



## AN OVERVIEW OF MICRO LEVEL DEVELOPMENTAL PLANNING STRATEGIES IN SIAHA DISTRICT, MIZORAM

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### **Abstract**

The term planning means taking decisions to implement them in order to attain economic development. Planning in one form or the other has become imperative for the development of a country or a region and Siah District is no exception in this regard. Planning is done for a variety of purpose ranging from socio-economic growth to power politics. However, most planning concerns with socio-economic development of a country, society or a region. Regional planning as a technique has become to be recognized all over the world and this has been applied in order to wipe out the existing regional economic disparity. Planning can be of various types, depending upon the purpose. Planning can be economic or developmental. Planning can be sectoral or spatial also. Sectoral planning is the most commonly adopted form of planning these days. Developmental or active spatial planning, on the other hand, sets itself a more ambitious task. Planning region is a segment of territory over which economic decisions is applied. This paper attempted to study micro level planning in Siah District for the overall development in general and sustainable and inclusive development Siah district. Due to inadequate infrastructure and civic amenities in Siah district in rapidly growing population provide a clear example of problems one may have to face as a result of uncontrolled and unplanned growth. Since planning provides an efficient tool to steer the process of growth in a desired direction. The present paper is concerned with the ordering of human activities for socio-economic transformation in supra-local space in an agriculture based rural economy as against supra-urban space for an urban dominated economy. In the present context the concept of micro- planning has emerged in order to maintain a balance in “planning and development” between national priorities and local need and decentralized planning approach to the overall development of a country.

Key Words: Planning, Siaha, Spatial, Rural, Programme, Shifting Cultivation, South West Monsoon, Agriculture.

## **Introduction**

Micro-planning is a crucial aspect of development. The term micro-planning is used in many different ways and in vastly divergent contexts. In fact, the term micro-planning remains rather vague unless the actual level of planning is defined. Nowadays, a more fashionable term “area planning” is often employed as a synonym of micro-planning. In essence, the term micro-planning implies multi-level and decentralised planning approach to the overall development of a country. Micro-planning is essentially a spatial development planning which tends to utilise all kinds of available resources – natural, human and others to the fullest extent. It attempts to distribute the fruits of development among regions and social groups within the region, which can minimize the socio-economic imbalances and improve the living conditions of the masses.

In other words, micro-planning is concerned with the ordering of human activities for socio-economic transformation in “supra-local space” in an agriculture based rural economy as against supra-urban space for an urban dominated economy. In India, the concept of micro-planning has emerged in order to maintain a balance in “planning and development” between national priorities and local needs.

Micro-planning as a development strategy got some importance out of a realization that general planning done at the national level does not automatically ensure its applicability at local levels, for each area has its own personality, potentiality and needs. A successful plan, therefore, must be sensitive to these micro-level variations, while taking into account the limitations posed by national priorities, resources and investment of funds.

Since the very beginning of Indian planning emphasis has been given on promoting a better standard of living of the people by efficient exploitation of resources of the country, increasing production and offering opportunities to all for employment in the services of the community within an ideology deeply rooted in the concept of democracy and socialism. For achieving these objectives, special significance has been laid on the welfare of the rural areas and the weaker/backward sections.

What is Planning?

Planning in one form or the other has become imperative for the development of a country or a region and Siahya District is no exception in this regard. The current economic and social conditions necessitate development in a planned manner. The unplanned growth leads not only to regional differences in levels of development but also host of other problems. Inadequate infrastructure and civic amenities in the rapidly growing population provide a clear example of problems one may have to face as a result of uncontrolled and unplanned growth. Planning provides an efficient tool to steer the process of growth in a desired direction.

Planning is done for a variety of purpose ranging from socio-economic growth to power politics. However, most planning concerns with socio-economic development of a country, society or a region. Planning is taken up to solve the problems being faced today and to overcome the problems that are likely to be faced in future. Planning thus can be thought of as a means to so organize human society that it can adjust itself to the changing socio-technical environment and can utilize this environment to maximize the welfare of its members.

