

CHAPTER-VII

MAJOR PROBLEMS OF AGRICULTURAL DEVELOPMENT

INTRODUCTION

Agriculture is controlled by a host of natural conditions like, soil and other characteristics like rainfall, availability of soil moisture, and duration of sun shine etc. The hilly terrain conditions of the district have added more problems like variation in sunshine, which leads to longer duration of maturing of the crops. Another significant problem is slope. Due to high degree of slope the cultured fields are small and terraced cultivation are the common feature in this region. From the study, it is revealed that each part of the district faces a problem due to variation in physiographic, climate, soil, and water. These entire problems affect the agricultural development in the district. These problems can be broadly divided into three categories viz. physical, institutional and cultural.

7.1 PHYSICAL CONSTRAINTS IN AGRICULTURE

The physical constraint in agriculture can be divided into a number of categories on the basis of their origin. (Jana 1981)

These are:

- i) Topography
- ii Rainfall and sun shine
- iii) Deforestation
- iv). Soil fertility and soil erosion.

7.1.1 Topography

In the district agriculture is comparatively easier in the lower altitude of river valleys (<600m) and lower hills where the slope is gentle. These areas are located in the narrow tract of Rangit and Tista rivers bordering the district from three sides, with fertile alluvial soil field. In central part of the district, the slope is moderately gentle and terrace framing is practice, but the percentage of soil erosion is very high. In the northern part, the topography is mostly made up of rugged, escarpment and ridge with very steep slope (>59%). More over this part has high drainage density and relative relief with large tract of luxurious forest cover. These varied topographic conditions lead to the unique pattern of agriculture, from large permanent cultivated field in the

river valley to terrace farming in the middle altitude with low productivity. The type of crops cultivated in the district is also different along with the variations in physiographic conditions. In lower altitude, rice, maize and pulse are main crops and in higher altitude cash crops like cardamom, ginger and horticulture crops are cultivated. As a result, the economic conditions of cultivators and of land tenure system are widely varied in the district. (Jana 1981)

7.1.2 Uneven Distribution of Rainfall and Sunshine

The district enjoys the sub-tropical climatic conditions. The main characteristic of rainfall is control by variations in altitude and location. The rainfall ranges between 2400mm and 2800mm annually. But the rainfall pattern is uneven. The peak rainfall occurs during the months of June to September. It is low in the southern parts especially Namchi sub-division and the Ravongla sub-division has received higher amount of rainfall. This means that the distribution of soil moisture is not uniform throughout the district. Besides, the pattern of rainfall is fluctuated year by year. In some year, the rainfall is heavy causing landslide and havoc to the life and hampering agricultural practice. And in some year, the rainfall is less causing dryness affecting the survival of cultivated crops.

Along with rainfall is another important factor of climate which directly or indirectly influences the agricultural practice is sunshine. Heat and temperature is very important for germination and photosynthesis process, which leads to the growth and survival of plants and crops. The district experiences variation in sunshine, lower is the altitude higher is the temperature and longer the duration of sunshine and higher is the altitude lower is the temperature and shorter duration of sunshine. The variation in sunshine leads to the variation of cropping pattern and ripening season. In the southern part especially in the river valleys and lower hills the sowing and ripening of crops take shorter due to higher temperature and longer duration of sunshine and it constitutes only 40 percent of the total cultivated area. In the middle and higher altitude which is found in central and northern parts of the district experience shorter duration of sunshine and low temperature which cause longer duration of sowing and ripening and these areas occupied 60 percent of the cultivated area.

The peculiar type of the physiographic and climatic conditions prevails in the district has rise the problem of selecting crop which can be suited in this specific condition for maximum utilization of available cultivated land for increasing

productivity level. As well as the adaptation of locally suited cultivation methods will get booster productivity of the district.

