

## **CHAPTER VIII**

# **MAJOR STRATEGIES FOR THE DEVELOPMENT OF THE BASIN**

### **INTRODUCTION**

The study area being situated in the hills and majority of the area being dominated by tea garden villages, development strategies need to be area specific. People of the area are mainly dependent on the tea gardens and their socio-economic status is so low that they are unaware about the policies formulated for them by the Govt., through panchayats and NGOs. People have to be more aware to utilize the benefits of such policies, which will lead to the upliftment of their living conditions and life itself.

### **8.1 PAST STRATEGIES**

Scientific planning is very essential for sustainable development. Developmental strategies can be successful if only they are formulated keeping in mind the problems of a particular area and the various problems confronted by the people of that area. Since independence, Govt. has formulated many developmental strategies, some of which are implemented in the study area. In some cases the achievement is significant but in most of the cases achievement is not successful due to lack of monitoring and management of the policies and strategies implemented by the Govt. and other agencies.

#### **8.1.1 Past Strategies for Rural Development:**

By definition, development is the act or process of developing or growth evolution within the framework of available resources. Its primary aim is the removal of poverty and socio-economic evils which are interlinked with it. Since independence, many strategies were adapted for rural development. The objectives were to examine whether the benefit of such strategies reaches the needy families and whether those can generate income and employment opportunities.

The Govt. of India has undertaken many programmes for rural development which can be broadly categorized as:

- a) Programmes for Agricultural Development
- b) Programmes for Industrial Development
- c) Employment Oriented Programmes and
- d) Programmes for the Development of Backward Areas.

#### **8.1.1a *Agricultural Development Programmes***

- (i) Community Development Programme (C.D.P.).
- (ii) Small Farmers Development Agency (S.F.D.A.).
- (iii) Marginal Farmers and Agricultural Labourer's Development Agency (M.F.A.L.D.A.).
- (iv) Intensive Agricultural Development Programme (I.A.D.P.).
- (v) Intensive Agricultural Area Programme (I.A.A.P.).
- (vi) High Yielding Varieties Programme (H.Y.V.P.), and
- (vii) Multiple Cropping Programme (M.C.P.).

- i) The closest of micro-level planning is the Community Development Programme which is the first attempt of the Govt. of India for rural development with an account on 'Panchayat Raj', Co-operative and Agricultural Development. The concept of this programme is based on the development of blocks with an area and a certain population size.
- ii) Small Farmers' Development Agency's primary objective is to guide, assist and co-ordinate the existing agencies in order to serve the small farmers in a better way and to enable them to earn the benefits of the new strategy like the large farmers' agency.
- iii) MFALDA was set up to assist the marginal farmers in optimum utilization of their small landholdings by taking vegetable growing, horticulture, dairy farming, poultry farming etc. The main aim is to generate additional income by challenging credit improved inputs and improved practices into their activities. It also gives employment in the leisure hours of the year or day.

- iv) In IADP the cultivators were induced to adopt package of improved agricultural practices such as the use of improved seeds, fertilizers, pesticides, improved implements, proper soil and water managements etc. in order to bring about significant increase in yields per hectare and to increase the level of agricultural production of major crops.
- v) Intensive Agriculture Area Development was launched covering two-fifth of the districts of India. Because of high coverage with limited resources, this programme could not provide certain supporting facilities.
- vi) Both IADP and IAAP were concerned with the promotion of intensive agriculture which was relatively less responsive to fertilizer and other inputs within the introduction of high yielding varieties. The propagation of high yielding varieties over fairly large areas was taken up as a full-fledged programme from kharif season of 1966-67 in selected areas. This programme was introduced where there was assured irrigation or rainfall, proper drainage, existence of strong input supply agencies such as co-operative societies etc.
- vii) Multiple cropping was suggested both in irrigated and rainfed areas. The aim of this programme is to produce more per unit of time in a unit of land by multiple cropping. This was advocated much in areas where initially one crop was grown in a year to raise three to four crops in order to fully utilize the farm inputs and to engage labour throughout the year.

All these programmes no doubt, contributed to agricultural development but the benefits reaped by different areas differed. This was because the needs and problems differed area-wise or region-wise and preparing programmes and implementing them in all the areas without the consideration of local problems, resulted in less than optimum utilization of resources.

**8.1.1b Programmes for Industrial Development:** The Govt. of India had undertaken many programmes for industrial development with special

emphasis on cottage and small scale industries. Among these the Industrial Estate Programme was undertaken to bring about dispersion of industrial activities in the undeveloped areas. The planning commission had pointed out that "a large number of our industrial estates started in rural areas and semi-urban areas languished mainly owing to unsuitable location, lack of integrated planning and marketing facilities and shortage of raw materials".

**8.1.1c Employment Oriented Programmes:** There were many farmers and labourers lying below poverty line waiting for employment opportunities. The only way to bring benefits down to the lowest section of people was by providing them adequate employment opportunities.

