

# CHAPTER -7

## CONSERVATION OF FOREST RESOURCE

### 7.1 INTRODUCTION

Indiscriminate exploitation of forest resource of Darjeeling and Jalpaiguri district has resulted in the decline and also in the destruction of some forest areas. Rapid deforestation also causes flood, drought, landslide and soil erosion (Bhutia, 1999). The removal of forest has economic implication also. Existence of agricultural civilisation is intimately connected with the local forests. Few conventional methods are generally used to conserve the forest of the study area. But the conventional methods are not enough today to manage the forest resource properly. Rate of afforestation and exploitation should go side by side. Keeping this view in consideration, the state government has adopted certain non-conventional methods to conserve the valuable forest of the area. This non-conventional method includes **Social Forestry, Joint Forest Management and Agro-forestry or Inter-cropping.**

An attempt has been made in this chapter to visualise the extent of the above mentioned measures. This chapter has highlighted some problems and suggest corrective measures to protect the valuable forests of the region. The investigator has carried out this study through primary data collected from fields and secondary data obtained from local Gram Panchayat, Zilla Parisad, FPCs and Forest Department. A case study on strip plantation has also been undertaker by the researcher.

### 7.2 SOCIAL FORESTRY

The social forestry programme in Darjeeling and Jalpaiguri district was launched in 1981-82 with the assistance from World Bank to make rural areas self-sufficient in their daily needs of forest produce so as to act as catalyst for overall rural development and to utilise the waste and barren lands along the roads, canals, and railway lines. During last one decade Gram Panchayats and Panchayat Samities of the study area involved in tree planting on barren, vacant, waste lands within their jurisdiction from the funds under J.R.Y and N.R.E.P (Chakrabarty, 1997). There are few instances in the study area, like Kalabari of

Jalpaiguri district, where tree planting has been taken up very successfully on every piece of vacant, barren lands along roads, canals etc. Such efforts in some areas have also won recognition from the government in the form of “Indira Vrikshamitra Puruskar”. The main components social forestry are strip plantation and farm forestry . One of the major achievement of the social forestry projects which indeed in 1992, was that trees have become a common sight on the road side of Darjeeling and Jalpaiguri district. The main objectives of social forestry programme are shown on the following figure 7.1

