4. RESULTS

In order to realize the objectives delineated in the chapter on introduction, studies were carried out as furnished in the chapter 3 and the quintessence of the results are furnished under the following headings.

4.1. Nature and Type of Programs Implemented by the FDAs
4.2. Impact of FDA on Socio Economic Status of the Tribal Households
4.3. Factors influencing Participation of Tribes in FDA Activities
4.4. Policy Options

4.1. NATURE AND TYPE OF PROGRAMS IMPLEMENTED BY THE FDAs

The FDA programmes and activities were predominantly implemented by the respective forest divisions. However, the activities of line departments like DRDA have been dovetailed with the FDA activities as per the Government of India guidelines. As per the NAP guidelines, seven major activities were carried out by all three FDAs of the study area. These activities included aided natural regeneration, bamboo plantation, mixed plantation, entry point activities, fencing and micro planning, soil and water conservation and other maintenance activities. The details of physical and financial targets and achievements were collected, analyzed and discussed under the following sub heads:

4.1.1 FDAs in Tamil Nadu
4.1.2 Approved Components of NAP in CFC (CFC)
   4.1.2.1 Achievement Made under NAP in CFC
   4.1.2.2 FDA Activities and Assets Created under NAP
4.1.3. Schemes Operated by the Forest Department in Coimbatore Forest Circle
4.1.4 Schemes Implemented in Different FDAs by Line Departments
4.1.1 FDAs in Tamil Nadu

The state forest department has set up 32 FDAs covering 12 forest circles (Table 9). Among the various forest circle, Dharmapuri forest circle has 5 FDAs with the highest financial outlay (15.88 per cent) for the period between 2002 to 2007. But, the study area i.e., CFC has only 3 FDAs with the budget outlay of Rs. 779.49 Lakh accounting for 8.37 per cent of the total state outlay. It was also evident that there was no correlation existed between the number of FDAs and the extent of budget allocation during the project period (2002 – 2007).

The CFC has three FDAs viz., Anamalai, Coimbatore and the Nilgiris and represented two agro climatic zones viz., Western Zone and Hilly Zone. Among three FDAs, the Anamalai FDA received maximum budget outlay of 152.58 Lakh (34.27 per cent) followed by Coimbatore 148.59 Lakh (33.38 per cent) and the Nilgiris 144 Lakh (32.35 per cent) for the period between 2002 to 2007. Though the budget outlay sanctioned for the entire CFC was Rs.779.49 Lakh, the actual amount received was only Rs.445.15 Lakh accounting for only 57.11 per cent. This revealed that only 50 per cent of the budget was actually released is evident in Table 10.

4.1.2 Approved Components of NAP in CFC

The approved components of NAP implemented through FDA along with physical and financial targets are furnished in Table 11. The approved activities included Aided Natural Regeneration; Establishment of Bamboo plantations; Establishment of Mixed Plantations including NTFP Species; Establishment of Entry Point Activities; Fencing and Preparation of Micro Plans; Soil and Moisture Conservation, Maintenance and other charges. Among these seven components, first three components are related to regeneration and afforestation activity and other four components are related activities. Among the afforestation activities, Aided Natural Regeneration was found to be the major task with the physical target of 1590 ha afforestation with the financial support of
142.97 lakhs for the Western Zone. In Hilly Zone, 420 ha was accomplished with an outlay of Rs. 39.40 lakhs. The Mixed Plantation component in respect of Western Zone and the Hilly Zone had an outlay of Rs. 112.56 lakhs and Rs. 68.76 lakhs respectively.

Among the other activities, entry point activity had a maximum budget outlay of Rs. 127.84 Lakhs followed by soil and moisture conservation (72.57 Lakhs), maintenance (48.41 Lakh) and fencing and micro planning (48.37 Lakh) for the entire Coimbatore circle. The entry point activities had maximum outlay in Western Zone FDAs (85.84 Lakhs) compared to the Hilly Zone (42 Lakh). Among the three FDAs in Coimbatore Forest Circle, Anamalai FDA received maximum outlay for entry point activities (53.04 Lakhs).

4.1.2.1 Achievements Made under NAP in CFC

The achievements made under physical and financial targets in respect of FDAs of CFC are furnished in Table 12.

The Western Zone comprised 67 project villages with the financial sanction of Rs. 560 Lakhs and able to treat an area of 3741 ha by afforestation which accounted 2.26 per cent to the total forest area. In respect of Hilly Zone, the treated area was accounted to only 1.98 per cent to the total forest. The CFC has a total area of 220456 ha under forests, for which an amount of Rs. 779.49 lakhs had been earmarked during the implementation of the NAP. Out of the total forest area only 4836 ha was treated utilizing an amount of Rs. 378.33 lakhs which accounted for 48.54 per cent to the total sanction.

