

CHAPTER – FIFTEEN

15.0 Agriculture Practises in National Economy, Plan Period analysis and its Future Prospects Through agro-geomorphological Regions.

The role of agriculture is very important in Indian Economy. So it is high time that the Government should look into the matter for the development of agricultural practices in hills and plains of Darjeeling district from the data it is clear that agricultural development in hill areas is abnormally low due to its terrain constraints. It has been said in tenth five-year plan (2002-07) the 8% of national income will increase every year. To make it practical, it is necessary to increase agricultural products by 4% annually. It may be noted that it does not mean only the agricultural but the agricultural and allied activities i.e., agriculture and related areas that indicate the increase of overall field. It is clear that India is proceeding towards self-sufficiency but disparities are plenty in case of uniform developmental scenario in every administrative units or geographical units of the district. It has been observed that all the peasants are not uniformly well established and development of different agricultural products is different. Lastly task of infrastructural facilities and financial potentiality, various types of control, bring down the development of this primary sectoral activity. From the gist of the report of the M.S. Swaminathan Committee or steering group on agriculture and allied sectors submitted in January, 2002 it is seen that 11 different task forces have been formed for different problems in agricultural sectors. Over and above in 2000 special task force had been designed for agriculture under the Chairmanship of Sharod Joshi. So there is no controversy regarding the problems in agriculture (as revealed from different reports) but what is the solution ? How can it be renovated ? The following problems have been identified so solutions also may be designed later on. The problems are as follows : (1) It has been observed that 25% of national income comes from the agriculture and 69% of the people of the

district depend on this national income, (2) Production and productionability have been increased at the end of sixties due to high quality seeds, pesticides, and precision instruments have been used irrigation facilities, supply or electricity, communication facilities, market facilities have been added with this. But it is not the over all picture. These facilities did not reach everywhere of the district. Only about 45% of the land of the district comes under the purview of irrigation facilities particularly in the plains. It can be well estimated about the precarious condition of the hill areas of the district. Even in hill areas of Darjeeling district, *rabi crop* can not be produced smoothly. (3) Agricultural loan is not available readily. Bank has been directed that 18% of the loan year marked for the priority section should be directed to agriculture but in practice it is only 12% or less. Kisan credit card has been issued to the peasants but it is very difficult to say, how far the poor peasants will be benefited by this. (4) The constraints of fund have become the menace for agricultural development of the district. The Government Fund of the D.G.H.C. in case of irrigation, transport, research, development and application of technology has been reduced to a great extent.

(5) Control or embargo has been imposed on production, storage and marketing in terms or technology and exchange of agricultural products too.

(6) The development of agriculture or primary sector does not come only from the production of food and other crops only. So diversification in agriculture is necessary e.g., cultivation of fruits, flower, poultry, fishing is encouraged inspite of many constraints. It has been observed that a sizeable amount of produced crop is lost due to non-availability of timely cold storage and processing practices. Ultimately frustration among the peasants has become acute thereby restricting the growth in this sector.

Diversification and rate of increase production, particularly food grain and other crops have been reduced during nineties. More water has been used in agriculture without thinking about its proper utilization. Rainwater has been misused without making any arrangement for rainwater harvesting. Due to unwise and excess use of fertiliser some

land has been declared degraded for agricultural use. The income of the peasants has reduced due to these factors.

The government's financial help in agriculture in Darjeeling district is a matter of discussion in this context. Subsidies have been given in electricity, water and fertilizer. Minimum support price has been introduced in the tenth five-year plan and the rich peasant have benefited a lot out of this practice. So there is enormous inequality in applying the principle for agricultural development.

Some fruitful suggestions may be placed for solving the problems in the near future considering the miserable condition of agricultural practices and productions, particularly in hill areas.

- (1) Subsidies should be given to the needy peasants only (BPL).
- (2) Non-Government organizations along with FCI have been empowered to collect food grains.
- (3) Instead of subsidy the Govt. should help financially for the development of infrastructure in the villages.
- (4) Tax should be imposed on agricultural income.
- (5) Restriction should not be imposed on the production, storage, marketing and use of technology to check the entry of multinational entrepreneurship.
- (6) Decision should be taken about the contract cultivation or corporate cultivation.
- (7) Land market should not be opened completely.
- (8) The gene-transplantation system may be introduced to cater the needs of the present demand and thereby bringing about new dimension in agro diversity in North Bengal particularly in the Darjeeling district in the age of globalisation

to save extinct seeds as mentioned in a statistical account of Bengal, 1864 by William Wilson Hunter.