Regional planning as a technique has become to be recognized all over the world and this has been applied in order to wipe out the existing regional economic disparity. It should however, be noted that that the initial problem is how to demarcate the units or regions of lower level. This requires an intensive study of micro-geomorphology, micro-climatology and other factors of natural environment in context of existing population and economic conditions. In order to develop strategies of planning it is extremely necessary to study its general geographical conditions and then suitably divide it into planning regions. This can be done by intensive study of each region. This might be a method to show the prospect and problems of a region. The region may hold industries or may have agricultural, lumbering, horticultural prospects.

Necessary plans then should be chalked out in order to develop the area in the required direction. It is at this stage the major problems like irrigation, drainage, afforestation, growing pastures and developing transport and communication lines will arise. In order to match the potential resources with the needs of the people these have to be done. It is also necessary that at times, surplus labour force from one area is required to be withdrawn to other areas in order to facilitate optimum utilization of natural resources and man power.

### **Study Area**

Located in the south eastern corner of Mizoram, Siaha District covers an area of 1399.90 sq km which constitute 6.64% of the total state area and it is the second smallest district in Mizoram next to Kolasib district, while its population accounted for only 5.18% of the total population of the state and recorded the least populated district of Mizoram. The location lies within 92°30' – 92°58' E longitude and 21°9' – 22°47' N latitudes. The district is bounded on the north and north west by Lunglei district, on the west by Lawngtlai district while the eastern and southern side is bounded by Myanmar, therefore the location has a strategic significance as it share an international boundary with Myanmar.

The administrative set up of Mizoram in 1998 results in the bifurcation of Chhimtuipui District into Siaha district and Lawngtlai district which was previously the district capital, in 1998 the district was separated into two district i.e. Siaha district and Lawngtlai district and after the bifurcation Siaha continue as the district capital of Siaha district. In 2011 the total population of Siaha District was 56574, within the district Siaha town is the only urban center having a total population of 25110. While the rural population constitutes 31,464 and the total number of inhabited villages in the district was 52. The above figure shows that 57 % of the total population lives in the rural areas. The total population of Siaha district was 45,567 (*Statistical Abstract of Mizoram, 2019*). The density of population was 33 person sq/km, which is lower than the state average.

Many of the villages in this district is well known for its economic backwardness due to its remoteness, especially those villages in the southern part bordering Myanmar, rural inhabitants are scattered along the international boundary comprising of few houses ranging from 20-50 with a population of less than 300 people. These villages are connected by seasonal road which are sometimes cut off from the rest of the district during rainy season. It is also true to mentioned that there are no medical facility and even for treatment of minor illness and they have to go the nearest Sub-Centres, in many cases the villagers could not afford to do so and sometimes it results in a very bad and awful situation.

The study area has a hilly landscape and the altitude ranges between 900 m and 1200 m. The area is largely constituted by Tertiary rocks of Bhuban sub group. The highest point of the area is 6470 feet from mean sea level. The rocks are covered by an uneven layer of soil which is composed mainly of alternate thinly bedding shale. Many of the villages in this district is well

known for its age old practices i.e. shifting cultivation where majority of its population depend for their livelihood. Despite its drawbacks and low returns in terms of output, no viable alternative has been found so far. Efforts have been undoubtedly channelized to improve through infusion of technology and capital. In many areas, these efforts have been complemented by extensive introduction of horticulture.

The location of the study area falls within monsoon type of climate, the study area also experience the same climate with a marked dry season from November to April during which about 10% of the annual rainfall is recorded and a wet season from May to October and average annual rainfall of 250 cm (accounting for 90% of annual rainfall). The temperature in the study area sometimes fluctuates between 17°C in winter and 27°C in summer. As a result the climate is pleasant throughout the year.

As stated above most of the rural settlements are located along the higher slopes, ridges or near the crest of the hills with a very exception which are located at the foothills or valley. Therefore it is necessary to mention some of the important physical features of the study area. The present study area can be divided into four physiographic units which are described as follows:

*High Structural Hills, 239.3 sq km (17.10%)*

High Structural Hills include those which rise above 1200 meters. They are mainly confined to the Eastern and the North-Eastern parts in addition to few areal distributions in the central parts of the district in the form of small patches near Vahai and Latawh Villages. The High Structural Hill mainly covers hill of the Eastern parts such as Theiri-Theiva ridge, Niawhtlang ridge, Chhualungtlang ridge and Tuipang ridge. Besides these, Paithar Tlang in the South-eastern periphery of the district also falls within the high structural hill.