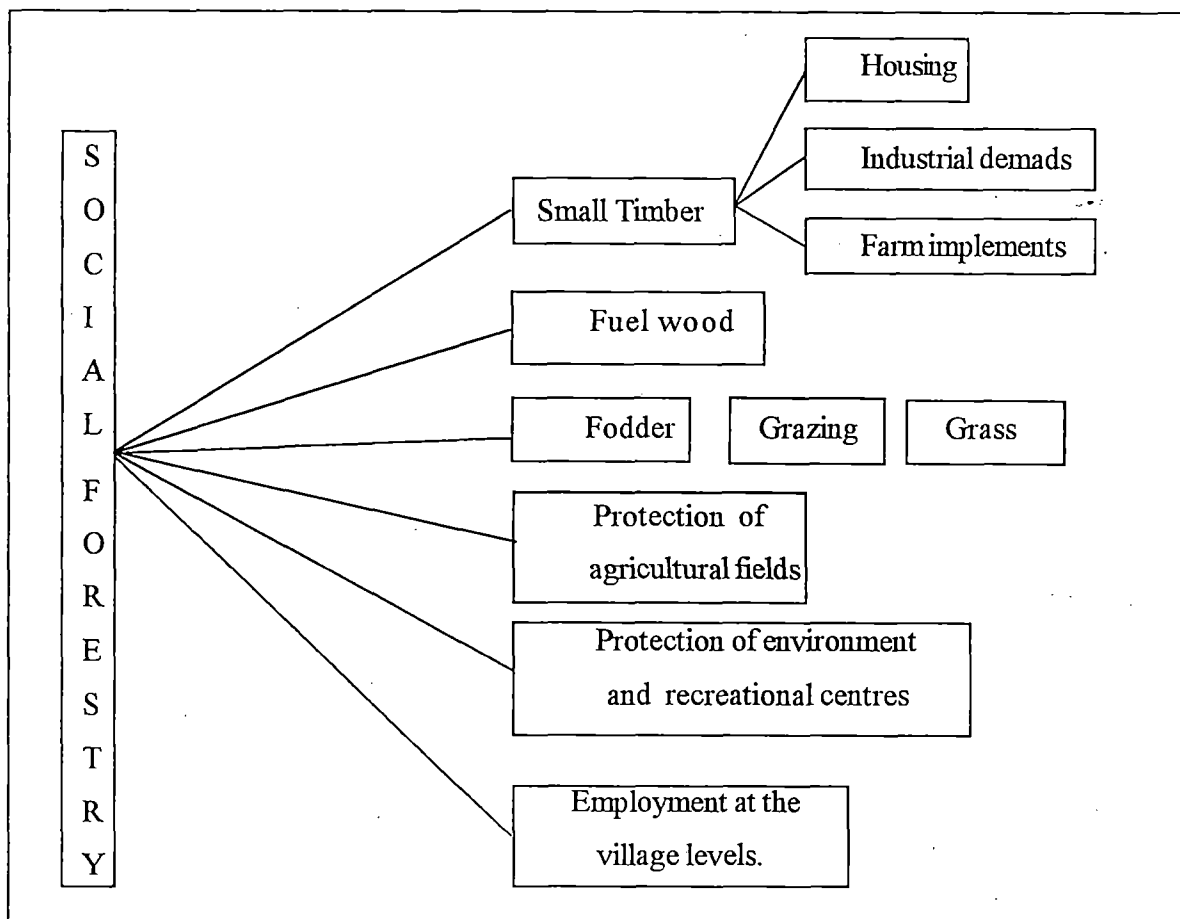


Fig 7.1 - Objectives of social forestry in Darjeeling and Jalpaiguri district.

### 7.2.1 Farm Forestry

The basic component of operation is the organisation of a substantial programme of the planting of trees of the bunds and boundaries of fields of the farmers, which is to be taken up by the farmers themselves. The basic objective of “Vana Mahotsav “ accepted in the planned development of forestry is to encourage farmers to participate in this programme and regenerate forests for their own benefits. The Government has exempted the value of

trees standing on agricultural land from wealth tax .Farm forestry is an important component in social forestry programme of the study area. It meets the fuel wood demand of the rural areas and generates a source of income to the villagers of the Darjeeling and Jalpaiguri district (Pandey, 1997).

Composition of species is an important aspect of farm forestry in the area. A sample survey has been conducted by the researcher to find out the main composition of species in farm forestry. Five important blocks of study area consisting Alipurduar, Malbazer, Dhupguri, Matigara , and Naksalbari have been taken into consideration for sample survey. As per sample survey, the composition of species in farm forestry is given below (Table 7.1). It has been observed that there is a good motivation among the farmers to grow trees on their uncultivated land, boundary of the home and agriculture fields etc. Nowadays the farmers of the region specially, Dhupguri and Malbazer areas are earning a good amount from farm forestry plantation. Kadam is the most important specie which gives a good return within a very short rotation (Photo 7.1)

**Table -7.1**  
Species composition in farm forestry

Sl. No.	Spcies	Percentage
1.	Kadam	60%
2.	Gamar	15%
3.	Akashmari	10%
4.	Sissoo	5%
5.	Eucalyptus	5%
6.	Simul	5%
	Total -	100%

Source-Sample Survey

Table 7.2 provide an interpretation about the status of farm forestry in the study area. Different reaction of the farmers and land owners are observed during sample survey. Some blame the forest department and government effort inefficiency and lack of marketing facilities for their wood produce. On the other hand, there are people who also praise the government efforts in this regard. However, analyses of the relevant data for the year 1992-96 of Darjeeling and Jalpaiguri district is not even 50% of the target.