4.1.2.2 FDA Activities and Assets Created under NAP

The Entry Point Activities (EPAs) as per the NAP Guidelines of GOI, (2005) included the following items of work.

- Water harvesting structures like check dams for irrigation, drinking water requirements and amelioration of soil and moisture regime
- Digging of wells for supply of drinking water
- Creation of roads and culverts
- Construction of sheds for school and community use assets
- Installation of energy saving and energy alternative devices
- Rural electrification through the use of Solar Power

The activities and assets created are furnished in Table 13. The study revealed that the number of assets created under EPAs was arrived at 581 in respect of Western Zone, whereas in the Hilly Zone the number of assets created was not available and hence it was not documented. The expenditure incurred towards creating the assets was arrived at Rs. 368.58 lakhs in respect of Western Zone.

The Soil and Moisture Conservation is yet another component of FDA activity implemented to an extent of 15 per cent of plantation components delineated under FDAs as per the guidelines of NAP. Under this activity, Coimbatore and Anamalai FDAs had established assets numbering 53 and 33 respectively during the project (NAP) period (2002-2007). Thus, in respect of Western Zone, the number of assets created was found to be 86 with the expenditure of Rs. 86.71 lakhs and the Hilly Zone with only 79 number of assets with an expenditure of Rs. 2.92 lakhs. When compared to the expenditure incurred towards raising the assets under the head, “Soil and Moisture Conservation”, the norms stipulated in the guidelines of NAP were not followed.

Thus, it is evident from the Table 13 that out of 41 activities taken up in CFC under the sub components of “EPAs” and “Soil and Moisture Conservation”, the Western Zone had the share of 27 and the Hilly Zone had the share of 14 activities.

### 4.1.3 Schemes Operated by the Forest Department in CFC

As per the NAP guidelines, implementation of Centrally Sponsored Afforestation Schemes (CSS) is one of the major activities identified to be implemented by the FDAs. Besides, creation of awareness against poaching and illicit felling of timber, forest fire
fighting operations was also enlisted as major activities in the guidelines of NAP. Accordingly, the current study has also included the CSS implemented by the FDAs and were inventoried and furnished here below.

Among the five major schemes operated, Western Ghats Development Program (WGDP) focused on the components of establishing Fire Line Tracing, appointment of Fire Watchers and repair of check dams. These activities generated a cumulative employment of 12006 man days to the tribes in the Anamalai FDA during the project (NAP) period followed by the activities of Indira Gandhi National Park scheme, which generated 8901 man days of employment.

Table 14 revealed that, among the five major schemes operated by the Forest Department the WGDP, IGNP scheme and IGWLS scheme generated 33.47 per cent, 24.81 per cent and 22.32 per cent of man days respectively. The project elephant scheme generated 11.75 per cent employment generation in Anamalai FDA.

Similarly, the forest department activities in respect of Coimbatore FDA were analyzed and presented in Table 15. Among the various schemes, the WGDP was found to be the major contributor towards employment generation which accounted for 38.76 per cent to the total man days generated from all the schemes. This was followed by Tamil Nadu Afforestation Project (TAP) scheme which created 26.91 per cent of man days of employment under the schemes operated by the Forest Department. Besides these schemes, Project Elephant scheme had also created 21.36 per cent of employment generation. In a holistic perspective these three schemes generated 87.03 per cent of employment between 2002 and 2007.

Similarly the activities under the Nilgiris FDA were analyzed and furnished in Table 16. In respect of the Nilgiris FDA, though there were six schemes like Hill Area Development Program (HADP), TAP, Nilgiris Biosphere Reserve (NBR), Project Elephant (PE), Integrated
Forest Protection Schemes (IFPS) implemented, only the HADP contributed maximum employment generation of 88.54 per cent. The Schemes like TAP and PE schemes were found only marginally contributing to the employment to the tribal folks.

In a holistic perspective the schemes operated by the forest department influenced through FDAs in CFC were analyzed and presented table 17. Among various schemes implemented in the circle, WGDP generated 33.56 per cent of man days followed by TAP (21.15 per cent). The PE and IFPS created 18.20 per cent and 2.75 per cent of man days respectively in CFC.

In total, out of 297407 man days of employment generated, 262393 man days of employment was generated in Western Zone alone (89.34 per cent) contributing maximum benefit to the people. It also revealed that the Hilly Zone had a poor share of employment in CFC due to the absence of many schemes for the livelihood enhancement other than HADP.