*Medium Structural Hills Area 379.80 sq km (27.13%)*

Medium Structural Hills include those which range in height from 800m to 1200m. It is mainly found to surround the high structural hill with a very limited areal distribution. The Medium Structural Hill mainly covers the Eastern parts of the Saikhao Tlang, Chakhang tlang and Ainak Tlang in the Eastern part of the district. In addition, the medium structural hill also

covers Siaha town and its surrounding villages such as Maubawk, Siahatlang, Tuisumpui and Phalhrang Villages.

*Low Structural Hills 598.70 sq km (42.77%)*

Low Structural Hills include those hills which rise below 800m. The Low Structural Hill is predominantly high in terms of areal extent than its counterparts and covers almost the entire district including Linear Ridge, Flood Plain and Valley Fill areas.

*Intermont Valley 19.66 (1.40%)*

Intermont Valley is a fluvial origin characterized by the unconsolidated sediments deposited by streams or rivers in a narrow fluvial valley. The valley fill is found mainly along the major streams such as Palak Lui, Siaha Lui, Kawlawh Lui, Tuipang Lui, Tuisih Lui, and Tuisumpui Lui. Besides, it is also found in between the hillocks in various parts of the districts.

### **Distribution of Population:**

The present study examines the spatial distribution and availability of health care facility in the study area. An important dimension in health care facility in any region refers to its distribution and concentration of population. Therefore it is necessary to examine the distribution of population in the study area. The total population of Siaha District was 56,574 (*Census of India, 2011*), of which male and female were 28,594 and 27,890 respectively. The density of population was 44 person sq/km. Siaha town is the capital and it is the only urban center within the district having a total population of 10,421, while the rural population constitutes 31,464. There are two rural development blocks namely Siaha R.D. Block and Tuipang R.D. Block, the total number of inhabited villages in the whole district was 52, of which 33 villages falls under Tuipang R.D. Block and the remaining 19 villages falls under Siaha R.D. Block. The above figure shows that about 55 % of the total population lives in the rural areas. A micro level examination reveals that the spatial distribution of population and the size of village within the district are highly uneven. The distribution of rural population including male and female are shown in the table given below:

*Table No: 1*

### ***Distribution of Rural Population in Siaha District-2020***

	Name of Village	Household	Male	Female	Total
1	Tuisih	196	445	433	878
2	Theiri	131	311	315	626
3	Serkawr	258	500	477	977
4	New serkawr	37	67	77	144
5	New Latawh	123	312	291	603
6	Tuipang L	140	322	330	652
7	Tuipang V	306	849	806	1655
8	Tuipang Diary	238	561	559	1120
9	Siatlai	74	161	174	335
10	Zawngling	302	803	827	1630
11	Chheihlu	101	280	250	530
12	Chakhang	285	651	682	1333
13	Siasi	74	172	172	344
14	Mawhre	98	255	285	540
15	Chapui	205	501	544	1045
16	Khopai	137	296	355	631
17	Ahmypi	42	112	135	247
18	Kaisih	96	245	197	442
19	Maisa	52	130	114	244
20	Lohry	55	132	137	269
21	Lawngban	119	296	311	607
22	Lodaw	60	143	116	259
23	Phura	231	553	515	1068
24	Vahai	148	414	412	826
25	Tongkalong	107	243	235	478
26	Miepu	95	221	202	423
27	Laki	182	508	504	1012
28	Supha	15	28	30	58
29	Lomasu	82	170	159	329
30	Bymari	113	245	210	455
31	Lope	15	29	29	58
32	Lungpuk	223	551	523	1074
33	Khaikhy	36	73	78	151
34	Phalhrang	73	188	189	377
35	Romibawk	103	229	221	450
36	Riasikah	36	72	61	133
37	Tuipuferry	58	125	111	236
38	Zeropoint	155	399	360	759
39	Maubawk L	122	285	314	599
40	Maubawk Ch	56	135	117	252
41	Kawlchaw E	239	548	523	1071
42	Lower Theiva	135	290	261	551
43	Lungbun	167	396	403	799
44	Ainak	132	285	274	559