7.1.3 Deforestation

Deforestation is another physical problem exists in South District. The main cause of deforestation is over grazing, used of firewood as fuel and excessive commercial exploitation of forest etc. Of which the impact of overgrazing and exploitation of farm fodder for deforestation is decreasing considerably, but the reckless cutting of woods for fire wood, wood charcoal, and raw material for building construction is increasing in the district. During the winter season, most of the villagers use fire wood for heating, cooking, and other purpose even the government provide LPG free of cost. In the town, the demand for charcoal is very high during the winter season for warming up because use of electricity is costlier. Beside, with the expansion of town the number of building is also increased and these leads to higher demand for wood as building materials. Another cause of deforestation is that lack of transparency in forest policy. There is not a single saw mill and wood show room where local people buy woods when ever they need in reasonable price. Due to banning and lack of this facility, villagers have to take permission form the competent authority for cutting down tree. Many a time villagers has cut woods beyond permit and sale the wood in black market in absorbent price. In the district, there is still some persons whose main business is selling woods in black market and earn their livelihood.

7.1.4 Loss of Fertile Soil

Successful practice of agriculture depends on the fertility of soil. The fertility of soil is different in different parts of the district. The general characteristic of soil in the district is that, in the upper part of the slope there is formation of washed off soils and towards the base of the slope there is formation of washed in soils. In terms of soil property and chemical composition, the soil of South District is acidic and low organic composition. As the formation of organic matter in the soil is a biological process, the low temperature at higher altitude of northern and central parts has the experience of slow decomposition rate restricting the microbial activities causing low organic composition. Towards the south where the temperature is higher

the microbial activities are also high and the organic composition is also rapid. Due to variation of temperature in the district, the existence of organic matters in the soil is high in the river valley, moderate in the middle altitude and very low or almost less in the extreme northern parts. These phenomena also create the variation of soil fertility. The acidic nature and low organic composition of the soil character makes problem for the development of agriculture in the district.

One of the menaces in agriculture is soil erosion. Soil erosion is caused by various factors like climatic condition, topography of land, type and area of drainage, nature and extent of vegetation cover and the physio-chemical constituents of soil. Out of the total cultivated area of the district, 80 per cent of the area is affected by soil erosion. In the southern part of the district, the nature of the soil erosion is moderate and loss of top soil is caused by deforestation and agricultural practice. The middle part of the district, soil erosion has the characteristics of severe loss of top soil due to water erosion of dominant extent also caused by deforestation and agricultural practice. In the northern part of the district the soil erosion has stable terrain with moderate loss of top soil. (Das, Sarkar and Seghal 1995). Thus the main character of soil erosion is loss of top soil in the district. It is known fact that once the top soil is lost it is irreversible particularly, where a top fertile soil is replaced by a compact acidic sub-soil. The rate of soil degradation by different process is generally increased by using land for what ever it is not capable of and unsuitable methods of soil and crop management. Consequently, soil degradation set in resulting in wide spread occurrence of sheet and gully erosion and ultimately encroachment by silt on highly eroded land of middle and northern part where the swift streams are flows.

Another factor of soil degradation is landslide. It is considered to be a type of slope failure in which movement take place along a single or several sets of discrete shear plane. The cause of landslide in the district is deforestation and lack of scientific methods in infrastructural development especially for the construction of road network. Still in the district high dependency on the forest resources for fodder, commercial exploitation and over grazing prevails, which cause exposing of rocks causing ultimately landslide. Besides, the construction of new road network slopes has been cut leaving the back side of the road to more than 90° where landslide can be initiated. If these back side cutting is made into 45° the intensity of landslide may be less. The main cause of landslide in the district is due to this nature. Land slide is occurred in the blocks of Lingding, Upper Manzing, Temi, Tarku, Pakzer, Boomtar,

and Wak. In the district, land slide is usually occurred during rainy season, after a long rainy days and alternate sunny day due to differential hydraulic pressure. The important consequence of land'slide is loss of life, loss of agricultural land and adverse affect on fertility of soil which damage to forest area and its wealth.

