census was conducted in Arunachal Pradesh in the same year. According to this Census, the total population of the state was estimated to be 4,67,511 out of which 3,69,408 were tribals, which was approximately 79.01 per cent of total population. The number of literates in the state were around 52,791 i.e. 11.29 per cent of total population as against 7.13 percent of 1961. Similarly, the number of tribal literate persons increased to 19,202 of which 16,046 were males and 3,156 were females. Correspondingly, the percentage of tribal literates too indicated an increase of 3.89 as compared to 4.93 percent increase in total tribal population.

The other important findings of 1971 Census were age, gender and economic classification of population. The total population was classified into ten age cohorts starting from 0-4 and ending with 60 and above. The economic classification of workers and non-workers showed that there were 2,69,542 persons identified as workers in the state. These were further divided into 9 (nine) broad occupational categories and 1,97,969 non-workers classified under 7 (seven) broad categories, as per Census of India pattern.⁽²⁾

According to 1981 Census, the total population of the state was 6,31,839 of whom 3,32,555 were workers and 2,99,284 were non-workers. The percentage of literacy in the state was 20.79 showing an increase over 9.50 per cent from the previous Census.⁽³⁾ Finally, according to 1991 Census, the total population of the State reached to 8,64,558 of them 3,99,782 are workers and 4,64,776 are non-workers. The total tribal workers are estimated to be 2,52,338 and non-workers are 2,98,013. The total tribal workers, though accounted for 63.12per cent of the total workers of the state, yet, it appears that 83.30per cent of the tribal workers are engaged in cultivation alone and 1.38per cent working as agricultural labourers. However, the percentage of literacy of the State as per 1991 Census reached to 41.59per cent (32.80per cent including children in the age group of 0-6 years) while the percentage of tribal literate persons over total population increased to 21.68per cent (excluding children in the age group 0-6 years) and over total tribal population increased to 34.45per cent (excluding children in the age group 0-6 years). During 1981 and 1991 Census, the concepts were modified and coverage was increased and as such, some more demographic aspects as well as attributes of migration are also available.⁽⁴⁾

Educational Scenario

The Pre-Independence educational scenario of Arunachal Pradesh, (the then North East Frontier Tract) was very dismal. There was only 1 (one) Lower Primary School at Pasighat with 30 (thirty) students.⁽⁵⁾ However, the Independence dawned with 4 (four) Primary Schools and effective steps were taken for the development of infrastructure for spreading education. Lack of awareness about education along with poor infrastructure and poverty of the people were the main hurdles in the spread of education during pre-independence period. These were also, the main obstacles in the first few years after the independence of the country. Moreover, the aim of education in the initial days was much different. It was mainly for the purpose of motivating people toward new education. It can be said that, starting almost from a 'Zero' growth, the level of development in the field of educational institutions reached upto 67 Lower Primary Schools with a total of 2377 students, 1 (one) M.E.School with 7(seven), and 1(one) High school with 37 students (in Siang area) till 1950-51 i.e. the beginning of planning era. The State started its planning process from the beginning of First Five Year Plan along with the other parts of the country. The achievement in the field of education during the First Five Year Plan was quite encouraging. A total of 152 Primary Schools, with 7105 students, 16 Middle Schools with 310 students and 3 High English Schools with 87 students were enrolled till the end of First Five Year Plan.⁽⁶⁾

The Second Five Year Plan was the period of consolidation rather than expansion as far as educational development is concerned. However 44 Primary Schools, 7 Middle

Schools, 5 Higher Secondary Schools were opened during that period. The notable achievement of this period was the opening of Buniadi Siksha Bhavan, (BSB) at Changlang for imparting basic education on agriculture, social service and development of traits on tribal cultural education. The Institute runs two training courses viz. (i) Teacher Certificate Senior Basic and (ii) Teacher Certificate Junior Basic. The training institute was originally established at Sadiya in the year 1948, which was subsequently shifted to Margerita in the year 1955 and finally shifted to Changlang in 1956. During the Third Five Year Plan, apart from strengthening of the existing Schools, the first College of Arunachal Pradesh under the name of "Jawaharlal Nehru College" was established at Pasighat in the year 1965. The College started functioning with only 'Arts' faculty at the initial stage under Guwahati University. The first batch of Pre-University (Arts) and B.A (Part -1) students appeared for final examination in the year, 1966-67. The Science faculty was however, started from the year, 1973 and the first batch of students for Pre-University (Science) appeared for the final examination in the year 1975.⁽⁷⁾

However, the facilities for technical/vocational education in Arunachal Pradesh remained very poor. It is seen that only two training Centers viz. i) Gram Sevak Training Centre (GTC) at Pasighat and ii) Health Training Research Centre (HTRC) also at Pasighat were there as back as 1956-57.⁽⁸⁾ The GTC runs two courses i) for 2 years course and the other (ii) for 6 months course, while the HTRC also runs two courses i) 2 years course for Junior Nurses and ii) 1 year course for Health Assistant. The only Industrial Training Institute (ITI) was established at Roing in the year 1970. This institute imparts training on 5(five) technical trades viz. i) Motor Mechanics ii) Plumbers

iii) Carpenters iv) Electricians and v) Wiremen.⁽⁹⁾ Moreover, to cater the training needs at the level of Foresters and Forest Guards the Forest Training School at Namsangmukh in Tirap District was established in the year 1977.⁽¹⁰⁾

The state though was not having much facilities for technical education, but it was rich in the field of Cottage industries and its products have an international reputation. However, to encourage local artisans, a number of Craft centre were established in the year 1953, and besides other programmes, training to local boys and girls on about 20(twenty) disciplines of handicrafts were started. Later-on the government took special interest and opened District Industries Centres for further development of Cottage Industries as well as to raise the skill-level of local artisans and also to provide them with a source of income.⁽¹¹⁾

The state though made considerable progress in the field of general education, but it is lagging much behind in respect of technical education. Uptill now, there is not a single Engineering College or Medical College in Arunachal Pradesh. Every year, the State Government is sending the interested students out side the state for pursuing Engineering, Medical and other technical education. However, in the year 1985, the Government of India gave the approval for setting up of North Eastern Regional Institute of Science and Technology (NERIST) at Nijuli (Itanagar). The institute was approved for running Diploma courses in 10(ten) disciplines and Degree courses in 11(eleven) disciplines in Engineering/Technology and 4(four) disciplines in Applied Sciences. The institute started its academic session in the year 1986 at Certificate levels,

Diploma in 1988 and Degree courses in 1990⁽¹²⁾ This institute is catering mainly to the needs of North Eastern States on the basis of proportional allotment of seats. However, it is evident that the facilities for technical/vocational education available within the state of Arunachal Pradesh is quite inadequate. Though, the facilities available in the field of general education have increased with the recent addition of a few colleges and the first and the only University of the state at Rhono Hills, Doimukh. Further details of general education etc. are shown in the Appendix 5.1 and 5.2⁽¹³⁾

Position of Government. Employees

The population and literacy of the State of Arunachal Pradesh, though increased gradually, yet, the employment situation particularly with respect to local people is far from satisfaction even after four decades since independence and planned development. The tribal people, particularly in the rural area are mainly depending on agriculture and allied activities for their sustenance. There is conspicuous absence of alternative means of livelihood in most part of the state. From the available records, it is known that there were around 3395 persons (excluding subansiri area) employed in government services including 294 employees of NEFA secretariat Shillong and 275 employees of Tuensang area, in 1956⁽¹⁴⁾. However, the participation of local people in the Government employment was very less mainly due to rampant illiteracy among them. It could be seen that it was only after 1966, the employment position of the tribal people started increasing. In the year, 1966 i.e. at the end of Third Five Year Plan, there was a total of 1534 (i.e. 20.46 per cent) Scheduled Tribe Government employees in the state. Out of these there were 6 group -A, 17 Group-B, 719 Group-C and the remaining 792 Group-

D employees⁽¹⁵⁾ The position of Government employees at the end of each Five Year Plan starting from 3rd Plan onward till the third year of the 8th Five Year Plan has been shown in the Appendix 5 3 prepared on the basis of different reports⁽¹⁶⁾

It is evident from the Appendix 5 3 that the number of Scheduled Tribe (ST) Government employees has increased with the passages of time The rate of increase at the initial stages was comparatively less, particularly in group 'A' and 'B' services, but in recent years, it started increasing considerably However, the tribal participation in group 'C' service is increasing at a faster rate and the position in group 'D' is quite encouraging

Economic Census

The annals of human history reveals that human beings have interaction with the other members or community for carrying out their productive activities and for exchanging goods, commodities and services This process ultimately took the shape of trade and commerce and formed an essential part of the economic development of a nation The trade and commerce not only set-up many technological, industrial, trading and other business centres, but also opened-up new avenues and vistas for absorbing skilled or un-skilled manpower thus, helped in solving the ever growing problem of unemployment

The basic information like the nature of manpower engaged in such activities are very essential for economic as well for manpower planning But, ironically enough such

information were hardly available in case of Arunachal Pradesh. It was particularly for the enterprises and establishments engaged in the un-organised sectors i.e. those were not registered under the Factory's Act. 1948 of the Government of India. Therefore, to collect such information and to know the position of employment in the agricultural and non-agricultural sectors of economy, the Government of India, like population Census, introduced the scheme of Economic Census.

The main aim of Economic Census is to cover all agricultural and non-agricultural activities along with own account enterprises, i.e. those enterprises that are normally operated by the household members without engaging any hired worker and those establishments that are generally operated by engaging atleast one hired worker on a regular basis. In Arunachal Pradesh, the first Economic Census was conducted in the year 1977 but, this did not cover own account enterprises. Thereafter, the second and the third Economic Census were conducted in the 1980 and 1990 respectively. A detailed account of the numbers of enterprises and the labour force engaged in agricultural and non-organised sector of economy of the State of Arunachal Pradesh as per these three Economic Censuses⁽¹⁷⁾ have been given in the Appendix 5.4. It is evident from the this table that there were 20,812 enterprises (as per 1990 Economic Census) in the unorganised sector of economy in the State of Arunachal Pradesh. This sector provided employment for 93,274 persons i.e. 10.61 per cent of the total workforce, identified as hired workers.* Further, it appears that the enterprises and establishments increased by 148.84 per cent during 1977-80. The rate of increase though, slowed down to 89.65 per

* Hired workers are those that are paid for their work either in cash or in kind

cent during the period 1980-90, yet it registered a very high rate of 371.93per cent during 1977-90 i.e. within a period of 13 years. Simultaneously, the rate of absorption of workers in these activities increased from 18.41per cent during 1977-80 to 144.49per cent during 1980-90 and reached to 189.51per cent during 1977-90. Similarly the rate of hired workers also increased from 19.66per cent during 1977-80 to 109.78per cent during 1980-90 and to 152.02per cent during 1977-90 i.e. within 13 years.

The reasons for such growth in such entrepreneurial activities can perhaps be attributed to the fact that increase in literacy and the role played by successive economic planning in opening up new areas, activities and opportunities in the state. Moreover, it is observed that the people are also enthusiastic in availing these opportunities and taking-up such activities as their ways of life.

The non-agricultural activity consists of 13 major activity groups viz.; i) Mining and quarrying, ii) Manufacturing, iii) Electricity, Gas and water, iv) Construction v) Wholesale trade, vi) Retail trade vii) Restaurants and hotels viii) Transport ix) Storage and warehousing x) Communication xi) financial, Insurance, Real estates, Business services, xii) Community, social and personal services and xiii) Other activities. From the Report on Economic Census, 1990, it is evidenced that Retail Trade accounts for maximum number of non-agricultural own account enterprises i.e., 54.21per cent and provided livelihood for 6908 persons followed by manufacturing, which accounts for 23.42per cent of own account enterprises and engaged 2413 persons⁽¹⁸⁾. In case of non-agricultural establishments, the Community, Social and Personal Services occupied the

top position with 48.02 per cent of the total establishments providing employment to 45,819 persons of whom 44,850 are hired workers. The Retail price though occupied 2nd position in terms of number of establishments i.e. 22.81 per cent, but in case of employment, it occupied the 3rd position providing employment to 7631 persons of whom 5674 are hired workers. The Manufacturing activities though ranked fourth with 8.07 per cent of the total establishments, but occupied 2nd position in respect of employment of worker. It accounted for 10688 worker including a very high number of hired workers i.e. 10128⁽¹⁹⁾.

NATIONAL SAMPLE SURVEY (NSS)

It is a known fact that the development planning needs comprehensive and continuing information on various aspects of demographic and socio-economic characteristic features of people. The population census though, to some extent serves this purpose but due to its fixed decadal duration of enumeration and emphasis on the most general information available at the all India level have limited its scope of application. Moreover, most often, it rests on very vague and loosely defined concepts that makes it more informative and less insightful. The scope is further reduced due to lack of the availability of intra decadal information. So, to avoid such a situation the National Sample Survey (NSS) was introduced in India on country wide basis in the year 1950. Its aim was to generate information on specific themes through successive rounds of sample surveys. So that these information can be utilised for formulating plans, conducting research and for structural analysis.

The NSS was introduced in Arunachal Pradesh covering all districts from 31st round during 1976-77. The data on employment and unemployment though, have been collected in several rounds, but due to various reasons the results of these rounds are not available. However, some results on employment and unemployment of Arunachal Pradesh are available in the central sample report on 43rd round (July 84-Jan,85). Accordingly, a few important results have been collected and presented in the Appendix 5.5, 5.6, 5.7, 5.8 & 5.9⁽²⁰⁾

From Appendix 5.5 it appears that about 3 lakh persons, 2 lakh males and 1 lakh females in the rural areas of Arunachal Pradesh are engaged in one or more than one gainful economic activities. The percentage of usual status workers (Principal and subsidiary) was 52.40 per cent which is about 1 per cent more than the usual Principal status workers, among rural males. Whereas the percentage of usual workers was 30.50 per cent which was about 3.00 per cent more than the usual principal status workers, among the rural females. In urban areas, though the total number of workers is not available, yet, it appears that the percentage of usual status workers was 53.50 per cent and was slightly more than 1 per cent of the Principal Status workers, among urban males. Whereas, the percentage of usual status workers was 14.20 per cent and was slightly more than 3.00 per cent than the usual Principal Status workers, among the urban females. This means that, more number of rural and urban female workers were having subsidiary occupations than rural as well as urban male workers.

The Appendix 5 6 shows that, the percentage of education-specific principal status of workers of age group 15 years and above. It indicates that, the principal status of workers among the rural males with qualification graduation and above was the highest i.e. 97.70 per cent followed by rural illiterate males having 88.60 per cent. Whereas, in case of rural females, the highest percentage of 57.60 per cent was among the illiterate females followed by only 8.70 per cent among the females having qualification upto Primary level. This means that more number of females after attaining education upto Primary level were being engaged in household duties. In case of urban, the percentage was highest of 97.00 per cent among graduate males followed by 85.70 per cent among illiterate males. Whereas, the highest percentage of 27.40 among females with qualification higher secondary and above followed by 21.20 per cent among the females having qualification upto middle standard.

From Appendix 5 7 it appears that the percentage of education specific usual Principal and subsidiary status of workers of age group 15 years and above, among the rural males having qualification graduation and above was the highest of 97.70 per cent followed by illiterate males having 88.70 per cent. Whereas, among the rural females, the highest percentage of 62.30 per cent was in the illiterate group followed by 12.00 per cent in the group having education upto middle level. In case of urban, the males with qualification, graduation and above, having the highest percentage of 97.00 followed by illiterate males with 85.70 per cent. Whereas, in case of females, the highest percentage of 28.50 per cent among the group having qualification upto Secondary level followed by 27.40 per cent among the group having qualification upto middle level. Further from

Appendix 5.6 and 5.7, it appears that except in the case of the urban male workers having qualification upto Secondary level, all others were mostly pursuing only one principal occupation. Whereas, in case of females for both rural and urban and in all education levels were working with Principal Status as well as with Subsidiary status.

From Appendix 5.6 and 5.9, two important conclusions can be drawn in the case of children in the age group 5-9 years and the workers in the age group 50-54 years. In case of the children it appears that 2.00 per cent rural male children were working with subsidiary capacity and 2.70 per cent rural female children were working with both principal and subsidiary status. This means that, in rural areas, the girls were being engaged in regular economic activities at an early age of 5-9 years. In case of the latter, it appears that 100per cent of the urban male and female workers in the age group 50-54 years were working with both principal and subsidiary status. However, in all other age groups, both in rural and urban areas, it appears that more or less the same number of workers were working with principal status and also with principal and subsidiary status. Whereas, in case of females, it appears that a good number of female workers in different age groups were engaged in economic activity with subsidiary status only.

MIGRATION AND MANPOWER

It was mentioned in the previous chapter that proper planning started in the state of Arunachal Pradesh only recently. But, within a short period the state came up with enormous opportunities. Strategic location of the state has also enhanced the scope of developmental opportunities. Though, the scopes are gradually widening, yet it is

becoming increasingly difficult to utilise all these opportunities in isolation by mobilising internal resources only. It is particularly so in case of the human resources. Therefore, it is imperative that in the initial stages, there is a great demand of skilled manpower in the state, which in turn is the main cause of enhanced immigration. Ultimately, this has significantly influenced the manpower position of the state to a great extent.

Migration is an important demographic factor in population changes. Besides, fertility and mortality, population migration is the only other factor responsible for variations in the regional distribution of population. It influences regional population growth, its distribution over space and its composition, etc. In short run, it is to a great extent, a result of spatial disparity in economic development but, in long run, population mobility, in the form of migration, affects regional economic development. It has varied effects on the areas of emigration and on those of immigration. Thus, population, its size and composition to a large extent are determined by migration, and it in turn shapes the demographic, economic, social and political features of any region.⁽²¹⁾

The movement of people is as old as the human being. Man is a mobile creature, susceptible to suggestions and endowed with imagination and initiative. Population mobility is an important feature of developing as well as developed parts of the world. There are definite patterned regularities in the growth of migrating population and this comprises an essential components of modernization.⁽²²⁾ Population mobility has increased with technical and economic progress.⁽²³⁾ Each movement provides an important net work for the diffusion of ideas and information. It indicates a system of

social and economic changes, and can be regarded as a form of human adjustment to economic, environmental and social problems.⁽²⁴⁾

The data on internal migration forms one of the basic sources for the inter-censal estimation of population of any region of the country. It is also helpful in preparing a realistic projection of population for the years to come. Besides, the estimation of population figures, an analysis of the cause and nature of population movements helps in socio-economic planning. Urbanisation, which is considered to be the most important aspect of transition from agricultural economy to industrial economy, is the direct result of migration of people from rural areas to towns and cities. Thus, movement of people have always been associated with economic development.

Population census is the main source of getting detailed information on migration characteristics of people. It is known that till 1961 population census, migration data were presented with reference to the place of birth i.e. if a person was born at a place other than the place of enumeration, he was treated as a migrant in census reports. In 1971 census some improvements were made in the procedure and migration data were collected for the first time on the basis of place of last residence in addition to the question on birth place. In 1981 census, however, the scope of enquiry on migration was been further broadened by collection of information on 'reasons for migration from place of last residence' in addition to the enquiry made in 1971 census.⁽²⁵⁾ The 1981 census however did not collect the information on outmigrants.

In Arunachal Pradesh the first population census was conducted in the year 1961. But, this was conducted on the basis of simplified schedules and as such the details of migration particulars are not available. The 1991 population census though, completed long back, but the detailed reports are yet to publish. However, some of the important migration data as per 1981 census with respect to Arunachal Pradesh are presented in the Appendix 5.1, 5.11 & 5.12⁽²⁶⁾

It is evident from the Appendix 5.12 that the percentage of total migrants to total population was 41.60. And, the gender wise disaggregated data shows that the percentage of male migrants accounts for around 39.79 per cent to the total male population while it was 43.71 per cent in case of the female migrants. It was much higher than the percentage of male as well as of total migrants. However, if it is considered that all the people under-D (i.e. SC + others) Appendix 5.12 i.e. other than ST people, were immigrants, and came from a place other than Arunachal Pradesh, then it can be concluded that, a total of 72190 persons with 15728 males and 56462 females were intra state tribal migrants. Thus, the rate of internal migration of Tribal people was 16.36 per cent for total migrants. Out of these the male tribal migrants accounted for 7.15 per cent of the total male population and the ratio for the female was 25.53 per cent of the total female population, which was also higher than the percentage of males as well as of total ST population. This reveals that, in all cases, females were more mobile than males and marriage/family shifting was perhaps the main reason of such movement

From Appendix 5.11 it is evident that out of total male migrants, the rate of male migration for employment was the highest with 38.38 per cent followed by 30.80 per cent due to movement of family and 24.66 per cent due to other reasons. However, in case of female migrants, the rate of female migration was the highest of 44.48 per cent due to movement of family, followed by 38.83 per cent due to marriage, 11.65 per cent because of other reasons and migration of females for employment was only 3.09 per cent of the total female migrants.

Besides Census Organisation, the National Sample Survey Organisation (NSSO) is also collecting data on migration from its 9th round of NSS (1955) as a part of its employment and unemployment enquiries. In the 9th, 11th and 12th rounds of surveys, migration particulars were collected for the labour force population only. From the 13th round onwards more detailed information on internal migration has been collected. From the 38th round of NSS (1983), the NSSO has integrated the collection of migration data with the regular quinquennial surveys on employment and unemployment. The other significant contribution has been made with regards to modification in the concept of migrant itself.

During 38th and 43rd round of Survey, a resident member of a sample household was treated as a 'migrant' if the person's village/town of enumeration was different from his/her 'last usual place of residence'. The last usual place of residence was defined as the village/town where the person has stayed continuously for at least six months immediately prior to moving to the present village/town, where the person has been

enumerated.⁽²⁷⁾ The next survey on employment and unemployment was repeated during 50th round, July, 93-June-94 in which the concept of migrant was been further improved and the data on emigrants too was collected, but due to certain reasons, it is still not available for wider use. Though, the NSS data on migration with respect to Arunachal Pradesh is not available for earlier rounds, however, some of the important data on migration for the state as per 43rd round (July 84-June' 85) central sample results based on 115 sample villages and 20 urban blocks, are presented in the Appendix 5.13, 5.14 & 5.15.

From Appendix 5.13, it appears that the rate of migration for both males as well as females was higher in urban areas in each period of reference. Taking all reference periods together i.e. for all years, the percentage of migration in urban areas for males was the highest with 27.3 per cent followed by 15.4 per cent for females. This indicates the growth of urban areas as well as expansion of government services and other activities like trade and commerce etc. In other words this indicates the transition from a rural agricultural economy to an urban entrepreneurial or industrial economy.

Appendix 5.15 and 5.14 showing the rate of immigration in Arunachal Pradesh from other states of India for 1981 and 1987 respectively. Included here are those were born out side Arunachal Pradesh but within India. The comparative study of these two Appendices shows that the rate of immigration of males in the rural areas in search of job came down from 33.90 per cent to 16.80 per cent from 1981 to 1987. Similarly, the percentage of female workers too declined from 2.50 per cent to zero per cent. Decline

in the number of immigrants were also noticed in the urban areas particularly in case of the male and it came down from 57.50 per cent to 38.30 per cent during the same period. This indicates a significant improvement in the employment scenario of Tribal people. That means, the educated and skilled manpower is gradually increasing in the state. There is significant increase in the employment of locals in the modern sectors of the economy. In other words, it can be said that the state of Arunachal Pradesh is producing her own expertise and the state is gradually becoming less dependent on non-tribal people for implementing the development plan and other development activities in the state. However, in urban areas the rate of migration for female population though has decreased but, for male population, there was a considerable increase from 21.80 per cent to 36.30 per cent which also indicates the growth of urban areas as well as expansion of trade and commerce and the economic development of the state.

To conclude the forgoing discussion it can be said that the total human capital of Arunachal Pradesh as per latest census of 1991 is 8,64,558 and out of these 5,50,351 i.e. 63.66 percent is scheduled tribes. Though, the proportion of scheduled tribal workers to total worker of the state is around 63.12, but it is interesting to note that 83.30 percent of these are engaged in cultivation alone and 1.38 percent are working as agricultural labourers. It is disheartening to notice that literacy among the tribals is less than the average literacy rate at the state level. It is 21.68 per cent as against 41.59 percent at the state level. Thus, it is evident from these two important conclusions that most of the tribal people are engaged in agriculture and literate manpower among the tribal is comparatively less in the state.