45	Siata	179	438	429	867
46	Tuisumpui	34	98	102	200
47	Old Tuisumpui	69	193	202	395
48	Thingsen	57	174	154	328
49	Niawhtlang-I	151	368	404	772
50	Niawhtlang-II	169	466	443	909
51	Chhualung-I	174	430	421	851
52	Chhualung-II	56	155	158	313
	Total	6541	15853	15631	31464

*Source: Census of India (District Census Handbook) 2018*

With an average population of 605, there are 9 villages in Siaha District where the total population exceeds above 1000, the largest concentration of population is found at Tuipang ‘V’ village having a total population of 1655, this is followed by Zawngling (1630), Chakhang (1333) Tuipang Diary (1120) respectively. On the other hand, there are 5 villages where the total population is below 200 and 2 villages namely Supha and Lope recorded the lowest population with 58 only. Apart from this, there are 23 villages having a total population of above the average and the remaining 29 villages’ falls below the average.

It is quite apparent that the size of village population shows a sharp contrast in terms of its absolute number throughout the whole district. This unequal distribution of population within the district may be attributed to different factors such as location, agricultural activities, migration, accessibility, and means of livelihood and so on.

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### **Socio-Economic Background**

An interesting fact about this area is that most of the agricultural practices are carried out through shifting cultivation. It is characterized by the dominance of subsistence crops. Crops are mostly grown during the monsoon season on the gentle to steep slopes without terracing of



fields. Vegetables and fruits are also grown and consumed domestically. Commercial uses of these crops are largely negligible. Some small proportion of agricultural lands is spread in the lowlands, where permanent agricultural is practiced. Mostly, wet rice is cultivated.

Shifting cultivation has a tremendous impact on the socio-economy and on the environment. Being as a main source of livelihoods of the poor rural people, it has negative impacts on the environment. It is mainly due to clearing and burning of forests. Mizoram enjoys with rich biodiversity. It is one amongst the rich biodiversity hotspots in India. Natural vegetation comprises of tropical evergreen in the lower altitudes and semi-evergreen on the upper slopes. The marginal farmers generally clear forest for agriculture during the month of January and February. The slash dries on the hill slopes and is burned during March-April. Prior to the onset of pre-monsoon rain, sowing operations are carried out.

The average annual rainfall is 2150 mm. It occurs mostly between June and September by the southwest monsoon. The winter (Oct-Jan) is a cool dry season with few rainy days. Summer (March-May) is largely hot and dry with occasional thundershowers and pre-monsoon rains in April-May. Temperature accedes to 32° C during April and May and after occurrence of monsoon rain, temperature recedes slowly. During winter, average temperature remains 9° C. The sky remains clear and the days are sunny during the four months of winter.

In the study area shifting cultivation occupies about 85 % area out of the total cultivated land (Singh and Singh, 1992). Singh and Ramakrishnan (1982) observed that shifting cultivators comprise of 82 per cent of the rural main workers and few urban main workers also involved in shifting cultivation. In this area too, shifting cultivation is the main source of livelihood for the poor rural people. Maithani (2005a) observed that shifting cultivation is widely practice in Mizoram, the main occupation of the people and a major source of economy. The efforts were also comprised of to increase food production through settled cultivation and through launching of a new land use policy (NLUP).

### **Types of Planning**

Planning can be of various types, depending upon the purpose. Firstly, from the temporal point of view one can distinguish between short term and long term planning. Planning can be economic or developmental. From the organizational point of view, it can be regarded as imperative or indicative. The planning process can be considered to be normative or systems.

Normative planning enjoins upon the planners to search for the best possible results in relation to the established goals and there is less emphasis upon the social and institutional dimensions of planning. The systems approach looks at planning from social – technical viewpoint.