**8.1.1d Crash Scheme for Rural Development:** The objectives of this programme were two fold, direct generation of employment to landless labourers and creation of durable assets.

**8.1.1e Programmes for Development of Backward Areas:** Special programmes were designed for the development of backward areas by eradicating the problems responsible for its backwardness.

**8.1.1f Comprehensive Area Development Programme (C.A.D.P.):** Increase in agricultural production and its proper distribution is the main aim of this programme. Its objective include – i) functional integration of complementary physical facilities like power, irrigation, road etc. so that the modern technological innovation can be used for the optimum utilization of the physical resources like tanks, lands, minerals, canals, etc. within the area. ii) Self-reliance in financing the project by making it economically viable. iii) A restructuring of the rural socio economic institutions to make total productive use of the manpower potentials in an area, guaranteeing maximum production in minimum cost and an equitable sharing of the produce. iv) Increase in production for generating immediate employment and creating the basis for its quick transformation into direct CADP area. The success of all these programmes depend on the choice of programme in the region and other factors like availability of irrigation facilities, fertilizers, pesticides and high yielding variety seeds. The choice of programmes also depends on

the character of the region and the problems of the farmers. Proper funding was not available to execute such programmes. People were also unaware about the functioning of such programmes.

### 8.1.2 Past Strategies for Forest Development

Forests are renewable resources and have contributed substantially to the economic development of the country by providing goods and services to the people and industry. They also generate substantial volume of employment. In addition, forests play an important role in enhancing the quality of environment by influencing the life support system and also interwoven with our culture. The Forest Department in British India was constituted in 1864. In 1865, the Indian Forest Act was enacted, directing state monopoly right over the forests. The revised Forest Act of 1878 gave the power to the state to demarcate valuable tracts of forest for railways and other purposes. The ownership of the entire forest tract was acquired by the British Govt. of India by the Forest Act. As a result, land area under State Controlled Reserved and Protected Forest increased. The Indian Forest Act of 1878 was amended in 1890, 1891, 1901, 1911, 1914, 1918 and 1920, till a comprehensive Indian Forest Act was formulated in 1927. The major drawback of the Act is related to the extent of control over forest exercised by the state. The 1865 Act provided for the protection of a forest only after it had been selected and declared as a government forest and according to this Act the customary use of forest land by the forest dwellers was based on privilege not on right. The first official forest policy of Govt. of British India was pronounced in 1894. It aimed at forest preservation by regulating the rights of dwellers. Later, revised forest policy of 1952 classified forest on a functional basis into: a) Protected Forests, b) Natural Forest c) Village Forest and d) Tree Lands. From 1864 to 1972, forest management strategies were markedly biased in favour of commercial and industrial exploitation, with little attention paid to sustainability or to social justice. The National Forest Policy of 1952 (still is vague in revised form) spelled out that India should aim at maintaining one-third of its total land area under forests;

60 percent in the hills and 20 percent in the plains. Among others, the policy stressed that: i) basis of annual cut should be sustained yield, harvesting only the increment leaving the forest capital intact; ii) wildlife need to be protected and forest grazing regulated; iii) adequate forest laws to be promulgated; iv) professional training and research need to be intensified. The policy recommended functional classification of forests was i) Protection Forests, ii) National Forests, iii) Village Forests and iv) Tree Lands, and stressed the need for increasing tree land outside government forests. Important forestry related legislations in force were the Indian Forest Act, 1927, the wildlife (Protection) Act, 1972, and the Forest (Conservation) Act, 1980. All these Acts were revised afterwards. The Wildlife Protection Act of 1972 was amended and made more stringent in 1991. It took initiatives for the creation of a vast network of protected parks and sanctuaries. But there were no legal definitions of Protected Area, Biosphere Reserves etc. Moreover, Section 18 of the wild life (Protection) Act 1972 defined the Sanctuaries as forested land. Subsequent amendments to the Act have deleted the word 'forested land'. Forestry developmental activities were concentrated primarily on industrial timber production. Apart from large dimensioned, long-rotation species (Sal, Teak, etc) much efforts were made for raising extensive short-rotation, fast growing plantations for meeting fuelwood requirements. The National Commission on Agricultural (NCA) introduced the concept of 'Social Forestry' in 1976. Following the recommendations of the National Commission on Agriculture (1976), Forest Development Corporations were established in most parts of India to operate "commercial" forestry on more businesslike manner. Simultaneously, a programme of social forestry was also launched to bring non-forestry land under tree cover through people's participation. This latter effort was intensified in 1985 when the National Wastelands Development Board was established. During the 'seventies' forest areas were under threat due to increasing pressure on forests and on tree-growth outside the forest, to meet the various household and industrial consumption demand of the growing

population. Diversion of state forest lands to non-forestry uses also added to the situation. This adversely influenced environment and ecology. Policies and policy instruments conceived to address the above concerns consisted of:

- i) Social forestry with people's participation;
- ii) Forest Development Corporations were established to create 'man-made forests' to meet the demand for wood;
- iii) Departmentalization and nationalization of harvesting and trade of a variety of forest produce to reduce illegal removals and introduce fair-trade practices. All the above policies will rejuvenate the depleted forests. Promulgation of the wildlife (Protection) Act, creation of a designation of areas as Biosphere Reserves, and intensification of soil and water conservation activities including afforestation of fragile forest areas, were measures, aimed at checking environmental and ecological degradation.