However, it is observed that, due to economic planning and industrial policy, the entrepreneurial activity in the unorganised sector of economy is growing very fast and this particular sector has provided employment and livelihood to 10.79 percent population of the state . Though, the educational scenario, particularly among the tribal people is far from satisfactory, yet the situation shows symptoms of improvements with the passes of time. Practically speaking, education in its true sense started in Arunachal Pradesh only after the introduction of planning process. Even now, in case of higher education, there are only 4 (four) colleges and 1 (one) university in the state. There is conspicuous absence of technical and medical institutes with the exception of the North Eastern Regional Institute of Science and Technology (NERIST) and the students of this state have to depend on the facilities available in other states. But, it is encouraging to notice that the situation has improved considerably in the last five decades since independence. The state is now well in a position to man every possible position and opportunity by the local manpower. It particularly true in case of the lower level jobs and satisfactory in case of technical and other skilled works. But, a lot needs to be done in the fields of specialised skills and higher grade bureaucratic jobs. On the whole it can be said that, inspite of various difficulties, the state could make considerable progress within a very short period, but still it will have to go a long way to reach its goal.

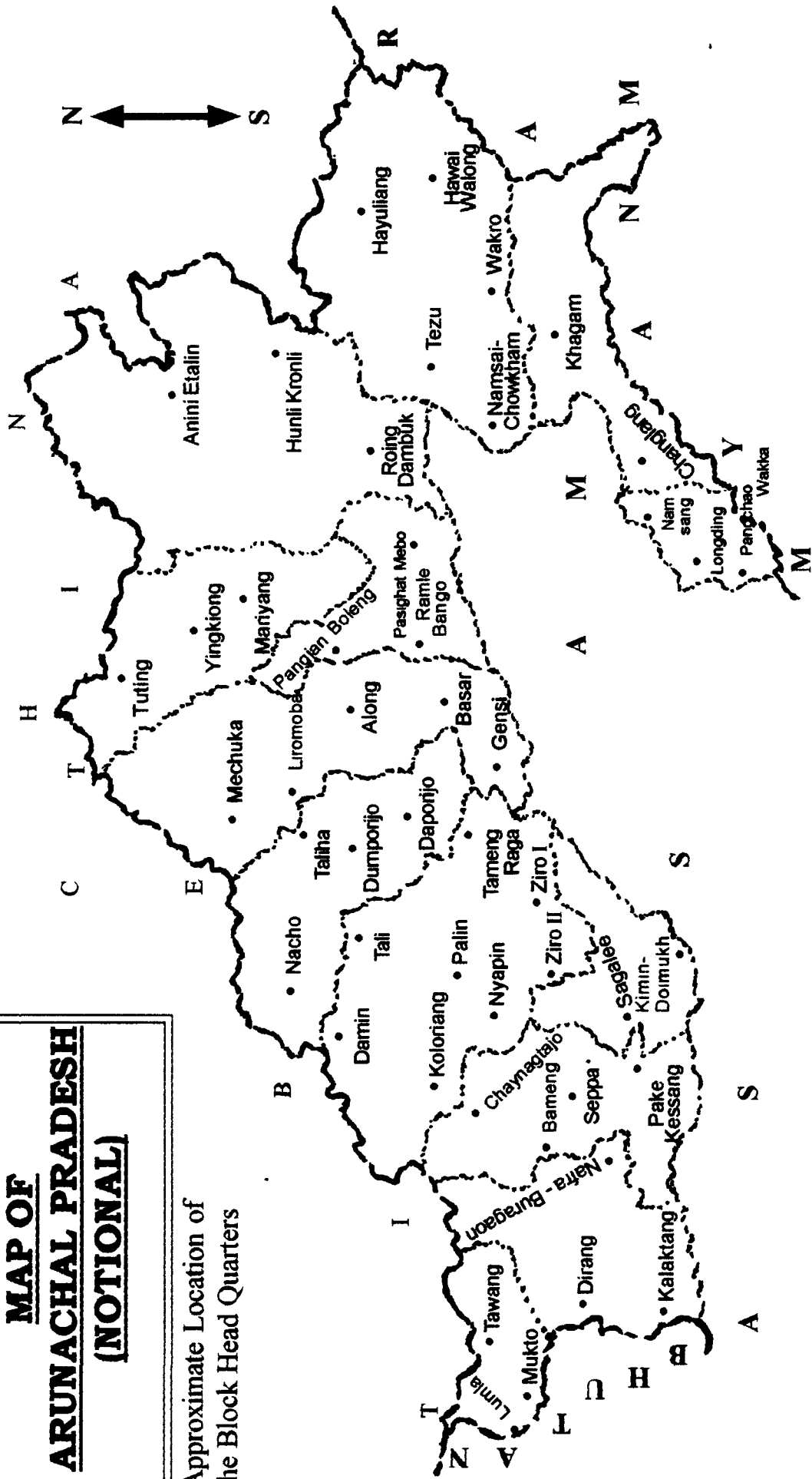
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MAP OF **ARUNACHAL PRADESH** **(NOTIONAL)**

Approximate Location of
the Block Head Quarters



CHAPTER - 6

LEVELS OF ECONOMIC DEVELOPMENT: A METHODOLOGY INTERPRETATION (Data by Block)

Search for truth has been the perennial endeavor of all disciplines. But, what constitute truth has always been a matter of contention and disagreements. Truth, within the ruling rationalist paradigm, was considered to be factual and objective independent of individual's will and values. On the contrary, it is subjective and culture specific according to the post-modernist philosophers. According to them, the claims of objectivity and factuality made by the rationalist is a matter of choice of instrument and methodology. Thus, truth is procedural, it is methodological and changes in the nuances and instruments employed for searching the truth will change the nature of the truth itself.

The search for truth in social and human spaces is most complex. It is multidimensional and dynamic at the same time. Search for truth and objectivity on themes like economic development and manpower planning is one of such endeavors. For an objective study of the said theme, the methodology adopted involved:

- *Choice of study unit.*
- *Data collection*
- *Choice of indicators*
- *Data processing*
- *Analysis.*

Choice Of Study Area And Unit Of Study

It is said that 'all rich are rich alike but, all poors are poor in their own ways'. Poverty and backwardness in the post colonial country like India is due to various factors. The Scheduled Casts are so due to continued exploitation and domination by the high castes. The Scheduled Tribes are due to isolation and exclusion. The females are due to non-recognition. Therefore, to be developed means not only to attain higher rate of economic growth but, also to attained social distributive justice and regional balance at the same time. For doing so, special emphasis need to be given to the backward areas and poor people. Arunachal Pradesh is one of those few states of India that has special problem of economic development and manpower planning.

It was mentioned earlier that it is a hilly frontier state of India inhabited mostly by the tribal ethnic groups. It is strategically one of the most sensitive states of India and like other states of North-Eastern. Region the centrifugal potentialities are very powerful in the state. One of the important way of check and ultimately eradicate the threat from these powerful yet dormant centrifugal forces is to take up economic development on a war footing with expressing full confidence among the local people. Efforts should be made to integrate economic development with spatial balance and socio-cultural identity of the people. The other important aspect of the problem of development in states like Arunachal Pradesh is the high degree of intra state and even

intra district variations in terms of the relief, climate, infrastructure, culture and economy. In order to minimise the impacts of these, blocks have been taken as the unit of study. The other equally important reason behind this is the importance given to block level planning at the grass root level for the preservation and progress of the tribal people. *In this back drop an objective study on the proposed theme is most essential* which is possible by making an inventory into the various factual and objective data and information.

Data Base:

By the very nature of the study it is explicit that it will use considerably large data and information. Considering the paucity of data about the state of Arunachal Pradesh and particularly on aspects like Manpower Planning and Economic Development the researcher tried his best to explore all the possible data sources. Most of the data used in the thesis is from the secondary sources. However, wherever it was necessary data from the primary sources have also been used. Thus, the two main data sources used in the research are:-

a. Secondary Data Sources:-

A tabular presentation of the Secondary data sources have been given along with the respective hypothesis. However, it is worth to mention some important secondary sources like:-

- i) *books, periodical, journals, gazettes, newspapers, etc. for a historical as well as socio-economic background of the study area;*

- ii) *Central and State Government's plan documents and planning reports of the North-Eastern Council for the availability of resources, planning process, allocation and expenditure, achievements etc. at different point of times;*
- iii) *Census of India Publication, District census handbooks for reports on vital statistics, demographic and populations statistics*
- iv) *District and State Statistical abstracts and handbooks for, health and family welfare statistics,*
- v) *National Sample Survey reports, for manpower and human resource development, employment and un-employment etc, for guidance and assessment of manpower of the state.*
- vi) *Reports and publication of the state and central election commission for peoples representation and election results etc.*

However, wherever it was necessary primary data collection was done in collaboration with the national Sample Survey Organisation.

b. Primary Data Sources:

It is evident from the survey of literature and the nature of data available from the secondary sources that there is paucity of required data. Therefore, it was necessary to generate requisite data through primary sources. Moreover, it was also essential for establishing the authenticity of the published data. In this research work field survey was conducted on sampling basis for estimation of manpower potentials. Estimation of manpower resources of the state on the multidimensional classification has been the

special feature of the survey. A detail of the methods of data collection and presentation has been included in the fourth and eighth chapters.

Methodology:

It is said that for a scientific study availability of factual information is a must. But, simple collection does not make the study scientific. For that equally appropriate methodology is required. In the present thesis the methodology use included the following aspects:-

- a. selection and choice of indicators; and,*
- b. data collection, processing and presentation.*

Choice of Indicators

The term 'economic development' can neither be expressed by a single definition nor can it be measured by a particular yard stick. The economic development of an area depends mainly on its geographical characteristics, resource base, socio-economic and politico-cultural factors which normally varies over time and space. Therefore, it asks for a people oriented rather than sector oriented approach. In India, first systematic step was taken for the development of rural areas in early fifties under Community Development Blocks Programme. This programme helped in establishing the basic extension and development services in the villages. It is also aimed at creating awareness among the people about the objectives of development. It was expected that this will ultimately accelerate the pace of rural Socio-economic and technological advancement. Special

emphasis was given for the development in rural areas in the backward region like Arunachal Pradesh. It is well over four and half decades since the introduction of these programmes but, the situation in many states is far from satisfactory. Infact, the experience shows that the gulf between the developed and backward areas have increased in absolute and relative terms. An important aspect of these disparities have been witnessed in states dominated by tribal population. Inter as well as intra-regional disparities in these, other wise socio-economically less differentiated states have increased over these years. Lack of objective information and data for making a scientific analysis is a major obstacle in the measurement of the level of development in these areas. Therefore, at times, surrogate indicators have been selected in place of appropriate ones. For measuring the levels of development in Arunachal Pradesh sixteen indicators have been selected for detailed analysis. Attempt have been made to make these indicators as objective as possible for measuring different characteristics of development in each of the 48 Community Development Blocks of the study area. The indicators selected for measuring the levels of development in the state are as follows:-

- 1) Approximate altitude of Block Head Quarters
- 2) Notional area of the Block.
- 3) Percentage of Urban population to total population of the Block.
- 4) Percentage of main workers to total population
- 5) Percentage of marginal workers to total population
- 6) Percentage of total workers to total population
- 7) Percentage of non-workers to total population

- 8) Literacy
- 9) Percentage of population served by the amenities of-
 - a) Education
 - b) Medical
 - c) Post and telegraph
 - d) Market/hat
 - e) Road Communication
 - f) Approach by pucca road
 - g) Power supply
- 10) Percentage of villages to total inhabited villages having drinking water through Taps/Tube wells.

Data Processing

The selected indicators are then ranked (detailed shown in the Appendix 6.8 and 6.9) as per the procedure mentioned below :-

- a) All indicators (except approximate altitude, notional area and percentage of non-workers) have been ranked on the basis of assigning rank 1(one), to the highest percentage of the respective indicators, rank 2 (two), to the second highest percentage, and so on.

- b) The approximate altitude of the Block Head quarters have been²² ranked on the basis of assigning rank 1 (one), to the lowest altitude, rank 2 (two), to the second lowest, and so on. This procedure has been followed considering the fact, the Block situated in the foot hills or in the lower altitudes generally receive maximum advantages in-terms of infrastructural and other facilities. However, exceptions are there in case of Blocks situated in and around the District or Sub-Divisional Head Quarters etc., but these exceptions have not been considered for the purpose of this study.

- c) In case of notional area of the Block, rank 1 (one) has been assigned to the largest area, rank 2 (two) to the second largest area, and so on, taking into account the fact that, the largest area generally may have more cultivable land, forest resources and other development potentials. This particular indicator is significant in areas predominantly inhabited by socio-cultural groups practicing subsistence agriculture on the basis of extensive use of land and other resources. Thus, larger area will mean more opportunities for using the natural resources.

- d) In case of non-workers (which consists of mostly children, students and old persons), rank 1(one) has been assigned to the lowest percentage, rank 2(two) to the second lowest percentage, and so on, considering the fact that, less the number of non-workers means low dependency ratio which in turn will mean favourable environment for development.

- e) In case of Blocks, which do not have urban population, or marked by the absence of urban services etc. rank 50 (fifty) has been assigned to each of such indicators in order to maintain the lowest position of such cases, for the purpose of this study.
- f) In case of tied values, that means, if for a particular indicator, two or more Blocks have the same value, equal ranks have been assigned to each of these values based on the average of their corresponding ranks.

To find out the over all levels of development of 48 Community Development Blocks of Arunachal Pradesh the following steps were followed:-

- composite ranks have been obtained by adding all the sixteen ranks of each Block,
- the composite ranks of all the Blocks are then divided into ten equal classes, and;
- the values of four quartiles (Qs) have been calculated with the help of the following formula :-

$$Q_i = l + \frac{\frac{iN}{4} - f_c}{f} \times h \quad \text{----- (1)}$$

where $i=1,2,3$.

l - is the lower limit of the class in which the particular quartile lies,

f - is the frequency of the quartile class That means, the total number of blocks for which the composite ranks falling within that class where the particular quartile lies

f_c - is the cumulative frequency upto and including the class preceding the quartile class

That means, the total number of blocks for which the composite ranks falling upto and including the class preceding the quartile class

h - is the width of the class or the class interval

N - is the total frequency, that means the total number of blocks

The values of the Quartiles, thus calculated are - $Q1 = 331.50$, $Q2 = 425.79$ and $Q3 = 493.72$. Further, on the basis of these values, the levels of economic development of all the 48 Community Development Blocks have been divided among them, into four groups namely:- i) More developed, ii) Moderately developed, iii) Less developed and iv) Least developed Moreover, the position of each Block has been shown in descending order of development within each group along with the name of the Districts and the composite rank value of the particular Block (Appendix - 6.9) within brackets The details are shown in a tabular form as given below -

Analysis**Table 6.1**

LEVELS OF ECONOMIC DEVELOPMENT OF THE COMMUNITY
DEVELOPMENT BLOCKS OF ARUNACHAL PRADESH (as per 1991 population
census data)

Levels of Development	Measure of Dispersion	Position of Community Development Blocks in descending order of development
1	2	3

1 More developed	Upto Q_1 (331 50)	(1) Namsang (Tirap) (192 87)
		(2) Tezu (Lohit) (221 00)
		(3) Kalaktang (West Kameng) (245 00)
		(4) Pasighat-Mebo (East Siang) (262 00)
		(5) Along (West Siang) (283 50)
		(6) Kimin-Doimukh(Papum (286 00) Pare, old lower Subansiri)
		(7) Ziro-1 (Lower Subansiri) (288 50)

		(8) Roing-Dambuk (Dibang (295 00) Valley)
		(9) Changlang (Changlang) (296 50)
		(10) Yingkiong (Upper Siang, (304 87) Old East Siang)
		(11) Dirang (West Kameng) (310 87)
		(12) Daporijo (Upper Subansiri) (323 50)
		(13) Namsai-Chowkham (Lohit) (324 50)
2 Moderately Developed	$Q_1 - Q_2$ (331 50) -(425 79)	(1) Seppa (East Kameng) (367 50)
		(2) Basar (West Siang) (375 50)
		(3) Mariang (East Siang) (376 37)
		(4) Tuting (Upper Siang, (378 37) old East Siang)

- (5) Anini-Etalin (Dibang
(385 50) Valley)
- (6) Khagam (Changlang
(397 50))
- (7) Hayuliang (Lohit
(400 00))
- (8) Wakro (Lohit
(406 00))
- (9) Pangin-Boleng (East Siang
(406 87))
- (10) Tawang (Tawang
(421 50))
- (11) Pangchao-Wakka (Tirap
(422 00))
- (12) Mukto-Thingbu (Tawang
(424 50))

3 Less developed

$Q_2 - Q_3$

(425 79) - (493 72)

- (1) Tameng-Raga (Lower
(438 25) Subansiri)
- (2) Nafra-Buragaon (West
(442 00) Kameng)

- (3) Longding (Tirap)
(442 25)
- (4) Lumla-Zemithang (Tawang)
(443 87)
- (5) Hawai-Walong (Lohit)
(454 00)
- (6) Hunli-Kronli (Dibang
(465 25) Valley)
- (7) Ramle-Bango (East Siang)
(474 00)
- (8) Liromoba (West Siang)
(482 00)
- (9) Taliha (upper Subansiri)
(485 00)
- (10) Pakke-Kesang (East
(493 00) kameng)

4 Least developed Q₃ and above
(493 72)

- (1) Bameng (East Kameng)
(498 87)
- (2) Gensi (West Siang)
(499 50)

- (3) Chayengtajo (East Kameng)
(499.50)
- (4) Koloriang(Lower Subansiri)
(500.00)
- (5) Ziro-II (Lower Subansiri)
(511.00)
- (6) Dumporijo(Upper Subansiri)
(519.00)
- (7) Nacho-Siyum (Upper
(530.00) Subansiri)
- (8) Sagalee (Papum Pare, old
(531.00) Lower Subansiri)
- (9) Mechuka (West Siang)
(531.00)
- (10) Nyapin (Lower Subansiri)
(556.00)
- (11) Tali (Lower Subansiri)
(572.00)
- (12) Palin (Lower Subansiri)
(582.00)
- (13) Damin (Lower Subansiri)
(590.75)

Analysis

More Developed Blocks

From Table-6.1 it appears that a total of thirteen Community Development Blocks are included within the more developed category. It includes Namsang Block of Tirap District on the top and the Namsai-Chowkham Block of Lohit District at the bottom. Out of these thirteen Blocks, except Dirang, Daporijo, Yingkiong and Changlang, the remaining nine Blocks are having urban areas as well as the District Headquarters or other major Administrative Centre within the geographical boundary of each Block. This gave an added advantage with respect to infrastructural facilities and in turn the level of development. The other four Blocks of this group though not having urban centres, but the District Headquarters or the major Administrative Centre - is falling within their geographical boundary. Moreover, these block have relatively better accessibility mainly due to enhanced strategic importance.

However, from the composite ranks, it appears that all the thirteen Blocks of the first group are not equally developed. The Namsang Community Development Block of Tirap District, appears to have uniform characteristics, for which it got rank between 1 to 26 in all the sixteen indicators and the composite rank value 192.87 (Appendix 6.9). Therefore, it occupied the first position in this group. But, the other Blocks are not uniformly developed in all aspects and there are great variations amongst them. This is also evident from the position of the Namsai-Chowkham Block, which is at the bottom of the group having composite rank 324.50. This has however been verified by calculating the variance (V_1) and the standard division σ_1 of the composite ranks, which

are quite high and justify that there are great variations in the level of development of the Community Development Blocks of this group. The calculated values of variance and standard deviation are as follows .-

$$V_1 = 1436.975$$

$$\sigma_1 = \pm 37.907$$

MODERATELY DEVELOPED BLOCKS

In the second group there are twelve Community Development Blocks. Among these, the Seppa Community Development Block of East Kameng District occupied the top position, whereas, the Mukto-Thingbu of Tawang District is at the bottom. The Community Development Blocks of this group though do not have main urban centres within their geographical boundary yet, district and block head quarters like Tawang, Seppa, and Anini-Etalín etc. are equal to the other urban centres particularly in terms of urban amenities. These have not been declared urban centre mainly due to definitional reasons. The other Blocks are normally having two or more Administrative Centres within their respective geographical area, which also brings in additional facilities for development of essential infra-structure and helping in raising the level of development of each Block. Further, it appears that, except Tuting Block of Upper Siang District, which does not have proper marketing and communication facilities, the indicators of all other eleven Blocks of this group are more or less similar and not varying widely. This can be seen from the position of Seppa Block, which occupies the top of this group having composite rank 367.50 and the position of the Mukto-Thingbu Block, which is in the bottom having composite rank 424 50. It has also been varified by

the variance (V_2) and standard deviation (σ_2) of the composite ranks. These values are moderate as compared to, that of the first group. The calculated values of variance and standard deviation are as follows :-

$$V_2 = 367.176$$

$$\sigma_2 = \pm 19.161$$

However, to test the significant difference between the variances V_1 and V_2 or the standard deviation s_1 and σ_2 , the F test has been done with the help of the following formula :

$$F = \frac{\frac{N_1 \sigma_1^2}{n_1}}{\frac{N_2 \sigma_2^2}{n_2}} \quad \dots\dots\dots (2)$$

With n_1 and n_2 degrees of freedom, where $N_1=13$., i.e. the total number of Community Development Blocks in the first group.

$$n_1 = N_1 - 1 = 12$$

$N_2=12$, i.e. the total number of Community Development Blocks in the Second group.

$$n_2 = N_2 - 1 = 11$$

$$F = \frac{\frac{13(37.907)^2}{12}}{\frac{12(19.161)^2}{11}}$$

$$\begin{aligned}
 &= \frac{1556\ 685}{400\ 520} \\
 &= 3\ 886
 \end{aligned}$$

But the table value of F at 5% level with 12 and 11 degrees of freedom is 2.72. Therefore, the calculated value of F is greater than the table value and hence it is concluded that there is a significant difference between the variance of the first and the second groups.

LESS DEVELOPED BLOCKS

There are ten Community Development Blocks included in this group. Among these, Tameng-Raga block of Lower Subansiri District is in the top and Pakke-Kesang block of East Kameng District is in the last position. Most of these Blocks are located slightly away from the District Headquarters and having less infrastructural facilities like education, medical, post and telegraph, communication, power supply, marketing etc. However, all the Blocks of this group, to some extent are alike in characters and there is not much variation in the value of indicators as well as in the levels of their socio-economic development. This can be found from the position of Tameng-Raga Block, which is on the top having Composite rank 438.25 and the last position of Pakke-Kesang with composite rank value of 493.00. This has however been verified by calculating the variance (V_3) and standard deviation (σ_3) of the composite ranks which are also comparatively less, as compared to blocks in the second group. The calculated values of variance and standard deviation are as follows:

$$V_3 = 379.135$$

$$\sigma_3 = \pm 19.471$$

However, to test the significance of difference between the variances V_3 and V_2 or the standard deviations σ_3 and σ_2 , the F test has been done with 9 and 11 degrees of freedom. The calculated value of -

$$\begin{aligned} F &= \frac{10(19.471)^2}{9} \quad / \quad \frac{12(19.161)^2}{11} \\ &= \frac{421.24}{400.52} \\ &= 1.05 \end{aligned}$$

The table value of F at 5% level for 9 and 11 degrees of freedom is 3.10 which is greater than the calculated value of F and hence it is not significant. Therefore, it is concluded that there is no significant difference between the variances of the second and third groups.

LEAST DEVELOPED BLOCKS

In the fourth group, i.e. the least developed group, there are thirteen Community Developed Blocks. Among these, the Bameng Block of East kameng District is in the first position and the Damin Block of Lower Subansiri District is in the last position. The blocks of this group are generally situated in the hilly interior places where the

infrastructural facilities are comparatively less than other places. It is seen that, none of these Blocks has proper marketing facility and even many of them do not have proper communication and power supply. Moreover, the coverage of other essential services are also very low. There is large variation among these Blocks. This is also clear from the position of the Bameng Community Development Block with composite rank value of 498.87 at the top of this group and Damin Community Development Block with the composite rank value of 590.75 at the bottom. This has also been verified by calculating the variance (V_4) and standard deviation (σ_4) of the composite ranks of this group, which are comparatively higher than that of the third group. The calculated values of variance and standard deviation are as follows

$$V_4 = 998.155$$

$$\sigma_4 = \pm 31.593$$

However, to test the significance of difference between the variance V_4 and V_3 or the standard deviations σ_4 and σ_3 , the F test has been done with 12 and 9 degrees of freedom respectively. The calculated value of –

$$F = \frac{13(31.593)^2}{12} / \frac{10(19.471)^2}{9}$$

$$= \frac{1081.294}{421.244}$$

$$= 2.567$$

But, the table values of F at 5% level of significance with 12 and 9 degrees of freedom is 2.80. Therefore, the calculated value of F is less than the table value and hence, it is concluded that there is no significant difference between the variances of the third and that of the fourth groups.