- (9) There is enough of scope for crop diversification in the soil of this region that may strengthen the economy of North Bengal as a whole and Darjeeling in particular (as expressed by Mrs. Joke Mayabik, the ex-ambassador of Netherlands in a Seminar, organized by center for the Development initiatives in 31.01.2004.
- (10) For ascertaining the crop diversification Bhatia (1965)¹ formula

($I_{cd} = \%THAc/Nc$) should be taken into consideration.

Where I_{cd} = Index of crop diversification

$THAc$ = Total harvested areas of crops Nc = Number of crops.

- (11) For the measurement of the level of production, the crop yield and concentration indices ranking co-efficient may taken into consideration. The procedure may be expressed as follows :-

$$Y_i = \frac{Y_{a_c}}{Y_{a_r}} \times 100 \text{ and } C_i = \frac{P_{a_c}}{P_{a_r}} \times 100$$

Where Y_i = Crop yield index

Y_{ac} = av. Yield / hectare of crop 'a'

C_i = Crop concentration index

P_{ac} = % strength of the crop 'a' in the unit

P_{ar} = % strength of the crop 'a' in the region

$$\begin{array}{lcl} \text{Crop yield and concentration} & & \text{Crop yield} & \text{Crop concentration} \\ \text{Indices ranking coefficient} & = & \text{Index ranking of} & + \text{Index ranking of} \\ \text{For crop 'a' (RC)} & & \underline{\text{crop 'a'}} & \underline{\text{crop 'a'}} \\ & & 2 & \end{array}$$

¹ Singh, Jasbir (1976) : An agricultural Geography of Haryana, pp. 309-319, Vishal Publication, University Campus

The results thus derived will give us an idea of the level of agricultural production.

$Rc = \frac{1}{Pr oduction}$; it means that the ranking co-efficient is lower, then the higher will be

level of agricultural production.

(12) For measuring the level of agricultural production a new technique comprising, nine broad approaches should be considered :

- a. Value of agricultural production/unit area
- b. Production / unit of farm labour
- c. Input-output ratio and profitability of farming.
- d. Production in terms of grain equivalent / head of population.
- e. Output / unit area (ha).
- f. Ranking order of land in terms of population.
- g. Index of productivity.
- h. Index number of agricultural efficiency per unit area.

(13) 'Ayacut Development' and Management should be practised for high yield production. 'Ayacut development' – means water utilization and management in areas that may be brought under irrigation and also cover such areas that are reclaimed by flood control, drainage and soil conservation measure for planned development of agricultural production of these areas as a composite operation involving improved agricultural practices, land shaping, construction of channels, supply of input and introduction of new cropping patterns².

² Mamoria, C.B. (1982) : Agricultural Geography, p. 690-719. Shival Agarwala & Co., Delhi.

- (14) Agriculture in broad sense involves cultivating an extensive area including forestry, plantation including medicinal crop production, animal husbandry and fisheries. Thus agro-geomorphological map should be prepared for the use of all farmers, and agricultural planners. Agro-geomorphological maps show the rational arrangement of crops based on geomorphological characteristics of the area under cultivation (excluding the high inaccessible terrain in Darjeeling mountainous areas. Based on the needs of demand for agricultural products the following four important criteria may be identified :
- a. Agro-geomorphological map for showing the impact of terrain on agricultural development in Darjeeling district in particular should be prepared (Relationship between geomorphology and agricultural production in the context of national economy of the country).
 - b. For showing the relationship between the climate and exogenous process assemblages.
 - c. Agro-geomorphological classification should be made on the basis of morphological types, exogenetic process assemblages and surface materials.
 - d. Field checks should be carried out with a view to studying the relationships of geomorphology with existing agricultural layout to put forward amendments for appraisal and recommendations for further agricultural developments.
- (15) It may be pointed out that agro-geomorphological classification (CHW GUONAN, 1984) as established by the author should be made with some modifications. The classification for the Darjeeling district may be made which comprises both hills and plains. An assessment may be done for comparative study of the agricultural practices and recommendations may be made for its overall agricultural development. The relationships may be shown

between the terrain types and agricultural practices over the genetic types (depositional and erosional-structural) with morphological and climate-morphogenetic sub-types based on lithology (geology). So morphology and lithology is the only criterion that makes the present study successful for tackling the problems i.e., landsliding, gullies depressions, fault scrps, cuestas etc. in hill areas of Darjeeling district.