Unfortunately, the above policy measures could not fully address the problems at hand. Social forestry activities were most successful on private lands, the commercial interest of tree growing being the prime motivator. Community participation was low and the expected decrease of consumption pressure on state forests was minimal (Banerjee, 1990). The Govt. of West Bengal gave official recognition to the Forest Protection Committees (FPC) in 1989, although FPCs have been in existence for atleast a decade and a half. A major contribution of the FPCs has been the generation of employment for the local people. As the tree – growers does not have to many any financial investment, the programme was alterative to the poor. A modified version of social forestry was Agro-forestry. It is indeed a new name for an ancient land use practice where in land was used for agriculture, forestry and animal husbandry. The Five-Year Plan clearly draw the linkage between the land reforms programme was the integration made more effective than in the FPCs which aim not merely at increasing the forest cover and the upgradation of degraded lands, but also at involving the forest

dwellers in the process of regeneration and at the same time contributing to their upliftment. In West Bengal, Joint Forest Management was also introduced, which later achieved great success. The Forest Conservation Act more difficult to convert forest land to non-forest use, without the clearance of the Central Govt. which has consolidated its territorial extent.

#### 8.1.3 Past Strategies for Tea Cultivation:

In 1841, Dr. A Campbell brought Chinese tea seeds from Kumaon and planted them in his garden in Darjeeling town – commercial cultivation began around 1852-53. By 1874, there were 113 tea gardens in Darjeeling district alone. Tea crisis in 1932 completely paralysed the tea industry. The planters of North – East India was very much perturbed about how to keep the industry alive. In this respect, the tea planters made their decision that tea industry as a whole should limit the production and cultivation of tea at least for some years and try to expand the internal and external markets. The ball thus set rolling by Indian and non-Indian planters culminated in the biggest event for the sustenance of the tea industry, namely the setting up of the International Tea Committee and International Tea Market Expansion Board in 1933 and the passing of Tea Control Act by the Govt. of India. The Indian Tea Association established a Scientific Research Organization in 1899 which was the precursor of the Tocklai Experimental Research Station' funded in 1911. In 1938, an advisory department was set up with the aim of transferring technology to members of the Indian Tea Association. In 1964, the Tea Research Association was formed to take over the management of the Tocklai Experimental Research Station. Under the Tea Act 1953, the Union Govt. had taken the tea industry under its control. The Tea Board was formed under the act and it was directed towards the development of the tea industry and trade in the sphere of production, extending area under tea cultivation, improving quality of tea, promoting co-operative efforts among growers and manufacturers exports of tea to foreign countries, issuing of export license, collecting tea statistics and

adopting welfare measures for workers. The Consultative Committee of Plantation Association consisting of 9 tea associations from Assam, Dooars, Terai, Darjeeling and Southern India has implemented several development programmes. The North – Eastern Tea Association, Tea Association of India, United Planters Association of Southern India, Assam Tea Planters Association, Bharatiya Cha Parishad, Dooars Branch Indian Tea Association, Darjeeling Tea Planters Association, Terai Indian Planters Association and Kangra Valley Small Tea Planters Association have contributed to the betterment of the living standards of the local people. All the tea gardens are the members of one or other of these producers associations. The tea gardens were the most backward areas of the basin. People immigrated as labourers and were illiterate. There were many acts and policies formulated by the govt. but all remain unimplemented by the authorities due to ignorance of the labourers and shrewd management techniques of the owners.

## **8.2 PRESENT STRATEGIES**

India lives in villages and village uplift is the key to the progress of the country. Since independence, there has been a great exodus of population from the villages to the cities and towns. In spite of this, the majority of our population still lives in villages. Successive Five-Year Plans have deployed huge funds for village development.

In the agricultural sector, farmers still practice monoculture. Crops grown are wheat, mustard, winter vegetables, summer vegetables, winter potato summer potato, maize, bhadoi, ginger, cardamom, millets, pulses, soyabean, winter (or aman) rice, oranges, etc. Ginger, orchard and large cardamom are perennial crops. These fields grow the same crop throughout the year and are cash crops with great commercial value. Maize is gaining more importance in the eastern side of the study area. Agriculture based villages like Kharia Basti, Sonada Khasmahal, Rangbul, Pokhribong, Rongbong Basti, Mirik and Saurini Basti enjoy the same facilities provided under different schemes by DGHC Agricultural Offices. The present trend in the