It was mentioned earlier that Arunachal Pradesh is a hilly tribal state. The undulating topography of the state is least favourable for constructing modern infrastructural facilities and a system of providing other essential services to the people. Moreover, in many parts of this state, the villages are located on hill tops or on higher hill slopes. Villages are scattered far and wide from each other. The situation is more alarming in the remote areas where villages are thinly populated. Before the independence of the country the infrastructural facilities in the state were almost non-existent. It is only after independence and particularly with the beginning of planning era and introduction of Community Development Programme in early fifties, that some development have taken place mainly due to the efforts of the Government. This in turn has initiated the process of development in other sectors of the state economy.

However, even after passing of more than four decades, many areas of this state are still lacking in many respects and there are large intra regional variations in terms of the levels of their development. There are great variations amongst the Community Development Blocks with respect to socio economic indicators. It is seen that, there are many Blocks which do not have marketing facilities, proper communication system, power supply, and other essential services like proper education, medical, post and

telegraph etc. However, an attempt has been made to show the position of different Community Developed Blocks by classifying them in different categories with the help of mean ($\bar{X}$), Variance (V) and standard deviation (σ) on the basis of a few indicators (Appendix 6.8), for which the relevant information is available in 1991 District Census Hand Books for all the 48 Community Development Blocks. The position of the Blocks are shown below in a tabular form :-

TABLE - 6.2
DISTRIBUTION OF COMMUNITY DEVELOPMENT
BLOCKS ACCORDING TO PERCENTAGE OF TOTAL
WORKERS TO TOTAL POPULATION
 (1991 population census)

Category	Measure of Dispersion	Percentage of total workers	Name of Community Development Blocks
1	2	3	4
1. Quite High	$+2\sigma$ to $+3\sigma$	63.62 - 70.70	Tali
2. High	$+1\sigma$ to $+2\sigma$	56.54 - 63.62	Lumla-Zemithang, Koloriang, Hawai-Walong, Hunli- Kronli, Pangchao-Wakka.
3. Moderate	$\bar{X}$ to $+1\sigma$	49.46 - 56.54	Tawang, Mukto-Thingbu, Dirang, Seppa, Bameng, Chayangtajo, Nacho- Taliha, Siyam, Nyapin, Mechuka, Sagalee, Tameng- Raga, mariang, Yingkiong, tuting, Wakro, Hayuliang, Anini-Etaln, Namsang.

4. Moderate	-1σ to $\bar{X}$	42.38 - 49.46	Pakke-Kesang, Daporijo, Dumporijo, Ziro-II, Palin, Basar, Liromoba, pangin-Boleng, , Roing-Dambuk, Longding, Changlang, Khagam.
5. Low	-2σ to -1σ	35.30 - 42.38	Kalaktang, Nafra Buragaon, Ziro-I, Kimin Doimukh, Along, Gensi, Pasighat-Mebo, Ramle-Bango, Tezu, Namsai-Chowkham

NB:

$\bar{X} = 49.46$ Highest percentage = 70.54 of Tali Community Development Block

$V = 50.08$

$\sigma = \pm 7.08$ Lowest percentage = 37.89 of Kimi-Doimukh Community Development Block.

TABLE -6.3

**DISTRIBUTION OF COMMUNITY DEVELOPMENT BLOCKS
ACCORDING TO PERCENTAGE OF LITERACY
(1991 population census)**

Category	Measure of Dispersion	Percentage of literacy	Name of Community Development Blocks
1	2	3	4

1. Quite High	$+1\sigma$ to $+2\sigma$	48.86 - 62.22	Kalaktang, Ziro-1, Kimin-Doimukh, Along, Fasighat-Mebo, Tezu, Namsai-Chowkham, Anini-Etalín, Changlang
2. High	$\bar{X}$ to $+1\sigma$	35.50 - 48.86	Tawang Nafra Buragaon, Daporijo, Dumporijo, Taliha, Basar, Gensi,

				Liromoba, Pangin- Boleng, Ramle-Bango, Yingkion, Tuting, Wakro, Roing-Dambuk, Namsang, Khagam
3. Moderate				
Low	-1σ to $\bar{X}$	22.14 - 35.50		Lumla-Zemithang, Dirang, Seppa, Pkke- Kesang, Ziro-II, Palin, Sagalee, Tamen-Raga Mechuka, Mariang, Hayuliang, Hawai-Walong Hunli-Kronli, Longding.
4. Low	-2σ to -1σ	8.78 - 22.14		Mukto-Thingbu, Bameng, Chayangtajo, Nacho-Siyam, Nyapin, Koloriang, Damin, pangchao- Wakka.
5. Very Low	below -2σ	below 8.78		Tali

N.B:

$\bar{X} = 35.50$ Highest percentage = 61.95 of Kimin-Doimukh Community

Development Block

$V = 178.50$

$\sigma = \pm 13.36$ Lowest Percentage = 6.43 of Tali Community Development Block

TABLE - 6.4

**DISTRIBUTION OF COMMUNITY DEVELOPMENT BLOCKS ACCORDING
TO PERCENTAGE OF VILLAGES TO TOTAL INHABITED VILLAGES
HABING DRINKING WATER THROUGH TAPS/TUBE-WELLS
(1991 population census)**

Category	Measure of Dispersion	Percentage of Villages	Name of Community Development Blocks
1	2	3	4
1. Very high	above $+1\sigma$	above 94.70	Lumla-Zemithang, Dirang, Bameng, Pasighat-Mebo, Pangin-Boleng, Mariang, Yingkiong, Tuting, Namsang.
2. High	$\bar{X}$ to $+1\sigma$	70.75-94.70	Tawang, Mukto-Thingbu, Kalaktang, Nafra-Buragaon, Seppa, chayangtajo, Ziro-1 Nyapin, Along, Basar, Gensi, Ramle-Bango, Tezu, Namsai- Chowkham, Hayuliang, Hawaii Walong, Anini-Etalin, Changlang.
3. Moderate	-1σ to $\bar{X}$	46.80-70.75	Pakke-Kesang, Daporijo, Dumporijo, Taliha, Ziro-II, Koloriang, Sagalee, Kimin-Doimukh, Tameng-Raga, Liromoba, Wakro, HunliKronli, Roing-Dambuk, Pangchao-Wakka.
4. Low	-2σ to -1σ	22.85-46.80	Palin, Mechuka, Longding, Khagam
5. Very Low	below -2σ	below 22.85	Nacho-Siyum, Tali, Damin

NB:

$\bar{X} = 70.75$ Highest percentage = 100 of Lumla-Zemithang, Dirang, Bameng, Pangin-Boleng, Maiang, Yingkiong, Tuting, Namsang Community Development Blocks.

$V = 573.44$

$\sigma = \pm 23.95$ Lowest percentage. = 5.17 of Damin Community Development Block.

TABLE -6.5

DISTRIBUTION OF COMMUNITY DEVELOPMENT BLOCKS ACCORDING TO PERCENTAGE OF POPULATION SERVED BY THE AMENITIES OF EDUCATION (1991 population census)

Category	Measure of Dispersion	Percentage of population	Name of Community Development Blocks
1	2	3	4

1. Very high	above $+1\sigma$	above 88.03	Ziro-1, Along, Pasighat-Mebo, Pangin-Boleng, Ramle-Bango, Mariang, Yingkiong, Tazu, Namsang, Pangchao-Wakka, Longding, Changlang.
2. High	$\bar{X}$ to $+1\sigma$	67.98-88.03	Mukto-Thingbu, Kalaktang, Seppa, kimin-Doimukh, Basar, Gensi, Tuting, Namsai-Chowkham, Anini-Etalin, Roing-Dambuk, khagam.
3. Moderate	-1σ to $\bar{X}$	47.93-67.98	Tawang, Lumla-Zemitha ng, Dirang, Bameng, Chayangtajo, Pakke-Kesang, Daporijo, Dumporijo, Taliha, Palin, Nyapin, Tameng- Raga, Liromoba, Wakro.

4 Low	-2σ to -1σ	27.88-47.93	Nafra-Buragaon, Nacho-Siyum, Ziro-II, Tali, Koloriang, Damin, Sagalee, mechuka, Chayuliang, Hawai-Walong, Hunli-Kronli
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NB

$\bar{X} = 67.98$ Highest percentage = 99.02 of Mariang Community Development

Block

$V = 402.19$

$\sigma = \pm 20.05$ Lowest percentage = 31.78 of Tali Community Development Block

TABLE - 6.6
DISTRIBUTION OF COMMUNITY DEVELOPMENT BLOCKS ACCORDING
TO PERCENTAGE OF POPULATION SEVED BY THE AMENITIES OF
MEDICAL
(1991 population census)

Category	Measure of Dispersion	Percentage of population	Name of Community Development Blocks
1	2	3	4

1 High	above $+2\sigma$	above 67.43	Kimin-Doimuk, Tezu
2 Moderate	$+1\sigma$ to $+2\sigma$	52.04-67.43	Kalaktang, Dirang, Along, Gensi, Anini-Etalin, Namsang, Changlang
3 Moderate	$\bar{X}$ to $+1\sigma$	36.65-52.04	Lumla-Zimithang, Daporijo, Ziro-I, Tameng-Raga, Basar, Liromoba, Mechuka, Pasighat-Mebo, Yiengkiong, Tuting, Roing-Dambuk, Longding

4. Low	-1σ to $\bar{X}$	21.26-36.65	Tawang, Mukto-Thingbu, Nafra-Buragaon, Seppa, Chayangtajo, Dumporijo, Taliha, Palin, Nyapin, Koloriang, Namsai-Chowkham, Wakro, Chayuliang, Hawaii-Walong, Hunli-Kronli, Pangchao-Wakka, Khagam.
5. Very low	below -1σ	below 21.26	Bameng, pakke-kesang, Nacho-Siyum, Siro- II, Tali, Damin, Sagalee Pangin, boleng, Ramle-Bango, mariyang.

NB:

$\bar{X} = 36.65$ Highest percentage = 74.79 of Tezu Community Development Block

$V = 236.81$

$\sigma = \pm 15.39$ Lowest percentage = 9.71 of Ramle-Bengo Community Development Block.

Table 6.7
DISTRIBUTION OF COMMUNITY DEVELOPMENT BLOCKS ACCORDING
TO PERCENTAGE OF POPULATION SEVED BY THE AMENITIES OF POST
AND TELEGRAPH
(1991 population census)

Category	Measure of Dispersion	Percentage of population	Name of Community Development Blocks
1	2	3	4
1. High	above $+2\sigma$	above 64.25	Kimin-Doimukh, Tezu
2. Mode	$+1\sigma$ to $+2\sigma$	47.89_ 64.25	Kalaktang, Ziro-I, Pasighat-Mebo, Anint- Etalin, Roing-Dambuk
3. Moderate low	$\bar{X}$ to $+1\sigma$	31.53-47.89	Dirang, Nafra-Buragaon, Sppa, Daporijo, Along, Basar, Mariang, Yingkiong, Tuting, Namsai-Chowkham, Wakro, Hayuliang, Hunli-Kronli, Namsang, Changlang
4. Low	-1σ to $\bar{X}$	15.17-31.53	Tawang, Mukto-Thingbu, Bameng, Chayangtajo, Pakke- Kesang, Dumporijo, Taliha, Nacho-Siyum, Palin, Nyapin, Koloriang, Gensi, Liromoba, Mechuka, Pangin_ Boleng, Hawaii-Walong, Pangchao-Wakka, Longding, Khagam.
5. Very Low	below -1σ	below 15.17	Lumla-Zemithang, Ziro-II, Tali, Damin, Sagalee, Tameng Raga, Ramle-Bango.

NB:

$\bar{X} = 31.53$ Highest percentage = 79.15 of Tezu Community Development Block.

$V = 267.65$

$\sigma = \pm 16.36$ Lowest percentage = 6.57 of Ramle- Bango C.D block

On the basis of the above discussion it can be summarised that the economic development of a place ordinarily means the status of its people in terms of their achievement in and availability of essential and desirable requirements for leading their lives. The economic development generally depends on various factors like geographical characteristics, education and activities of people, availability of essential and desirable amenities and many other socio-economic factors which normally vary from place, time to time and even community to community. Generally the economic development of a place can neither be expressed by a single definition or by a few characters nor it can be measured by a particular yard stick.

The domain of this study is very wide and it requires a thorough study of a lot of socio-economic parameters. But, since these parameters vary from place to place and community to community, therefore, to study the levels of economic development, first it is required to identify the lower level of study unit in a way that the characteristics required for the study are more or less evenly distributed over the study unit. Therefore, to study the levels of economic development of Arunachal Pradesh, the Community Development Blocks have been considered as the most suitable lower level units of study and accordingly sixteen socio-economic indicators were selected.

This study shows that the position of all those Blocks which have urban characteristics or the administrative centres within their geographical boundary are comparatively better in many respects. This shows that the process of development continues to be urban based even in the remote tribal area like Arunachal Pradesh.

Presence of an urban centre has an added advantage to their socio-economic status. However, it appears that due to various factors all these Blocks are not equally developed. There are significant variations among the developed blocks. Further, it has been observed that the Blocks which are situated slightly away from the District Headquarters are having less infrastructural facilities like education, medical, post and telegraph, communication, power supply, marketing etc. Moreover, the position of most of these Blocks are similar and there is no significant variation in their levels of development. The study further reveals that the condition of Blocks situated in the hilly interior places are not at all satisfactory. There is an acute shortage of most of the basic amenities of life in these blocks.

On the whole it has been observed that the geographical condition to some extent slowed down the pace of economic development in Arunachal Pradesh. Due to hilly terrain, the most essential service like communication could not be established properly in many parts of this state. Communication can be considered as the first step towards the development of other essential services. Therefore, it is obvious that, without proper communication system, other services cannot be developed and in turn, bound to hinder the levels of development. However, due to continuous efforts of the Government and gradual increase in public awareness the situation is improving and it is expected that the common people particularly of the interior places will get the benefit of economic planning in due course of time and will be able to raise the standard of their living. The single most important feature for the development of the state continues to be its strategic location and predominance of the tribal population.

- a. *selection and choice of indicators:-* Data and information collected from different sources needed to be transformed according to the requirements of the objectives of the study. Thus, these information were transformed into indicators. Use of ratio, percentage, average and proportion etc. were used to transform data into indicators. a detail justification of the choice of indicators has been given in chapter four of this thesis.

- b. *collection of data for these indicators:-* The present state of Arunachal Pradesh has passed through many stages before it emerged as fulfilled state of India on the 20th day of February 1987. During its long journey it experienced a series of administrative changes. Right from the nomenclature of frontier tracts to Frontier Agency to Union Territory and finally to the state there had been significant changes at the level of the lower order administrative units. In the present study Community Development Blocks have been taken as the unit of study. The need to take the block level study was felt because these are also the lowest level planning units in the state along with the latest addition in the grass root level planning.

- c. *data processing and presentation:-* Use of statistical techniques like correlation, regression, and measures of central tendency and dispersion like mean, median, standard deviation and coefficient of variation etc are common in the social sciences. In this thesis too these have been used. However, to find out the levels of economic development at the block level composite index has been calculated

on the basis of Z score, and finally quartile methods was used to classify the blocks in terms of their position. Use of cartographic techniques like bar diagram, and pie diagram etc have been used.

CHAPTER 7

SKILL FORMATION AND ECONOMIC DEVELOPMENT (STATE LEVEL ESTIMATION METHOD AND ANALYSIS)

‘Planning is a continuous process of mankind ^{and} for the mankind’. Further, it can also be said that “man is the cause and development is the affect”. The main objective of economic planning is to bring about a structural transformation in the economy and society in order to achieve a high and progress along with improvement in the standard of living of the people. To achieve sustained rate of growth ^{of} these objectives, the first step is to evolve a standard method of classification of natural and human resources along with the objective assessment of their quality and quantity. The next step is to work out strategies for ‘input-utilisation-cost-out-put’ of these resources for different sectors of economy. The success of these objectives requires enormous efforts towards manpower planning and development. Planning for an adequate supply of educated and skilled manpower at the right time to meet the demands of the economy in various sectors is as important and crucial as the fixing of priorities based on a realistic assessment of the development needs of a region.

The economic policies at the global as well as the national levels are changing very fast due to new techno-institutional development and trading requirements. To cope-up with the changing economic scenario and to compete with the technologically developed partners, proper education and skill formation among the workforce is essential. It is well understood that, though, technology plays a vital role in the economic development of the industrialised countries e.g. Japan, countries of the North-

Atlantic and some East Asian countries etc. but, skill and educational levels of the population of these countries determined and sustained the pace of their development¹.

It is difficult to reduce the complex process like socio-economic development to a set of a few over determining variables like levels of education and skill formation. Moreover, it is equally ironical to establish any direct mathematical or statistical relationship of universal application between the two. But, perhaps there are no two opinions on the fact that education and skilled persons can do their work quickly and efficiently and this is probably the sequel to the whole process of development. Further, it is also a fact that there is a relationship between the education and efficiency and that efficiency increases with the increase in the level of education or the percentage of literacy. From Appendix 71, it is evident that the correlation between the percentage of non-agricultural workers and literacy rate calculated for different districts of Arunachal Pradesh has increased from 1971 population census to 1991 population census. The correlation coefficient (r) value that was considered statistically not significant with $r=0.1662$ in 1971, improved its position with $r=0.4219$ in 1981 and finally it touched the level of $r=0.7922$ in 1991. Moreover, it has been further proved by the correlation coefficient $r=0.6076$ between the number of workers in the small scale industries and the corresponding percentage of literacy at district level. Further, it is noticed that the correlation coefficient between the percentage increase in the number of educational institutions and the percentage increase in the number of students at the end of different plan periods from Third Five Year Plan to the first four year of the Eight Five Year Plan is positive and strong with $r=0.8656$. Similarly, the correlation

¹ Manpower Journal, October-December, 1994, Institute of Applied Manpower Research, p-40.

coefficient between the average increase in the number of medical personnel and the average number of patient treated per year of different plan periods from the Second Five Year Plan to two Annual Plans of 1990-92 has been found to be 0.4509. All these perhaps, establish that there is a strong and positive relationship between the levels of education and skill formation with the levels of physical achievements in the state of Arunachal Pradesh. This is indicative of the fact that, for socio-economic development, educated and skilled persons are required. In other words they determine the pace of development.

Moreover, in the present world, knowledge has become the fastest snagging quality and thus, very often countries and social groups suffer from obsolescence due to non-availability of proper means and facilities for acquiring adequate know how. Every individual has some kind of capacity for doing things, which however may vary in kinds or from person to person. Initially, it may remain dormant, but this can be revived and developed in the most desired manner, provided it is endowed with right kind of guidance, education, training and other facilities at the opportune time. Proper education and training can contribute significantly in articulating the hidden potentials of individuals.

For proper manpower planning, diversification of skill is necessary to make the human resources fit to shoulder the responsibility of work with efficiency. It also aims to equip them with the latest knowledge and technology in such a way that the skill of a particular person can be channelised in the right direction for the benefit of the society. Every person does not possess or require the same kind of knowledge or skill. But,

every human being requires some kind of scientific or technical and professional proficiency or skill for doing his/her day to day work. Therefore, for educational planning vis-a-vis skill formation, it is essential to know the size of the human capital, their age composition, gender, levels of education and occupational status. These can give an indepth idea about the behaviour of the human capital. Moreover, these would also contribute in making proper assessment of the path of development.

It was mentioned in the previous chapters that Arunachal Pradesh is an economically and educationally backward tribal state. People, particularly in the rural areas are mainly dependent on agriculture for their livelihood. There is little scope for development of trade and industrial activities in this strategically most sensitive state of the Indian union. Its geopolitical location continues to hamper the development of international trade related activities. Apart from other things the rugged topography and difficult accessibility have slowed down the pace of infrastructural development. However, the people in the urban areas as well in and around the administrative centres have relative advantages over the rural population. Here, the benefits of modern amenities like hospital, educational institutions and economic opportunities are coming-up though slowly.

It is though ironical, yet, true to say that the state does not only lags far behind in terms of its social and economic development but, it has failed to make an objective assessment of its manpower potentials. The nature, quality and quantity of the human capital of the state in the context of manpower planning and skill formation is still largely unknown in the state. The population census, economic census and other

publications though present a broad framework of the demographic and economic characteristics of the population, yet, it is difficult to get the multidimensional characteristics of different groups of the people from these limited source of information. The other source of information and data on manpower planning is the National Sample Survey (NSS). The fiftieth round of NSS is of special significance in this respect. For the purpose of this study, the field level data collected under State Sample Survey during July, 1993 to June 1994 have been used. The details of methodology adopted and the conclusion arrived at are as follows.

METHODOLOGY.

During fiftieth round of NSS a stratified two stage sample design was adopted. In case of rural areas of Arunachal Pradesh each district was treated as a separate stratum. The first stage units were the 1991 census villages and second stage units were the households. Initially, a total of 26 nucleus villages were selected *Circular Systematically* with equal probability, in the form of two independent sub-samples and later on, clusters were formed taking normally 4 to 6 villages located around and including each of the nucleus village. The detailed survey was however conducted considering each village of a cluster as a separate unit of survey. In case of urban areas, the Urban frame survey (UFS) blocks or 1991 population census blocks for newly declared towns were considered as the first stage units while the households were the second stage units. All together 24 urban blocks were selected *Circular Systematically* with equal probability for detailed study.

For selection of second stage units i.e. the households, both in rural and urban sectors, attention was given to cover adequate number of affluent households determined on the basis of possession of assets and standard of living. To start with, first all the households of a sample village or a block were listed and two second stage strata viz, second stage stratum-1 (ss-1) consisting of affluent households and the second stage stratum-2 (SS-2) consisting of all other households were formed. However, if a village or a block was having more than 10 affluent households, in that case the affluent households were ranked in descending order and then top 10 households were considered under SS-1 and the remaining affluent households together with other households were considered under SS-2. But, if the total number of households were less than or equal to 10, then all were considered under SS-2 and there was no SS-1. The need to adopt such a subjective criteria was felt largely due to the fact that the concept of affluence in a tribal settling comprised of numerous isolated villages is specific to each tribal group and any universal criteria is less acceptable. Moreover, Each villages has its own tribal chiefs and the ruling clans and in most of the cases the number of such families constitute only a small portion of the total number of families in the village. In the absence of any commonly accepted standard it is erroneous to compare levels of inter affluence.

After the formation of two second stage strata, the households under SS-2 were further classified according to means of livelihood and land possessed in case of rural and per-capita expenditure in case of urban and in the final stage generally 2 households from SS-1 and 8 households from SS-2 were selected *Circular Systematically* from each sample village or block for collection of detailed information. However, in case of

shortfall in any second stage stratum, the quota of other second stage stratum was suitably increased so that a total of 10 households could be surveyed.

ESTIMATION PROCEDURE:

During fiftieth round of NSS, a total of 112 villages of which a total of 996 sample households having 4691 sample population in rural areas and 24 sample blocks of which a total of 240 sample households having 864 sample population in urban areas, were selected and surveyed under state sample in Arunachal Pradesh. The formula used for estimating the human capital of the state for the purpose of this study is as follows :

A. FOR RURAL:

$$\hat{Y}_{sb} = \frac{Z_s}{n_{sb}} \sum_{i=1}^{n_{sb}} \sum_{j=1}^2 \frac{H_{sij}}{h_{sij}} \sum_{k=1}^{h_{sij}} y_{ijk} \quad (1)$$

B. FOR URBAN

$$\hat{Y}_{sb} = \frac{N_s}{n_{sb}} \sum_{i=1}^{n_{sb}} \sum_{j=1}^2 \frac{H_{sij}}{h_{sij}} \sum_{k=1}^{h_{sij}} y_{ijk} \quad (2)$$

s = Subscript for s-th stratum

b = Subscript for b-th sub sample

i = Subscript for i-th sample village/block

j = Subscript for j-th second stage stratum of a sample village / block, j = 1,2

k = Subscript for k-th sample household

Zs = Total number of villages in s-th stratum for rural sector

N_s = Total number of blocks in the frame for urban sector

n_s = Total number of sample villages/blocks surveyed in s-th stratum.