7.2 INSTITUTIONAL PROBLEMS

Physical factor does not solely control the development of agriculture in an area. Agricultural development also involved complex process and procedure of institutional features. Amongst the important institutional factors which contribute to the development of agriculture are; i) Land right and ownership ii) Size of holding and its fragmentation iii) Land tenure system iv) Labour availability

7.2.1 Land Right and Ownership System

Historically, the back ground of land rights and ownership in the state shows, that there is no clear fact available to trace out the system of settlement in olden days in South District and Sikkim as a whole. It is however, appeared from the history of Sikkim that during the regime of Chandra Palla Dynasty, the system of measuring the size land Dhoor or pace of land and right of enjoying the taxes accruing from the tenant who lived in that land was in existence in the state. During the time of Namgyal Dansty (1641 AD.) the Kazis were holding the grant of land from the former Maharajas, some as confirmation of their hereditary title on the land held by them, some as reward for service and some as a special inducement. Later on to encourage settlement the lease of some of the areas were also transfer to Nepali landholders. During the tenure of Bengal Government (1889 to 1895) and again (1906-1917) the state was under the direct superintendency of Government of India period that settlement was made with all the landholder who were then found in possession of their land in the state by issue of lease deeds (renewable). This leads to the emergence of Zamindari system of ownership in the state. The distinctive feature of zamindari system in the state was that land holder was bound to the land for payment of revenue amount for the whole term of settlement. The holder could not at his wishes relinquish the estate which means that there is a contract between the holder and the state and for this; the landholder has to pay a fixed sum as land revenue besides collection from the estate. This shows that all the land in the state during these periods belongs to the state.

The introduction of land tenancy system after 1975 has abolished the Zamindari system and changes the right, ownership rights of the landholders. This leads to demise the land by government to the individual properties in different holdings. Again, the right and status of the tenant are established.

The land ownership system in the district is two types as i) Primary holder and ii) Secondary holder. The primary holder includes bustywala (villagers) or the farmer in the village who own the land in their name and the landlords who has given their land to tenant on lease. The secondary owner is two types locally known as Kuatidar and Adiadar. Kuatidars are those people who engaged to cultivate on condition of rendering a stipulated amount of crops or cash to the primary holders. And Adhiadar are those persons who engaged to cultivate on condition of rendering half the produce to the primary holders.

The law of the state has also protected the tribal ownership rights for Bhutia and Lepcha community. The government prohibit land alienation by these to community to other community and the civil court are also debarred from sanctioning sales of land to other communities another peculiar protection is that land which is earlier settled by these two communities can not be settled by other community with out permission from Government..

7.2.2 Size of Land Holding

The picture of land holding has also unique character in the district. According to the "law of limitation" 1924, the ceiling of land holding on agricultural land was fixed as under:-

- i) Bustiwala (Raiyot) - 40 hectares.
- ii) Mondals « 60 hectares.
- iii) Kazis, Thikadar (landlords) - 200 to 400 hectares.

"The land holding system was again modified the rayots are allow to perchance land up to 30 acres of land in the name of each member of his family and rayots whose holding is more than 15 hectares of land are allow to shale of land. This system of holding was further modified by land reform act of 1977. which has fixed the limit of 36 standard hectares of land for a family consisting of 5 members, and in the case of family having more than 5 members can hold the land of 6 hectares of land for every increased number of family their ceiling should not be more than 60

hectares .But these limitations are not bound to the Kazis and Thikadars. The land holding pattern show that there is no uniform pattern in the district

The size of the operational holdings is also another important factor for which influence the farming decision.

Table 7.1 show the operational holding pattern and fragmentation of land holding in the South District.