agricultural sector is the development of oilseeds and pulses besides maize. Soil conservation and watershed management are some of the key areas of development. Organic farming is mainly gaining importance in the tea growing sector. Organic manures and pesticides like cowdung, castor cake, neem cake are much in demand. Introduction of bio fertilizer, encouragement of compost manure production by using egg shells, egg crates, dry straws, grasses, shrubs, cow dung, dry leaves and twigs etc. are much in practice. Young people are encouraged to earn by growing mushrooms, by providing them training. Nurseries, growing tea seedlings and other seedlings for the Forest Department are also gaining importance among the youths. Govt. schemes like Rashtriya Krishi Vikas Yojna (RKVY), National Watershed Development Project for Rained Areas (NWDPRA), National Horticulture Mission (NHM) help the farmers in different ways in the study area. Mini-kits are distributed amongst the farmers. Maize seeds are also given to the farmers in the study area. Farmers get fertilizers, fungicides and pesticide at 50% subsidy. Training programmes to practice different methods of cultivation are conducted by the village panchayats. Potato seed multiplication farms are located in Rangbul and Sonada which distributes potato seeds for growing potato. Summer potato of the hills can be used as seed potatoes in the plains. Since organic manure is used, production is less. Due to lack of water storing facilities, crops are mostly rainfed. Under National Horticulture Mission, 50% subsidy is given for the cultivation of gladiolus, orchid, carnation, jarbera etc. A vermicompost plant is set up in Mirik. Under different schemes plastic crates, sprayers etc. are given to the farmers. Seeds, sprayers and implements are given from Block Development Office's. Organic manures are mostly used in tea gardens so that bacteria, fungi, earthworms should be able to survive. Bank loans for agricultural purpose are still not very easy to get.

All the major commercial banks, cooperative banks, agricultural credit banks give out loan to the villagers for both farm and non farm activities. While banks do direct financing, organizations like NABARD

does indirect finance. This system of indirect financing is known as refinancing. NABARD gives the money to the different banks and they, under certain terms and conditions disburse the loan amount to those who apply for it. In the study area, people from both farm and non-farm sectors avail these loans. Those who need loan for agriculture or non-farm activity, has to prepare a project which shows the knowledge of the person in the same field, his credentials and loan repayment capacity. If all these things are satisfactory, then loan is sanctioned. Sick cooperative banks in the study area, gets training on how to increase their deposits by encouraging local peoples' participation in banking. Self Help Groups, under District Rural Development Agency, get loans at the rate of three times the amount, the group has accumulated.

For the development of the study area, Govt. takes loan from NABARD (macro financing) to improve the socio-economic conditions. Govt. takes loan for construction of roads, hydel power projects, lift irrigation, surface irrigation etc. Micro finance is gaining importance among the people due to its nature of low capital start. Training provided by different NGOs aim at inculcating banking habits among the people of the Balason basin. Since capital is the most important necessity for any developmental work, people have to be more aware of the benefits of banking. Before financing any project, NGOs do the necessary field research work and according to their report, project planning is finalized by authorities like NABARD, World Bank, Central Govt., Foreign Development Agency etc. DGHC gets fund from the various above mentioned financial organizations for various developmental projects like building roads, providing drinking water to the remote villages, building schools etc. Projects funded by World Bank, Central Govt. and Foreign Development Agency are supervised by NABARD. People of the study area submit projects for doing floriculture, fishery, dairy farming, poultry etc. Gramin banks in Pokhribong, Sukhiapokhri, Saurini, Sonada give loans for all the above purposes. West Bengal Farmers' Old Age Pension Scheme is a Govt.

scheme under which old farmers get Rs500 per month. The Block Development Office, through the Panchayats, gives this facility to the old farmers who are now unable to work in the agricultural land. In Kurseong Block alone, 102 old farmers are under this scheme.

The present rural development scheme functioning in the study area is NREGA. The National Rural Employment Guarantee Act was enacted in September 2005 and its objective is to provide 100days of guaranteed unskilled wage employment to each rural household opting for it. The NREGA makes a paradigm shift and stands out among the plethora of wage employment programmes, as it bestows a legal right and guarantee to the rural people through an Act unlike the other wage employment programmes. The ongoing programmes of Sampoorna Grameen Rozgar Yojana (SGRY) and National Food for Work Programme (NFFWP) have been summed in NREGA. The focus of the Act is on works relating to water conservation, drought proofing (including afforestation), land development, flood control and rural connectivity in terms of all weather roads. Panchayat have a key role in planning, implementing and monitoring of the Act through preparation of perspective plan, approval of shelf of projects, execution of works at least to the extent of 50% in terms of costs. The Act envisages strict vigilance and monitoring. It also envisages a grievance redressal mechanism and helpline. NREGA is a poverty alleviation movement which not only assures employment but helps for future income generation of the entire community.

Present strategies in rural development like

- (i) Sampoorna Grameen Rozgar Yojana,
- (ii) National Food For Work Programme,
- (iii) Pradhan Mantri Sadak Yojana,
- (iv) Indira Awass Yojana,
- (v) Swarnajayanti Gram Swarozgar Yojana,
- (vi) Integrated Child Development Scheme etc.