- (16) The detail slope analyses may be undertaken depicting the relationship between the terrain and agricultural production. Fruitful suggestions may be put forward and attention of the concerned authorities may be drawn for agricultural development in the tune of national economy.

Chronological development of agricultural practices during the plan periods.

We have not yet been able to achieve self-sufficiency in food. The so-called green revolution is now out of question. The problems of hunger and malnutrition in our country are very serious. There are reports on starvation deaths in the tribal and backward areas. The problem of global hunger has been receiving worldwide attention. It is estimated that 700 million people out of one billion people in the world are suffering from hunger and malnutrition for which endemic poverty is responsible for this. The Darjeeling district is no exception. The international food policy research institute in Washington has warned that the developing countries will face a food crisis in future, because the trend in investment in agriculture is declining gradually.

In the *First Plan period (1951-56)* there were two fold objectives viz. to correct the diequilibrium in the economy and to initiate simultaneous process of all round balanced development for raising national income and living standards. *The Second Plan period (1956-61)* tried to meet the increasing demand for food and raw materials due to growing population and expanding industries. *The Third Plan peiod (1961-66)* gave the priority to agricultural development because agricultural production the main factor for the progress of national economy. This plan sets two specific goals that it has reached (1) to produce enough of food grains for self-sufficiency and (2) to

produce enough of commercial crops for meeting the needs of exports and industry. The plan period was readjusted due to hostilities in 1962 and 1965 that brings down the agricultural production for two successive years 1965-66 and 1966-67 and the devaluation of the rupee in 1966. As a matter of fact the *Fourth Plan* was abandoned and three yearly plans were implemented (1966-69). *The Fourth Plan* (1969-74) more or less fulfilled its two main objectives (1) growth of about 5% per annum and (2) remedy of imbalances. The *Fifth Plan* (1974-78) aimed at fulfilling two goals (1) removal of poverty and (2) attainments of economic self-reliance. The *Sixth Five Year Plan* (1979-80 – 1984-95) tried to take into account for immediate and long term needs of agricultural commodities both for domestic consumption and export. After these periods new agricultural strategies were introduced with a view to reaching its goals. After these programmes many recommendations came into being for intensive agricultural production. The recommendations were based on selective approaches like IADP (Intensive Agricultural District Programme) and IAAP (Intensive Agricultural Area Programme) for intensive agricultural production. And it was necessary till Xth Five Year Plan to launch new strategy for agricultural development. The keynote of this strategy is the application of science and technology for increasing yield per hectare. This strategy, known as New Agricultural Strategy or Green Revolution (as it created greener looking field) is based on high yielding varieties responsive to heavy doses of fertilizers and the package of improved practices in selected areas with assured rainfall or irrigation facilities. The programmes are (1) High Yielding Varieties Programmes (HYVP) (2) Multiple Cropping Programme (MCP) (3) Integrated Development of Dry areas (IDDP) (4) Plant Protection Measures (PPM) (5) Increased Use of Fertilizers (IUF) through new irrigation concept and water management.

From the analyses it is clear that we have not yet achieved self-sufficiency during *Eighth Five year Plan* where our production was 190 MT. in 95-96. The so called green revolution has now reached a dead end. With the passage of time the high yield variety and multicrop practices were encouraged. Boro rice cultivation practices have

been introduced between November and May i.e., the influence of summer and winter is beneficial to this production. Basin and hill-valley systems have been introduced during this plan period. On 27th May 1998 Mr. Swapan Sinha stated that there is enough of scope for development in agriculture in Terai on the basis of the cultivated crops in the remaining parts of North Bengal except the mountainous part of Darjeeling district. It was observed that cultivable land in Darjeeling district is very low (30,000 ha) in comparison with Jalpaiguri and Cooch Behar (2,30,000 ha). It is obvious that national economic development comes through industrial development and industrial development is complementary to agricultural development and it is important to note that raw materials can fulfill this requirement.

Tista irrigation project has become the new hope to the people of North Bengal because with the completion of the project the agricultural scenario may be changed with the advent of Green Revolution. Out of 9 lakh 23 thousand hectares only 22,800 hectares of land have been brought under irrigation for the cultivation of Kharif crop. The peasants are now cultivating two crops a year. This multipurpose project will be completed in three phases. Only 15% of the total work is not completed. The project in the village stage has developed three hydel projects and each of these projects will produce 22.5 MW of electricity. Besides, there is scope for establishment of agro-industry in North Bengal for enrichment of national economy.