H = Total number of households listed

h = Total number of households selected and surveyed.

y = Value of the characteristics

$\hat{Y}$

$\hat{Y}$ = Estimated value of the characteristics.

The estimated value of different characteristics have been shown in the Appendix 7.7

ANALYTICAL FINDINGS:

The estimated total human capital of Arunachal Pradesh as per Fiftieth Round of State Sample NSS data collected during the period from July, 1993 to June, 1994 has come to 8, 73,227 of which 4,75,257 i.e. 54.43 per cent were identified as males and 3,97,970 i.e. 45.57 per cent as females. The percentage of literates including those having educational standard below primary level was 42.25 per cent (excluding children in the age group 0-4 years). It accounted for 13.28 per cent of the total population. The percentage of literate male was 49.80 while for female in both categories was 33.25 (excluding children in the age group 0-4 years). This indicated that almost half of the male population were literate, but only one third of the female population were literate while two third were illiterate. However, the most important feature was that out of the total literates 41.07 per cent of population had educational level below primary. It was 40.13 per cent among males and 42.73 per cent for females. This indicates that large

number of children are discontinuing their studies at an early stage. Though, the situation has shown some improvements after the introduction of Adult Education Programmes and other non formal education facilities in the state.

Further, from this study, it appears that though, some of the children started their education even at the age below 5 years, but, a considerably high number of children entered into school quite late and were continuing their studies at the primary level even at the age group between of 15-19 years. Moreover, the percentage of students in the age groups 5-9 to 20-24 years those were continuing their studies at different levels were very less as compared to the total number of children in that age groups, and their percentage was decreasing at faster rate in the successive stages. This can be seen from Table - 1 given below :

TABLE - 1
PERCENTAGE DISTRIBUTION OF STUDENTS AND NON-STUDENTS.

Category of children in the age groups 5-9 to 20 -24 years	Percentage of							Total	Total estimated children
	Students continuing studies at different levels								
	Non Students	Primary	Middle	Secon dary	Higher secondary	College			
1.	2.	3.	4.	5.	6.	7.	8.	9.	
Boys	38.89	31.95	13.14	10.90	4.29	0.83	100.00	212678	
Girls	54.40	21.74	14.10	7.38	2.05	0.33	100.00	181899	
Total	46.04	27.24	13.58	9.28	3.26	0.60	100.00	394577	

The above table indicating proportion of students in different levels of education reveals that there is an inverse relation between the level of education and the number of

students. Meaning thereby, many children were discontinuing their studies in the successive levels of education. This is but natural. But, the proportion of sharp decrease in the successive levels and unusually high average age of the students in the schools is a matter of serious concern. To make this point more clear Table - 2 given below will be more helpful

TABLE - 2

NUMBER AND PROPORTION OF STUDENTS IN DIFFERENT LEVELS OF EDUCATION :-

Category of students	Number of students in different levels		Proportion in different levels		Proportion per hundred in different levels	
1.	2.	3.	4.	5.	6.	7.
	Primary	Middle	Primary	Middle	Primary	Middle
Boys	68695	27940	2.46	: 1	246	: 100
Girls	40478	25647	1.58	: 1	158	: 100
Total	109173	53587	2.04	: 1	204	: 100

	Middle	Secondary	Middle	Secondary	Middle	Secondary
Boys	27940	23189	1.20	: 1	120	: 100
Girls	25647	13434	1.91	: 1	191	: 100
Total	53587	36623	1.46	: 1	146	: 100

	Secondary	Higher Secondary	Secondary	Higher Secondary	Secondary	Higher Secondary
Boys	23189	9123	2.54	: 1	254	: 100
Girls	13434	3722	3.61	: 1	361	: 100
Total	36623	12845	2.85	: 1	285	: 100

	Higher Secondary	College	Higher Secondary	College	Higher Secondary	College
Boys	9123	1761	5.18	: 1	518	: 100
Girls	3722	595	6.25	: 1	625	: 100
Total	12845	2356	5.45	: 1	545	: 100

For the purpose of this study if it is assumed that :-

- i) The proportions of students at different levels (as shown in table - 2) remained same for a minimum period required for the students at a particular level of education to reach to the next corresponding higher level and,
- ii) If the proportions of students of the State are not affected much by in-migration or out-migration of students,

then, it can be seen clearly from columns (6) and (7) of Table-2 that, for every 100 students at a particular level, what was the number of students in the corresponding lower level. In other words, it can be said that how many students are dropping-out or remaining in the same class or discontinuing their studies after attaining or even not attaining the corresponding higher level. There might be five main reasons for such dropout. These are:-

- (i) Not interested for further studies,
- (ii) Financial inability of parents or guardians,
- (iii) Higher educational facilities are not available at the place of residence or nearby,
- (iv) Due to bad performance and,
- (v) Requirement for participation in household duties or household industries or enterprise or other economic activities.

However, whatever might be the reasons, but it appears that the drop-out numbers are quite high and it increased gradually in successive higher levels. This needs attention of the appropriate authority and to find out suitable ways and means to bring down the number of drop-outs at the earliest possible for the benefit of the state.

Apart from the drop-out cases, it is also equally important to have an idea about the educational standard and the activities of the non-student children of the same age groups of 5-9 to 20-24 years. The total number of non-student children within these age groups was estimated to be 1,81,664, of them, 82,717 were boys and 98,947 were girls. Further, it appears that out of total non-student children, 78.49 per cent were illiterates and only 21.51 per cent were literates. In case of boys, 77.03 per cent were illiterate and 22.97 per cent were literate, while in case of girls, 79.71 per cent were illiterate and 20.29 per cent were literate. Moreover, it is seen that, the number of children with higher educational standard were very less. The educational standard for the purpose of this study was considered as the course which was successfully completed. To get more information about these aspects Appendix 7.2 has been incorporated at the end of this thesis.

Regarding Principal Usual Activity Status (PUAS) of the non-student of the age group 5-9 to 20-24 years, it appears that most of the children were engaged in household enterprise (self employed) and worked as own account workers or worked as helper (unpaid family worker) in household enterprise, while a considerably large number of children were working as casual wage labourers in public works. The number of educated unemployed in the state is relatively less. It is observed that there is a positive

relation between higher educational standard and permanent job opportunities like regular salaried/ wage employees. In rural areas, usually many of the non-student children remain engaged either as self employed or as helper in the agricultural activities of the household. It appears that they start this work even at the age group 10-14 years and work as helper in agricultural activities even before that age. In villages of Arunachal Pradesh, generally most of the household members use to go to the agricultural field and either work as main worker or as helper in different operations of the agricultural activity. The children at the lower age groups, particularly girls usually remain busy in household duties. However, it appears that, some of the children in addition to their household duties were also engaged in free collection of goods like vegetables, roots, fire-wood, cattle feed etc. for household use. The Principal Usual Activity Status of a person has been determined on the basis of the activity status on which a person spent relatively longer time during 365 days preceding the date of survey. In order to have a clear idea, the percentage distribution of non-student children of the age group 5-9 to 20-24 years according to their principal usual activity status along with the educational standard have been shown in the Appendix 7.3.

The total population in the age groups 25-29 to 55-59 years was 3,46,614 of which 1,94,269 were males and 1,52, 345 were females. The population of these age groups can be considered as the main potential workforce or the main productive human capital of the State. As it appears in the case of students that, many of them were continuing their studies at the graduation level right up to the age group of 20-24 years, so it can be concluded that all the students are normally entering into service or opting for other suitable occupations after completion of graduation or even postgraduation in

any discipline latest by the age group of 25-29 years. Therefore, the human capital consisting of population of age groups 25-29 to 55-59 years is generally expected to have the most educated, skilled and professional experts. In their turn the pace of economic development of the state depends upon the quality of these workforce. However, in case of Arunachal Pradesh, it appears that, out of total population of the age groups 25-29 to 55-59 years, 2,30,558 i.e. 66.52 per cent were illiterates and 1,16,056 i.e. 33.48 per cent were literates. In case of male, 1,07,308 i.e. 55.24 per cent were illiterates and 86,961 i.e. 44.76 per cent were literates. The situation was more alarming in case of the female in these age groups. There were 1,23,250 i.e. 80.90 per cent illiterates and only 29,095 i.e. 19.10 per cent were literates out of total female. Moreover, it appears that most of the literate people were having lower educational standard and only about 9.81 per cent were having graduation and higher qualification in general lines. However, this study has some limitations in the case of persons having educational standard degree and above in the fields of agriculture, medicine, and engineering. The total number of persons in these three disciplines were very less in Arunachal Pradesh in comparison to total population, and they were highly unevenly distributed to all over the State. Since, this study was conducted on the basis of samples and as such, there is a possibility of not getting adequate representation from the people of these groups. This possibly may be one of the reason behind their under estimation. For detail account of the percentage distribution of people having different standards of education Appendix 7.4 has been included at the end of this thesis.

As regards activities of the human capital of the age groups 25-29 to 55-59 years, it appears that only 33.48 per cent of them were literates and 66.52 per cent were

illiterates. This implies that most of the potential workforce of the State did not have any educational background. The estimated total number of illiterate potential workforce was found to be 2,30,558 of whom 1,07,308 were males and 1,23,250 were females which again indicated that there were more uneducated females than the uneducated males. Moreover, it appears that most of the illiterate people were self employed and were working in household enterprises. This study shows that out of total illiterate potential working force, 64.58 per cent were working as own account worker in household enterprises. The percentage of female was 50.44, but the percentage of male was as high as 80.81. Further, it is seen that many of them were working as helper in the household enterprises, while a good number of them were also working as regular salaried/wage employees and some others as casual wage labourer in public works or other type of works. A considerable part of females were however, engaged in household duties and some of them, in addition to household duties were also engaged in free collection of goods, weaving, knitting etc. for household use.

Among the literate potential workforce, it appears that 23.88 per cent of them were having educational standard, below primary while 17.06 per cent primary, 17.94 per cent middle, 16.17 per cent secondary, 14.49 per cent higher secondary and 10.94 per cent graduate and above in all subjects including agriculture, engineering and medical. In this case too, it appears that most of the workforce, particularly the less qualified ones were engaged in household enterprises and were working as self employed. While a considerable number of them were also working as helper in the household enterprises But, the significant part of this was that the number of female workers in both the cases were comparatively less than the male workers

In case of self employment, both in illiterate and literate groups, though, separate information is not available about the number of people engaged in agricultural activities, trade, manufacturing and repairing and in other entrepreneurial activities. However, it can be assumed that most of the people living in rural areas, particularly in villages were generally engaged in agricultural activities, while those living in the urban centres and in other administrative headquarters were normally engaged in trade, commerce and other industrial activities.

The educated people of the potential workforce particularly with educational standard matriculation and above were mostly in service and of course the percentage of male service holders were comparatively much higher than the females. It appears that a good number of females were engaged in household activities only. They were perhaps mostly the urban housewives who were devoting their time for household works as well as educating and bringing-up their children. Moreover, it also appears that some of them, in addition to their household duties were also engaged in weaving, tailoring, sewing, knitting etc. for household use.

The study further reveals that there are some people who are quite active even at the age of 60 years and above and could work as self employed person in household enterprises. Moreover, it is seen that there are some more person, though, their number is very less, who were self employed and were engaged in the household enterprises not as workers, but as employers. The state of Arunachal Pradesh is endowed with many natural resources and bountiful forests with very high quality woods. As a result some

of the local people started saw mills, cane bamboo production centres and given employment to many people. The unemployment problem in the State is not that acute as in many other parts of the country but, this of course increasing day by day. This study though, reveals that there were some job seekers, yet, their percentage was comparatively less. Apart from the findings of this study, a separate Appendix 7.6 showing the number of job seekers with their qualification as per live register for the years 1989 to 1994 has been included for the benefit of the readers. However, the detailed findings of this study has been shown in the Appendix 7.5.

On the whole, it can be concluded that the human capital of the State of Arunachal Pradesh is mostly illiterate or less educated and still there is a long way to go to build-up the required infrastructure for accelerating the pace of economic development. It is true that, Arunachal is a late starter in this direction and virtually everything had to be started almost from a zero point. The four decennial census though indicated that the percentage of literacy has increase from 7.13 in 1961 to 41.59 in 1991, but the percentage increase of literacy alone is not enough for increasing general aptitude or professional expertise of such a group of people, most of whom have only the minimum level of education. Moreover, very high proportion of the drop-outs at successive levels of education has grave consequences on the educational level and quality of manpower in the state. The situation is serious and perhaps this is the time to look back, and to think over the whole situation and also to adopt suitable measures for bringing down the rate of drop-outs at different levels. An equally disturbing aspect of the skill formation process in the state is about the nature of lopsided growth in favour of the male population. Female population in India in general and Arunachal Pradesh in

particular shows large discrimination. This particular aspect is as important as an urge for the diversification of education, increase in the number of educated persons and improvement in the quality and levels of education.

The benefits of better education are secular. It can contribute in improving every thing eg. farming, trade, commerce and services. An educated cultivator is definitely a great help in modernising the agriculture. The educated farmers can very easily understand the importance of latest technological development and can adopt the improved methods of cultivation and also can take-up allied activities simultaneously for improving crop production and at the same time increasing earnings for raising the standard of living.

For the persons engaged as self employed in trade, commerce, industrial and other activities, education is indispensable. They need certain level of education and skill for dealing with their customers which is a vital factor for promoting their activity. They also need it for keeping proper records of their transactions. This is not only important for finding-out their profit and loss, but also important from the point of socio-economic surveys that are being conducted by the National Government, State Government or by other organisations time to time. The information being collected by these surveys are required for State or National level accounting, for finding status of economic activities and for other socio-economic studies. There is of course no need to emphasis on the requirements of skill formation for the persons those engaged in manufacturing and repairing activities. However, for them it is required to keep

themselves up-to-date with the latest changes or development that are taking place from time to time.

In service sector, i.e. those engaged in earning regular wage or salaries, the percentage of persons with higher education is comparatively less in the State. Generally, the quality of work depends on quality of education or professional skill. In Government service, there are many technical subjects apart from typing, stenography, maintenance of accounts, service rules and regulation, which need expertise. Otherwise, it is difficult to get better service and on the other hand that may slow down the pace of overall development.

SUMMERY OF MAIN CONCLUSIONS AND RECOMMENDATIONS

1.
 - i) Development is an integral part of the human life. The word 'Development' ordinarily means a stage of achievement or change from a certain level to a higher level within a given field of the universe. Thus, the term 'Economic Development' means, shift from the given level of structural and functional interdependence to higher levels in the field of economic relations. This particular term is very wide and scholars interpreted it differently at different times.
 - ii) The economic development of a country/state or a region can be expressed, in short, as the level of achievement of essential and desirable requirements of the people of that country/state or region at a particular point of time in relation to some other time in the past or as compare^d_^ to the people of another country/state or region at the same point of time.
 - iii) Development is neither an inherent value nor a spontaneous process. On the contrary, it is to be cultivated and to be achieved in a systematic way involving in-depth objective, understanding and analysis of the development potential, identification of objectives, rational choice of strategy and clarity of goals etc. It is perhaps here that planning becomes imperative.

- iv) Planning has been commonly understood as a process of mobilising and assessing the natural as well as human resources and their systematic utilisation for getting optimum benefit for the mankind. Moreover, it is a continuous process towards desired goals and all major decisions have to be made related to those goals and social purposes behind them.

- v) Man is the most important factor of planning process as he has to perform the three main roles of plan formulator, executor of the plan schemes and also to enjoy the benefits of the whole process. Thus, manpower planning can be defined as process of developing and determining objectives, policies and programmes that will develop, utilise and distribute manpower so as to achieve desired economic and other goals.

- vi) To study the socio-economic condition of the Tribal people of India, the first thing that comes to mind is the constitution of India. The constitution provided various scopes for protection and promotion of tribal rights and interests on their land and forest resource, social, cultural and economic rights along with safeguard against exploitation.

- vii) At the beginning of the planning era, the Planning Commission, while formulating the Five Year Plans, considered all aspects of tribal life and culture and tried to translate these actions into special constitutional provisions for the benefit of the tribal people. Special attention has been given to the suggestions

made by political leaders, scholars, institutions, organisations and various study groups from time to time for all round development of the Tribal People.

2.

- i) Arunachal Pradesh is a Tribal State situated in the North Eastern Part of India. The topography of the state is mostly mountainous and out of 83,743 sq.km of the total geographical area, 61.55 per cent is forest area and the remaining 38.45 per cent is other than forest. Thus, forest resources constitute the most valuable resources of the state.
- ii) The state has not been surveyed properly for preparation of cadastral maps. This has posed serious hurdle in formulating proper land use plans. Moreover, conspicuous absence of written law on land also added its share of problems and made it more difficult including in the emergence of land market in the state.
- iii) In rural areas, ownership, land holdings and transfer of land among tribal people follow certain social customs and traditions. In urban, semi-urban and major administrative centers, the Government, particularly, the Deputy Commissioner or the other concerned officer maintains the land records. He is the final authority for the allotment of land to be used by Government as well as by the indigenous tribal people. Most of the land allotted by these authorities are used for the construction of buildings including residential complexes. The ownership as well as the transfer of the land is restricted to the locals only. However, for getting the land they have to make nominal payment. These practices are mostly

found in the urban areas. Allotment of land in the rural areas is on the basis of inheritance and at times it is also done by the village council.

- iv) In Arunachal Pradesh, the Tribal rights on land and forest are preserved through the traditional laws. These laws prohibit the outsiders to gain a direct access to selling/allotment of land and forest resources. The foremost condition for availing these rights is that one must be the bonafide tribal of the State. Further, introduction of Inner Line System also restricted the free movement of Non-Tribals in the state, and thereby to some extent, saved the local people from exploitation.
- (v) There are about 20 major tribes and more-than 100 sub-tribes in the state. Every tribal group has its own village council which is very powerful and normally deals with matters of common interest and settles all disputes within the village. Even serious crimes against tribal society are being settled, up to the satisfaction of all concerned by this council.
- (vi) The tribal people also have their own distinct culture, religion and customs. Each and every community follow their own way of life and so far there is no evidence of imposing anything against the will of an individual or a group, apart from law and order by the State Government.
- vii) In earlier days almost all the Tribal people used to practise Jhum cultivation and were maintaining their livelihood by hunting, trapping and free collection of

fruits, roots etc. from jungle. But, after the introduction of planning process, things have changed significantly, people gradually started realising the benefit of using fertiliser, high yielding variety Seeds and adopting settled cultivation wherever flat lands are available. By now the state has attained the status of producing sufficient food grains.

3.

- i) Manpower has been considered as the most valuable resource among all the resources. The speciality of this resource is that, it can be developed according to the needs and proper utilisation of this resource can bring about a structural change in the over all development of a nation /state or a region. But, on the other hand, misuse of this resource may turn out to be a liability at any time.
- ii) In India, even after over four decades of economic planning, the infrastructural facilities for proper manpower planning and development are inadequate. The system of collection of manpower data and the institution that are engaged in the study of applied manpower are very limited.
- iii) The position of Arunachal Pradesh with respect to manpower planning is far from satisfactory. There is no separate institution for manpower studies. It has been found that, except a few studies, that have been conducted by the Institute of Applied Manpower Research (IAMR) for Arunachal Pradesh along with the other states of North Easter Region, there is conspicuous absence of any other comprehensive and meaningful study on the Manpower planning in the state.

- iv) Though, some Government Departments and some other organisations have presented the position of manpower in the state yet, these are mostly quantitative in nature. Thus, analytical studies are almost not available.
 - v) The information system for collection of manpower data is not adequate. Though, there are provisions for recording the information of job seekers at the district levels but, it is observed that proper Employment Exchange services are still to take off in all most all the districts.
- 4.
- i) The Planning era started in Arunachal Pradesh with the launching of First Five Year plan in the year 1951 along with other parts of the country. But, owing to dismal pre and post independence (particularly during the first decade after the independence) Socio-Economic scenario of the State, there were hardly any infrastructural facilities and basic amenities available for development. As such, at the beginning of planning process, almost everything had to be started afresh.
 - ii) At the initial stages, priority was given to improvement of agriculture and allied activities, cottage industries, development of communication, opening of schools, establishment of medical hospitals and dispensaries, providing water supply and electricity to the villages etc. Later on, besides paying adequate attention to the basic requirements, new areas were taken-up and accordingly various plans and programmes were adopted during different plan periods and

efforts were made to bring the fruits of development to the door steps of common people as far as possible. At the end of first four years of Eighth Five Year plan, the situation as a whole changed many-fold from that of the beginning of planning process.

- iii) With regards to other basic amenities like road, it is found that starting with a total road length of only 122 km. in 1951, the state has developed more than twelve thousand km. road at the end of first four years of the Eighth Five Year Plan.. In case of total number of educational institutions, it has reached to 2010 from only 69 and the corresponding figure of students also increased to 2.35 lakhs from a mere number of 2421 during the same periods. Corresponding to this, the percentage of literacy increased to 41.59 (as per 1991 Census) from 7.13 (as per 1961 census). As regards medical institutions, the total figure reached to 453 from 44, besides there are village level medical personnel like Medics and trained Dais etc. In addition to that about 90 per cent of the villages are provided with water supply and more than 50 per cent of the villages are electrified.
- iv) In the process of implementation of the development schemes during different plan periods, the benefit reaches to the people directly as well as indirectly. The schemes particularly those taken - up under Rural Development Programme, generated large scale employment and training opportunities and provided many other benefits to rural poor and unemployed youths. However, the implementation of the other sectoral schemes, though not opened-up large scale

employment on regular basis but, provided opportunities for wage income along with taking-up different activities including self employment for the socio-economic development of individual, community and even of the State as a whole.

- v) The three-tier Panchayat Raj system, namely, Gram Panchayat, Anchal Samity and Zilla Parishad, prevalent (from 1997 it is not functioning as panchayat election could no be held) in Arunachal Pradesh provided an additional opportunity of development, recognition and empowerment for the common people. The representatives of the lower level bodies could take part in the Zilla Parishad level discussions for finalisation of Schemes to be taken-up. People could place their view points and were in position to extend their suggestions and recommendations through their elected representatives.
- vi) Due to introduction of decentralised planning in 1990, the Zilla Parishad attained the status of the District Planning Body and enjoyed certain autonomy with respect to formulating and implementing some development schemes for which funds are provided under the scheme known as *Untied Fund*. In addition to that, the Panchayat institutions also plan and implement some area specific programmes to promote the interest of the community as a whole.
- vii) With the gradual increase in the number of educational institutions, the Tribal people of Arunachal Pradesh got an opportunity to educate their own persons and to build-up their own team of people to do the work of development and

administration. By now they have their own representatives almost in every field though their number is still comparatively less, particularly in the higher positions and in educational institutions and some other technical and specialised jobs.

- viii) It is evident that the Panchsheel of Pandit Nehru, the suggestions of Rajendra Prasad and other scholars and organisations, the provisions made in the constitution have been followed and adequate attention has been given while formulating and implementing the plan for the over all socio-economic development of the Tribal people of Arunachal Pradesh. But still, there is a long way to go to attain the status of a developed state in its true sense

5.

- i) The total population of Arunachal Pradesh as per 1991 census is 864558, of them 550351 i.e. 63.66 per cent are Scheduled Tribe . Among the tribal people 252338 i.e. 45.85 per cent are workers and 298013 i.e. 54.15 per cent are non-workers. However, it is significant to note that out of the total tribal workers, 83.30 per cent of them are engaged in cultivation alone and 1.38 per cent are working as agricultural labourers.
- ii) The educational scenario of the state, particularly in case of tribal is not very satisfactory. As per 1991 population census, the per centage of tribal literacy is 21.68 as against the state literacy of 41.59 per cent. This shows that the number of literal tribal manpower is less in the state.

- iii) Education in its true sense started in Arunachal Pradesh only after the introduction of planning process. The situation upto higher secondary level though improved considerably, but for higher education there are only 4 (four) colleges and 1 (one) university. For technical and other professional courses, the students of this state have to depend on the institutions located in other parts of the country.
- iv) The entrepreneurial activity in the unorganised sector of economy of Arunachal Pradesh is growing quite fast and this has provided employment to 10.79 per cent of population of the state.
- v) In case of Government service, the participation rate of the tribal people particularly in the lower levels is quite high and in the higher levels the rate is also increasing.

6

- i) Economic development generally depends on various factor^s like geographical characteristics, education and activity of people, availability of essential and desirable amenities and many other socio-economic factors which normally vary from place to place, time to time and even community to community.
- ii) To study the economic development of Arunachal Pradesh, the Community Development Blocks have been considered as the most suitable lower level units

of the study and 16 socio-economic indicators have been chosen from each of the block for details study.