The objective of Swarnajayanti Gram Swarozgar Yojana (SGSY) is to bring the assisted poor families above the poverty line by organizing

them into Self Help Groups (SHGs) through the process of social mobilization, their training and capacity building and provision of income generating assets through a mix of bank credit and Govt. subsidy. The scheme emphasizes establishment of activity clusters through selection of key activities based on aptitude and skill of the people, availability of resources and market potentiality. The scheme adopts a process approach and attempts to build the capacities of the rural poor. It provides for involvement of NGOs, CBOs, individuals, banks and Self Help Promoting Institutes in nurturing and development of SHGs, including skill development. The office of the Child Development project executes schemes like Integrated Child Development Scheme (ICDS). Under this scheme the Anganwadi centers take care of and assist, accepting and lactating mothers. Children within the age group 0-6 years are given APL & BPL nutritious meal, once in a day. These centers also look after primary cell. These schemes employ women because its objective is women empowerment in different community activities.

PWD is in charge of infrastructural development of the study area. Various works like road widening, *jhora* training etc. are done by them to protect the roads from getting destroyed during heavy rain leading to landslide. *Jhora* training work made of drops and guides are seen as one passes by the metalled roads of the study area. Very recently, road side drain (32km) from Kurseong to Darjeeling, along Hill Cart Road is being constructed. These drains help in transporting rain water following the slope of the land, systematically. Recently, many culverts are also constructed along with approaches for widening the roads. Out of many such works, culvert no. 190 was constructed in 2006. Near St. Mary's there is 600m road widening. In 2007, many culverts were constructed along with approaches, among which culvert no 191, 331, 363 and 393 are worth mentioning. Though fund flow is very limited in the study area, necessary works are done on priority basis. Under the head of OR (Ordinary Repair) Fund, minimum amount is allotted for the hills, which is inadequate for maintenance of National Highway 55

and other roads in the study area. Though *jhora* training is done by PWD, but lack of proper maintenance result in the entire thing getting washed away during monsoons. Theft of wire netting and stone boulders is another importance problem. Drop structures accumulate fine sands encouraging weed growth, restricting the flow. Thus after some time the structure fails. Large number of retaining and breast walls has been constructed for the protection of road benches in the study area. Besides roads, protection of homestead lands, bridle paths, buildings and other structures, too, has been given the protection walls. The terrain in the study area, being steep and rugged, it is impossible to build any large structure without constructing retaining and breast wall. In most cases, before constructing the retaining wall, loose materials, which are likely to slip are not removed and slopes are not trimmed and flattened. These faulty measures make the structures quite vulnerable. Some river training and stream bank protection works are done in different parts of the study area. Such works are mainly done by the tea garden authorities like Sangmaru T.G., Mangarjung T.G., Rangumk Cedar T.G., Ambootia T.G. etc. Rubble checkdams with boulders, constructed in series, are extensively used in the study area, for control of moving debris in smaller landslides. The Govt. Departments mostly construct defective structures and the maintenance of such structures is neglected. Govt. Departments like Forest Department and Border Roads Organization, constructs palisades and wattles in different parts of the basin. Construction work by Border Roads Organization is funded by Central Govt. and the villages like Bukim T.G., Gopaldhara T.G., Seyok T.G., Rangbang Basti, Simana Basti, Sukhiapokhri and Manjha Forest, in the study area, gets the advantage of such constructional works since these are situated in and around the international border areas of Nepal and India.

Land terracing and mulching is done in the agricultural lands of the study area to conserve soil. Farmers depend on protective vegetation belts, to prevent soil erosion, than on mechanical ones. Species like Amla, Ambake, Arkavla, Arupate, Buk, Mithe Champ,

Dalne Katus, Utis etc. are planted. For fodder, trees like Pipli, Gogun etc. are important. Good soil binding perennial grasses are also grown as fodder. *Amlisho* is grown as both soil binder and brooms are made from the flowers, which is of great economic value. Mulching is done by straw. Water channels in the agricultural land are strewn with boulders to reduce the speed of flow of excess water. Major soil and water management schemes, executed in the study area are Operation Soil Watch (OSW), National Watershed Department Programme for Rainfed Agriculture (NWDPRA) and Integrated Afforestation and Ecodevelopment Project Scheme (IAEDPS). Under OSW, afforestation is done in Ghoom Simana region of the study area. Two landslides were treated with engineering structures in Rongbang Basti. A series of catchwater drains are constructed in and around Sukhia pokhri. Few *jhoras* in upper Balason catchment were treated with drop and guide structures. Due to lack of proper fund, the NWDPRA projects are running in a very small scale. Govt. schemes like IAEDPS was implemented to attain the goals of restructured wasteland development programme. Many wastelands in the study area were turned into forest lands.