‘Contract Farming’ has become a new agricultural policy introduced in West Bengal. This policy was formulated by ‘Mackinsey and was known as ‘Mackinsey Report’. The ‘Contract Farming’ may be explained as follows : One company, foreign or inland, will make contract with the peasants. On the basis of the contract the company will purchase the crop from the peasants at a predetermined cost and amount. The benefit of this new agricultural policy is that the peasants will know their amount before hand and at the same time the company will know his share of payment to the peasants before hand. Abrupt rise and fall of market price will be abolished and ‘uncertainty’ will be replaced by ‘certainty’. The national economy will be stable (Das Gupta, 2002).

The present new agricultural policy was introduced in August 2002. It was said in the policy that an alternative way should be established for agricultural development keeping in mind the national crisis and imperialists attack. China has adopted both the policies, we should not follow that principle for increasing our national economy.

Centre and state should consider seriously about the speedy completion of Tista project for overall development of North Bengal.

Just before the WTO conference at CANCUN, three organizations IMF, WB and OECD unitedly demanded the withdrawal of subsidy on agricultural products. The bad effect is the fall of crop price in world market. As a result of it the poor peasants will be bound to go far away from the market.

Now question arises whether the new agricultural policy will be fruitful in reality ? It is quite relevant that unless the easily available organic manure will be sufficient as per demand, the agricultural development will not be satisfactory. This policy has been introduced with a view to elevate the economy of the states inspite of many constraints. It is a matter of satisfaction that in Cuncun (Sept. 2003) twenty developing countries have demanded the withdrawal of export subsidies in agriculture that ultimately will bring stability in national economy of the country as a whole and North Bengal or specifically Darjeeling District in particular.

In this context of agricultural status the fact raised by Mr. Dipak Basu on Friday the 19th September 2003 in the Statesman may be quoted here for some implications in agricultural development in Darjeeling district. It would allow foreign investors to control eventually all natural resources including agricultural land. That would take away the sovereignty of the government making the country a dependent economy. It would not allow the government of India to direct investment to the socially describable sectors or to the economically backward regions. It would also create extreme inequality between regions and between social classes, which can undermine the stability of the country.

In the context of the above, Government should think seriously about the fate of agricultural development in North Bengal and in Darjeeling district in particular. In the interest of North Bengal agriculture one should think afresh. As everybody knows that Egypt is called the gift of the Nile. So it is obvious that North Bengal could be called as the gift of the 'Tista-Torsa'. Both government and NGOs can only save the agriculturists of North Bengal and they may undertake the following programmes forthwith. (Report on 26.06.2004).

- (a) Budget must be increased for agricultural development.
- (b) The maximum agricultural areas are to be brought under the irrigation scheme in Cooch Behar and Jalpaiguri district through the construction of the canals.
- (c) The waters of the small canals and water bodies of North Bengal are to be brought under the irrigation scheme.
- (d) Irrigation waters may be arranged by deep tubewell where there is no small canals and water bodies.
- (e) Even a square inch of land should not be left outside the irrigation scheme.
- (f) Agricultural training and workshops should be arranged for the agriculturists instead of well to do people free of cost.
- (g) Agro-industry should be encouraged to strengthen the economy of North Bengal districts.
- (h) Special attention should be given for Darjeeling District in developing agriculture in the context of terrain constrains particularly in hilly areas.
- (i) The hill areas are to be brought under Agri-Export Zone (AEZ) immediately which have got green signal from center in September 2004 (as announced by Murasoli Maran, Union Commerce and Industry Minister in March 2001.)