The table reveals the following facts :-

i).In the district for all the categories of the number of holdings has fluctuating trend in 1977-78. It is 10,271 and had increased in 1980-81 to 16,340, but had decreased in 1995-96 12,854 and again it increased to 22796 in 2005-06. In the case of area of holdings out of the four recorded year only 1995-96 has decreased recording 29336 hectare, but other remaining years its show increasing trend as it is 24366.66 hectare in 1977-78 and 29498 hectare in 1980-81 and 30302 hectare in 2005-06.

ii). The category wise analysis of the distribution of land holdings reveals interesting facts. Out of all the holdings, marginal (<1 hectare) holding category total no of holding has ups and down trend having 29.03%, 43.23%, 43.97% , and 73.73% in 1977-78,1980-81,1995-96 and 2005-06 respectively. The area occupy by marginal farmers shows also fluctuating picture having 7.47%, 12.04%, 9.61% and 9.93% in 1977-78, 1980-81, 1995-96 and 2005-06 respectively.

iii). The highest percentage of holdings is found in the category of small holding (1-2 hectare). The category also has the fluctuating trend. The percentage of number of holding in 1977-78, 1980-81, 1995-96 and 2005-06 were 27.83%, 26.56%, 24.97% and 32.62 respectively. The area occupy by the small holdings has lesser percentage having 17.86%,21.14%, 18.52% and 18.55 % of the total holdings of 1977-78, 1980-81, 1995-96 and 2005-06 respectively.

iv). The semi-medium category has declining tendency both in the number of holdings and area of holdings in all the recorded years. The number of holdings is in semi-medium (2- 4 ha) category has 28.07%, 20.36%, 18.16% and 17.54% in 1977-78, 1980-81, 1995-96 and 2005-06 respectively and the area occupied by this category is also recorded decreasing trend having 34.42%, 31.51%, 26.81% and 25.98% in 1977-78,1980-81, 1995-96 and 2005-06 respectively. The significant changes are observed in 1980-81 to 1995-96.

Table 7.1 Pattern of Operational Holdings, South District 1977 - 78 & 2005 - 06

Type of holding	Size of holding in (ha)	1977-78		1980-81					
		No of Holding	Area of Holding	No of Holding	Area of Holding				
Marginal	< 1	2984	1752.51	7064	3552				
		(29.03)%	(7.47)%	(34.23)%	(12.04)%				
Small	1 - 2	2859	4140.81	4340	6238				
		(27.83)%	(17.98)%	(26.56)%	(21.14)%				
Semi-Medium	2 - 4	2884	8075	3328	9295				
		(28.07)%	(34.42)%	(20.36)%	(32.51)%				
Medium	4 - 10	1457	8298.98	1453	8306				
		(14.18)%	(35.38)	(8.89)%	(28.15)%				
Large	>10	87	1199.26	155	2107				
		(0.85)%	(5.11)	(0.95)%	(7.14)%				
All Category		10271	24366.66	16340	29498				
		(100.00)	(100.00)	(100.00)	(100.00)				

*Source: Agricultural Census of Sikkim, 1977-78, 1980-81, 1995-96 and Economic

v).The medium category (4-10 ha) has different type of trend in total number of holdings and area occupy by the category. The total number of holdings in this category has fluctuating trend having 14.18%, 8.89%, 10.00%, and 8.76% in 1977-78, 1980-81, 1995-96 and 2005-06 respectively. Where as area occupy by medium category shows decreasing trend having 35.38%, 28.15%, 24.34% and 24.20% respectively.

vi).The changing pattern of large category (>10 hectare) shows that the consolidation of holdings in this category. In the category, both the area of holdings as well as number of holdings is increasing. The percentage of total number of holdings is 0.85%, 0.95%, 2.96% and 5.34% and area occupy by large category are as 5.11%, 7.14%, 21.33% and 21.37 % respectively in all the recorded years.

vii).The marginal and small holders together occupy more than 50 per cent than the other three categories and increasing trend in these two category shows the fragmentation of holdings is still a character in the district. And the higher percentage in these two categories also reveals the fact that the development and mechanization of farming is very slow and negligible in the district.

viii).Another important fact reveals by the discussion is that of consolidation of holding is observed in the category of large holding.