Hydel power in the study area is available from power stations situated at Fazi, Singtom, Bijanbari, Little Rangit and Richington. But all these plants are of very low capacity in the KW range. Ramman Hydro Electric Project (Stage - II) with a total capacity of 51MW, comprising 4 units, each of 12.75MW, had started its generation partially in 1995 through its first unit. To receive the power from Ramman to Siliguri, a 132KV sub-station is being constructed at Labong. Chukha Hydel Power Station in Bhutan, also supplies electricity to West Bengal.

All the above mentioned schemes are implemented in the study area. But due to illiteracy and ignorance of the people of the study area, benefits of the schemes are not reaching to the desired ones.

### **8.3 FUTURE STRATEGIES**

Both the pre and current strategies do not address some of the important issues of overall development of the area. Policies are framed by the Central and State Govt. but their application and execution in different parts of India gives different results. Area specific planning is required, to get the overall benefit.

#### **8.3.1 Human Resource**

Growth of population should be reduced by increasing awareness and education among the people. Easy methods of family planning should be implemented and contraceptive pills should be made available to the women free of cost. Anganwadi centers should be made more active. More and more such centers should be opened up. All the villages should have one such center. Rural development schemes like NREGA, SGRY, NFFWP should be executed in a more organized manner. The real needy people should be identified and schemes should be executed with full sincerity and honesty. Govt. and panchayat officials have to rise above their self interests and then only all round development of the study area is possible. Self Help Groups should be given more support from the NGOs and Govt. They should encourage and train local people to prepare items like potato chips, chilli and other pickle, handicraft items made from bamboo, woolen garments etc.

#### **8.3.2 Forest**

Forest conservation methods like social forestry, agro-forestry, silviculture, joint forest management should be made popular among the local people. People residing near the forest should be trained in such a way that they will take care of the forest as well as reap the benefits of the forest products. Livestock should be stable fed to control overgrazing. To ensure ample supply of fodder wastelands should be reclaimed and managed. It is essential to choose the fast growing and useful indigenous tree species to suit the agro-climatic zone in the study area. Vast tracts of degraded and wastelands should be used for sustainable forestry with selected tree species or combination of

species. Afforestation, accompanied by post afforestation management is very important. After afforestation, the newly planted seedling should be watered and saved from grazing animals. Local species are best suited for afforestation but in small patches new plants should be grown on an experimental basis. In this sphere also, available fund should be judiciously used. Forest Departments should have their own nurseries so that they spend less money for buying seedlings. Forest Departments should sell the products directly to the people by Govt. managed outlets, in major cities and towns.

### 8.3.3 Agriculture

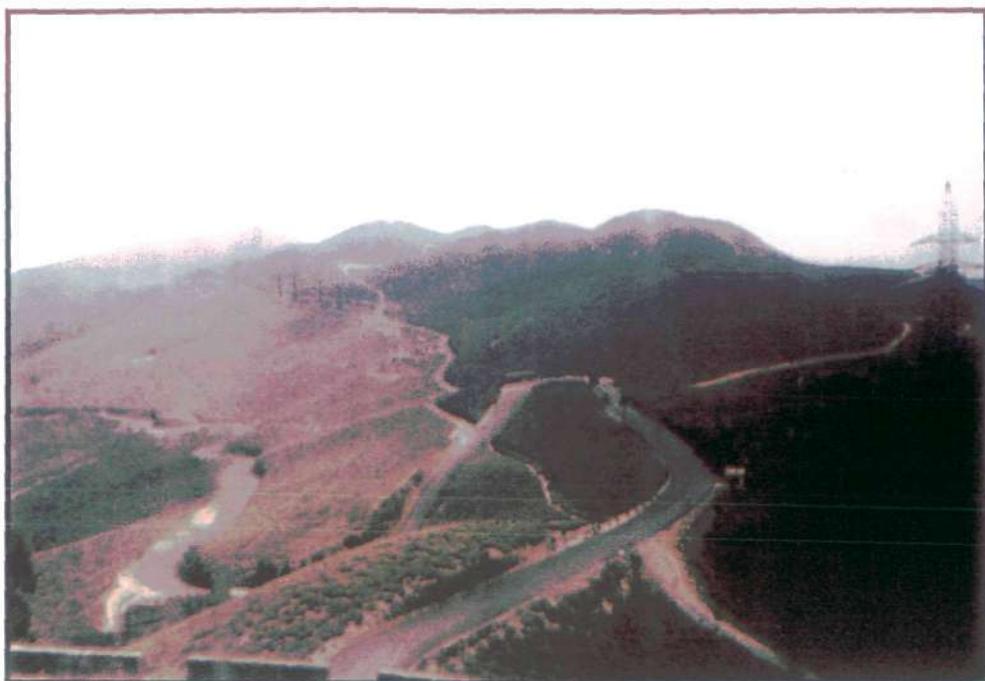
Land is the main physical component on which agriculture is dependent. So, new technology like Computerization of Land Records (CLR), is the future need of the study area. GIS mapping technique should be applied to have proper maps and demarcation of land schemes. Strengthening of Revenue Administrative and Updating of Land Records (SRA & ULR) should be immediately implemented in the study area.