4.1.4 Schemes Implemented in Different FDAs by Line Departments

During the period under study, it was observed and reported that, besides Forest Department, the line departments like District Rural Development Agency (DRDA) also involved in FDA activities and contributed significantly for the forest development. The development departments like Rural Development, DRDA, the Animal Husbandry, Tamil Nadu Electricity Board, Tamil Nadu Water Supply and Drainage Board dovetailed their program with FDA activities. It is important to analyze the nature of services rendered by them in different FDAs. Since the details relating to participation of line department were available only in respect of Coimbatore FDA and Anamalai FDA, the same were documented and presented under the following heads:

4.1.4.1 Nature of Works Executed by Line Departments in Coimbatore FDA

4.1.4.2 Schemes and Activities Carried out by Line Departments in Coimbatore FDA
4.1.4.3 Line Department Works Implemented in Anamalai FDA

4.1.4.4 Training Programs Organized in Different FDAs

**4.1.4.1 Nature of Works Executed by Line Departments in Coimbatore FDA**

The Nature of works carried out by the line departments in Coimbatore FDA was analyzed and the details are furnished in Table 18.

Among the 16 items of works carried out in Coimbatore FDA, Construction of Group Houses was found to be the major accomplishment accounted for 49.04 per cent to the total number of assets created followed by construction of Class Rooms (12.50 per cent). Besides these assets, construction of houses and improvement works to the existing houses were accounted for 9.62 per cent each to the total in the Coimbatore FDA. To sum up, the investments made in asset creation accounted for 80.78 per cent to the total assets and these works were exclusively under creation of safe shelters to the tribes. Other equally important activities such as provision of drinking water and electricity connection to the tribal households extended were respectively accounted for 4.82 per cent and 1.92 per cent to the total assets. On examining the existing nature of houses and the condition of forest roads, it was observed that the share of investment and asset creation were found to be inadequate to cater the needs of dwelling tribal population.

**4.1.4.2 Schemes and Activities Carried out by Line Departments in Coimbatore FDA**

Among the various schemes enlisted, Pradhan Manthris’ Grama Yojana (PMGY) promoted through DRDA which contributed 37.36 per cent of total assets created in the form of laying Black Top Roads to an extent of 20.50 Kms in the Coimbatore FDA (Table 19). Similarly construction of group houses under PMGY accounted to 15.59 per cent to the total assets. Thus, the PMGY scheme contributed for raising assets to a level around 50 per cent to the total assets created in Coimbatore FDA. Community assets provided
included facilities in school building, battery operated vehicle check dams, tractor with trailer, bore well with motor, solar pump and street lights accounted for 20.45 per cent altogether to the total assets created in Coimbatore FDA.

In Coimbatore FDA as a whole, the man days of employment generated from all line department activities delineated in Table 19 were 519643, spending an amount of Rs. 420.91 lakhs during the period 2002 - 2007. Among 23 schemes enlisted in Table 19, the PMGY scheme alone contributed about 50 per cent employment. But, the contribution of other schemes towards building community asset in the tribal front was found to be inadequate as evidenced during the study.

4.1.4.3 Line Department Works Implemented in Anamalai FDA

The details of activities of line departments executed in Anamalai FDA are highlighted in Table 20. Among the various schemes, the SGRY contributed maximum fund for several developmental works in Anamalai FDA. Construction of group houses to the tune of 100 numbers was carried out in Anamalai FDA, which accounted for 62 per cent to the total works carried out. Among the total line department works, SGRY scheme alone contributed to the tune of 88 per cent to the total works followed by SS1 scheme. These schemes were operated by the DRDA. The fund for these developmental activities was dovetailed by the Forest Department at division level in the Anamalai FDA in liaison with the DRDA.

4.1.4.4 Training Programs Organized in Different FDAs

The details of capacity building program to VFC presidents and members by forest and line departments are documented and presented in Table 21. Among the three FDAs, only Coimbatore and Anamalai FDAs conducted capacity building activities to the stakeholders. Among these two FDAs, Coimbatore FDA excelled by conducting several capacity building program to the stakeholders.
The efforts taken by the Coimbatore FDA to build capacity of the stakeholders were of multidisciplinary in nature. Among these, the Mushroom cultivation, Bee Keeping and the exposure visit were found to be the most important activities which were practical in nature and infused more confidence in the minds of the stakeholders. The study also found that there was no follow up action to establish any rural enterprise in the VFCs as a source of alternative employment.

4.2. IMPACT OF FDA ON SOCIO ECONOMIC STATUS OF THE TRIBAL HOUSEHOLDS

Any developmental programs implemented would create both positive and negative impacts with varying degree. Against this backdrop studies were conducted and its impact assessed in terms of socio economic status in the study of FDAs and is furnished under the following heads:

   4.2.1. General Characteristics of the Selected Sample Households
   4.2.2. Social Impact Created among the sample Households
   4.2.3. Economic Impact Created among the sample Households

4.2.1. General Characteristics of the Selected Sample Households

The discussion on the general characteristics is the outcome of survey findings of the sample household members of the Village Forest Committees. In respect of general characteristics, the following aspects were discussed in detail.