**Table 7.2**

Achievement of farm forestry in Darjeeling and Jalpaiguri (1992-96)

Sl.No.	Items	Divisions	
		Darjeeling	Jalpaiguri
1.	Number of wood lots created	10590.00	38178.00
2.	Number of seedlings raised (in '000)	4673.00	5726.50
3.	Total area covered (Ha.)	2182.00	2961.00
4.	Number of Beneficiaries (in '000 person)	82.30	374.80
5.	Survival rate in percentage	40.39	25.86

Source :- Monitoring & Evaluation Cell, North Bengal (Report -1), D.C.F. monitoring (North). 1996.

### 7.2.2.Strip Plantation in the study area.

Strip plantation raised by the forest department are handed over to Gram Panchayat for management as per existing Government Order (Ref. G.O.No 2914-For dated 22.7.86). In many cases, the Gram Panchayats have started harvesting tree plantation and it is now widely realised that, if managed and protected properly, strip plantation can be a major source of revenue for the Gram Panchayat (Mandal, 1995, Ghosh, 1997). But it will be wrong to evaluate the achievement of strip plantation only in terms of the revenue earned.

The primary objective of strip plantation of the area is to reduce pressure on natural forests by creating sufficient resources on public and private lands for meeting the local demand, for timber, fuel-wood and fodder. Strip plantation along the road side were also intended to have an aesthetic appeal. Strip plantation also laid down special emphasis on creating gainful employment for the rural people, generating cash income and improving consumption level of the village poor, producing raw materials for village level cottage industries,



**Photo 7.1 Farm forestry ( Kadam ) at Rajar hat**



**Photo 7.2 Strip plantation on Maynaguri - Bhotpatty P.W.D. road**

protecting and improving indirectly the soil and moisture regime of the degraded areas (Vyas & Dubey, 1997). Thus strip plantation is a valuable asset of the area (Photo 7.2).

Strip plantations have been raised at the different division of Darjeeling and Jalpaiguri district. Jalpaiguri forest division which is under Cooch Behar social forestry department has been taken into consideration as a case study. The data for various plantation raised in Jalpaiguri division are collected from divisional office and annexed in Annexure 3. As per Annexure the following observation are classified :-

- It has been found that the major reasons for failure of plantation and low volume of production has been mainly due to lack of protection provided to these plantations during their establishment and subsequently their illicit felling.
- It has been found that in spite of all odds against an investment of Rs. 12,28,322.00 (Social Forestry Report- 1997) and a total of Rs. 3,04,09,641.00 revenue is expected if all plantations are harvested properly.
- A total of 12181 number of 42 species of trees are found in existence.
- In the non-existence plantation sites mainly Teak, Sissoo, Gammar has been felled for commercial reasons where as other species has been mainly felled for plywood and box making industries and to some extent for fire wood. It has been found that in the climatic condition of Jalpaiguri, 16\* out of 42 tree species has given reasonably good results in volume production.

### **7.2.3 Performance of social forestry division**

There are two important social forestry division in the area - Cooch Behar & Siliguri social forestry division. A picture of performance of social forestry in these two divisions has been analysed from the 1991 to 1995. Over all position of Siliguri division is not at the satisfactory level on account of illicit collection of timber and fire wood. Only in the year 1995, the plantations have been given some positive results. The position of social forestry division of Cooch Behar has given some significant results. Plantation raised under Cooch Behar social forestry division have achieved the targets. Survival percentage of species is more than 50% (D.C.F. Monitoring, North, Report -1 ).

Following table 7.3 depicts the number of strip created, area under social forestry and a categorical distribution of the plantations in the study area.