Though agriculture occupies very less share of the economy, even it is important for those who are practicing it. There is huge scope of agricultural development in the study area. Supply of mini-kits should be handed over to the farmers in distress. Unlike tea, cultivation of crops and vegetables should use chemical fertilizers along with organic fertilizers. This is expected to increase production to a considerable extent. Government should distribute agricultural inputs like HYV seeds, chemical fertilizers; pesticides etc. to the farmers and make them understand the benefits they can reap from multiple cropping. Since soil erosion is one of the major problems of the study area, cropping techniques, which help in soil conservation, should be adopted for sustainable development. Proper crop management is also necessary for the success of agriculture. Because of favourable climatic conditions, horticulture and floriculture are slowly gaining ground. Proper training programmes should be organized in the study area. According to Honourable Governor of West Bengal, the horticulture and

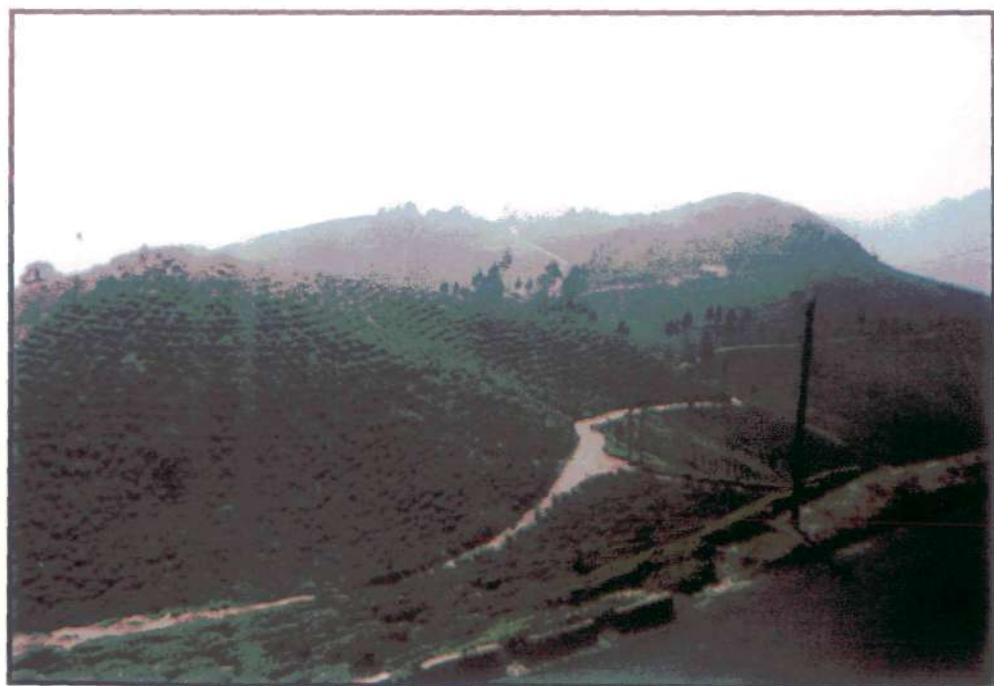
floriculture section of the University of North Bengal should be set up in the Darjeeling hills. Products of floriculture need to be transported to the markets as fast as possible. So development of fast transportation network is the most urgent need of the area. More emphasis should be given on fruit cultivation. Researches should be carried on to explore all possible avenues in the sphere of fruit cultivation. Fruits like apple, which are brought from other hilly states, should be grown in Darjeeling hills itself. If marketing strategies are properly formulated then in near future fruit cultivation will play an important role in the market by earning huge profits. Cultivation of cash crops like large cardamom and ginger should be done on a large scale. Proper marketing of such items can fetch more money. Livestock farming and animal husbandry by rearing locally adaptable varieties of cow, poultry, goat and pig can be encouraged. Animal husbandry can give promising returns if done properly. Milk chilling plant and dairy industry can be developed to utilize the animal husbandry products. Hides of different animals can also be used as raw material for small scale leather factory in the nearby areas.

Share of funds, allotted for the development of agriculture in the hills are extremely less, compared to the requirement. The methods of accessing fund or subsidy for agriculture is very difficult in the study area. Illiterate farmers are expected to submit projects, on the basis of which they are selected to receive the benefits given by the Government Agriculture Department. Because of this, only educated farmers or farmers with the help of middlemen can apply for such schemes. This process should be changed immediately and benefits should be provided to the needy ones. ATMA (Agricultural Technology Management Agency), a central Govt. funded project, implemented through Ramkrishna Misssion, is expected to cause total socio-economic development of the farming community. This project also aims at increasing production in the agricultural sector. West Bengal Farmer's Old Age Pension Scheme should be continued and more and more farmers should be brought under this scheme. Supply of mini-