4.2.1.1 District wise Tribal Population in Tamil Nadu
4.2.1.2 Composition of Scheduled Castes (SCs) / Scheduled Tribes (STs) Households in Coimbatore Forest Circle
4.2.1.3. Age of the head of the household
4.2.1.4. Size of the Family
4.2.1.5. Size of land holdings with the sample households
4.2.1.6 Cropping pattern in different FDAs
4.2.1.1 District wise Tribal Population in Tamil Nadu

The information on District wise Tribal population helps to know the details of the status of tribes in the study environment. From Table 22, it is inferred that the Nilgiris shared 3.72 per cent of the total tribal population of Tamil Nadu and stood first followed by Salem and Namakkal (each 3.45 per cent). With respect to the Coimbatore Forest Circle, the tribal population in The Nilgiris accounted for 4.40 per cent to the total tribal population. In Tamil Nadu as a whole, the tribal population share was only 1.70 per cent. Compared to the average tribal population, the CFC had higher per cent of tribal population.

4.2.1.2 Composition of SCs / STs Households in CFC

It is also equally important to assess the composition of communities residing in CFC as it will be a guideline to illustrate the level of participation extended to the particular community from the activities of FDAs. The details were documented and presented in Table 23.

It could be evidenced from the Table 23 that the households of SCs and STs communities were dominant in CFC. The tribal population per village was found to be almost equal in both agro climatic zones which accounted for 49.34 (Western Zone) and 48.40 (Hilly Zone) per cent respectively. The SCs community was found to be more per village in the Western Zone than the Hilly Zone and their respective share was found to be 41.48 per cent and 31.96 per cent to the total. With regard to other communities like Most Backward Classes (MBCs), Other Backward Classes (OBCs) and Backward Classes (BCs), the share was found to be more in the Hilly Zone.

4.2.1.3. Age of the Head of the Household

The CFC had 51 percentage of households were under the classification of Middle age followed by 42 per cent households under the category of Young age and only seven per cent households was found to be living under the Old age category (Table 24).
In respect of Western Zone and Hilly Zone, the number of households under each age group was found to be almost similar. The FDA wise analysis indicated that the Old age category was found to be more in Anamalai FDA (10 per cent).

4.2.1.4 Size of the Family

The family size differed in different FDAs. It is evident that the pre and post FDA inception, group I showed decrease in the number of households between 2002 and 2007 and the decrease was found to be of 9.52 per cent revealing a reduction in the nuclear family as they wish to be in a joint family situation. The same was found to be true in respect of Group II and Group III households, wherein a marginal increase in the number of households under the respective groups was observed (Table 25). It might be due to absence of adequate number of houses for their convenient living; the houses built in which they were living might have been damaged and found unfit for living. However, in all FDAs, the average size of the family was around four members. It was observed during the study period that the number of households in need of houses for their stay in the study environment was found to be increased.

It is also important to assess the awareness among the households as members of VFCs and their commitment towards VFCs were also analyzed and the results are presented in Table 26.

It was evident that the middle age category of households was much aware that they are members of VFC followed by young age category which accounted for 54 and 42 per cent respectively. Among the three FDAs, 93 per cent of the households of Coimbatore FDA was found to have awareness as members of VFCs followed by the Anamalai FDA (72 per cent) and the Nilgiris FDA (79 per cent). In the CFC as a whole, 81 per cent are aware of their membership in VFC and this situation called for special efforts in creation of awareness among the members through various awareness creation programs.
4.2.1.5 Size of Land Holdings with the Sample Households

The size of land holding available with the households was also post stratified into Marginal (less than one ha), Small (one to two ha), Medium (two to five ha) and Large (more than five ha) and accordingly the studies were conducted and the results were analyzed and presented in table 27.

It is evident that most of the sample households were found to be only marginal category accounted for 53.67 per cent to the total sample households. The households that did not own any land accounted to 39.33 per cent. The small and medium categories of farm were found to be very less and the large farm category was found to be nil in the study area. It could be inferred that the land owned by the households were within the reserve forest wherein they were permitted to do agricultural operations to meet out their livelihood.

FDA wise analysis revealed that the Anamalai FDA had the highest number of small farm households (76 per cent) followed by the Nilgiris FDA (46 per cent). The presence of Small and Medium farm category was found only in Coimbatore FDA, indicating the accessibility of the households to the urban environment which made them to earn higher income from different sources that led to acquire more land holding for agriculture and allied activities. The average size of land holdings in Coimbatore FDA was 1.15 ha followed by Anamalai FDA (0.54 ha) and the Nilgiris FDA (0.39 ha). The CFC had the average land holding size of 0.70 ha and it might be due to the defined allocation of land to the tribal households by the Forest Department.