7.2.3 Land Tenure

The land tenure system exists in the district like the land tenure system exists in other parts of the country. In the district, there are two types of tenants viz, Kutiadar and Ahiadar. But there are various laws which control the system of leasing to the tenants. Any person cant be become tenant of he/she has own land more than six hectares of land means that tenants should owned less than six hectares of land or a land less labour. Another important feature is that any persons who have own land less than six hectares of land can not lend his/her land to tenant.

Besides any persons who are outsider can not became a tenant. But in reality it is not true. Most of the Kutiadars and Adhiadars are outsiders coming from Nepal and Bhutan. Besides, another peculiar type of land tenant system was exists in the district. They are Nangjen and Charey. The first one is selfdom and second one is regular and hereditary servant. Both of them possesses land from the land lord or Bustywala for cultivation but does not retain any thing after ripening the crops, their expenses are

borne by the owner of the land. Most of these systems were followed by monastery. Now, these two systems were abolished and freed them. The government allow them to acquire the land in their possession.

The feature of protection for tenants rights is very interesting, According to Sikkim Cultivators Protection Act 1975. "That any owner of the land is not entitled to terminate the cultivators of his/her land except in execution of an order made by prescribe authority on the ground that the cultivator has without any reasonable case failed to cultivate the land". But this protection has meaning less as the same act stated that the agreement between Kutiadar and Adhiadars and owner of the land is only for one agricultural season, there after left at the will of the primary holders. Its means that in actual senses there is not any protection of tenants rights. These hamper the agricultural production.

Table 7.2 Leased Holdings in South District.

Category	1980-81				1995-96			
	No of holding	Total (%)	Area in (ha)	Total (%)	No of holding	Total (%)	Area In (ha)	Total (%)
Marginal	3048	58.42	1381	21.54	1460	69.19	519	22.00
Small	1231	23.59	1719	26.81	421	19.95	578	24.56
Semi-medium	708	13.56	1954	30.48	172	8.15	202	8.56
Medium	218	4.17	1179	18.40	45	2.13	240	10.17
Large	14	0.26	178	2.77	12	0.56	558	23.65
Total	5217	100.00	6411	100.00	2110	100.00	2359	100.00

* Source: Agricultural Census of Sikkim .1980-81 & 1995-96.

Table 7.2 represents the wholly lease tenant and area under leased cultivation in the district. In 1980-81 the total percentage of leased tenants and leased area was 31.93% and 21.73%. But it is decreased in 1995-96 becoming 16.42 and 8.05%. The category- wise leased tenants and area under leased shows another picture. The category of marginal, small, semi-medium, medium and large leased tenant has occupied 58.42%, 20.59%, 13.56%, 4.17% and 0.26% respectively. But the percentage in all these categories shows another trend in 1995-96. In the case of marginal and large categories it increased from 1980-81 to 1995-96 having 69.19 per cent and 0.56 per cent respectively. The small, semi-medium and medium shows decreasing trend recording 19.95 %, 8.15% and 2.13 % respectively. And the area under the leased cultivation shows different picture. The category of marginal, small, semi-medium and large leased tenant cultivators constitute 21.54%, 26.81%, 30.48%,

18.40% and 2.77% in 1980-81. But in 1995-96, the marginal and large category shows increased percentage having recorded 22.0% and 23.65%, and the remaining categories of small, semi-medium and medium shows declining trends having recorded 24.50%, 6.56% and 10.17%.

The caste wise composition in leased tenants and area under leased also shows another picture. There are 30.71 per cent of scheduled caste lease tenants in total scheduled caste cultivators and the area occupy by scheduled caste lease tenants constitute 16.35% per cent to total scheduled caste cultivated area. The scheduled tribe lease cultivators and area cover by them is different from scheduled caste. The scheduled caste lease cultivators occupy only 4.33 per cent to the total scheduled tribe cultivators and the area occupy them also has only 4.37% to the total area cultivated by scheduled tribe in the district. The discussion shows that the number of leased tenant and area occupy them is decreasing.