**Table 7.3**  
Appraisal of social forestry in the study area

Division	Year	Number of strips created	Area in Ha.	Plantation status ( in Ha.)			
				Good *	Moderate*1	Bad*2	Non-existent*3
Siliguri Social Forestry	1991	4	55			15	40
	1992	3	30		17		13
	1993	2	25			25	
	1994	2	20			20	
	1995	2	30	30			
Cooch Behar Social Forestry	1991	6	120	76			44
	1992	4	55	36		08	06
	1993	5	65	38	10	10	07
	1994	9	335	180	126	25	04

\*density above 75%; \*1 density 45% - 75 %; \*2 density 15% - 45%; \*3 density below 15%

Source :- Monitoring and Evaluation Cell, North Bengal (Report -1), 1996

### 7.3 JOINT FOREST MANAGEMENT (JFM)

The idea of joint forest management was introduced in the study area to protect and develop the degraded forests with the co-operation of fringe dwellers. Under the JFM, the forest fringe dwellers participate in the protection of the forest and its resources in lieu of which they are granted certain benefits. The dwellers are allowed "25 per cent of the sale proceeds at every final harvesting of the concerned plantation/forests (i.e. timber, pole etc.), They are also entitled to collect "fallen twigs, grass, fruits, flower, seeds etc." as well as "one forth of the produce obtained as intermediate yield from multiple shoot cutting, thinning etc. For all this, the dweller have to form the Forest Protection Committee (FPC) or

Eco Development Committee (EDC). The FPC are formed by dwellers living near ordinary forests, while the EDCs are those who live in the vicinity of a wild life sanctuary. After the formation of the FPC/EDC, the members have to involve themselves at least five years in forest protection before being eligible for the benefits. The FPCs/EDC, are formed by the divisional forest officer in consultation with the local Panchayat Samiti. The committee selects the beneficiaries, identified from amongst the economically backward people.

JFM in the districts was officially adopted from mid 1989. The day to day affairs and up keeping of JFM forest areas are looked after by FPCs. The main objectives of JFM in the area is to conserve and improve forest productivity. This is done through closing of forest for grazing and protection of coppice forests. Besides the afforestation is also done on the same areas. At present there are several problems which are associated with the function of JFM in Darjeeling and Jalpaiguri district (Lama 1999). Several aspects of JFM in the study area have been studied through sample survey and secondary sources which are mentioned in the following sections.

### **7.3.1 Forest Protection Committee ( FPC )**

Forest Protection Committee is the main component of joint forest management in the study area. Joint Forest Management is basically done through the establishment of Forest Protection Committee. This committee is also involve in afforestation programme. There are 226 Forest Protection Committees in Darjeeling and Jalpaiguri district with a total member of 27,197. Most of the beneficiaries in Forest Protection Committee are the SC. and ST. Details are given in table 7.4 and figure 7.2

### **7.2.2 Member from local admistration**

As per the objective of joint forest management, there should be some members from local forest department and Panchayat to make the function of joint forest management more effective. As per table 7.5, it is revealed that only one member (96%) is included in joint forest management besides forest villagers. This one member is basically local Panchayat or Forest Beat Officer.

**Table 7.4**  
FPCs in Darjeeling and Jalpaiguri district.

Sl. No.	Divisions	No. of FPCs	Composition of FPC members				Area in Ha.
			SC	ST	Other	Total	
I	Cooch Behar SF	23	752	208	319	1279	5,158
II	Jal-CoochBehar	26	883	1467	755	3105	8,390
III	B.T.R.	21	1769	1904	869	4542	25,942
IV	Jalpaiguri	34	4719	2044	2228	8991	11,089
V	Baikunthapur	54	4649	187	700	5536	7,462
VI	Kurseong	12	133	124	572	829	2,137
VII	Kalimpong	24	87	245	839	1171	11,126
VIII	Darjeeling	27	85	225	1434	1744	5,121
IX	Wild life -II	5	-	-	-	-	6,199
	Total	226	13077	6404	7716	27,197	86,624

Source: Annual Report, Northern Circle - 1998 -99.