- iii) This study shows that the position of all those blocks which have urban characteristics or the administrative centres within their geographical boundary are comparatively better in many respects. But, on the other hands, due to various other factors these blocks are not equally developed in all respects and as such there is a great variation in the levels of their development.
- iv) The blocks which are situated slightly away from the District Headquarters are having less infrastructural facilities. The position of most of these blocks are similar and there is not much variation in their levels of development.
- v) The study further reveals that the condition of all those blocks which are situated in the hilly interior places are not at all satisfactory. Most of these blocks do not have many of the basic amenities and essential services. Their levels of development also differ to a great extent from each other.

7.

- i) The economic development of a country or a state primarily depend upon the technical and professional skill, aptitude, educational levels etc. of the human Capital. But, it appears that, the human capital of Arunachal Pradesh is lagging much behind in these respects. It has been found that, out of the total estimated

children (July'93 to June'94) between the age groups 5-9 to 20-24 years, 46.04 per cent were non-student and 53.96 per cent though continuing their studies, but most of them were in the lower levels. The percentage of students in the higher secondary was 3.26, while only 0.60 per cent were in the college level, but the girls were comparatively much behind than the boys, almost in all levels.

- ii) Among the non-students of the age groups mentioned above, 78.49 per cent were illiterate and 21.51 per cent were though literate, but most of them were having their educational levels upto middle or secondary levels, and 0.58 per cent were having higher secondary while only 0.18 per cent were graduation and above. Further, it appears that most of the non-students were engaged either in household enterprises (self employed) or were working as labourer or were engaged in household duties, but their percentage in regular salaried/wage earning activities was comparatively less.
- iii) As regard potential working force, i.e. the persons in the age groups between 25-29 to 55-59 years, it appears that, out of the total estimated persons of these age groups, 66.52 per cent were illiterate and only 33.48 per cent were literate. Among the literate potential working force, the position was also not very satisfactory. It has been found that, most of them were having their educational standard within middle and secondary level, but however, 4.85 per cent could attain the standard of higher Secondary. The number of persons having educational standard of graduation and above in Agriculture and Medical were very less, while in Engineering, the position was slightly better in comparison to

the above mentioned two subjects and in general subjects, the percentage was only 3.28.

- iv) It appears that, 64.58 per cent of the illiterate potential working force (80.81 per cent male and 50.44 per cent female) were usually engaged in household enterprise and were working as own account workers (self employed) which means, in rural areas, most of them were engaged in agriculture, but however, quite a good number of them were also working as casual worker either in public or in other sectors. The percentage of regular salaried/wage earners were quite less, but a good number of females were engaged in household activities and in addition to that many of them were also engaged in free collection of goods, weaving, sewing etc for household consumption.
- v) Among the Literate potential working force, particularly with lower level of educational standard, the activities were more or less same as those of the illiterate groups with the exception that, quite a good number of them were earning their livelihood as regular salaried/wage paid employees. However, the literate potential force having educational level secondary and above were mostly working as regular salaried/wage paid employees. But, in case of females, many of them were engaged as house wife and of course, some of them, in addition to their household duties, were also engaged in weaving, sewing, tailoring etc. for household use. In the higher educational groups, persons having technical qualification, almost all were working as regular salaried employees,

but, in case of general subjects, more than 78 per cent of potential work force were earning their livelihood as regular employees.

RECOMMENDATIONS:

1. People may be encouraged for taking up settled cultivation, use of fertiliser and high yielding varieties to increase the yield and also to reduce jhum cultivation.
2. Gradually, possibility may be explored for building up inter village road network system so that at certain common points, markets facilities can be developed. The market relations should emphasis both economic and cultural aspects of development.
3. Provisions may be made for supplying raw materials to the local weavers and artisans and to procure the finished products from them for further development of cottage industries.
4. Efforts may be taken to cover all the villages at least under primary level of education and parents may be inspired to send their children to schools regularly. Suitable incentives like residential accommodation, sports and games, cultural activities etc. may be provided to minimise the number of dropouts.
5. For proper manpower development, systematic efforts may be taken up for increasing the number of educational institutions in the higher levels and at least one medical and one engineering college should be established in the interest of the state.

6. Efforts should be taken to inculcate scientific temper through education in the state such that proper manpower development can take place. Special emphasis should be given to the orientation of the parents and elders.
7. Institutes like typing, stenography, computer education, photography, electronics like radio, television and other vocational institutions may be established to provide the young boys and girls an alternative way of life.
8. During finalisation of Annual or Five Year Plans priority may be given for infrastructure development and employment oriented schemes.
9. Youth should be trained and encouraged to take up self-employment in trade and commerce. Special incentives should be provided to such individuals..
10. Efforts may be taken to find out renewable resources of energy with special emphasis on solar energy generation and bio-gas wherever possible.
11. Efforts may be intensified for harnessing the God gifted water resources and to establish more hydel projects.
12. The scenic beauty of Arunachal Pradesh is no way less attractive than any other important places of India. Places of historical and religious significance can be harnessed to promote tourism in the state.

13. Work of many of the schemes do not end with completion of implementation only. Proper care may be taken for maintenance of such schemes in order to make the efforts successful.
14. Evaluation and monitoring is an indispensable part of the planning process. Proper care may be taken in this regard in order to make the whole process meaningful.

Appendix 2.1**DISTRICTWISE DISTRIBUTION OF AREA, POPULATION AND
DENSITY OF POPULATION AS PER 1991 CENSUS**

Name of the District	Notional Area (Sq. Km)	Total Population	Location quotient (percentage over total population)	Density of population	Total Scheduled Tribe population	Location quotient (percentage over total Scheduled Tribe population)	Density of Scheduled Tribe population
1.	2.	3.	4.	5.	6.	7.	8.
1. Tawang	2172	28287	3.27	13	22238	4.04	10
2. West Kameng	7422	56421	6.53	8	29900	5.43	4
3. East Kameng	4134	50395	5.83	12	43116	7.83	10
4. Upper Subansiri	7032	50086	5.79	7	43034	7.82	6
5. Lower Subansiri	10135	83167	9.62	8	74543	13.54	7
6. Papum Pare	2875	72811	8.42	25	36066	6.55	13
7. West Siang	8325	89936	10.40	11	70571	12.82	8
8. East Siang	4005	71864	8.31	18	46282	8.41	12
9. Upper Siang	6188	27779	3.22	5	22048	4.01	4
10. Dibang Valley	13029	43068	4.98	3	19572	3.56	2
11. Lohit	11402	109706	12.69	10	40933	7.44	4
12. Changlang	4662	95530	11.05	20	33278	6.05	7
13. Tirap	2362	85508	9.89	36	68770	12.50	27
Arunachal Pradesh	83743	864558	100.00	10	550351	100.00	7

Appendix 2.2

**DISTRICT WISE DISTRIBUTION OF TOTAL AND SCHEDULED TRIBE
(ST) POPULATION ACCORDING TO SEX AND THEIR PERCENTAGE
WITH RURAL AND URBAN BREAK-UP AS PER 1991 CENSUS.**

Name of District	Rural/Urban	Total Population			Total Scheduled Tribe Population			Percentage of Scheduled Tribal Population over Total Population		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11
1 Tawang	Total (Rural)	15338	12949	28287	10925	11313	22238	71.23	87.37	78.62
	Total	30966	25455	56421	15069	14831	29900	48.66	58.26	52.99
2 West Kameng	Rural	27723	23043	50766	14067	13889	27956	50.74	60.27	55.07
	Urban	3243	2412	5655	1002	942	1944	30.90	39.05	34.38
3 East Kameng	Total (Rural)	25689	24706	50395	21240	21876	43116	82.68	88.54	85.56
4 Upper Subansiri	Total (Rural)	26823	23263	50086	21642	21392	43034	80.68	91.96	85.92
	Total	42502	40665	83167	36733	37810	74543	86.43	92.98	89.63
5 Lower Subansiri	Rural	37442	36863	74305	34353	35420	69773	91.75	96.09	93.90
	Urban	5060	3802	8862	2380	2390	4770	47.04	62.86	53.82
6 Papum Pare	Total	39775	33036	72811	18350	17716	36066	46.13	53.63	49.53
	Rural	22711	19186	41897	13203	13044	26247	58.13	67.99	62.65
7 West Siang	Urban	17064	13850	30914	5147	4672	9819	30.16	33.73	31.76
	Total	48029	41907	89936	35160	35411	70571	73.21	84.50	78.47
7 West Siang	Rural	40023	36674	76697	32209	32830	65039	80.48	89.52	84.80
	Urban	8006	5233	13239	2951	2581	5532	36.86	49.32	41.79

1	2	3	4	5	6	7	8	9	10	11
	Total	38294	33570	71864	22951	23331	46282	59 93	69 50	64 40
8 East Siang	Rural	29921	27304	57225	20964	21513	42477	70 06	78 79	74 23
	Urban	8373	6266	14639	1987	1818	3805	23 73	29 01	25 99
9 Upper Siang	Total (Rural)	15248	12531	27779	11165	10883	22048	73 22	86 85	79 37
	Total	24087	18981	43068	9789	9783	19572	40 64	51 54	45 44
10 Dibang Valley	Rural	19938	16154	36086	9026	9264	18290	45 27	57 35	50 68
	Urban	4149	2827	6982	763	519	1282	18 39	18 36	18 36
	Total	61043	48663	109706	20660	20273	40933	33 84	41 66	37 31
11 Lohit	Rural	47136	39324	86460	19147	18918	38065	40 62	48 11	44 03
	Urban	13907	9339	23246	1513	1355	2868	10 88	14 51	12 34
12 Changlang	Total (Rural)	51291	44239	95530	16979	16299	33278	33 10	36 84	34 84
	Total	45919	39589	85508	34734	34036	68770	75 64	85 97	80 43
13 Tirap	Rural	41683	36728	78411	33675	32986	66661	80 79	89 81	85 01
	Urban	4236	2861	7097	1059	1050	2109	25 00	36 70	29 72
	Total	465004	399554	864558	275397	274954	550351	59 22	68 82	63 66
Arunachal Pradesh	Rural	400966	352964	753930	258595	259627	518222	64 49	73 56	68 74
	Urban	64038	46590	110628	16802	15327	32129	26 24	32 90	29 04

Appendix 2.3

DISTRICT WISE DISTRIBUTION OF WORKERS AND LITERACY ACCORDING TO SEX WITH RURAL AND URBAN BREAK-UP AS PER 1991 CENSUS.

Name of District	Rural/Urban	Total worker (main and marginal)			Percentage of total workers to total population			Percentage of literacy of Total Population			Percentage of literacy of Scheduled Tribe (ST) Population out of Total ST Population		
		Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Tawang	Total (Rural)	9465	6265	15730	61.71	48.38	55.61	40.41	16.83	29.80	28.40	13.61	20.80
	Total	17305	7564	24869	55.88	29.72	44.08	55.03	35.22	46.31	44.91	27.82	36.42
2 West Kameng	Rural	15542	7191	22733	56.06	31.21	44.78	52.43	32.44	43.57	42.29	25.47	33.92
	Urban	1763	373	2136	54.36	15.46	37.77	76.10	60.79	69.75	80.45	61.30	71.16
3 East Kameng	Total (Rural)	13868	11717	25585	53.98	47.43	50.77	37.69	14.02	26.20	30.83	9.47	20.01
4 Upper Subansiri	Total (Rural)	13780	9953	23733	51.37	42.78	47.38	47.58	27.24	38.31	45.73	25.16	35.52
	Total	22616	19066	41682	53.21	46.89	50.12	38.26	21.41	30.07	32.90	18.77	25.70
5 Lower Subansiri	Rural	19977	18571	38548	53.35	50.38	51.88	33.53	18.07	25.87	30.23	16.50	23.23
	Urban	2639	495	3134	52.15	13.02	35.36	71.98	54.95	64.99	72.98	54.30	63.66
	Total	20596	8692	29288	51.78	26.31	40.22	65.13	42.65	55.11	54.26	31.57	43.01
6 Papum Pare	Rural	11518	6751	18269	50.72	35.19	43.60	54.76	29.04	43.18	44.14	22.08	33.07
	Urban	9078	1941	11019	53.20	14.01	35.64	78.57	61.06	70.87	80.08	58.16	69.59
	Total	24111	14687	38798	50.20	35.05	43.14	53.86	35.85	45.64	49.25	32.44	40.77
7 West Siang	Rural	19846	14046	33892	49.59	38.30	44.19	47.83	31.50	40.14	46.06	30.14	37.97
	Urban	4265	641	4906	53.27	12.25	37.06	81.78	65.63	75.70	82.52	61.73	73.00

1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Total	19124	10512	29636	49 94	31 31	41 24	55 53	38 77	47 86	58 97	40 82	49 84
8 East Siang	Rural	14773	9754	24527	49 37	35 72	42 86	50 67	34 09	42 88	56 44	39 26	47 74
	Urban	4351	758	5109	51 96	12 10	34 90	71 71	58 49	66 26	84 15	59 14	72 51
9 Upper Siang	Total (Rural)	8942	5618	14560	58 64	44 83	52 41	45 03	23 06	35 33	33 27	20 28	26 81
	Total	13515	6198	19713	56 11	32 65	45 77	56 94	33 27	46 88	59 08	31 87	45 31
10 Dibang Valley	Rural	11409	5866	17275	57 22	36 31	47 87	51 79	27 06	41 10	55 63	30 07	42 47
	Urban	2106	332	2438	50 76	11 74	34 92	80 31	66 71	75 00	95 40	64 36	83 52
	Total	33764	14641	48405	55 31	30 09	44 12	59 02	36 21	49 21	55 67	34 46	45 12
11 Lohit	Rural	25886	13868	39754	54 92	35 27	45 98	53 33	29 96	42 98	52 97	32 02	42 50
	Urban	7878	773	8651	56 65	8 28	37 21	77 10	61 42	71 06	87 27	68 06	78 44
12 Changlang	Total (Rural)	27260	16238	43498	53 15	36 70	45 53	54 44	29 64	43 20	59 94	35 08	47 86
	Total	25647	18638	44285	55 85	47 08	51 79	43 44	18 52	32 06	31 94	11 76	21 89
13 Tirap	Rural	23030	18386	41416	55 25	50 06	52 82	38 15	13 59	26 76	30 01	9 94	20 00
	Urban	2617	252	2869	61 78	8 81	40 43	89 83	78 40	85 43	87 26	66 28	77 02
	Total	249993	149789	399782	53 76	37 49	46 24	51 45	29 69	41 59	44 00	24 94	34 45
Arunachal Pradesh	Rural	215296	144224	359520	53 69	40 86	47 69	47 00	25 31	37 02	41 50	22 89	32 14
	Urban	34697	5565	40262	54 18	11 94	36 39	77 99	62 23	71 59	81 97	60 17	71 68

Appendix 4.1

INFORMATION ON OPERATIONAL HOLDINGS, LAND USE AND CROPPING PATTERNS OF ARUNACHAL PRADESH

Sl. No.	Particulars.	Unit	Agricultural census year .				
			1970-71	1976-77	1980-81	1985-86	1990-91
1	2	3	4	5	6	7	8
1.	Operational holdings	No	78990	66499	78542	86038	94357
a.	Marginal (below 1.00 Ha)	"	6060	6442	12986	14781	16399
b.	Small (1.00-2.00 Ha)	"	9450	12133	16298	16234	17366
c.	Semi-Med (2.00-4.00 Ha)	"	20470	18234	22094	26822	30202
d.	Medium (4.00-10.00 Ha)	"	28750	18169	22073	23237	25631
e.	Large (10.00 Ha & above)	"	14260	11521	5091	4964	4759
2.	Operated area.	Hectare	489011	395526	335732	344254	349891
a.	Settled	"	28006	40013	52012	76759	NA
b.	Jhum	"	461005	355513	283720	267495	NA
3.	Average Size of Holdings	"	6.19	5.95	4.27	4.00	3.71

1	2	3	4	5	6	7	8
4.	Land use classification	“					
a.	Net area Sown	“	115226	111914	118232	149314	165616
i.	Settled	“	28006	40013	52012	76759	NA
ii.	Jhum	“	87220	71901	66220	72555	NA
b.	Current fallow	“	51612	24765	23127	24700	28463
c.	Other uncultivated land (excluding fallow land)	“	19164	49850	34888	28655	44437
d.	Fallow land other than current fallow	“	117740	105239	57253	49008	35823
e.	Culturable Waste	“	148698	84540	47595	44426	32999
f.	Land not available for cultivation	“	36571	19218	54637	48129	42553
5.	Gross cropped area	“	129775	120310	136110	167469	193498
6.	Area under multiple cropping	“	14549	8396	17878	18155	20000*
7.	Cropping intensity	“	113	108	115	112	113*
8.	Area under irrigation	“	22661	23802	21857	31040	36482

* Provisional figure

Appendix 4.2

PHYSICAL AND FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF AGRICULTURE DURING DIFFERENT FIVE YEAR/ ANNUAL PLAN PERIODS.

Plan period	Average out lay / expenditure per year during the plan period. (Rs. in lakhs)		Average area per year during the plan period (in hectares) under							Average production per year during the plan period (in MTs) of		
	Out lay	Expenditure	land developed under permanent cultivation	Area brought under irrigation (normal & C.D)	High yielding varieties	Cereals	Pulses and oil seeds.	Horticulture	Cereals	Pulses and oil seeds	Fruit crops	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	
1st plan 1951-56	6.40 (32.00)	6.55 (32.77)	909	-	-	-	-	-	-	-	-	
2nd Plan 1956-61	9.84 (49.21)	4.85 (24.24)	370	-	-	-	-	-	-	-	-	
3rd Plan 1961-66	12.36 (61.78)	12.59 (62.93)	934	474	-	-	-	-	-	-	-	

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
3 annual Plans 1966-69	17.72 (53.15)	10.34 (31.03)	803	960	-	-	-	-	-	-	-
4th Plan 1969-74	27.16 (135.82)	19.72 (98.62)	1292	634	1778	-	-	-	-	-	-
5th plan 1974-79	NA	NA	2757	1556	5485	106740	-	-	102460	-	-
Annual Plan 1979-80	NA	NA	3040	4538	5269	92409	6000	2740	133050	5570	3400
6th Plan 1980-85	363.23 (1816.14)	357.61 (1788.03)	727	4380	8359	143594	8510	5966	150840	8374	10440
7th Plan 1985-90	742.75 (3713.76)	727.00 (3635.01)	918	3158	16495	171245	17825	10954	188525	15183	25684
2 Annual Plans 1990-92	1237.24 (2474.48)	1211.28 (2422.55)	208	3413	33675	182960	28160	17000	214830	26275	37660
Four Years of 8th Plan 1992-96	2135.50 (8542.00)	2018.77 (8075.08)	98	3514	48650	179995	30975	24543	203126	31312	55290

Note :- i) Figures from 1951 to 1969 included AH & Vety also in Col 2 and 3

ii) Figure within bracket indicates total outlay/expenditure of the plan period in col 2 & 3.

Appendix 4.3
PHYSICAL AND FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF VETERINARY SERVICES DURING DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS.

Plan Period	Average outlay/ expenditure per year during the plan period (Rs. in lakhs)		Average increase in the number of Dispensary, Aid centre and different Farms per year during the plan period.					Average achievement per year during the plan period (No. in '000)				Milk production during plan period (Terminal year in '000 MT)
	Outlay	Expenditure	Veterinary dispensary	Veterinary aid centre	Cattle upgrading and demonstration/multiplication centre	Poultry Farm	Dairy/Milk production centre	General case treated	Castration performed	Vaccination done	Total	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1st Plan 1951-56			NA (6)	NA (6)	NA (6)	NA (4)	-	3.96	0.34	8.75	13.05	-
2nd Plan 1956-61			1.80 (15)	1.80 (15)	3.00 (21)	0.20 (5)	-	5.88	0.17	6.51	12.56	-
	Included with											
3rd Plan 1961-66	Agriculture		2.60 (28)	3.60 (33)	7.00 (56)	0.60 (8)	-	24.02	4.02	26.98	55.02	-
3 Annual Plans 1966-69			3.33 (38)	NIL (33)	3.67 (67)	NIL (8)	-	75.67	5.74	53.16	134.57	-

1	2	3	4	5	6	7	8	9	10	11	12	13
4th Plan 1969-74	8 10 (40 50)	9 87 (49 36)	2 00 (48)	0 60 (36)	NIL (67)	NIL (8)	-	62 76	6 86	51 32	120 94	-
5th Plan 1974-79	NA	NA	1 20 (54)	5 80 (65)	NIL (67)	NIL (8)	-	88 30	11 88	129 78	229 96	-
Annual Plan 1979-80	NA	NA	7 00 (61)	1 00 (66)	NIL (67)	0 20 (9)	NA (6)	145 60	18 25	344 65	508 50	30 00
6th Plan 1980-85	105 88 (529 39)	101 92 (509 61)	2 60 (74)	7 20 (102)	7 60 (105)	0 80 (13)	NIL (6)	251 58	20 94	186 34	458 86	35 00
7th Plan 1985-90	194 15 (970 75)	195 01 (975 03)	1 40 (81)	3 00 (117)	3 00 (120)	NIL (12)	0 60 (9)	330 17	39 61	256 03	625 81	40 00
2 Annual Plans 1990-92	287 94 (575 87)	285 67 (571 33)	3 50 (88)	8 50 (134)	NIL (120)	NIL (11)	0 50 (10)	383 62	36 06	205 00	624 68	41 00
Four Years of 8th Plan 1992-96	523 50 (2094 00)	505 33 (2021 32)	1 50 (91)	5 33 (150)	NIL (120)	0 50 (12)	NIL (10)	406 47	36 88	290 70	734 05	42 00

Note - a) Figure within bracket indicates the total outlay/expenditure of the plan period, in col 2 & 3

b) Figure within bracket indicates the position of the terminal year

Appendix 4. 4

**PHYSICAL AND FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF FISHERY DEVELOPMENT DURING
DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS**

Plan period	Average outlay/expenditure per year during the plan period (Rs.in lakhs) (State plan only)		Average increase in area (Hectares) per year under different types of pisciculture during the plan period.										Average production (in million) per year during the plan period of			
	Outlay	Expenditure	Ponds and Tanks					Beals and lakes					Paddy cum fish culture	Average production of fish (in Tons) per year during the plan period	Fry	Fingerlings
			Govt.	NEC	Private	Total	Govt.	NEC	Private	Total						
											4.	5.				
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.		
1st Plan 1951-56	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2nd Plan 1956-61	0.20 (1.00)	0.08 (0.39)	0.10 (0.50)	-	0.10 (0.50)	0.20 (1.00)	-	-	-	-	-	-	-	-		
3rd Plan 1961-66	0.34 (1.70)	0.41 (2.07)	0.10 (1.00)	-	0.44 (2.70)	0.54 (3.70)	-	-	-	-	-	-	-	-		
3 Annual Plans 1966-69	0.97 (2.90)	0.93 (2.80)	0.57 (2.70)	-	5.03 (17.80)	5.60 (20.50)	-	-	-	-	-	-	-	-		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4th Plan 1969-74	2 40 (12 00)	1 75 (8 75)	0 50 (5 22)	-	2 28 (29 20)	2 78 (34 42)	-	-	-	-	-	-	-	-
5th Plan 1974-79	NA	NA	0 37 (7 10)	-	2 38 (41 09)	2 75 (48 19)	3 10 (15 50)	-	-	3 10 (15 50)	20 00 (100 00)	-	-	-
Annual Plan 1979-80	NA	NA	1 34 (8 44)	-	12 55 (53 64)	13 89 (62 08)	6 00 (21 50)	-	-	6 00 (21 50)	200 00 (300 00)	50 00 (50 00)	1 00 (1 00)	0 35 (0 35)
6th Plan 1980-85	22 84 (114 20)	23 32 (116 62)	0 62 (11 53)	0 60 (3 00)	9 03 (98 78)	10 25 (113 31)	NIL (21 50)	-	1 97 (9 87)	1 97 (31 37)	36 96 (484 80)	130 00 (330 00)	1 40 (2 15)	0 65 (1 00)
7th Plan 1985-90	50 49 (252 45)	50 40 (252 01)	1 10 (17 04)	NIL (3 00)	10 21 (149 83)	11 31 (169 87)	0 73 (25 15)	20 00 (100 00)	2 52 (22 48)	23 25 (147 63)	47 44 (722 00)	631 40 (998 00)	7 90 (15 00)	2 82 (5 00)
2 Annual Plans 1990-92	86 00 (172 00)	85 80 (171 59)	2 25 (21 53)	NIL (3 00)	46 32 (242 47)	48 57 (267 00)	0 55 (26 25)	5 00 (110 00)	NIL (22 48)	5 55 (158 73)	112 00 (946 00)	1372 50 (1499 00)	18 55 (19 09)	5 75 (6 00)
Four Years of 8th Plan 1992-96	145 00 (580 00)	139 91 (559 63)	0 91 (25 16)	0 91 (6 65)	65 87 (505 96)	67 69 (537 77)	NIL (26 25)	NIL (110 00)	NIL (22 48)	NIL (158 73)	71 50 (1232 00)	1740 00 (1852 00)	20 14 (21 00)	6 42 (7 00)

Note - a) Figure within bracket indicates the total outlay/expenditure of the plan period, in col 2 & 3

b) Figure within bracket indicates the position of the terminal year

Appendix 4.5
PHYSICAL AND FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF GENERAL EDUCATION DURING
DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS.