4.2.1.6 Cropping Pattern in Different FDAs

In the study area, the tribal households actively involved in crop cultivation for their livelihood sustenance. They cultivated paddy, ragi, sorghum and minor millets, besides, rice-fallow-pulses. Banana cultivation was observed widely in some tribal settlements particularly in Coimbatore FDA. These details were documented and presented in Table 28. Among the cereal crops, ragi was found to dominate in respect to the extent
of area both in Anamalai FDA and Coimbatore FDA, but ragi cultivation was totally absent in the Hilly Zone due to the absence of desirable climate for raising such crop. In the Western Zone, Anamalai FDA alone had higher area under Ragi (19.19 ha) followed by Coimbatore FDA (14.23 ha). The cultivation of minor millets was dominant in Coimbatore FDA (15.16 ha), followed by pulses (10.18 ha).

Banana cultivation was confined to Coimbatore FDA alone and found cultivated to an extent of 17.29 ha. Vegetable crops were found cultivated in a small area to meet the domestic and local needs of the tribes. However, cultivation of Banana in the forest environment could be visible with protection measures like battery operated electric fence, watch and ward in the form of tree top machaans (sheds in the tree top branches) so as to prevent damage from wild animals.

In respect of Nilgiris FDA, area under vegetable crops was found to be higher (17.27 ha) followed by flower crops (5.12 ha) in the tribal holdings. The cropping intensity was found to be 122.15 per cent in The Nilgiris FDA followed by Anamalai FDA (114 per cent). Among the FDAs, the size of land holding was found to be more in Coimbatore FDA. However, Coimbatore FDA experienced the low cropping intensity due to higher area allocated for annual crops like Banana. It is inferred from the investigation that the tribal households learnt the technology of cultivating cash crops like banana, but the productivity enhancement as experienced by their counterparts in the plains could not be realized.

4.2.2. Social Impact Created among the Sample Households

In an impact study, both “Social” and “Economic” impact need to be considered separately. Under the head social impact, the following aspects were discussed.

4.2.2.1 Educational Advancement on Implementation of the Project

4.2.2.2 Status of Housing and Electrification in different FDAs

4.2.2.3 Participation in the Activities of FDA
4.2.2.3.1 VFCs / EDCs established in CFC

4.2.2.3.2 Presidents of VFCs / EDCs Present in CFC

4.2.2.3.3 Enrollment and Participation of Tribes in Various Committees of FDAs

4.2.2.3.4 Gender Participation in FDA Activities

4.2.2.3.5 Meetings Conducted in Different FDAs of CFC.

4.2.2.3.6 Deviation of guidelines in the Composition of General and Executive Bodies of FDAs

4.2.2.3.7 Women Self Help Groups (SHGs) Formed under Different FDAs

4.2.2.4 Migration and Mobility of the Sample Households

4.2.2.5 Community Assets and Benefits Accrued to the Sample Households

4.2.2.6 Status of Medical and Health Facilities Available to the Sample Households

**4.2.2.1 Educational Advancement on Implementation of the Project**

The literacy level prevalent in the study area was classified as Illiterate, Functionally Literate, Primary, High School, Higher Secondary School and Collegiate education. The Educational advancement was compared between the base year of project (NAP) implementation (2002) and the year of completion (2007) of NAP. The details of educational advancement realized in different FDAs were analyzed and the results are presented in Table 29.

The educational status of the respondents varied significantly. The percentage of illiteracy reduced to the present level of 9.52 per cent (2007) compared to the base year 2002. Within Five years since the inception of FDA, illiteracy was slashed from 35 per cent (2002) to 31.67 per cent (2007) in CFC and the same had become functionally literate. The change in the functional literates accounted to 45.45 per cent increase over the base year of project implementation (2002). However the other categories of education level did not change much.
The FDA wise analysis revealed that Anamalai FDA experienced 36 per cent of illiteracy during 2002 and the same was reduced to 33 per cent during 2007 indicating that the illiteracy had come down. Similar reduction was also noticed in Coimbatore FDA from 32 per cent to 27 per cent during the same period. On the whole, in the study area there was no change in the higher secondary level. On an average, around 55 per cent of the households obtained education only up to the primary level and the illiterates were around 35 per cent.

4.2.2.2 Status of Housing and Electrification in Different FDAs

During the project period, two types of up-gradation were made available to the tribal poor such as construction of new houses and converting the existing Kutcha (old) houses into Pucca (new) houses by supplying construction materials such as bricks, cement, tiles, door and providing free electricity connection to the resident tribal houses. The details of construction and electricity provision to the tribal houses were analyzed and presented in Table 30.