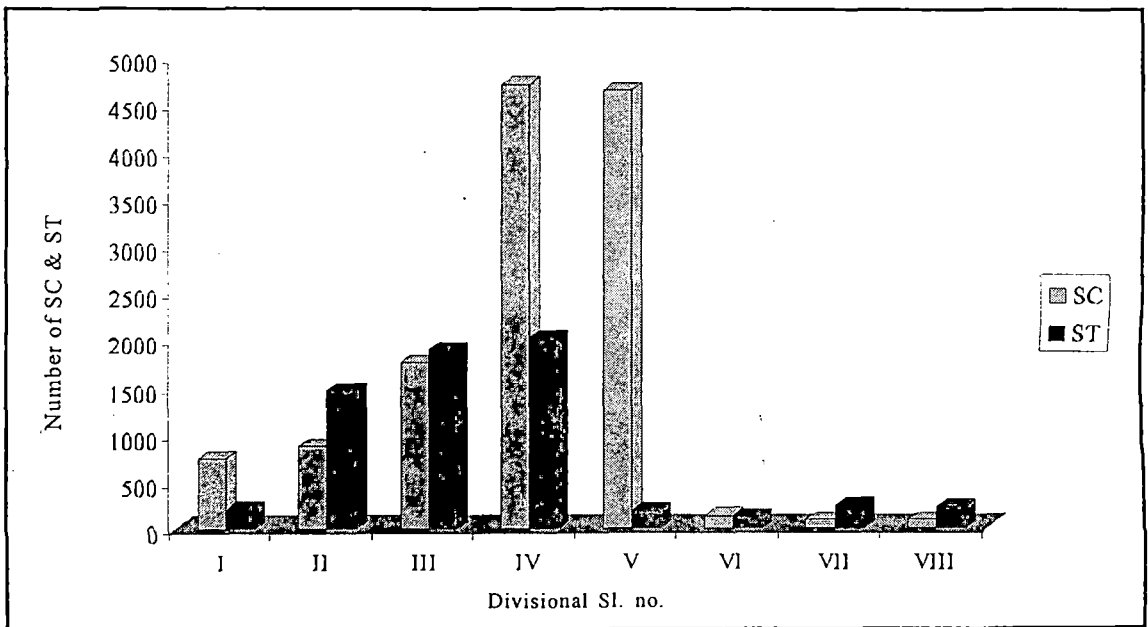


Fig. 7.2 -SC & ST Member in different F.P.C.

**Table - 7.5**

Member from local administration in FPC (in percent).

No of member	Percentage of FPC
One	96.2
More than one	3.8
Total	100.00

Source-Sample Survey

**7.3.3 FPC members by primary occupation**

People from several occupation are the members in Forest Protection Committee. This study is conducted to find out the nature of occupation of members (Table 7.6). It is seen that about 35% members are daily workers or labourers employed in the local tea garden. Members who are involved in various forestry activities are the second largest percentage (25%) by primary occupation. Persons involved in agriculture are also the members of Forest Protection Committee (11%)

**Table 7.6**

FPC members by primary occupation (in percent)

S1 No	Primary occupation	Percentage of FPC
1.	Agriculture	10.8
2.	Forestry	24.8
3.	Daily workers / Garden labour.	34.8
4.	Cottage Industry	4.0
5.	Fishery/goatery/poultry	15.4
6.	Others	11.0
Total		100.00

Source-Sample Survey

**7.3.4 Right enjoyed by the FPC members**

FPC members of the study area have the right to collect leaves, inter-cropping, plantation, collection of firewood and fodder as well as 1/4th of the net sale proceeds at every final

harvesting. Through sample survey it is noticed that members are enjoyed to collect firewood and plantation, inter-cropping on the forest lands (Table 7.7). But the most important aspects of the Joint Forest Management of Darjeeling and Jalpaiguri district is the distribution of 25% of the net sale proceed at every final harvesting of the concerned plantation / forests. But this aspects is totally neglected (Chakrabarty, 1999). This may be the cause of restriction on clear felling by the Honourable Supreme Court of India. Most the respondents have given no response on this issue. Members are not satisfied with the present system of Joint Forest Management