Plan period	Average outlay/expenditure per year during the plan period (Rs. in lakhs)		Average increase in the number of Educational Institutions, Teachers and students per year during the plan period.				
	Outlay	Expenditure	Educational Institutions,				Total
			College (actual number)	High/Higer Secondary School.	Middle/Seni or basic.	Primary/Pre-primary and Junior basic	
1.	2.	3.	4.	5.	6.	7.	8.
Upto 1950-51.	-	-	-	1	1	67	69
1st Plan 1951-56	8.36 (41.81)	3.81 (19.07)	-	0.40 (3)	3.00 (16)	17.00 (152)	20.40 (171)
2nd Plan 1956-61	10.00 (50.00)	8.66 (43.32)	-	0.40 (5)	NIL (14)*	NIL (130)*	NIL (149)*
3rd Plan 1961-66	16.47 (82.37)	16.99 (84.97)	1	1.40 (12)	4.00 (34)	36.40 (312)	42.00 (359)
3 Annual Plans 1966-69	34.64 (103.93)	24.80 (74.41)	1	1.33 (16)	0.67 (36)	37.00 (423)	39.00 (476)
4th Plan 1969-74	41.04 (205.18)	39.20 (196.00)	1	0.40 (18)	1.80 (45)	21.60 (531)	23.80 (595)

1.	2.	3.	4.	5.	6.	7.	8.
5th Plan 1974-79	NA	NA	2	3.60 (36)	12.40 (107)	76.00 (911)	92.20 (1056)
Annual Plan 1979-80	NA	NA	2	NIL (36)	10.00 (117)	13.00 (924)	23.00 (1079)
6th Plan 1980-85	529.81 (2649.04)	522.85 (2614.24)	4	5.80 (65)	4.60 (140)	63.00 (1239)	73.80 (1448)
7th Plan 1985-90	1425.82 (7129.12)	1389.00 (6944.99)	4	8.60 (108)	20.20 (241)	22.20 (1350)	51.00 (1703)
2 Annual Plans 1990-92	2320.99 (4641.98)	2265.36 (4530.71)	4	11.00 (130)	11.50 (264)	21.50 (1393)	44.00 (1791)
Four Years of 8th Plan 1992-96	2745.75 (10983.00)	2684.88 (10739.51)	4	6.00 (154)	9.25 (301)	39.50 (1551)	54.75 (2010)

Note :- a) Figure within bracket indicates the total outlay/expenditure of the plan period, in col. 2 & 3

b) Figure within bracket indicates the position of the terminal year.

* Tuensang Separated

Appendix 4.5 (Continuation)

Teachers										Students				
College	High/Higher Secondary	Middle/Senior basic	Primary/Pre-primary and Junior basic	Total	College	High/Higher Secondary	Middle/Senior basic	Primary/Pre-primary and Junior basic	Total					
9	10	11	12	13	14	15	16	17	18					
-	NA	NA	67	NA	-	37	7	2377	2421					
-	NA (26)	NA (88)	58 40 (359)	NA (473)	-	10 00 (87)	60 60 (310)	945 60 (7105)	1016 20 (7502)					
-	11 20 (82)	0 40 (90)	NIL (244)*	NIL (416)*	-	182 40 (999)	199 80 (1309)	NIL (4201)*	NIL (6509)*					
- (9)	14 40 (154)	25 80 (219)	59 60 (542)	101 60 (924)	- (44)	306 40 (2531)	322 60 (2922)	1240 60 (10404)	1878 40 (15901)					
4 00 (21)	34 33 (257)	2 67 (227)	34 00 (644)	75 00 (1149)	10 67 (76)	170 33 (3042)	152 00 (3378)	1493 67 (14885)	1826 67 (21381)					
1 20 (27)	1 60 (265)	15 20 (303)	40 60 (847)	58 60 (1442)	41 40 (283)	847 20 (7278)	1581 40 (11285)	831 00 (19040)	3301 00 (37886)					
2 80 (41)	49 60 (513)	58 40 (595)	73 80 (1216)	184 60 (2365)	20 80 (387)	951 40 (12035)	572 60 (14148)	2924 60 (33663)	4469 40 (60233)					
2 00 (43)	108 00 (621)	72 00 (667)	57 00 (1273)	239 00 (2604)	2 00 (389)	1187 00 (13222)	1381 00 (15529)	3297 00 (36960)	5867 00 (66100)					

9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
4.60 (66)	97.00 (1106)	71.00 (1022)	100.60 (1776)	273.20 (3970)	90.80 (843)	305.00 (14747)	1246.40 (21761)	4446.40 (59192)	6088.60 (96543)
7.60 (104)	209.40 (2153)	128.60 (1665)	163.40 (2593)	509.00 (6515)	126.60 (1476)	55.60 (15025)	613.60 (24829)	11888.60 (118635)	12684.40 (159965)
16.50 (137)	88.00 (2329)	55.00 (1775)	84.50 (2762)	244.00 (7003)	328.50 (2133)	1103.00 (17231)	1497.00 (27823)	8119.50 (134874)	11048.00 (182061)
2.00 (145)	113.50 (2783)	75.50 (2077)	33.00 (2861)	215.75 (7866)	240.00 (3093)	1283.00 (22363)	2591.50 (38189)	9196.00 (171658)	13310.50 (235303)

Note :- Figure within bracket indicates the position of the terminal year

* Tuensang Separated

Appendix 4.6

**PHYSICAL NAD FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF MEDICAL AND HEALTH SERVICES
DURING DIFFERENT FIVE YEAR/ ANNUAL PLAN PERIODS**

Plan period	Average outlay/expenditure per year during the plan period (Rs. in lakhs)		Average increase in the number of Medical Institution, Hospital Beds and Medical Personnel per year during the plan period .						Average number of patient - treated per year during the plan period in '000 nos.	Average number of persons sterilized/user of IUCD per year during the plan period.	
	Outlay	Expenditure	Allopathic (Hospital/ Dispensary/Health Centre etc.)	Homoeopathic/ Unani/ Ayurvedic	Total	Hospital beds	Doctors	Nurses and Midwives		Sterilization done	User of IUCD
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Upto 1950-51.	-	-	44	-	44	-	NA	NA	-	-	-
1st Plan 1951-56	13.00 (65.00)	9.21 (46.06)	6.00 (74)	-	6.00 (74)	NA (336)	NA (71)	NA (28)	205.06	-	-
2nd Plan 1956-61	16.08 (80.42)	11.50 (57.48)	0.60 (77)	-	0.60 (77)	68.80 (680)	2.80 (85)	4.60 (51)	285.11	-	-
3rd Plan 1961-66	26.60 (133.00)	30.94 (154.72)	3.80 (96)	-	3.80 (96)	78.00 (1070)	1.80 (94)	8.80 (95)	262.19	-	-
3 Annual Plans 1966-69	36.64 (109.93)	28.01 (84.04)	1.67 (101)	-	1.67 (101)	30.00 (1160)	14.33 (137)	3.33 (105)	428.41	-	257

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
4th Plan 1969-74	27.30 (136.50)	35.77 (178.85)	NIL (101)	0.40 (2)	0.40 (103)	6.00 (1190)	4.20 (158)	2.80 (119)	402.47	30	37
5th Plan 1974-79	NA	NA	5.20 (127)	NIL (2)	5.20 (129)	16.00 (1270)	4.20 (179)	13.00 (184)	707.30	102	107
Annual Plan 1979-80	NA	NA	4.00 (131)	NIL (2)	4.00 (133)	123.00 (1393)	NIL (179)	28.00 (212)	981.09	108	381
6th Plan 1980-85	180.09 (900.43)	153.41 (767.03)	2.60 (144)	3.00 (17)	5.60 (161)	120.80 (1997)	3.40 (196)	0.80 (216)	808.83	353	1024
7th Plan 1985-90	292.40 (1461.98)	291.78 (1458.88)	19.20 (240)	2.60 (30)	21.80 (270)	58.20 (2288)	13.00 (261)	6.00 (246)	753.22	1075	3336
2 Annual Plans 1990-92	437.97 (875.94)	438.22 (876.44)	27.50 (295)	NIL (30)	27.50 (325)	15.00 (2318)	5.50 (272)	NIL (246)	718.26	1215	2334
Four Years of 8th Plan 1992-96	636.00 (2544.00)	617.10 (2468.40)	31.50 (421)	0.50 (32)	32.00 (453)	13.67 (2359)	NIL (272)	0.50 (247)	NA	1467	2557

Note :- a) Figure within bracket indicates the total outlay/expenditure of the plan period, in col. 2 & 3

b) Figure within bracket indicates the position of the terminal year.

Appendix 4.7

PHYSICAL AND FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF INDUSTRIES AND MINING DURING DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS.

Plan period	Average outlay/expenditure per year during the plan period (Rs. in lakhs)		Position at the end of each plan period						Average achievement per year during the plan period.					
	Outlay	Expendi- ture	Total numbe r of me- dium indust -ries	Small scale industries		Total District Indus- tries Centres (DIC) (No.)	Total craft centres (No.)	Total Seri culture demonst ration centres (No)	Cottage industries			Sericulture activities		
				Total indus- tries (No.)	Total emp- loy- ment (No.)				Train- ees train-ed in the craft cent-res (No.)	Annual out-turn of craft centres (in '000 Rs.)	Annual sale proce-eds of Emporium and Show- room cum- sale counters (in '000 Rs.)	Families engaged in seric- ulture activities (Eri, Muga & Pat) (No.)	Seed supplied (Eri, Muga and Pat) (Lys/ No.)	Producti on of silk yarn (Eri, Muga & pat in Kg.)
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1st Plan 1951-56	1.24 (6.19)	1.98 (9.91)	-	-	-	-	10	-	297	-	-	-	-	-
2nd Plan 1956-61	3.05 (15.24)	0.80 (4.02)	-	-	-	-	11	-	277	101.00	-	-	-	-
3rd Plan 1961-66	2.12 (10.62)	4.60 (23.00)	-	-	-	-	12	-	229	377.78	8.61*	-	-	-
3 Annual Plans 1966-69	7.31 (21.92)	4.88 (14.64)	-	-	-	-	17	-	292	654.71	314.93	-	-	-
4th Plan 1969-74	9.89 (49.43)	8.60 (43.00)	2	-	-	-	20	13	308	603.72	553.84	2630	65929.20	6268.40

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
5th Plan 1974-79	NA	NA	3	380	-	5	40	14	310	679.50	857.04	2129	44395.75	9280.13
Annual Plan 1979-80	NA	NA	3	380	-	5	41	14	272	1040.79	1025.69	1718	29043.00	852.00
6th Plan 1980-85	89.94 (449.70)	84.82 (424.12)	13	1155	8158	11	64	24	NA	2056.71	1919.83	1845	78898.67	6078.75
7th Plan 1985-90	238.76 (1193.82)	224.82 (1124.10)	16	1957	8319	11	64	24	NA	1779.25	2008.75	2030	NA	5084.00**
2 Annual Plans 1990-92	427.33 (854.65)	419.77 (839.54)	16	2455	7365	11	76	24	NA	2987.00	2091.00	4798	NA	5488.50
Four Years of 8th Plan 1992-96	624.00 (2496.00)	567.91 (2271.65)	18	3306	14325	13	81	28	891 (for 1995- 96 only)	4848.00	5632.75	4533	328464.0 0 (for 1994-96 only)	12395.47

Note :- Figure within bracket indicate total outlay/expenditure of the plan period in col. 2 & 3

* Figure of central Emporium for the year 1965-66 only.

** Figure for 1990 only

Appendix 4.8

PHYSICAL AND FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF TRANSPORT AND COMMUNICATION DURING DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS.

Plan period.	Average outlay/expenditure per year during the plan period (Rs. in lakhs)		Average increase in respect of the following items per year during the plan period.			Average installed capacity, generation and consumption of electricity (Hydel and Diesel) in M.W. per year during the plan period.			Average increase in the number of post offices per year during the plan period.		
	2.	3.	Total length of road. (KM)	Total number of villages provided with water supply	Total number of places electrified	7.	8.	9.	10.	11.	12.
1.			4.	5.	6.						
1950-51	NA	NA	NA (122.31)	-	-	-	-	-	-	-	-
1st Plan 1951-56	27.00 (135.00)	14.11 (70.55)	81.11 (527.86)	-	-	-	-	-	NA (5)	NA (6)	NA (11)
2nd Plan 1956-61	38.30 (191.50)	30.71 (153.55)	102.39 (1039.80)	-	NA (9)	0.65	-	-	0.20 (6)	2.20 (17)	2.40 (23)
3rd Plan 1961-66	53.00 (265.00)	42.76 (213.80)	61.20 (1345.81)	-	4.20 (30)	0.83	-	-	0.60 (9)	5.80 (46)	6.40 (55)
3 Annual Plans 1966-69	106.67 (320.00)	97.81 (293.42)	296.06 (2234.00)	NA (322)	1.33 (34)	1.18	-	-	0.67 (11)	1.00 (49)	1.67 (60)

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
4th Plan 1969-74	147.71 (738.55)	203.06 (1015.30)	208.80 (3278.00)	73.20 (688)	5.00 (59)	2.34	-	-	2.00 (21)	7.00 (84)	9.00 (105)
5th Plan 1974-79	NA	NA	260.40 (4580.00)	85.20 (1114)	34.20 (230)	6.68	-	-	1.40 (28)	13.80 (153)	15.20 (181)
Annual Plan 1979-80	NA	NA	1137.89 (5717.89)	250.00 (1364)	35.00 (265)	11.79	-	-	NIL (28)	13.00 (166)	13.00 (194)
6th Plan 1980-85	2124.64 (10623.18)	2244.55 (11222.75)	441.02 (7923.00)	107.00 (1899)	155.40 (1042)	13.85	19.84	15.08	1.40 (35)	14.60 (239)	16.00 (274)
7th Plan 1985-90	5271.57 (26357.87)	5324.43 (26622.15)	192.01 (8883.04)	132.00 (2559)	28.60 (1185)	19.95	39.95	31.36	NIL (23)	2.00 (249)	NIL (272)
2 Annual Plans 1990-92	9148.21 (18296.42)	9216.45 (18432.90)	374.68 (9632.39)	133.50 (2826)	135.00 (1455)	30.19	46.90	46.75	NIL (18)	NIL (249)	NIL (267)
Four Years of 8th Plan 1992-96	13261.00 (53044.00)	13522.72 (54090.88)	697.55 (12422.58)	117.25 (3295)	126.25 (1960)	40.67	80.15	59.52	0.25 (19)	3.75 (264)	8.00 (283)

Note:- a) Figure within bracket indicates the total outlay/expenditure of the plan period in Col 2 & 3

b) Outlay/expenditure figures include electricity and water supply also from 4th plan.

c) Figure within bracket indicates the position of the terminal year

Appendix 4.9

**PHYSICAL AND FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF
CO-OPERATION DURING DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS.**

Plan period	Average outlay/expenditure per year during the plan period (Rs. in lakhs)		Average increase in the total number of Co-operative societies and number of members per year during the plan period		Average working capital and share capital/paid-up capital (Rs. in lakhs) per year during the plan period.	
	Outlay	Expenditure	No. of co-operative societies.	No. of members (in '000)	Working capital	Share capital/paid-up capital.
1.	2.	3.	4.	5.	6.	7.
2nd Plan 1956-61	1.08 (5.42)	1.06 (5.29)	NA (25)			
3rd Plan 1961-66	2.40 (12.00)	7.67 (38.37)	8.80 (69)	NA (8.60)	11.01	3.98
3 Annual Plans 1966-69	10.32 (30.95)	7.73 (23.18)	8.33 (94)	1.60 (13.39)	31.91	6.62
4th Plan 1969-74	7.80 (39.00)	8.18 (40.90)	1.00 (99)	1.00 (18.39)	55.90	10.04
5th Plan 1974-79	NA	NA	3.00 (114)	NIL (16.51)	86.60	19.59
Annual Plan 1979-80	NA	NA	NIL (114)	NIL (16.51)	198.13	51.65

1.	2.	3.	4.	5.	6.	7.
6th Plan 1980-85	79.30 (396.50)	78.61 (393.03)	9.40 (161)	3.10 (32.00)	1041.27	177.83 (Average of 1983-85)
7th Plan 1985-90	112.30 (561.52)	111.11 (555.55)	5.20 (187)	3.40 (49.00)	3722.19	255.14
2 Annual Plans 1990-92	132.50 (265.00)	132.53 (265.05)	8.00 (203)*	1.00 (51.00)	4700.00 (Fig. of 1991-92 only)	274.74 (Fig. of 1991-92 Only)
Four Years of 8th Plan 1992-96	193.75 (775.00)	185.45 (741.79)	3.00 (215)	0.50 (53.00)	7855.77	313.07

Note :- a) Figure within bracket indicates the total outlay/expenditure of the plan period in Col 2 & 3

b) Figure within bracket indicates the position of the terminal year

* Including 11 societies which were under liquidation

Appendix 4.10 (A)

PHYSICAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF RURAL DEVELOPMENT DURING DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS.

Plan Period	No. of Community Development Block at the end of each plan period	Average number of beneficiaries assisted per year during the plan period under the programme of			Average number of mandays of employment (in lakhs) generated per year during the plan period under the programme of				Average number of house/well constructed per year during the plan period under		Average number of groups on Devel-opment of Women and Children in Rural Areas (DW/CRA) formed during the plan period.
		IRDP	ASMF	TRYSEM (Youths trained)	RLEGP	NREP	JRY (general)	Employment assurance scheme	Indira Awas Yojana	Million wells scheme	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
6th Plan 1980-85 (average figs. for last 4 years i.e. 1981-85)	48	10722	11628 (average of 1983-85)	NA	-	2.49	-	-	-	-	-
7th Plan 1985-90	48	11321	21622	NA	1.19 (average of 1985-89)	2.10	7.25 (only for 1989-90)	-	-	-	-

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
2 Annual Plans 1990-92	48	9656	10188	NA	-	-	7.68	-	-	-	-
Four Years of 8th Plan 1992-96	56	15498	10328 (average of 1992-94)	826	-	-	6.30	25.41 (average of 1993-96)	244	74 (average of 1993-95)	188

Appendix 4.10 (B)

FINANCIAL ACHIEVEMENT IN RESPECT OF SOME OF THE MAJOR ITEMS OF RURAL DEVELOPMENT DURING DIFFERENT FIVE YEAR/ANNUAL PLAN PERIODS.

Plan period	Average expenditure (Rs. in lakhs) per year during the plan period under Centrally Sponsored Schemes of										Average expenditure (Rs. in lakhs) per year during the plan period under Community Develop-ment Programme.
	IRDP and allied programmes						Rural Employment (Jawahar Rozgar Yojana)				
	IRDP	ASMF	NREP	RLEGP	TRYSE M (Trg)	DWCR A	JRY (general)	Employment assurance scheme	Indira Awas Yojana	Million wells scheme	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
6th Plan 1980-85 (average of last 4 years i.e. 1981-85)	189.13	39.80 (average of 1983-85)	32.73	-	NA	-	-	-	-	-	84.47 (average of 1980-85)
7th Plan 1985-90	276.39	62.62	71.33	30.51 (average of 1987- 89)	NA	-	165.40 (only for 1989-90)	-	-	-	224.14
2 Annual Plans 1990-92	292.04	102.02	-	-	NA	-	225.16	-	-	-	740.67
Four Years of 8th Plan 1992-96	486.25	60.00 (average of 1992-94)	-	-	17.72	24.17	157.72	529.31 (average of 1993-96)	31.65 (average of 1992-93) and 1994-95	26.87 (average of 1992-93) and 1994-95	512.08

Appendix 4.11

AMOUNT OF ALLOCATION AND EXPENDITURE DURING DIFFERENT FIVE YEAR AND ANNUAL PLAN PERIODS IN ARUNACHAL

PRADESH

(Rs. in lakhs)

Plan Period	Allocation	Expenditure	Excess(-)/ Short fall (+) of allocation
1.	2.	3.	4.
1st Plan 1951-56	300.00	201.22	(-) 98.78
2nd Plan 1956-61	509.56	356.64	(-) 152.92
3rd Plan 1961-66	715.00	920.37	(+) 205.37
3 Annual Plans 1966-69	847.15	830.90	(-) 16.25
4th Plan 1969-74	1799.00	2046.00	(+) 247.00
5th Plan 1974-79	6330.00	6086.28	(-) 243.72
Annual Plan 1979-80	2341.00	2251.00	(-) 90.00
6th Plan 1980-85	22290.65	22493.18	(+) 202.53
7th Plan 1985-90	55561.00	55051.15	(-) 509.85
2 Annual Plans 1990-92	37549.00	37267.63	(-) 281.37
8th Plan 1992-97	172862.00	171462.00	(-) 1400.00

Appendix 5.1

NUMBER OF RECOGNISED INSTITUTIONS
BY TYPE AS ON 31.3.1996

Sl. No	Type of Institution	Number of Institutions		
		Government	Private, aided /un-aided	Total
1.	2.	3.	4.	5.
1.	University	1	-	1
2.	Arts & Science College	4	-	4
3.	Higher Secondary School	62	5	67
4.	High/Post-basic School	84	3	87
5.	Primary School	1225	26	1251
6.	Teacher Training School	1	-	1
7.	School for Handicapped	-	1	1
8.	Middle School	292	9	301
9.	Pre-primary School	299	-	299
	Total of all Institutions	1968	44	2012

Appendix 5.2

INSTITUTION-WISE NUMBER OF STUDENTS
IN ARUNACHAL PRADESH AS ON 31.3.96

Sl No	Type of Institution	Number of Students		
		Boys	Girls	Total
1	University	274	81	355
2	College	2339	754	3093
3	High/Higer Secondary School	14175	8188	22363
4	Middle/Senior Basic School	21974	16215	38189
5	Primary/Pre-Primary, Basic School	95096	76562	171658
	Total of all Institutions	133858	101800	235658

Appendix 5.3

NUMBER OF GOVERNMENT EMPLOYEES AT THE
END OF EACH FIVE YEAR /ANNUAL PLAN.