DISTRICT DARJEELING

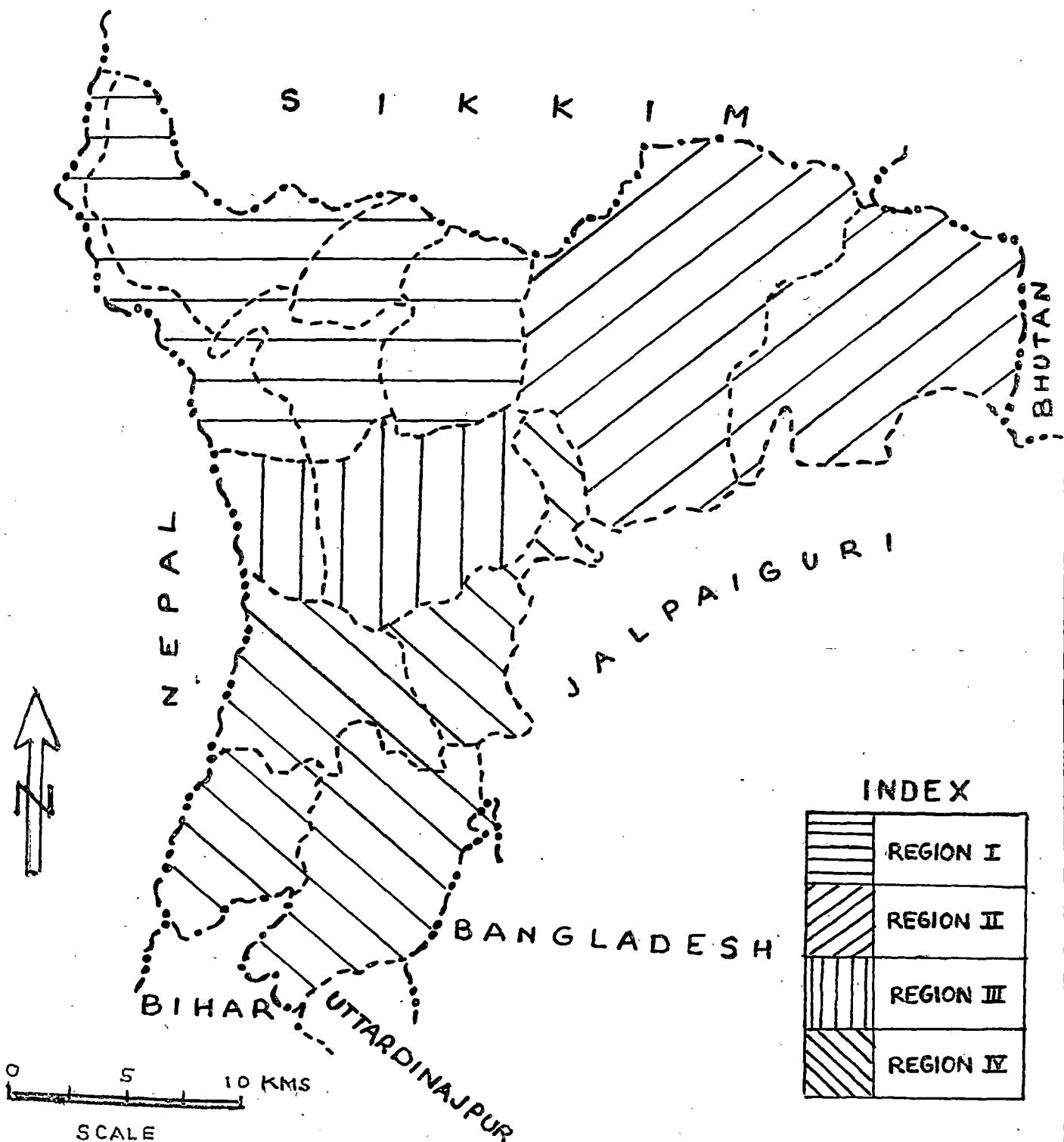


Fig. 15.1 SHOWING FOUR AGRICULTURAL REGIONS.
(ON THE BASIS OF ADMINISTRATIVE BOUNDARIES)

Planning Commissions (1964) divided the agricultural regions on the basis of topography, soil, climate, geology, land use, irrigation and cropping pattern Dr. Randhawa divided the country into agricultural and animal husbandry region on the basis of rainfall, temperature, altitude, latitude, natural vegetation, soils, crops and stock animals. NSS classified on the basis of similar population density and crop pattern and having similar altitude above sea level, and also having good transport and communication facilities. ICAR classified agricultural regions in collaboration with DES (Directorate of Economics and statistics 1968) into four broad zones for each of the crops of rice, wheat, cotton, sugarcane, jowar, bajra, maize, gram, groundnut, jute, pulses, soyabeans, potato and other plantation crops. K. William Easter (1972) classified on the basis of percentage contribution of a district to the total national production of crops and the percentage of the district's gross cropped area under the crop. Sengupta and Sdasyuk's classification was based on physical features and climatic conditions. I have divided the agricultural regions of Darjeeling district (2006) on the basis of administrative boundary of the block (fig. 15.1). It has followed the physical features (relief and geology) that corroborates with the crop pattern and terrain.