It was reported that 28 new houses were constructed in CFC during the study period (2002 to 2007). The construction work increased to the tune of 32.94 per cent compared to the base year (2002). The transformation of Kutcha (Old) houses into the Pucca (New) houses was quite visible in Coimbatore FDA, whereas no such attempt was made in Anamalai FDA. Only Coimbatore FDA had a remarkable and noticeable achievement in respect of establishment of new houses followed by the Nilgiris FDA.

Electricity connection provided to the houses of FDA villages was found to be remarkable. FDA wise analysis revealed that Anamalai FDA experienced an increase of electrified houses from 41 per cent to 59 per cent. Coimbatore FDA experienced 92 per cent of houses with electricity connection. Thus, Western Zone on the whole had electrified houses accounting for 75 per cent and the Hilly Zone had electrified houses accounting for 87 per cent.
With regard to the performance of FDAs in Coimbatore Forest Circle, it was poor in Anamalai FDA and hence concerted efforts are needed to provide electricity connection to all the tribal houses. CFC as a whole received electricity connection to 79 per cent of the houses from 62 per cent during the base year of implementation. The increase was accounted for 28.65 per cent over the base year (2002).

4.2.2.3 Participation in the Activities of FDA

Participation of tribal households in general body, executive body, meetings conducted by VFC and EDC and gender participation in FDA activities are discussed below.

4.2.2.3.1 VFCs / EDCs Established in CFC

The structure and composition of registered VFCs / EDCs in the CFC is furnished in Table 31.

The CFC had 87 VFCs / EDCs. Among this, the Western Zone shared 77.01 per cent followed by the Hilly Zone (22.99 per cent). In respect of Western Zone, almost an equal share of both VFCs and EDCs could be found functional. In respect of Members of FDAs, the Western Zone had 4810 members accounted for 51.57 per cent and the Hilly Zone accounted only for 48.43 per cent (4518 members). Among the Western Zone, the Coimbatore FDA alone had 28.58 per cent of members and was found to be the biggest. In respect of the position of Presidents of VFCs / EDCs, the role of women members was found to be almost nil in Western Zone, whereas the Hilly Zone had accommodated only three women members instead of ten members as per guidelines. From the study it is evident that the empowerment to women is purposely ignored.

To provide guidance to VFCs / EDCs, the Forest Range Officers (FROs) of Tamil Nadu Forest Department (TNFD) are given the Ex-officio Member Secretary position. Under the guidance of each FRO, an average of 6 VFCs / EDCs are functioning in Western Zone. In respect of Hilly Zone, it was found to be only 5. In all the VFCs / EDCs, the Treasurer position was found vacant. The services of treasurer was shared by the FRO and the
President of VFCs / EDCs concerned. This reflected the absence of autonomy among the VFCs / EDCs functioning. Besides, creation of Village Development Fund (VDF) as suggested by the Government of India with the contribution of one rupee per member per annum was also not practiced by the FDA. The officials of the Forest Department could have played a key role in such transformation, but it was totally absent.

4.2.2.3.2 Presidents of VFCs / EDCs Present in CFC

The success of any institution depends on the proactive role played by the leader, perception on the nature of activities of the committee, understanding ability of the leader, guidance support provided by the guiding institution etc. These parameters and the gender participation for the leadership position were the most important and are presented in Table 32.

The VFCs / EDCs present in the Western Zone had the presidents from male category alone. The women member should be elected as president at least once in three year. But such practice was found to be ignored in Western Zone. The Hilly Zone accommodated the female member as presidents of VFCs / EDCs to an extent of 15 per cent to the total. In respect of Coimbatore Forest Circle, the percentage share of female presidents to the total was found to be only 4.60 per cent. With respect to number of presidents, the Western Zone had 77.01 per cent while the Hilly Zone had only 22.99 per cent in the VFCs / EDCs.

4.2.2.3.3 Enrollment and Participation of Tribes in Various Committees of FDAs

The functioning of VFCs / EDCs is guided by the General Body and the Executive Body constituted exclusively for the purpose. The meetings of the General Body are chaired by the President of VFCs / EDCs concerned. The VFC/EDC president was elected by consensus / majority vote and holds the position for a period of one year. The women
member should be elected as president at least once in three year by the members of
the General Body. The details of enrollment of adult members in the General Body of
VFCs / EDCs are furnished in Table 33.

The Western Zone had 51.57 per cent of members followed by the Hilly Zone 48.43 per cent
of the members. The enrollment of male and female members was found to be almost
equal in the Hilly Zone also. However, Western Zone had 55.40 per cent of male
members and 48.13 per cent female members. This revealed that the Hilly Zone gave
equal importance to female members compared to the Western Zone.