**Table 7.7**  
Rights enjoyed by FPC members ( in percent)

Sl. No.	Nature of rights	FPC member (%)
1.	Leaf Collection	
	a) Tendu leaf	6.4
	b) Sal leaf	8.0
2.	Inter - cropping	24.6
3.	Right to grow corn	4.0
4.	Collection of fire wood	28.0
5.	Collection of fodder	00.5
6.	Plantation activities	28.5
7.	25% return after the final felling	-
	Total	100.00

Source-Sample Survey

### 7.3.5 Distribution of FPCs - by suggestion.

This sample survey brought various suggestions for the improvement in the working of FPCs, from the respondent, interviewed. These suggestion are given in the following table 7.8. As per suggestion which are stated in the table, it is seen that work for more few days is one of the principal demands by the members. Provision for drinking water, electricity, medical facilities and irrigation are other demands. Respondents also demanded more funds.

**Table 7.8**

Distribution of FPCs by their suggestions (in percent)

Sl.No	Suggestions	FPC member (%)
1.	Need more day work in plantations	15.0
2.	Improved road for better transportation	8.7
3.	Proper drinking water	11.0
4.	More funds for village development	10.0
5.	More house hold should be included in the programme	11.8
6.	Irrigation facilities	7.0
7.	Medical facilities	5.7
8.	Short rotation fuel wood	11.9
9.	Arrangement of electricity in the village	13.7
10.	More work on lean seasons through provided various training.	5.4
	<b>Total</b>	<b>100.00</b>

Source-Sample Survey

It is also found from the sample survey that most of these FPCs are representing class of beneficiaries who are extremely poor, many of whom are uneducated and hardly have any resource of their own for subsistence. About 30% of the members are landless and 65.6% are having only less than 2 ha. land holdings. Only 3% families have "Pacca" houses and the rest live in either thatch or mud houses. Only 2% members are educated upto tenth class. The facilities from Panchayat and other government department, hardly reach to them (Roy, 1993).

#### 7.4 AGRO-FORESTRY / INTER-CROPPING

The term "Agro-forestry" encompasses any and all techniques that attempt to establish or maintain both forest/tree and agricultural production of the same piece of land. Agro-forestry is a system of land use which combine growing or raising crops (and or livestock) with woody plants. Land can be used to produce agricultural crops -agriculture; animals and their products-animal husbandry; and trees and their products-forestry. The product

can be obtained by either growing or raising them separately or in different combinations (Figure 7.3a)

In classifying agro-forestry systems, vergara (1982) considered the relative allocation of land to trees, crops, pastures in various agro-forestry systems. For example, in figure 7.3b point A, at the extreme left show, that 100% of the land is allocated to agriculture. Similarly, on the right (point E), the area is wholly assigned to forestry. At any point between these two extremes will be found agro-forestry practices with various ratio of land allocation. At any point left of point C, agriculture is more than 50% and at any point right of point C, forestry is more than 50%