Sl No	Plan period	Categories of employees	Total number	Total No of Scheduled Tribe (ST) employees	Percentage of ST employees
1	2	3	4	4	6
1	<u>Thurd Plan</u> <u>1961-66</u>	Group 'A'	58	6	10.34
		Group 'B'	277	17	6.14
		Group 'C'	4856	719	14.81
		Group 'D'	2306	792	34.35
		Total	7497	1534	20.46
2	<u>Three Annual</u> <u>Plans 1966-69</u>	Group 'A'	94	20	21.28
		Group 'B'	514	54	10.51
		Group 'C'	5603	923	16.47
		Group 'D'	2941	1077	36.62
		Total	9152	2074	22.66

1	2	3	4	5	6
3	<u>Fourth Plan</u> <u>1969-74</u>	Group 'A'	135	12	8 89
		Group 'B'	613	102	16 64
		Group 'C'	7282	1255	17 23
		Group 'D'	4092	1354	33 09
		Total	12122	2723	22.46
4	<u>Fifth Plan</u> <u>1974-79</u>	Group 'A'	288	44	15 28
		Group 'B'	867	153	17 65
		Group 'C'	9282	1899	20 46
		Group 'D'	6273	2561	40 83
		Total	16710	4657	27.87
5	<u>Sixth Plan</u> <u>1980-85</u>	Group 'A'	428	62	14 48
		Group 'B'	934	221	23 66
		Group 'C'	12859	3456	26 88
		Group 'D'	6893	4219	61 21
		Total	21114	7958	37.69
6	<u>Seventh Plan</u> <u>1985-89 **</u>	Group 'A'	549	116	21 13
		Group 'B'	1453	534	36 75
		Group 'C'	18750	5264	28 07
		Group 'D'	8960	4395	49 05
		Total	29712	10309	34.70
7	<u>Third year of</u> <u>Eighth plan</u> <u>1992-95</u>	Group 'A'	938	353	37 63
		Group 'B'	2060	754	36 60
		Group 'C'	24120	8388	34 78
		Group 'D'	10339	5333	51 58
		Total	37457	14828	39.59

** Information for 1990 not available

Appendix 5.4

(A) NUMBER OF ENTERPRISES (WITHOUT HIRED WORKER)

Enterprise type	Year			Percentage increase of enterprises		
	1977	1980	1990	during 1980 over 1977 (i.e. in 3 years)	during 1990 over 1980 (i.e. in 10 years)	during 1990 over 1977 (i.e. in 13 years)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agricultural	-	465	615	-	32.26	-
2. Non-agricultural	-	3876	8568	-	121.05	-
3. All enterprises	-	4341	9183	-	111.54	-

(B) NUMBER OF ESTABLISHMENTS (WITH HIRED WORKER)

Enterprise type	Year			Percentage increase of enterprises		
	1977	1980	1990	during 1980 over 1977 (i.e. in 3 years)	during 1990 over 1980 (i.e. in 10 years)	during 1990 over 1977 (i.e. in 13 years)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agricultural	-	302	436	-	44.37	-
2. Non-agricultural	4410	6331	11193	43.56	76.80	153.81
3. All enterprises	4410	6633	11629	43.56	75.32	163.70
Total A+B	4410	10974	20812	148.84	89.65	371.93

(C) TOTAL NUMBER OF WORKERS

Enterprise type	Year			Percentage increase of workers		
	1977	1980	1990	during 1980 over 1977 (i.e. in 3 years)	during 1990 over 1980 (i.e. in 10 years)	during 1990 over 1977 (i.e. in 13 years)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agricultural	-	2104	3136	-	49.05	-
2. Non-agricultural	32218	36046	90138	11.88	150.06	179.77
3. All enterprises	32218	38150	93274	18.41	144.49	189.51

(D) TOTAL NUMBER OF HIRED WORKERS

Enterprise type	Year			Percentage increase of hired workers		
	1977	1980	1990	during 1980 over 1977 (i.e. in 3 years)	during 1990 over 1980 (i.e. in 10 years)	during 1990 over 1977 (i.e. in 13 years)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agricultural	-	1255	1817	-	44.78	-
2. Non-agricultural	29952	34586	73370	15.47	112.14	144.96
3. All enterprises	29952	35841	75187	19.66	109.78	151.02

Appendix 5.5

NUMBER OF PERSONS USUALLY EMPLOYED IN THE PRINCIPAL STATUS (P.S) AND IN THE PRINCIPAL AS WELL AS SUBSIDIARY STATUS (ALL) PER 1000 PERSONS (WPR) BY SEX AND RESIDENCE STATUS.

Rural/Urban	W P R *				No. of persons employed (in lakh)			
	Male		Female		Male		Female	
	P.S Workers	All workers	P.S workers	All workers	P.S Workers	All workers	P.S workers	All workers
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rural	515	524	276	305	2	2	1	1
Urban	523	535	111	142	NA	NA	NA	NA

- Number of persons/person-days employed per thousand persons/person-days is referred to as work-force participation rates (WFPR) or work population ration (WPR).

Appendix 5.6

EDUCATION SPECIFIC WORKER POPULATION RATIO FOR PERSONS OF AGE GROUP 15 YEARS AND ABOVE ACCORDING TO PRINCIPAL STATUS.

Rural/Urban	Sex	Not literate	Literate & upto Primary	Middle	Secondary	Graduate & above	All
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rural	Male	886	696	603	725	977	802
	Female	576	87	71	NA	NA	432
Urban	Male	857	800	847	696	970	808
	Female	140	128	212	274	11	179

Appendix 5.7**EDUCATION-SPECIFIC 'WORKER POPULATION RATIO' FOR
PERSONS OF AGE 15 YEARS AND ABOVE ACCORDING TO USUAL
PRINCIPAL AND SUBSIDIARY STATUS (ALL WORKERS).**

Rural/Urban	Sex	Not literate	Literate & upto Primary	Middle	Secondary	Graduate & above	All
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rural	Male	887	697	657	725	977	808
	Female	623	96	120	NA	NA	470
Urban	Male	857	800	847	739	970	821
	Female	195	174	274	285	11	224

Appendix 5.8**AGE SPECIFIC USUAL PRINCIPAL STATUS WORKER POPULATION
RATIO.**

Rural/ Urban	Sex	0-4	5-9	10 -14	15 -19	20-24	25-29	30-34	35-39	40-44	45-49	50- 54	55-59	60 & above	All
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Rural	Male	-	-	111	499	509	805	982	968	929	938	782	877	651	515
	Female	-	8	28	336	545	515	333	620	368	414	383	372	248	276
Urban	Male	-	-	-	265	560	900	985	928	933	950	1000	512	575	523
	Female	-	-	20	91	297	93	212	179	260	189	NA	NA	483	111

Appendix 5.9**AGE SPECIFIC USUAL PRINCIPAL AND SUBSIDIARY STATUS WORKER
POPULATION RATIO**

Rural/ Urban	Sex	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60 & above	All
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Rural	Male	-	20	130	536	509	808	982	969	930	938	782	881	662	524
	Female	-	27	45	368	590	520	401	629	424	513	405	442	272	305
Urban	Male	-	-	26	265	632	900	985	947	933	950	1000	512	575	535
	Female	-	-	48	161	336	93	248	224	260	408	1000	NA	483	142

Appendix 6.8

POSITION OF SOCIO-ECONOMIC INDICATORS OF THE COMMUNITY DEVELOPMENT BLOCKS AS PER 1991 POPULATION CENSUS

Name of District/ C.D.Block	Approximate altitude of Block Head quarters (Mtrs)	Notional area of Block (Sq.Km)	Percent age of urban Populat ion to total populat ion	Percentage (including urban) of				Percent age of literacy (includ ing urban)	Percentage of population (including urban) served by the amenities of						Percentage of villages to total inhabited villages having drinking water through Taps/ Tube-wells	
				Main worker s to total populat ion	Margi- nal worker s to total populat ion	Total worker s to total populat ion	Non- worker s to total populat ion		Educat ion	Medical	Post and Telegra ph	Market /Hat	Comm unicati on (road)	Approa ch by Pucca road		Power supply
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
TAWANG																
1. Tawang	3025	300	-	53.22	0.10	53.32	46.68	37.80	50.38	30.74	30.05	25.19	28.02	38.52	74.40	76.04
2. Lumla- Zemithang	2460	700	-	57.57	0.76	58.33	41.67	23.09	59.63	44.78	15.14	-	16.31	1.30	46.32	100.00
3. Mukto- Thingbu	2400	1174	-	56.06	0.26	56.32	43.68	21.91	69.41	30.33	17.03	-	31.21	13.64	74.44	87.50
WEST KAMENG																
4. Kalaktang	1113	2722	22.67	41.49	0.71	42.20	57.80	55.18	79.87	5749	54.55	49.92	72.75	75.64	81.02	85.25
5. Dirang	1497	1770	-	50.10	0.94	51.04	48.78	31.63	62.84	66.63	35.57	39.91	29.77	53.65	61.26	100.00
6. Nafra- Buragaon	1224	2930	-	41.10	0.13	40.23	59.76	46.72	45.69	28.40	32.00	32.00	54.28	37.58	51.57	75.34
EAST KAMENG																
7. Seppa	263	1420	-	50.32	0.05	50.37	49.63	30.72	74.27	32.50	34.49	30.63	38.56	38.56	39.26	86.41
8. Bameng	1358	1070	-	53.97	1.19	55.16	44.84	16.06	54.33	17.57	17.56	-	7.49	5.37	-	100.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
9	1906	750	-	45 14	5 00	50 14	49 86	18 70	66 07	27 75	22 84	-	31 21	31 21	22 84	78 72
Chayangtajo																
10 Pakke-	1180	894	-	46 08	0 04	46 12	53 88	34 07	61 72	20 82	26 84	11 32	37 51	37 51	29 24	70 18
Kesang																
UPPER																
SUBANSIRI	305	1455	-	43 92	0 92	44 84	55 16	44 77	65 16	49 32	46 74	45 71	54 33	61 36	65 70	60 17
11 Daporjo																
12	300	1172	-	43 46	-	43 46	56 54	41 58	63 09	25 17	23 22	-	21 41	32 41	31 11	60 49
Dumponjo																
13 Taliha	2500	910	-	44 95	5 66	50 61	59 39	37 32	59 05	24 03	24 03	-	28 54	37 06	24 03	67 42
14 Nacho-	805	3495	-	51 93	3 79	55 72	44 28	19 43	35 45	17 61	17 61	-	-	-	-	14 53
Sivam																
LOWER																
SUBANSIRI	1564	1015	44 25	39 06	0 77	39 83	60 17	53 02	89 45	52 03	62 50	44 25	55 29	93 78	95 51	77 42
15 Ziro-I																
16 Ziro-II	1250	1965	-	47 63	0 18	47 81	52 19	34 65	41 25	16 73	8 29	2 17	35 58	30 33	49 97	50 00
17 Palin	1080	622	-	48 11	-	48 11	51 89	22 20	48 65	29 39	21 24	-	23 41	5 56	28 88	38 14
18 Tali	1280	400	-	68 98	1 56	70 54	29 46	6 43	31 78	19 16	8 72	-	-	-	-	12 68
19 Nvapi	1040	192	-	52 41	0 02	52 43	47 57	19 64	59 12	30 49	21 26	-	11 22	-	13 74	73 33
20 Kolonang	1004	1000	-	55 18	1 52	56 70	43 30	18 16	36 23	34 88	22 12	-	-	-	17 67	65 52
21 Damun	1000	414	-	61 00	0 10	61 10	38 90	12 79	34 52	20 79	14 10	-	-	-	-	5 17
22 Sagalee	1079	1288	-	50 34	0 54	50 88	49 12	23 41	43 67	17 33	14 65	-	14 03	13 87	27 14	57 98
23 Kimun-	750	1587	51 77	37 67	0 22	37 89	62 11	61 95	75 74	67 68	64 64	56 14	71 82	72 07	81 50	54 17
Douruk																
24 Tameng-	1000	480	-	49 30	1 00	50 30	49 70	31 10	66 61	38 24	13 85	-	44 86	49 84	68 19	69 35
raga																

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
WEST																
SIANG	350	1078	34 64	41 12	0 16	41 28	58 72	52 22	89 73	64 46	43 34	34 64	50 33	47 42	71 34	87 21
25 Along																
26 Basar	650	815	-	42 71	0 19	42 90	57 10	44 61	87 92	48 45	37 08	25 16	48 63	36 30	69 42	89 06
27 Gensi	838	1222	-	39 06	0 17	39 23	60 77	42 89	68 67	57 11	31 35	-	24 31	31 51	17 50	82 43
28 Lromoba	600	2313	-	45 06	0 27	45 33	54 67	38 45	63 14	38 27	21 53	-	23 95	13 74	20 74	62 64
29 Mechuka	1890	2897	-	54 23	0 09	54 32	45 68	33 79	47 62	41 23	18 22	-	-	-	-	38 71
EAST SIANG																
30 Pasighat-	150	1778	28 77	39 70	0 27	39 97	60 03	51 38	94 61	42 53	50 42	35 24	61 34	56 40	64 71	96 25
Mebo																
31 Pangin-	455	1497	-	45 62	0 24	45 86	54 14	39 29	96 89	19 71	21 16	19 71	31 11	8 99	33 53	100 00
Boleng																
32 Ramle-	180	728	-	40 81	0 21	41 02	58 98	38 87	88 29	9 71	6 57	62 85	18 88	27 33	40 28	93 33
Bango																
33 Mariang	1067	1383	-	53 18	0 19	53 37	46 63	22 96	99 02	21 06	40 67	12 07	15 76	9 76	46 67	100 00
34 Yingkhong	428	1124	-	49 15	1 40	50 55	49 45	45 30	89 54	39 89	39 80	39 89	27 35	35 16	36 59	100 00
35 Tutung	590	3681	-	48 72	4 48	53 20	46 80	42 91	85 61	41 86	39 81	-	-	-	11 44	100 00
LOHIT																
36 Tezu	210	1536	50 58	40 56	0 35	40 91	59 09	61 05	88 87	74 79	79 15	50 58	75 00	85 26	84 16	73 81
37 Namsau-	150	960	13 85	37 85	3 90	41 75	58 25	50 36	85 92	33 25	34 48	22 60	41 22	43 34	61 85	82 54
Chowkham																
38 Wakro	686	907	-	50 15	-	50 15	49 85	39 97	49 02	33 86	32 26	18 76	41 38	80 75	75 01	55 26
39 Hayuliang	590	3849	-	52 73	0 05	52 78	47 22	26 08	42 88	23 67	41 29	14 18	18 64	40 62	22 34	85 71
40 Hawa-	1296	4150	-	61 60	0 41	62 01	37 99	28 91	37 89	22 44	24 62	-	-	3 00	24 62	72 94
Walong																
DIBANG																
VALLEY	1690	100	-	51 06	0 92	51 98	48 02	50 75	68 95	52 10	52 10	40 25	4 07	-	53 33	81 82
41 Annu-																
Etain																
42 Hunh-	1000	1440	-	58 65	0 42	59 07	40 93	31 39	44 81	31 14	32 40	-	23 05	-	-	51 06
Kroul																

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
43 Rong- Dambuk	390	2458	20 77	42 85	0 32	34 17	56 83	48 20	81 49	42 62	63 65	25 11	71 10	34 73	73 39	61 19
TIRAP																
44 Namsang	800	1135	15 98	49 75	1 22	50 97	49 03	43 23	89 85	58 86	47 46	28 82	52 40	55 12	95 88	100 00
45 Pangchao- Wakka	1877	507	-	57 79	1 90	59 69	40 31	11 78	88 10	33 43	17 75	7 53	30 83	-	68 78	61 90
46 Longding	1000	720	-	47 69	-	47 69	52 31	25 64	95 02	43 19	25 01	15 02	39 45	15 39	82 70	28 57
CHANGLANG																
47 Changlang	490	1300	-	46 42	0 16	46 58	53 42	52 46	88 25	59 77	40 98	37 68	46 33	48 34	87 15	81 21
48 Khagam	260	2585	-	42 26	2 83	45 09	54 91	39 14	84 69	35 97	21 53	16 75	22 55	31 29	78 91	36 03

Appendix 6.9

RANK OF SOCIO - ECONOMIC INDICATORS OF THE COMMUNITY DEVELOPMENT BLOCKS

Name of District/ C.D. Block	Approximate altitude of Block Head Quarters (Mtrs)	Notional area of Block (sq km)	Percent age of urban Population to total population	Percentage (including urban) of				Percentage of literacy (including urban)	Percentage of population (including urban) served by the amenities of							Percent lage of villages to total inhabited villages having drinking water through Taps/Tube- wells	Compo- site Rank
				Main work- ers to total popula- tion	Marginal workers to total population	Total workers to total popula- tion	Non- workers to total popula- tion		Educa-tion	Medical	Post and Telegraph	Market /Hat	Communi- cation (road)	Approach by Pucca road	Power supply		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
TAWANG																	
1 Tawang	46	46	50	11	38.50	13	13	24	35	29	24	16	26	16	11	23	421.50
2 Lumla- Zemthang	44	40	50	6	18	6	6	37	31	13	42	50	36	38	25	1.87	443.87
3 Mukto-Thungbu	43	24	50	7	27	8	8	40	21	31	41	50	20.50	32	10	12	424.50
WESTKAMENG																	
4 Kalaktang	30	7	6	39	19	39	39	3	18	7	5	4	2	4	7	16	245.00
5 Dirang	37	13	50	20	14	18	18	29	29	3	17	8	24	9	20	1.87	310.87
6 Nafra- Buragaon	32	5	50	41	37	44	44	11	39	33	22	13	8	17	22	24	442.00
EASTKAMENG																	
7 Seppa	9	19	50	18	41.50	23	23	32	20	27	18	14	17	15	27	14	367.50
8 Bameng	36	29	50	10	12	10	10	45	34	45	40	50	40	36	50	1.87	498.87
9 Chayengtao	42	37	50	31	2	26	26	43	25	34	30	50	20.50	26	36	21	499.50

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
10 Pakke-Kesang	31	35	50	29	43	31	31	27	30	40	25	26	18	18	31	28	493.00
<u>UPPER SUBANSIRI</u>																	
11 Daporjo	7	17	50	34	15 50	35	35	13	26	11	9	5	7	6	17	36	323.50
12 Dumporjo	6	25	50	35	50	36	36	18	28	35	29	50	33	23	30	35	519.00
13 Taliha	45	33	50	33	1	21	21	25	33	36	28	50	25	19	35	30	483.00
14 Nacho-Siyum	21	4	50	15	5	9	9	42	46	44	39	50	50	50	50	46	530.00
<u>LOWER SUBANSIRI</u>																	
15 Ziro-I	38	30	3	45 50	17	46	46	4	8	10	4	6	6	1	2	22	288.50
16 Ziro-II	33	11	50	27	33	28	28	26	43	47	47	28	19	27	23	41	511.00
17 Palin	29	41	50	25	50	27	27	39	37	32	35	50	30	35	32	43	582.00
18 Tali	34	45	50	1	8	1	1	48	48	43	46	50	50	50	50	47	572.00
19 Nyapin	26	47	50	14	44	16	16	41	32	30	34	50	39	50	41	26	556.00
20 Koloniang	25	31	50	8	9	7	7	44	45	23	31	50	50	50	39	31	500.00
21 Darun	23 25	44	50	3	38 50	3	3	46	47	41	44	50	50	50	50	48	590.75
22 Sagalee	28	22	50	17	20	20	20	36	41	46	43	50	38	30	33	37	531.00
23 Kimin-Dormuk	19	14	1	48	29	48	48	1	19	2	2	2	3	5	6	39	286.00
24 Tameng-raga	23 25	43	50	22	13	24	24	31	24	21	45	50	13	10	16	29	238.25
<u>WESTSIANG</u>																	
25 Aong	8	28	4	40	35 50	41	41	6	6	4	10	12	10	12	13	13	283.50
26 Basar	17	36	50	37	31 50	38	38	14	13	12	16	17	11	20	14	11	375.50
27 Gentsi	22	23	50	45 50	34	47	47	17	23	8	23	50	28	24	40	18	499.50

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
28 Luromoba	16	10	50	32	25 50	33	33	23	27	20	32 50	50	29	31	38	32	482 00
29 Mechuka	41	6	50	9	40	11	11	28	38	18	37	50	50	50	50	42	531 00
EAST SIANG																	
30 Pasighat-Mebo	1 50	12	5	44	25 50	45	45	7	4	16	7	11	5	7	18	9	262 00
31 Pangin-Boleng	12	16	50	30	28	32	32	20	2	42	36	20	22	34	29	1 87	406 87
32 Ramle-Bango	3	38	50	42	30	42	42	22	10	48	48	1	34	28	26	10	474 00
33 Manang	27	20	50	12	31 50	12	12	38	1	39	13	25	37	33	24	1 87	376 37
34 Yingkong	11	27	50	23	10	22	22	12	7	19	15	9	27	21	28	1 87	304 87
35 Tutung	14 50	3	50	24	3	14	14	16	15	17	14	50	50	50	42	1 87	378 37
LOHIT																	
36 Tezu	4	15	2	43	23	43	43	2	9	1	1	3	1	2	4	25	221 00
37 Namsai-Chowkham	1 50	32	9	47	4	40	40	9	14	26	19	19	15	13	19	17	324 50
38 Wakro	18	34	50	19	50	25	25	19	36	24	21	21	14	3	9	38	406 00
39 Hayuliang	14 50	2	50	13	41 50	15	15	34	42	37	11	24	35	14	37	15	400 00
40 Hawai-Walong	35	1	50	2	22	2	2	33	44	38	27	50	50	37	34	27	454 00
DIBANG VALLEY																	
41 Anuni-Etain	39	48	50	16	15 50	17	17	8	22	9	6	7	41	50	21	19	385 50
42 Hunli-Kronli	23 25	18	50	4	21	5	5	30	40	28	20	50	31	50	50	40	465 25
43 Rong-Dambuk	10	9	7	36	24	37	37	10	17	15	3	18	4	22	12	34	295 00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<u>TIRAP</u>																	
44 Namsang	20	26	8	21	11	19	19	15	5	6	8	15	9	8	1	187	192 87
45 Pangchao-Wakka	40	42	50	5	7	4	4	47	12	25	38	27	23	50	15	33	422 00
46 Longding	23 25	39	50	26	50	29	29	35	3	14	26	23	16	29	5	45	442 25
<u>CHANGLANG</u>																	
47 Changlang	13	21	50	28	35 50	30	30	5	11	5	12	10	12	11	3	20	296 50
48 Khagam	5	8	50	38	6	34	34	21	16	22	32 50	22	32	25	8	44	397 50

Appendix 7.1

VALUE OF DIFFERENT CHARACTERISTICS AND THEIR CORRELATION

Characteristics/correlation	District-wise number of Non-Agricultural workers (Xi) in '000 and percentage of literacy (Yi) as per different population census.						District- wise			Percentage increase of educational institutions (Xi) and the percentage increase in the number of students (Yi) at the end of different plan periods starting from 3rd five year plan to 4 yrs of 8th five year plan	Average increase in the number of medical personnel (doctors and nurses) (Xi) and the average number of patient treated (Yi) (in lakhs) per year of different plan periods from 2nd five year plan to 2-Annual plans 1990-92.		
	1971 (5 - Districts)			1981 (9-Districts)			1991 (12- Districts)						
	Number of workers (in'00) in small scale industries as on 31. 3. 96.		Percentage of literacy (1991 census)	Xi		Yi	Xi		Yi				
1	Xi	Yi	Xi	Yi	Xi	Yi	Xi	Yi	Xi	Yi	Xi	Yi	
	2	3	4	5	6	7	8	9	10	11	12	13	
	15.25	9.61	12.96	20.97	6.37	29.80	6.52	29.80	140.94	144.29	7.40	2.85	
	7.09	6.89	4.12	7.73	12.22	46.31	4.65	46.31	32.59	34.46	10.60	2.62	
	12.28	12.97	14.97	19.52	5.23	26.20	3.09	26.20	25.00	77.19	17.67	4.28	
	10.26	17.39	3.13	12.90	16.55	55.11	36.84	55.11	77.48	58.98	7.00	4.02	

1	2	3	4	5	6	7	8	9	10	11	12	13
8.20	11.22	7.42	22.50	7.53	30.07	5.68	30.07	2.18	9.74	17.20	7.07	
		7.69	26.04	6.99	38.31	7.15	38.31	34.20	46.06	28.00	9.81	
		6.78	26.28	12.56	45.64	9.11	45.64	17.61	65.69	4.20	8.09	
		11.73	28.26	13.21	44.30	10.16	44.30	5.17	13.81	19.00	7.53	
		13.47	19.33	7.93	46.88	10.19	46.88	12.17	29.24	5.50	7.18	
				18.31	49.21	15.28	49.21					
				10.29	43.20	18.41	43.20					
				10.82	32.06	16.17	32.06					
Correlation coefficient (r)	0.1662	0.4219	0.7922	0.6076	0.8656	0.4509						

Appendix - 7.2

PERCENTAGE DISTRIBUTION OF ILLITERATE AND LITERATE NON-STUDENT CHILDREN ACCORDING TO GENERAL EDUCATIONAL STANDARD

PERCENTAGE DISTRIBUTION OF CHILDREN BY EDUCATIONAL STANDARD										
Category of children in the age group 5-9 to 20-24 years	Percentage distribution of						Total literate children	Total illiterate children	Total percentage	Total number of estimated children
	literate children according to general educational standard of									
	Below primary	Primary	Middle	Secondary	Higher secondary	Graduate and above				
	2.	3.	4.	5.	6.	7.	8.	9.	10.	
1.										11
Boys	6.76	5.07	8.03	1.93	0.80	0.38	22.97	77.03	100.00	82717
Girls	9.56	4.34	2.81	3.17	0.40	0.01	20.29	79.71	100.00	98947
Total	8.28	4.67	5.19	2.61	0.58	0.18	21.51	78.49	100.00	181664