kits should be handed over to the farmers, in distress. Unlike tea, cultivation of crops and vegetables should use chemical fertilizers along with organic fertilizers. This is expected to increase production to a considerable extent. All agricultural villages should be well connected to the main marketing centers via proper all weather roads. Storage facilities for agricultural products should also be there in the study area. The District Seed Farms should be involved in extensive research and development. The new initiative should be multi-agency extension strategies in farming system approach and farmer centric extension services. Scope of irrigation has to be increased. Crops like maize, which are rainfed and do not require much water should be grown in plenty as a measure to conserve water and at the same time continue earning. Old tea bushes should be removed @ 2.5% per annum. 'No tillage replantation' may be practiced. At the time of replanting, care should be taken to make a balance of high yielding and high quality clones and seed stocks. The concept of judicious blend of inorganic, organic and bio-fertilizer should be given importance in the study area. Introduction of bio-fertilizers like Azotobacter, Azospirillum, Bacillus megatherium can be useful because these can curtail the requirement of inorganic fertilizers without telling upon on the productivity. Aspect of vermiculture and compost should also gain more importance. Amount of pesticide residue in tea may be reduced by strengthening the acceptability pattern of the concept of Integrated Pest Management. Integration of the methods of chemical control, biological control, genetic control, use of plant extracts, insect growth regulators, sex pheromones, sterile male technique can produce good result in the study area and help in producing tea without residual toxicity. Shorter plucking rounds of 5-6 day duration can yield high quality tea. 'Small Tea Growers' Training Programme', organized by University of North Bengal, should be conducted in the study area. More stress should be given for shifting the Tea Management Institute of University of North Bengal, to the study area. This will encourage the local educated youth to be academically strong and knowledgeable and their employment



Photograph 8.1 Panoramic View of Tea Gardens



Photograph 8.2 Tea Garden in Mirik.

opportunities will increase. The 'premium tea of the world' called 'Champagne of Tea' is grown in the study area. Though the Darjeeling hill produces 10 million kgs of tea each year, in the world market 40 million kgs of tea is sold in this name. To stop this, immediate action like patenting of 'Darjeeling Tea' should be done. Tea cultivated by applying organic manure only, is gaining more importance and is also fetching higher prices in the market. Tea thus produced is known as organic tea. New ways of sustaining the economic viability of organic tea includes: development and standardization of improved packaging practices; training and guidance on social and environmental needs; diversification of additional income; making consumer aware of the medicinal properties of drinking organic tea; developing competitive market strategies and creating special markets.

Co-operative societies have to be encouraged for storing and purchasing of farm products. Marketing management need to be strengthened by evolving marketing department, transport department, both lending and storing of agricultural products. Proper financial and marketing strategies are important. NABARD is planning to directly finance different sectors in near future. Public Private Participation (PPP) means involvement of local farmers in identifying the problems of land resource and finding out the solutions. Watershed approach for the agricultural development with PPP will be encouraged. Watershed approach is an integrated effort of land development for effective soil and water conservation with a view to 'in-situ' utilization of rain water for crop production and animal husbandry. The practice of modern scientific methods of agriculture e.g. poly house or green house technology should be strengthened. Such arrangements might encourage the educated youth to take up agriculture as an occupation. Diversification of agriculture and allied sector can be done in the field of horticulture, olericulture, floriculture, cultivation of medicinal and aromatic plants, as the prevailing agro-climatic conditions are quite suitable. Regulated market with proper infrastructural and transport facilities should be implemented on an urgent basis. Food processing

units should be opened up to utilize the perishable items more efficiently and profitably. Livestock farming and animal husbandry by rearing locally adaptable varieties of cow, poultry, goat and pig can be encouraged. Problems like encroachment an agricultural and forest areas, mass movement of soil during monsoon, indiscriminate and haphazard disposal of solid waste from the construction sites, unplanned disposal of sewage and effluents etc. need immediate attention.

#### 8.3.4 Tourism

The economy of the Darjeeling district depends on tea, tourism and timber. As tea has lots of scope for expansion, similarly tourism also has huge potentialities which are yet identified. Till date tourism is highly restricted to certain areas in the Balason basin. So there is need to decentralize the tourism activities and alternative tourist sites should be set up with adequate supply of the basic amenities. Eco-tourism which will provide both economic benefit and also conserve the natural resources should be taken up as the future project. Eco-tourism can be divided into:

- i. Nature tourism
- ii. Wildlife and Forest tourism
- iii. Wilderness tourism
- iv. Adventure tourism
- v. Religious tourism
- vi. Plantation Agriculture tourism and
- vii. Alternative tourism.

Conducted tours to different tea gardens of the area will give huge pleasure to the tourists. But while implementing all these, measures should be taken to conserve the environment of the area, which is of prime importance for the development of sustainable tourism.

## **CONCLUSION**

Since independence, under the different Five – Year Plans, Govt. of India has formulated different policies for the development of India. In the past years, many strategies were implemented along which few were partly successful and a few were not. The rural development programmes kept on changing to adjust to the present situations and mitigate the present crisis. Different developmental works are being executed but planning has to be more scientific and area specific. Strategies of sustainable development should be adopted for the future. Then only the study area will achieve on all round development.