7.2.4 Labour

Labour is also a major component in agricultural development and changing of cropping pattern of any region. In the district, the rate of mechanisation and use of improved farm equipment is very negligible due to physical constraints, these leads to the maximum dependence on manual labour specially crops like cardamom and horticulture cultivation. Every year during the month of June and July many farm labourer have to be imported from the neighbouring areas of Nepal and Bhutan for weeding and clearing the crops and again during the months of October and November a large number of labourers are required for plucking the seed and drying properly. Besides, a labourer is also required in other type of agricultural practice also. The average size of the family in the district is small; the numbers of persons who engaged in the agriculture and allied activities are limited and is decreasing over the year because of the pulling forces of labours by the towns. The increasing rate of literacy as well as urbanization leads to migration of younger generation to towns leaving the responsibility of agriculture and farms to elders' rural folks in the district. The other factors which cause the low percentage of labour in the district are low productivity, sedentary nature of agriculture, low wages and lesser percentage of land less labours.

Table 7.3. Agricultural Landless Labourer in South District.

Year	No of Agricultural Landless Labourer	Total populations (%)
1981	538	2.91
1991	1325	7.16
2001	2258	5.42
2005	2324	5.72

•Source: Census of Sikkim .1981, 91, 2001 & Economic Survey (DESME) 2005.

Table 6.3 shows the composition of agricultural labourers to the total cultivated farmers of the South District. The percentage of landless agricultural labourers in the district is 2.91%, 7.16%, 5.42% and 5.72% in 1981, 1991, 2002 and 2005. One of the important characteristics of the landless agricultural labourer in the district is that their percentage is very low in comparison to other districts, but their importance is very significant. Another factor of low agricultural labourers in the district is that the labourers after two or three agricultural seasons they become Kutiadar or Adhiadar because the owner has migrated in the towns due to various reasons. This low percentage of agricultural labourer indicates the low productivity in agriculture because mechanisation is very low and dependency upon the low agricultural labourer does not give desired result as the agriculture is labour intensive practice.

7.2 .5 Mechanisation in Agriculture

The technological inputs including the use of modern mechanised like tools, tractors, threshers, and other implements make it possible to carry out farming operations more quickly and efficiently for maximizing output. The degree of mechanisation in the South District is very negligible. This is due to various factors like physical, illiteracy, and poor economic conditions. Of these physical constraint is the most important factor of low degree of mechanisation in the district. As the district is located in the southern slope of Himalayan Mountain system, the cultivated fields are located in the steep slopes. These high degree slopes do not favour the use of machines for various purposes of agriculture. Besides, lack of knowledge and field experiment by the concerned department for locally suited tools and farm machines, if tried only the machines which are suited for plain areas discourage the mechanisation. The socio cultural and economic as well as the mindset of the farmers did not encourage the use of machine for higher agricultural productivity. Even the instrument and tools like sprayer which is used for spraying insecticide and fertiliser

to the field have to be hire from the block agricultural demonstration farm or block development office. .

The agricultural farms and block development office does not have adequate number of sprayer. Usually one agricultural farm and block development office has only 3 to 4 sprayer, which is not enough to cover all the blocks during the on set of agricultural seasons.

Table 7.4 Agricultural Tools in South District

Year	Iron Plough	Sprayer	Rubber Pipe for spring and drift irrigation.
2001	19	19	100
2005	30	30	300

* Source: Food Security and Agricultural Development Department, Govt of Sikkim.