With regard to executive body, the president of the general body shall also function as
President of the executive body. There are 6 other members drawn from the general
body who were nominated by the Member Secretary (FRO) in consultation with the
President of VFCs / EDCs concerned.

With respect to the Executive Body, there were 421 members in CFC in which the
Western Zone had 281 members (66.75 per cent). However, the Hilly Zone had only
140 members which accounted to be 33.25 per cent to the total. Sex wise composition
revealed the dominance of male members in both the zones.

**4.2.2.3.4 Gender Participation in the FDA Activities**

The FDA offers the voluntary membeRs.hip to one male adult member and one female
adult member from each of the households of the VFC functional villages. They are the
authorized members. An annual non refundable fee of Re. 1 for each ST Member and
Rs. 2 for non ST member are mandatory. The details are outlined in Table 34.

A large number of female members actively participated in the activities of the FDA.
The percentage increase in the women member participation in the CFC was found to
be 40 per cent over the base year (2002). The comparison of participation of male
members during the study period indicated only 16.67 per cent increase over the base
year 2002, because of the fact that the male members were already participating in the activities of various projects implemented by the Forest Department. The women members involved in NTFP collection, processing, livestock rearing, agricultural crop caring activities in addition to their household activities. The members engaged in other activities drastically reduced at the fag end of the study period. This change was accounted for a decrease of 66.67 per cent over the base year (2002).

There was a varying response with regard to the payment of membership fee subscription by the households. It was found that the VFC President himself paid the subscription fees for all the members instead of collecting fee from individual members. This might be due to unwillingness of tribal members to pay the subscription.

4.2.2.3.5 Meetings Conducted in Different FDAs of CFC

FDA has fixed norms in conduct of meeting of General Body and Executive Body of VFCs / EDCs. Details of such norms were analyzed and are presented in the Table 35.

Four General Body meetings should have been conducted at the rate of one per annum, in Coimbatore FDA as it started functioning from 2002 onwards. But it had conducted only three meetings between 2002 and 2007 as evidenced in the Table 35. In Anamalai FDA, only three meetings were conducted since its started functioning from 2003. In respect of the Executive Body Meeting, 12 should have been conducted, whereas only 11 meetings were actually conducted.

In Western Zone 50 per cent of General body meetings and 75 per cent of the Executive Body meeting alone was conducted. The percentage of deviation in the conduct of General Body and Executive Body meeting was arrived at 57.14 and 14.29 respectively in Western Zone, and there was cent per cent and 33.33 per cent respectively in Hilly Zone.
In respect of CFC, the percentage of deviation in conducting the General Body Meeting and Executive Body in conduct of meetings and non conduct of meetings forced the presidents and members meeting was found to be 40 and 20 per cent respectively. From this it is inferred that the delay to be away from execution and prioritization of FDA activities.

Since all developmental programs and schemes of line departments are to be dovetailed with FDA, conducting meetings at regular interval is vital to provide adequate opportunities to the presidents/members for preparing an integrated micro-plan for overall development of the forest environment. But this practice was found missing.

4.2.2.3.6 Deviation of Guidelines in the Composition of General and Executive Bodies of FDAs

FDA has specific norms in respect of composition of General and Executive Bodies of VFCs / EDCs. One of the important norm is 50 per cent of the presidents of VFCs / EDCs should be women. Accordingly, 33 women presidents should find a place in the FDAs in the Western Zone and 10 women presidents in the Hilly Zone. Instead, only 2.94 per cent and 15 per cent of women members were elected as presidents respectively in Western Zone and in the Hilly Zone. The study area as a whole had only 4.60 per cent of women as presidents in the VFCs / EDCs, which far below the norms of the FDA guideline prescribed (Table 36).

It is evident from the Table 36 that other norms such as (a) election of Women member as Presidents at least once in three years; (b) change of presidents after one year term; (c) appointment of treasurer from members of VFCs / EDCs and (d) operation of bank account jointly by Treasurer and Member Secretary were not practiced uniformly in all the three FDAs of CFC. It has prevented the women members from participation and decision making process of various FDAs activities. Though women members were not engaged in decision making positions such as President of VFC, the researcher could see some of the women participating in the micro plan preparation works exclusively for the VFC.
4.2.2.3.7 Women SHGs Formed under Different FDAs

Establishment of SHGs is one of the activities of Tribal VFCs / EDCs to tap the benefit of collection of NTFPs from the forest environment and in engaging other stipulated activities. The details of activities taken up and income generated by different SHGs in the study area are furnished in Table 37.