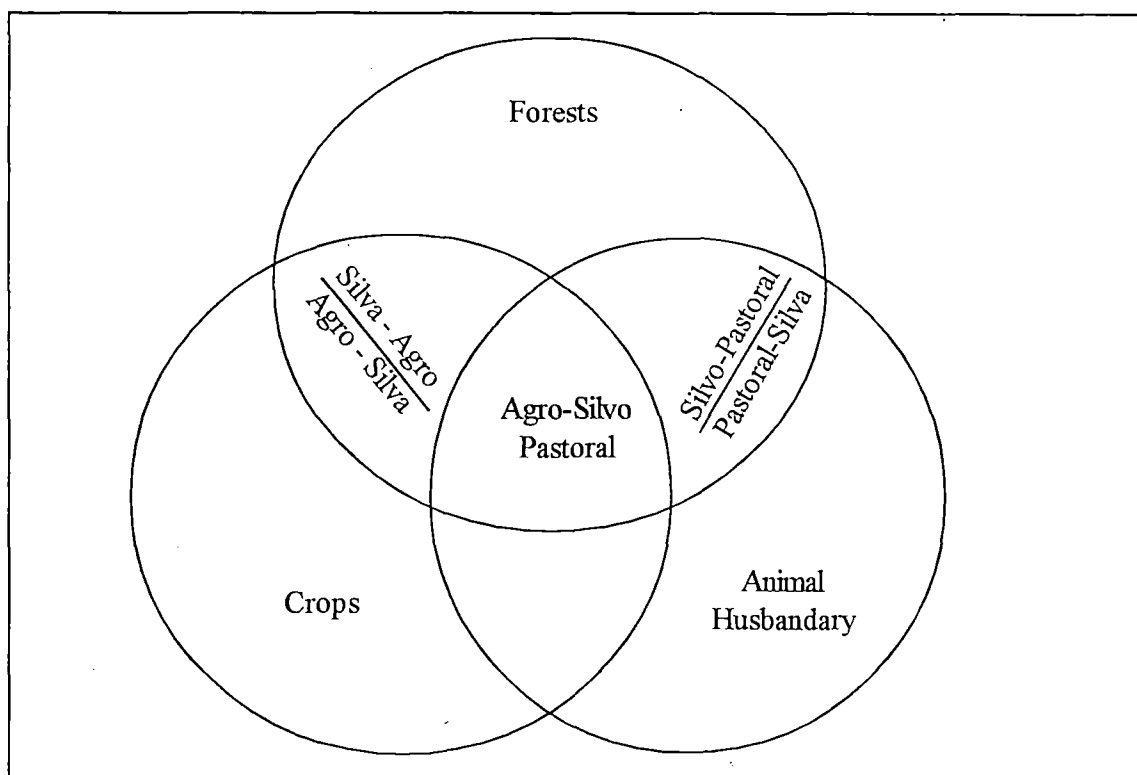


Fig 7.3a Land production systems and classification of agro-forestry.

( Source - Combe 1982 by Tejwani 1998a )

Intercrop is prescribed over 50% of the area under model R-5 and R-6 and 100% of the area under model P1, P3, P4, P5, and P6 (Annexure - 1). Taking into account the above prescription, total prescribed area under inter-crop for all the models in study area in 1432 ha. But actually 986.5 ha area has been covered under inter-crop in 1996 plantation. Percentage of inter-crop done in various divisions of the Jalpaiguri and Darjeeling district is given below table 7.9