Table 7.4 shows the status of important farm implement in the district. There are only 19 iron ploughs and same number of sprayer machines and 100 numbers of pipes for using irrigation, if these numbers of implements has distributed to 4 agricultural circles, only 4 to 5 implements and 50 pipes are in a circle. Again one circle has more than 30 revenue blocks it is not possible to cover such numbers by very little implements. Besides, higher number of farming community has hampered the mechanisation processes. Still large number of farmers clings to the traditional ploughing methods, than the iron or new type of plough due to physical conditions. The poor economic conditions are also another factor for hampering the process of mechanisation. Last not the least the large numbers of small holdings also affect the mechanisation process in the district.

Table 7.4a Agricultural Implement in South District, 2007

Manual and Animal Operated			Power Operated		
Implement	Number	Percentage	Implement	Number	Percentage
Seed fertilizer drill	101	0.98	Seed fertilizer drill	166	85.56
Thresher	7	0.07	Thresher	4	2.06
Plough (wooden)	4772	46.4	Mould plough	11	5.69
Plough (Steel)	12	0.11	Power tiller	6	3.09
Leveler	84	0.82	Disc harrows	2	1.03
Wet land puddler	12	0.12	Hay harvester	5	2.57
Ghani	21	0.20			
Chaff cutter	15	0.15			
Horticultural tools	5260	100.00			
Total	10284	100.00		194	100.00

* Source: Live stock census. Sikkim. 2003.and DESME. Govt of Sikkim.2007

Table 6.b represents the total agricultural implements use in the South District.. The manual and animal operated tools and implements constitute larger percentage. In manual and animal drawn plough occupied 46.4% and horticultural tools constitute 51.15% of the total implements. The remaining are constituted by seed fertilizer 0.98%, wet land puddler 0.12%, ghani 0.20%, and poultry chaff cutter 0.15%. The picture of power operated implements is very insignificant. Of these power seed fertilizer drill constitutes 85.56% of the total power operated implements and tools, power thresher 2.06%, mould plough 5.67, power tiller 3.09%, disc harrows 1.03% hay harvester 2.57%.

The picture reveals that of the total implement together manual, animal and power driven, the manual and animal driven has still constitutes 98% of the total implements use in the district. The fact also reveals that most of the policies and planning of mechanization in the district is not successful. One of the important factors of this situation of mechanization is the terrain conditions of the district, where the adoption of power operated implements are not suitable. Most of these implements are developed to suit the plain areas. Their modification with due consideration to local situation is strongly necessary. And they are not afforded by the small and marginal farmers of the district due to higher cost. So improvement of the traditional practice implements is the need of the hours

7.2.6 Lack of Irrigational Facilities

Lack of irrigation is one of the important problems faces by the framers of the district. The existing irrigational facility in the district is canals and springs which are entirely, depends up on the monsoon rain. The terrain condition does not allow water storage and streams are very swift and fast. Again, storage of large volume of water in hilly slope is a major problem and needs adequate technical know how. It can be rightly say that agriculture in the district is in the mercy of nature. During the rabi crop seasons, limited sprinkle and drift irrigation is use for cultivation of rabi crops from the natural storage like springs but due to the deforestation and infrastructural development the natural reservoirs of spring are destroyed and the volume of available spring water is decreasing. The rainfall distribution pattern in the district has varied due to the variation in altitude which adversely affects the cultivation of crops. The available water during the rainy seasons also can not be store and run down very

fast. The economic conditions of the farmers, also does not encourage for the large scale use of irrigation and lack of mechanisation like pump sets for lifting water does not exist in the district in spite of abundant power resource. The main practice of canal irrigation is also concentrated in the lower altitudes. Thus, the irrigation facility in the district is not developing up to the desired level which hampers the high productivity level of agriculture.