Planning can be sectoral or spatial also. Sectoral planning is the most commonly adopted form of planning these days. It is essentially a special purpose planning, designed to develop the various sectors of economy, such as agriculture or industrial etc. either individually or collectively. Spatial planning, on the other hand, aims at the development in a spatial framework. This planning itself can be of two types, adaptive and developmental. Adaptive spatial planning is based on recognition of the impact of general trends of development in spatial systems. The evolution of the latter is conceived as a response to the pressures and requirements of national economic development.

Developmental or active spatial planning, on the other hand, sets itself a more ambitious task. Based on recognition of the interplay and feedback relations between economic development and spatial evolution, it seeks to identify and achieve a pattern of evolution of the spatial structure that at any point of time is considered to be the most efficient from the point of view of promoting sustained rapid economic development.

Planning process can also be differentiated on the basis of the territorial levels at which planning is done. In many countries, plan formulation is done at the national level. On the other hand, planning can be attempted at several territorial levels; this may be called multi level planning. Indian planning has been essentially normative single level economic planning, with a greater reliance on sectoral approach. Sectoral plans, integrated into a single whole and fitted into the framework of national goals and objectives, have been prepared and implemented. The multi level and regional or spatial dimensions are being increasingly emphasized these days.

### **Planning Region**

Planning region is a segment of territory over which economic decisions is applied. The term planning means taking decisions to implement them in order to attain economic development. The regions for planning purposes may be administrative or political regions such as districts, block or village. Since planning is based on statistical data which are generally collected at the level of administrative divisions, planning regions, as a matter of fact, coincide with administrative regions. Thus the whole country is a planning region for national plans,

District is the planning region for District plan and district or blocks are the planning regions for micro regional plans.

For proper implementation and realization of plan objectives, a planning region should have fairly homogeneous economic structure as well as topographical and socio-economic homogeneity. Therefore, a balance has to be struck between homogeneity, nodality and administrative convenience, while delineating the planning regions. A planning region should be large enough to contain a range of resources to provide it economic viability. It should be internally cohesive. Its resource endowment should be such that a satisfactory level of product combination and exchange is feasible. It should also have a few nodal points to regulate the flows. Geographically, it should be contiguous areal unit.

The basic objective of economic planning in India has been to bring about a structural transformation of the economy so as to achieve a high and sustained rate of growth, a progressive improvement in the standard of living of masses leading to the eradication of poverty and unemployment and provide the material base for self reliance socialist economy.

It is generally observed that the whole planning process in the context of Siahya District has been failure and has not registered any significant growth. It has not taken into account into consideration local needs and resource potentialities. Furthermore, there is no evidence of any fundamental change in the traditional socio-economic structure of the district, in occupational distribution, cropping pattern, industrial composition, productivity trends etc.

### **Strategies of Planning**

Absence of theoretical framework for economic planning has been the fundamental weakness of the planning process in Siahya District. Lack of theoretical framework of planning hindered to have long term projections on population growth, population control, growth of macro economic variables, input-output relationship, sectoral demand and growth etc. Planning in Siahya District lacks a proper strategy, neglect of strategy variables along with lack of analysis and study of constraints impeded meaningful economic growth of the District. While attempting the strategies of planning in Siahya District it is presumed that the analysis itself will unfold the dimensions for future projections.

### **Agriculture**

Agriculture is a predominant sector in the economy of Siahya District and the growth in other sectors to a large extent depend upon the growth in the agricultural sector. Therefore, a

significant measure of prosperity in the agricultural sector is essential for creating the requisite conditions of growth in the economy as a whole. In view of the strategic importance of agriculture in the district's economy, top most priority should be given to this sector in the future plans of Siahha District till a satisfactory growth rate in agriculture production is achieved.

To meet the internal requirements, huge amount of rice was imported from outside; therefore, increase in foodgrains production is necessary first to meet the internal requirements and also the requirements of the neighbouring Districts. The programme of boosting up agricultural production should relate to both foodgrains and commercial crops. The production of commercial crops and also some food crops has to be increased in order to provide adequate raw materials for the agro-based industries.

Moreover, by suitable crop planning, some land can be used for more than one crop in different seasons, e.g. rice and pulses with the help of irrigation during the dry season. This will help the use of cropped land. The increase in production should be affected not by area extension alone, but also by increasing the productivity by means of new agricultural strategy.