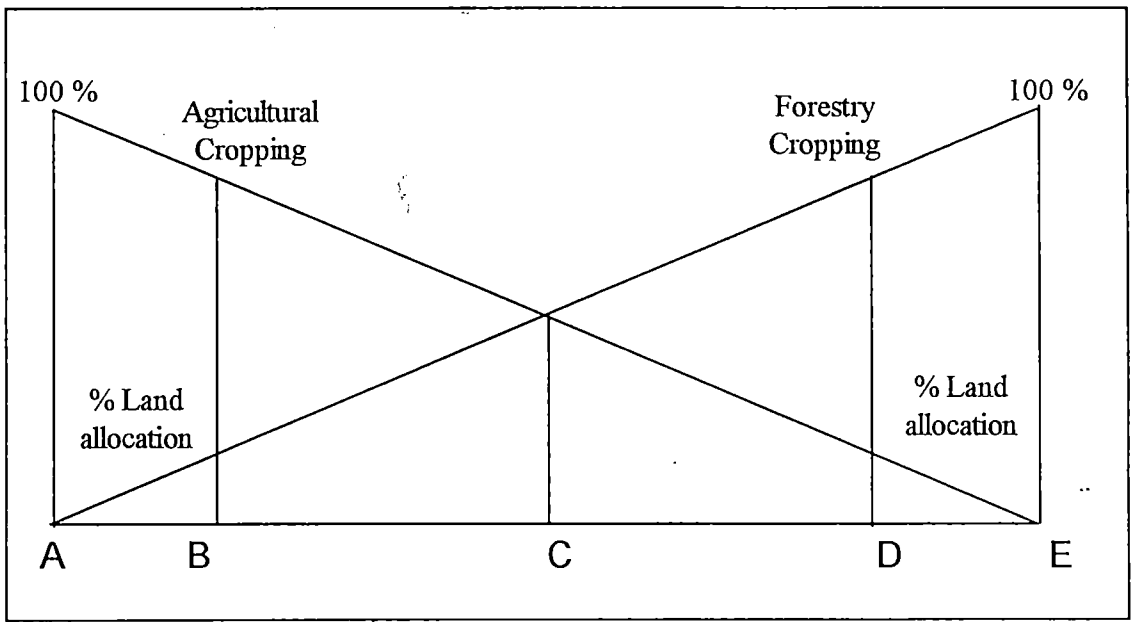


Fig. 7.3b Relative allocation of land under agricultural, forestry and agro-forestry production system (after vergara, 1982)

Table 7.9  
Division wise inter-crop

Baikunthapur	BTR(E)	BTR(W)	COB SF	Darjeeling	Kurseong	Jalpaiguri	Kalimpong
56.8%	50.7%	75.9%	18.5%	22.1%	124.6%	40.6%	93.0%

Source : Monitoring & Evaluation Wing, Forest Directorate, Survey Report -1996-97.

It is observed from the above table no 7.9 that in case of Kurseong division inter-crop percentage is more than 100% because in R models they have done 100% inter-crop. The same is true to some extent in case of BTR (w) and Kalimpong division. In general the inter-crop status of the study area is satisfactory.

## 7.5 CONCLUSION

The social forestry plantation have not yet been able to take the pressure of natural forests of Darjeeling and Jalpaiguri district. Strip plantation in Madarihat and Falakata block,

have generated good amount of revenue to the local Gram Panchayat , but the forest of Jaldapara Sanctuary and Madarihat Range continue to be disturbed. Similarly, despite excellent social forestry works in Naxalbari, Kharibari, Phansidewa and Matigara blocks of Darjeeling district, the adjoining forests of Kurseong division continue to suffer heavily on account of illicit collection of timber and firewood. The strip plantations are also prone to theft, damage, fire, grazing and encroachment and therefore, not much timber and firewood remain available at the time of harvesting to meet the local demands fully. Truly speaking neither the Panchayat nor the forest department have enough legal power to protect strip plantations. Position is further complicated by the fact that the land on which these plantations are raised, often belonging to some other departments (i.e. P.W.D, Irrigation, Railway etc) who play virtually no role in protection these plantation.

There is no doubt that there is a need for changing the approach of social forestry so far adopted both by the Panchayat and forest department specially in view of more emphasis on conservation of natural forests and growing need of forest produce by industries. Joint collaboration between forest and Panchayat department will not only improve the productivity of strip plantation to a very great extent but would also go long way in generating huge surplus of revenue for Panchayats to attain self sufficiency apart from meeting the raw materials needs of local wood based industries thereby supplementing employment opportunities for local populations. There is however , a need for change in infrastructural setup and administrative guidelines to achieve the desired results.

The Joint Forest Management in the study area has not grown its potentials. Most of the forest fringe dwellers in Darjeeling and Jalpaiguri district are involved in the lucrative illegal timber trade. The forest department has apparently failed to interact with the committees on a regular basis. The key word in JFM is co-operation and it is obvious that interaction between the forest department and the committees are free and frank. The forest department should keep the member involve right from the stage. A steady interaction will not only be way of monitoring the motivation levels of the members, but also help to ensure that financial dealing do not fall through because of doubt. It is correct to mention that the share of people i.e. FPC, in the final harvest varies. In the study area, FPCs are entitled for 25% where as in Gujrat it is 50% of the net proceeds. The forest department should provide more incentives to participate in JFM.

Inter-cropping system has not flourished to a great extent in the study area. Awareness of intercropping among the village people is very poor. Even today they think that the forestry is not the lucrative in comparison to other activities because it requires long incubation period. Only Kurseong division has occupied a significant place. The area is slowly getting the experience of inter-cropping. People should be motivated about the benefits of inter-cropping.

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