Appendix - 7.3

PERCENTAGE DISTRIBUTION OF NON-STUDENT CHILDREN ACCORDING TO PRINCIPAL USUAL ACTIVITY STATUS AND EDUCATIONAL STANDARD

Category of non-student in the age group 5-9 to 20-24 years	Percentage of non-students according to educational standard and Principal usual activity status										Estimated number of non-Student children
	Worked in household enterprise as		Worked as regular salaried/ wage employee	Worked as casual labour in		Did not work but was seeking and/or available for work	Attended domestic duties only	Attended domestic duties and was also engaged in free collection of goods, sewing, weaving etc. for household use.	Other	Total	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
<u>ILLITERATE</u>											
Boys	24.35	12.07	3.43	3.27	0.30	-	6.93	4.46	45.19	100.00	63717
Girls	21.83	2.07	1.43	2.98	3.78	-	18.13	18.00	31.78	100.00	78872
Total	22.96	6.54	2.32	3.11	2.22	-	13.13	11.95	37.77	100.00	142589
<u>BELOW PRIMARY</u>											
Boys	33.18	10.14	2.40	49.56	-	-	-	4.72	-	100.00	5593
Girls	8.88	0.88	-	15.54	-	-	31.38	43.32	-	100.00	9455
Total	17.92	4.32	0.89	28.18	-	-	19.72	28.97	-	100.00	15048

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
							<u>PRIMARY</u>				
Boys	40.36	8.42	1.15	3.79	5.54	-	38.50	2.24	-	100.00	4190
Girls	6.82	6.98	-	-	-	-	78.32	7.88	-	100.00	4299
Total	23.37	7.69	0.57	1.87	2.73	-	58.67	5.10	-	100.00	8489
							<u>MIDDLE</u>				
Boys	60.12	27.28	9.60	-	0.32	2.68	-	-	-	100.00	6646
Girls	13.14	2.70	5.15	-	-	-	48.45	30.56	-	100.00	2778
Total	46.28	20.03	8.29	-	0.22	1.89	14.28	9.01	-	100.00	9424
							<u>SECONDARY</u>				
Boys	32.58	13.45	28.39	-	-	25.58	-	-	-	100.00	1599
Girls	6.18	-	1.37	-	-	-	88.34	4.11	-	100.00	3138
Total	15.09	4.54	10.49	-	-	8.64	58.52	2.72	-	100.00	4737
							<u>HIGHER SECONDARY</u>				
Boys	3.78	31.16	19.67	-	-	45.39	-	-	-	100.00	661
Girls	4.52	-	58.09	-	-	-	27.39	-	-	100.00	398
Total	4.06	19.45	37.87	-	-	28.33	10.29	-	-	100.00	1059
							<u>GRADUATE AND ABOVE</u>				
Boys	-	-	66.24	-	-	33.76	-	-	-	100.00	311
Girls	-	-	-	-	-	100.00	-	-	-	100.00	7
Total	-	-	64.78	-	-	35.22	-	-	-	100.00	318

APPENDIX 7.4

PERCENTAGE DISTRIBUTION OF POPULATION OF THE AGE GROUP 25-29 TO 55-59 YEARS ACCORDING TO EDUCATIONAL STANDARD

Category of population in the age group 25-29 to 55-59 years.	Percentage distribution of												Total estimated persons
	Literate persons according to educational standard of								Total				
	Below primary	Primary	Middle	Secondary	Higher Secondary	Graduation and above in			Total	literate	Total	Illiterate	
						Agriculture	Engineering/Technology	Medicine					
1.	2.	3.	4.	5.	6	7.	8.	9.	10.	11.	12.	13.	14.
Male	10.70	7.53	7.55	6.27	7.61	0.01	0.30	0.08	4.71	44.76	55.24	100.00	194269
Female	4.55	3.39	4.03	4.33	1.33	-	-	-	1.47	19.10	80.90	100.00	152345
Total	8.00	5.71	6.01	5.41	4.85	0.005	0.17	0.05	3.28	33.48	66.52	100.00	346614

Appendix 7.5

PERCENTAGE DISTRIBUTION OF POPULATION IN THE AGE GROUP 25-29 TO 55-59 YEARS OF AGE ACCORDING TO PRINCIPAL USUAL ACTIVITY STATUS AND EDUCATIONAL STANDARD

Category of population in the age group 25-29 to 55-59 yrs	Percentage of population according to educational standard and principal usual activity status											Estimated number of persons
	Worked in household enterprise as			Worked as regular salaried /wage employee	Worked as casual labour in		Did not work but was seeking and/or avail-able for work	Attended domestic duties only	Attended domestic duties and was also engaged in free collec-tion of goods, sewing , tailoring, weaving etc for house hold use	Others	Total	
	Own account worker (self employed)	Empl -over	Helper (un-paid family worker)		public work	other types of work						
1	2	3	4	5	6	7	8	9	10	11	12	13
ILLITERATE												
Male	80 81	0 03	1 15	5 06	3 56	3 87	0 80	2 40	0 14	2 18	100 00	107308
Female	50 44	-	2 98	1 60	0 94	3 15	-	27 56	12 36	0 97	100 00	123250
Total	64 58	0 01	2 13	3 22	2 16	3 48	0 37	15 85	6 67	1 53	100 00	230558

1	2	3	4	5	6	7	8	9	10	11	12	13
<u>BELOW PRIMARY</u>												
Male	36 47	-	-	1057	31 86	20 52	-	0 58	-	-	100 00	20785
Female	17 19	-	4 01	-	9 90	0 61	-	65 95	2 34	-	100 00	6927
Total	31 65	-	1 00	7 92	26 38	15 54	-	16 92	0 59	-	100 00	27712
<u>PRIMARY</u>												
Male	29 97	-	1 68	47 90	16 46	2 54	0 23	0 19	-	1 03	100 00	14628
Female	5 01	-	-	-	3 07	-	-	87 80	4 12	-	100 00	5172
Total	23 45	-	1 24	35 38	12 97	1 88	0 17	23 07	1 08	0 76	100 00	19800
<u>MIDDLE</u>												
Male	54 39	-	1 53	37 95	3 52	2 61	-	-	-	-	100 00	14675
Female	6 15	-	-	4 54	-	-	-	85 10	4 21	-	100 00	6148
Total	40 15	-	1 08	28 08	2 48	1 84	-	25 13	1 24	-	100 00	20823
Female	3 43	-	4 13	4 28	-	-	-	82 70	5 46	-	100 00	6590
Total	9 66	1 25	1 59	55 03	1 51	-	-	29 04	1 92	-	100 00	18767
Male	24 87	0 57	-	73 02	-	0 71	0 83	-	-	-	100 00	14792
Female	-	-	-	49 90	-	-	-	50 10	-	-	100 00	2020
Total	21 88	0 50	-	70 24	-	0 63	0 73	6 02	-	-	100 00	16812

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
<u>GRADUATION AND ABOVE IN AGRICULTURE</u>												
Male	-	-	-	100.00	-	-	-	-	-	-	100.00	17
Female	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	100.00	-	-	-	-	-	-	100.00	17
<u>GRADUATION AND ABOVE IN ENGINEERING/TECHNOLOGY</u>												
Male	-	-	-	100.00	-	-	-	-	-	-	100.00	577
Female	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	100.00	-	-	-	-	-	-	100.00	577
<u>GRADUATION AND ABOVE IN MEDICINE</u>												
Male	-	-	-	100.00	-	-	-	-	-	-	100.00	166
Female	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	100.00	-	-	-	-	-	-	100.00	166
<u>GRADUATION AND ABOVE IN OTHER SUBJECTS</u>												
Male	6.54	0.46	-	91.70	-	-	-	-	-	1.30	100.00	9144
Female	-	-	-	22.25	-	-	-	77.75	-	-	100.00	2238
Total	5.25	0.37	-	78.04	-	-	-	15.29	-	1.05	100.00	11382

Appendix 7.6

NUMBER OF JOB SEEKERS ACCORDING TO LIVE REGISTER FROM 1989 TO 1994 IN ARUNACHAL PRADESH :

Educational qualification	Number of job seekers in					
	1989	1990	1991	1992	1993	1994
1	2	3	4	5	6	7
1 Primary	480	279	275	314	225	168
2 Below Middle standard	514	325	546	740	476	362
3 Under matric	764	414	919	1127	697	772
4 Matric	764	850	712	777	945	841
5 P U Arts/ Com/Sc	445	486	355	553	770	487
6 B A / B Com/B Sc	172	184	170	140	127	133
7 M A /M Com / M Sc	19	17	21	26	19	31
8 B Ed /M Ed	25	7	25	18	9	18
9 Engg/Trade, Diploma holder	21	1	21	88	71	30
10 Degree holder in Engg	8	7	60	1	16	28
Total	3212	2570	3104	3784	3355	2870

Source :- Fact book on Man-power in Arunachal Pradesh, 1995 , Directorate of Economics & Statistics, Govt of Arunachal Pradesh, P 42

Appendix 7.7

ESTIMATED HUMAN CAPITAL OF ARUNACHAL PRADESH ACCORDING TO AGE, SEX, SEX, EDUCATIONAL STANDARD AND PRINCIPAL USUAL ACTIVITY STATUS.

Educational standard - Illiterate											
Distribution of persons according to principal usual activity status.											
Age Group (Years)	Sex	Worked in household enterprise as			Worked as regular salaried/ wage employee.	Worked as casual labour in		Did not work but was seeking and /or available for work	Attended domestic duties only	Attended domestic duties and was also engaged in free collection of goods, sewing, tailoring, weaving etc for household use	Others
		Own account worker (self employed)	Employer	Helper (unpaid family worker)		Public work	Other types of work				
1	2.	3.	4.	5.	6.	7.	8.	9.	10	11	12
0 - 4	Male	-	-	-	-	-	-	-	-	-	59493
	Female	-	-	-	-	-	-	-	-	-	54769
5 - 9	Male	-	-	135	-	-	-	-	1171	1592	19723
	Female	-	-	-	-	-	-	-	1903	2852	19073
10 - 14	Male	128	-	2100	-	-	-	-	701	1248	6468
	Female	3889	-	185	-	-	-	-	4128	2795	3205
15 -19	Male	9551	-	3647	1060	1400	188	-	234	-	2601
	Female	6376	-	960	694	-	1490	-	1734	1559	2785
20-24	Male	5837	-	1810	1127	686	-	-	2310	-	-
	Female	6956	-	484	434	2348	1490	-	6534	6998	-
25-29	Male	11641	-	660	875	686	752	855	2310	-	-
	Female	11235	-	245	386	-	42	-	8936	6198	-

1	2	3	4	5	6	7	8	9	10	11	12
30-34	Male	16288	-	289	717	28	308	-	-	145	-
	Female	16880	-	278	434	827	-	-	6395	2109	-
35-39	Male	20923	-	267	2342	2328	497	-	7	-	-
	Female	13685	-	-	68	-	2348	-	6057	3240	-
40-44	Male	14463	-	-	947	630	143	-	-	-	-
	Female	10735	-	578	96	67	-	-	5063	2308	-
45-49	Male	12008	-	-	34	-	2348	-	-	-	-
	Female	4944	-	2021	188	-	1490	-	3986	661	-
50-54	Male	7055	-	24	144	151	104	-	233	-	660
	Female	3587	-	424	772	-	-	-	2796	465	-
55-59	Male	4340	27	-	376	-	-	-	27	-	1676
	Female	1104	-	130	34	263	-	-	739	250	1195
60 and above	Male	5449	27	-	420	-	24	-	17	83	1313
	Female	2945	-	363	-	-	-	-	1534	1229	1765
Total	Male	107683	54	8932	8042	5909	4364	855	7010	3068	91934
	Female	82336	-	5659	3106	3505	6860	-	49805	30664	82792
	Person	190019	54	14591	11148	9414	11224	855	56815	33732	174726

Educational standard - Below Primary										
Distribution of persons according to principal usual activity status										
Age group (years)	Sex	Worked in household enterprise as		Worked as regular/salaried/wage employee	Worked as casual labour in			Attended educational institution	Attended domestic duties only	Attended domestic duties and was also engaged in free collection of goods, sewing, tailoring, weaving etc. For household use
		Own acco-unt worker (self employed)	Helper (unpaid family worker)		Public work	Other types of work				
1.	2.	13	14	15	16	17	18	19	20	
0 - 4	Male	-	-	-	-	-	747	-	-	-
	Female	-	-	-	-	-	924	-	-	-
5 - 9	Male	-	-	-	-	-	39536	-	-	-
	Female	-	-	-	-	-	23277	-	-	-
10 - 14	Male	113	-	-	-	-	24836	-	-	264
	Female	86	-	-	-	-	14088	767	-	940
15 - 19	Male	706	-	134	714	-	3559	-	-	-
	Female	330	-	-	660	-	2189	295	-	1096
20 - 24	Male	1037	567	-	2058	-	17	-	-	-
	Female	424	83	-	809	-	-	1905	-	2060
25-29	Male	890	-	210	1372	2536	-	120	-	-
	Female	631	123	-	686	42	-	2515	-	81

1.	2.	13	14	15	16	17	18	19	20
30-34	Male Female	366 427	- -	596 -	2348 -	- -	- -	- 798	- 21
35-39	Male Female	2088 56	- 155	321 -	2217 -	1729 -	- -	- 486	- -
40-44	Male Female	3190 77	- -	560 -	686 -	- -	- -	- 576	- -
45-49	Male Female	742 -	- -	123 -	- -	- -	- -	- 193	- 60
50-54	Male Female	156 -	- -	- --	- --	- -	- -	- -	- -
55-59	Male Female	149 -	- -	386 -	- -	- -	- -	- -	- -
60 and above	Male Female	56 -	- -	- -	- -	155 -	- -	- 77	- -
Total	Male Female Person	9493 2031 11524	567 361 928	2330 - 2330	9395 2155 11550	4420 42 4462	68695 40478 109173	120 7612 7732	264 4258 4522

Educational standard - <u>Primary</u>												
Distribution of persons according to principal usual activity status												
Age group (Years)	Sex	Worked in house hold enterprise as		Worked as regular salaried/ wage employ- ee	Worked as casual labour in		Did not work but was seek- ing and /or available for work	Attended educational institution.	Attended domestic duties only.	Attended domestic duties and was also engaged in free collection of goods, Sewing, tailoring, weaving, etc. for household use.	Others	
		Own account worker (self employ ed)	Helper (unpaid family worker)		Public work	Other types of work						
1.	2.	21.	22.	23	24.	25.	26.	27.	28.	29.	30.	
0 - 4	Male	-	-	-	-	-	-	-	-	-	-	
	Female	-	-	-	-	-	-	-	-	-	-	
5 - 9	Male	-	-	-	-	-	-	5483	-	-	-	
	Female	-	-	-	-	-	-	3985	-	-	-	
10 - 14	Male	66	-	-	-	232	-	13599	-	-	-	
	Female	-	-	-	-	-	-	15952	-	-	-	
15 - 19	Male	704	99	-	159	-	-	7881	1613	94	-	
	Female	127	-	-	-	-	-	5643	348	245	-	
20 - 24	Male	921	254	48	-	-	-	977	-	-	-	
	Female	166	300	-	-	-	-	67	3019	94	-	
25 - 29	Male	1347	123	2254	-	278	34	-	27	-	-	
	Female	171	-	-	-	-	-	-	933	94	-	

1.	2.	21.	22.	23	24.	25.	26.	27.	28.	29.	30.
30-34	Male Female	1144 18	- -	607 -	660 159	94 -	- -	- -	- 1479	- -	- -
35-39	Male Female	344 18	123 --	3035 -	- --	- -	- -	- -	- 1388	- -	- -
40-44	Male Female	1112 -	- -	411 -	1748 -	- -	- -	- -	- 475	- 119	- -
45-49	Male Female	299 26	- -	313 -	- -	- -	- -	- -	- 266	- -	- -
50-54	Male Female	86 26	- -	308 -	- -	- -	- -	- -	- -	- -	- -
55-59	Male Female	52 -	- -	78 -	- -	- -	- -	- -	- -	- -	151 -
60 and above	Male Female	61 -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	Male Female	6136 552	599 300	7054 -	2567 159	604 -	34 -	27940 25647	1640 7908	94 552	151 -
	Person	6688	899	7054	2726	604	34	53587	9548	646	151

Educational standard --- <u>Middle</u>												
Distribution of persons according to principal usual activity status												
Age group (Years)	Sex	Worked in house- hold enterprise as		Worked as regular salaried/ wage employee	Worked as casual labour in		Did not work but was seeking and / or available for work	Attended educational institution	Attended domestic duties only	Attended domestic duties and was also engaged in free collection of goods, Sewing, tailoring, weaving, etc for house hold use	Others	
		Own account worker (self employed)	Helper (unpaid family worker)		Public work	Other types of work						
1	2	31	32	33	34	35	36	37	38	39	40	
0-4	Male	-	-	-	-	-	-	-	-	-	-	
	Female	-	-	-	-	-	-	-	-	-	-	
5 - 9	Male	-	-	-	-	-	-	-	-	-	-	
	Female	-	-	-	-	-	-	-	-	-	-	
10-14	Male	-	-	-	-	-	-	4857	-	-	-	
	Female	-	-	-	-	-	-	3112	-	-	-	
15-19	Male	540	1496	232	-	21	-	16427	-	-	-	
	Female	171	75	-	-	-	-	10217	264	185	-	
20-24	Male	3456	317	406	-	-	178	1905	-	-	-	
	Female	194	-	143	-	-	-	105	1082	664	-	
25-29	Male	1529	149	1297	187	383	-	-	-	-	-	
	Female	325	-	-	-	-	-	-	3259	138	-	

1	2	31	32	33	34	35	36	37	38	39	40
30-34	Male	1153	75	1592	232	-	-	-	-	-	-
	Female	35	-	159	-	-	-	-	1027	-	-
35-39	Male	3227	-	2040	98	-	-	-	-	-	-
	Female	18	-	120	-	-	-	-	514	-	-
40-44	Male	871	-	426	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	7	27	-
45-49	Male	730	-	214	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	338	94	-
50-54	Male	267	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	87	-	-
55-59	Male	205	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-	-
60 and above	Male	-	-	-	-	-	-	-	-	-	87
	Female	-	-	-	-	-	-	-	-	-	120
Total	Male	11978	2037	6207	517	404	178	23189	-	-	87
	Female	743	75	422	-	-	-	13434	6578	1108	120
	Person	12721	2112	6629	517	404	178	36623	6578	1108	207

Educational standard - <u>Secondary</u>										
Distribution of persons according to principal usual activity status										
Age group (Years)	Sex	Worked in household enterprise as			Worked as regular salaried /wage employ- yee	Worked as casual labour in Public works	Did not work but was seeking and / or available for work	Attended educational institution	Atten- ded domestic duties only	Attended domestic duties and was also engaged in free collection of goods, Sewing, tailoring, weaving, etc for house-hold use
		Own account worker (self employed)	Employer	Helper (unpaid family worker)						
1	2	41	42	43	44	45	46	47	48	49
0-4	Male	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
5 - 9	Male	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
10-14	Male	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
15-19	Male	134	-	65	21	-	304	6458	-	-
	Female	-	-	-	43	-	-	2599	-	-
20-24	Male	387	-	150	433	-	105	2665	-	-
	Female	194	-	-	-	-	-	1123	2772	129
25-29	Male	372	7	-	1117	-	-	-	-	-
	Female	182	-	-	145	-	-	-	2492	-

1	2	41	42	43	44	45	46	47	48	49
30-34	Male	433	34	27	2463	-	-	-	-	-
	Female	-	-	-	17	-	-	-	2414	120
35-39	Male	259	-	-	2745	131	-	-	-	-
	Female	-	-	27	-	-	-	-	276	240
40-44	Male	326	195	-	539	-	-	-	-	-
	Female	44	-	245	120	-	-	-	152	-
45-49	Male	43	-	-	2340	152	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
50-54	Male	153	-	-	502	-	-	-	-	-
	Female	-	-	-	-	-	-	-	116	-
55-59	Male	-	-	-	339	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
60 and above	Male	378	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-
Total	Male	2485	236	242	10499	283	409	9123	-	-
	Female	420	-	272	325	-	-	3722	8222	489
	Person	2905	236	514	10824	283	409	12845	8222	489

Educational standard - <u>Higher Secondary</u>									
Distribution of persons according to principal usual activity status									
Age group (Years)	Sex	Worked in household enterprise as			Worked as regular salaried/wage employee	Worked as casual labour in other types of work	Did not work but was seeking and / or available for work	Attended educational institution	Attended domestic duties only
		Own account worker (self employed)	Employer	Helper (unpaid family worker)					
1	2	50	51	52	53	54	55	56	57
0-4	Male	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-
5 - 9	Male	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-
10-14	Male	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-
15-19	Male	-	-	43	-	-	-	843	-
	Female	-	-	-	-	-	-	475	-
20-24	Male	25	-	163	130	-	300	918	-
	Female	18	-	-	271	-	-	120	109
25-29	Male	1452	-	-	3029	-	123	-	-
	Female	-	-	-	481	-	-	-	569

1	2	50	51	52	53	54	55	56	57
30-34	Male	358	57	-	3880	105	-	-	-
	Female	-	-	-	201	-	-	-	203
35-39	Male	1710	-	-	1949	-	-	-	-
	Female	-	-	-	326	-	-	-	233
40-44	Male	-	27	-	333	-	-	-	-
	Female	-	-	-	-	-	-	-	7
45-49	Male	159	-	-	1610	-	-	-	-
	Female	-	-	-	-	-	-	-	-
50-54	Male	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-
55-59	Male	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-
60 and above	Male	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-
Total	Male	3704	84	206	10931	105	423	1761	-
	Female	18	-	-	1279	-	-	595	1121
	Person	3722	84	206	12210	105	423	2356	1121

Age Group (Years)	Sex	Educational level - <u>Graduation and above in.</u>										Total estimated persons (Total of Cols 3 to 66)
		Agriculture	Engineering	Medicine	Other subjects							
		Principal usual activity status										
Principal usual activity Status	Principal usual activity status	Principal usual activity status	Worked as regular salaried/ wage employee	Worked in house hold enterprise as		Worked as regular salaried/ wage employee	Did not work but was seeking and/or available for work	Attended domestic Duties only	Others			
				Own account worker (self employed)	Employer							
1	2	58	59	60	61	62	63	64	65	66	67	
0 - 4	Male	-	-	-	-	-	-	-	-	-	60240	
	Female	-	-	-	-	-	-	-	-	-	55693	
5 - 9	Male	-	-	-	-	-	-	-	-	-	67640	
	Female	-	-	-	-	-	-	-	-	-	51090	
10 - 14	Male	-	-	-	-	-	-	-	-	-	54612	
	Female	-	-	-	-	-	-	-	-	-	49147	
15-19	Male	-	-	-	-	-	-	-	-	-	60928	
	Female	-	-	-	-	-	-	-	-	-	40560	
20-24	Male	-	-	-	-	-	206	105	-	-	29498	
	Female	-	-	-	-	-	-	7	-	-	41102	

1	2	58	59.	60	61.	62	63.	64.	65.	66.	67.
25-29	Male	-	87	-	123	-	471	-	-	119	37415
	Female	-	-	-	-	-	498	-	1490	-	41897
30-34	Male	-	-	166	261	21	1526	-	-	-	35973
	Female	-	-	-	-	-	-	-	250	-	34251
35-39	Male	-	338	-	116	-	4035	-	-	-	52869
	Female	-	-	-	-	-	-	-	-	-	29255
40-44	Male	17	-	-	89	21	903	-	-	-	27646
	Female	-	-	-	-	-	-	-	-	-	20696
45-49	Male	-	7	-	-	-	1443	-	-	-	22565
	Female	-	-	-	-	-	-	-	-	-	14258
50-54	Male	-	145	-	-	-	7	-	-	-	9995
	Female	-	-	-	-	-	-	-	-	-	8273
55-59	Male	-	-	-	-	-	-	-	-	-	7806
	Female	-	-	-	-	-	-	-	-	-	3715
60 and above	Male	-	-	-	-	-	-	-	-	-	8070
	Female	-	-	-	-	-	-	-	-	-	8033
Total	Male	17	577	166	598	42	8591	105	-	-	475257
	Female	-	-	-	-	-	498	7	1740	119	397970
	Persons	17	577	166	598	42	9089	112	1740	119	873227

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