The programme of boosting up agricultural production, jhumming should be abandon as far as practicable, in this regard it may be suggested that farmers should be give financial assistance and technical guidance to take up terrace cultivation on lower slopes. Extension of irrigation facilities is also necessary to increase the area under HYV and other improves varieties of crops. Efforts should also be continued to promote the cultivation of cash crop and fruits.

Another important measure to be taken is boosting up afforestation programme. Due to large scale practice of shifting cultivation virgin forest are destroyed and converted into barren land every year. Necessary steps should be taken to regenerate the forest area either naturally or artificially through plantation or both. Proper resource survey of the forest will be helpful in tapping the resources efficiently and in a planned manner.

The goal of raising agricultural productivity should also aim at creating employment opportunities on a large scale. In order to solve the problem of poverty in the region, purchasing capacity of the people needs to be increased and this is possible only by providing gainful employment on a required scale. Therefore, suitable employment intensive schemes in the rural areas like minor irrigation, land reclamation, soil conservation, storage facilities etc should be launched and enlarged. Besides, the lower cost of labour in the rural area can be profitably used for animal husbandry, forestry, fisheries and construction of roads and public buildings etc.

## **Irrigation**

The location of Siaha District falls within the direct influence of S.W monsoon. As such the region receives an adequate amount of rainfall. The climate is humid tropical, characterized by short winter and long summer with heavy rainfall. The average rainfall is 230 cm annually. The area experiences very heavy rainfall from the last week of May to the end of July. The rainfall decreases steadily up to September. During winter months the area receives very less rainfall as a result of which the winter season is very cold and dry. But the sporadic and erratic nature of rainfall makes the District's agricultural development vulnerable to nature thus necessitating the provision of irrigation facilities very essential.

Adequate water supply through irrigation facilities is very important for the application of required fertilizer and high yielding varieties of seeds which depend upon the assured water supply for their effectiveness. Irrigation is also vital for better crop planning and crop rotation by the introduction of early maturing varieties. Moreover, double cropping and multiple cropping system would be possible with the help of better irrigation facilities. Since the soil of Siaha District is porous with less retentive capacity, crops and plants suffer from lack of moisture even in kharif season. Therefore, it is almost impossible to practice cultivation of crop in rabi season without irrigation.

Considering the importance of irrigation for the development of agriculture in the region immediate thrust should be given to:

- a). Setting up of a separate organization for development of irrigation,
- b). Higher priority needs to be given to surveys, investigation and planning and design of new medium and minor irrigation facilities,
- c). Since the areas to be benefitted by small surface water scheme are invariably in the valleys and foot hills, and likely to be out of command by gravity flow, it will be desirable to install mini hydro power plants wherever feasible. This will provide power to lift water for irrigation to higher elevation.

## **Industries**

In spite of the vast potentialities of industrial development in Siaha District based on her rich and varied resources. This is therefore, indicative of the persistence of some missing links or constraints in the process of industrial growth of the district. One such missing link was the entrepreneurship which remained scarce input throughout the plan period in Siaha District. The

nature of the problem of entrepreneurship and finance varies according to the size of the industrial unit to be set up in the District. As a whole, the focus of industrial development should be on upgradation of technology, better utilization of assets, promotion of efficiency and removal off the infrastructural constraints effecting the growth of industries.

Siaha District has the advantage of setting up of agro-based industries such as banana figs processing, pineapple fibre, baking products, manufacture of cattle food, fruits and vegetables processing and preservation, ginger and ginger product, cold storage plants for fruits, meat and vegetables, mushroom cultivation and processing of spices etc. A part from these, top priority must been given to the development of Food and Allied industries followed by Handloom & Handicraft. Agro and Allied Food industries required top priority due to their known advantages over other sectors of industry. The main objectives should be directed to develop, promote and improve processing and preservation of food, milk, fish, fruits, vegetables and food materials of animal, poultry, agriculture or pisci-culture, apart from these it will also include sell, stock, import and export of such processed foods.

For a developing Siaha District the growth of small scale industries is of immense significance for several reasons. Apart from increased production, the growth of small scale industries helps to serve as an important pillar in the District march towards industrial growth. This movement has to be further foster by all round efforts, so that a new class of entrepreneurs, based on talent and enterprise come to the force in Siaha District.