7.2.7 Lack of Financial Inputs

The district is lacking in the agricultural financial support mechanism. The higher rate of fragmentation of land holdings which leads to low productivity does not favour the inflow of financial investment in the district. The traditional farming system of sedentary nature, low adaptation of scientific methods of cultivation and mechanisation does not require huge capital investment in agriculture. Out of the total crops cultivated in the district, highest investment is found in ginger and cardamom cultivation. The volumes of investment in both the crops are different. Ginger attracts smaller volume and the cardamom has higher volume of investment because the ginger cultivated area in the district is lesser than the cardamom and needs intensive capital inputs.

The low of financial investment in the agricultural sector in the district is also caused by the lack of knowledge about the financial institutions' policies and facilities by the farmers of the district. Again, when the farmers approach the institutions for credit and loans, banks did not show enthusiasm because of the small nature of the loans and low return. Even granted, the farmers have to go through a long, tedious process of clearance that has discouraged the farmers to approach the financial institutions for loans. Instead, the farmers prefer to invest whatever they save and loan from the local money lenders, who lend loans of small amounts very first but at a higher interest rate. These factors lead to the sedentary nature of agriculture in the district.

Thus, the role of financial inputs and financial institutions in the district has a limited role for agricultural development.

7.3 SOCIO-CULTURAL PROBLEMS

The process of decision making and implementation of agricultural practice in rural areas are very much influenced by social-cultural factors like religious importance of the crop, local demands and traditional values of the crops etc. The

socio-cultural influence changes of cropping pattern, crop diversification, and crop combination. In the district, traditional agricultural practice is still prevailed in almost all the villages. This is may be due to higher percentage of illiteracy in farming community. Usually, the farming community in the district does not take up the agriculture very seriously and they are easy going nature. Their main objective of agriculture is to survive and meet the day to day needs. Even local farmers did not bother to cultivate HYV seed which gave higher yields. Most of the framers thought that HYV seeds are preserved by using chemicals which is harmful to consumption after ripening the crops and higher cost of HYV seeds also affect the choice of crops. The concept is same in the case of chemical fertilizer. These problems are mainly arising from the lack of agri-extension service and financial in put. The degree of crop diversification is very low as the farmers prefer to cultivated the crops which they have through knowledge and want to use the seeds which they preserved for next year e.g. the cultivation of maize is still practice even its importance is decreased as a food crops and lesser market values, still in various religious ceremonies and traditional food item it is un avoidable item. Only a handful of farmers started to cultivate ginger instead of maize but their percentage is very low, these means that most of the farmers still wanted to preserved the traditionally important maize crop and cropping pattern. Another factor is that most of the farmers do not have the knowledge of newly develop methods of cultivation. The case is same is in crop combination also. Still in the district old age practices of maize- pulse domination prevail. The farmer does not want to shift the combination of maize- oilseed-ginger which gave more productivity and benefit. Thus it can be rightly concluded that traditional outlook of farming community is not changes much.

CONCLUSION

In the district, there is no significant agricultural development. The traditional practice of agriculture is still prevailed in the district, utilising the owned or lease land, limited family labour(with a few wage paid labour during peak season), owned or hire oxen power, owned seeds and limited quantity of organic manure from one's own reared animals. The used of high yielding variety seeds is decreasing in most of the crops. The percentage of cultivable land in the district is decreasing and fragmentation of land holdings is increasing due to encroachment of land for infrastructural development and increased in population in the district. The policy of

converting the state into total organic farming also adversely affects the development of agriculture. The farmers could not afford the costly organic fertilizer even though environmental friendly. Besides the technology and methods of using organic fertilizer is not filtered to the common farmers. Still farmers want to use the limited and easily available old age knowledge of manure and limited use of fertilizers. Mechanisation of farming is still in the primitive conditions, still the framers depends on old age implement due to lack of knowledge and physical limitation. The irrigation system is pathetic condition still using the old methods except changes of all season rubber pipes from bamboo for transporting water from source to field. Neither has strong financial and credit support.

In the district still scarcity of labour still prevails. The scenario is more deteriorating, as the younger generation have tendency to migrate to urban areas leaving the agricultural farming to older people, which is also not in the state of sound health.