Besides, there are possibilities of collaboration between the central or the District authority and the big companies of the country and even foreign enterprises in the promotion of industries in Siaha District. Whenever private enterprise is not forth coming to start either big or small industries, the District government should come forward and play the role of entrepreneur. The educated unemployed could be the potential source of entrepreneurs in the District, provided effective measures are taken for proper guidance and training, finance and other forms of assistance. In this respect, the government and commercial banks in the District have significant role to play.

### **Power**

Power is one of the most important and critical inputs for development of people and area. It has two important functions such as providing modern amenities to the people which includes domestic, hospitals, schools, rural electrification etc, and use of power for productive

purposes including power for small and cottage industries, irrigation, transport and communication and construction sectors. Thus power consumption provides a measure for socio-economic as well as industrial development in a region or District.

Considering the importance of power for the development of a region, the pace of power development needs an accelerated thrust to provide the required infrastructure for the removal of the backlog of economic backwardness of the District. Hydro electricity potential in the district has remained largely untapped, such projects are important due to difficult terrain for reaching electricity to the interior and remote corner of the District. Organizations and corporations in this respect should be encouraged to undertake research in the field. And it is the responsibility of the District to identify and undertake preparation and implementation of those projects.

For generation of hydro-electricity planning has to be done well in advance because of the fact that it takes a few years to conduct investigation works to determine the feasibility of a project and will take another few years to construct a major hydro project. A careful planning is required keeping in view the fact that development of power is a continuous process. The economic feasibility of large hydro projects and its corresponding match with thermal project for balancing it would need to be studied along with the technical feasibility of impounding large quantities of water within limitation of rocks and soil characteristics of the region and its seismicity.

Stress should also be given to rural electrification. The programme of rural electrification should primarily address itself as an avenue of lift irrigation as enough surface water resource are available in the region for raising of multiple crops besides setting up of small industries with locally available raw material. Apart from this, power should be treated as industry in the region, as bulk of transmission outside the District can become substantial revenue for the District. So further planning for power sector will have to keep this possibility in view of the mountainous terrain of the District with large number of rivers and streams which are ideally suited for taking several hydro projects.

### **Transport and Communication**

Railways, roads and shipping are the important modes of surface and water transport. The importance of road in Sialha District is greater than the rest of the country. In the absence railways and other means of transport the region has to depend chiefly on the roads network for the movement of goods and passengers within and outside the region. Till today, railway and

water transport do not play significant role in the economic life of the people of Siaha District. A dependable and low cost road transport system is very important for the economy of Siaha District as she imports practically all the requirement of consumer goods, machineries and equipments etc. Road not only provide important link between the rural and towns within the District but also with the rest of the country.

A master plan for the whole district may be prepared within the framework of which new schemes could be taken up for consideration and sanction depending on priority and resources. Due to difficult terrain of the region, construction, improvement and maintenance of the roads are quite difficult. Considering the present set up of PWD it is desirable to expand and strengthen this department. Moreover, the District PWD in the region is suffering from lack of road making equipment, timely supply of such machinery may be ensured. For the improvement of the quality of life and economic conditions in rural areas, availability of a good all weather road connecting all villages is urgently needed. The availability of these types of roads should be regarded as the prerequisite of economic development.

Apart from road, railways and airways, there is a scope for development of waterways. With proper planning, Koladyne river which passes through the southern part of Siaha District can be made navigable. Proper study and investigation of the major rivers of the District should be done to see the possibility of inland water transport which would connect the rest of the country including Myanmar. Investment should be made in this respect so that heavy reliance on road can be reduced considerably.

Considering the inadequate air service in the District, the government may also consider introduction of helicopter services for transportation of medical, supply and also for passenger service which would connect administrative headquarter, districts remote and inaccessible areas. Another means of transport which be developed in Siaha District is ropeways for carrying goods and passenger to some remote and inaccessible areas. Considering the need of the region for mobility, particularly in the rainy season where several weather roads are blocked by landslides, the introduction of ropeways should be included in the future.



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