In Coimbatore FDA, the SHGs were engaged in various activities viz., operation of NTFP lease unit; operation of Eco Friendly Battery Vehicle for tourism; Collection of Vehicle Parking Fees; Running Hotels and Teashops. An amount of Rs.15.93 lakhs was generated as income by 43 SHGs through these activities.

In respect of Western Zone as a whole, an amount of Rs. 20.26 lakhs was generated which accounted for 81.83 per cent to the total income generated by the SHGs. In Hilly Zone, the activities like establishment of nursery, planting works and revolving fund generation etc., generated an income of Rs. 4.50 lakhs which accounted for 18.17 per cent to the total income generated in the CFC. Among these, the SHGs formed in Coimbatore FDA was found to generate more income from diversified activities (Table 37). Unfortunately, the other activities enlisted were found to be unutilized due to lack of further maintenance and upkeep.

4.2.2.4 Migration and Mobility of the Sample Households

Generally migration among the tribes is uncommon. They remain in the forest environment and do their routine works. However, it was observed that temporary migration for employment and educational requirements was evident. The details were analyzed and are presented in Table 38.

Among the FDAs, Coimbatore FDA experienced highest number of temporary migration which was assessed as one per cent for education, particularly in the level of higher secondary education, and three per cent on the households performed migration for
employment purpose and Anamalai FDA experienced the migration for the above purposes at the rate of one per cent and two per cent respectively. Together, the Western Zone experienced 13 per cent of migration in which In-migration was found to be two per cent and Out-migration was found to be around four per cent. The In-migration was mainly due to the mobility of non tribes from plains migrating nearer to the forest fringes and thereby participated in the Forest development activities of VFC where they are members. The Out-Migration was prominent in Coimbatore FDA followed by Anamalai FDA. The households perform Out-Migration exclusively for employment and health related problems and forced to stay in the urban environment.

4.2.2.5 Community Assets and Benefits Accrued to the Sample Households

The details of common infrastructures / assets created in different FDAs were collected, analyzed and presented in Table 39. The Coimbatore FDA in the Western Zone experienced with higher number of community assets during 2007. In CFC, experienced 87 per cent changes in respect of Community Assets over the base year (2002). Among the community assets established, the construction of group houses, establishment of school buildings, providing drinking water and irrigation facility for the sustenance of agricultural activity and provision of street lights with solar power were found to be the most important assets.

Among the assets created, the increase in the length of Black Top Road laid was accounted to 854 per cent increase over the base year 2002. In actual terms, the length of road was found to be extend upto 22.9 Kms. The other assets created are bore well with motor coupled with water tanks and laying of drinking water pipe lines put together gave an increase of 230 per cent over the base year 2002. The Community Halls constructed was found used as store room during the peak season of NTFP collection as well as common place for the meeting of VFCs and to organize / conduct of ceremonial functions of the tribes. The increase in respect of number of community halls over the base year was found to be 200 per cent.
The School building and its associated infrastructure increased by 86 per cent over the base year 2002. Lack of adequate school infrastructure and non-upgradation of the primary school in the tribal environment, experienced stagnation in primary school level in respect of standard of education which was accounts to 55 per cent (Table 29).

4.2.2.6 Status of Medical and Health Facilities Available to the Sample Households

Though tribal households normally practice indigenous medicine for various health care issues, for curing some of the chronic health problems, they have been forced to migrate to nearby urban environment. In these circumstances, the distance travelled by the sample households to avail medical and health care facilities was analyzed and the details are furnished in Table 40.

To ease the understanding, the distance travelled by the households was post stratified into three different groups viz., less than five kms; 5 to 10 Kms and more than 10 Kms and the same were compared with the distance migrated during 2002 to assess the impact of the project in creation of medical and health care facilities.

The study indicated that the FDA activities created impact to some extent among the households in reducing the distance of travel to avail the medical facilities. Among the three FDAs, 64 per cent of the households of Anamalai FDA were found travelling around 10 Kms to avail the medical facilities and the same was found reduced to 52 per cent during the end of the study period (2007). In respect of The Nilgiris FDA, the percentage of households travelled to avail the medical facilities was also reduced from 54 per cent to 46 per cent for a distance of around 10 Kms. In CFC, around 77 per cent of the households were found travelling to avail the medical facilities at the end of 2007. Percentage reductions in number of households travelling to avail the medical facilities were found to be 23 per cent. This was mainly due to the initiative taken by the authorities towards conducting health camps periodically at the tribal environment. In respect of Coimbatore FDA, most of the households were not found migrating to a long distance for availing medical facilities due to the availability of health care to the tribes in the tribal settlement by certain NGOs.
4.2.3 Economic Impact Created among the Tribal Households

The Economic Impact created by the FDA is addressed through employment and income generation opportunities provided to the households and the livelihood enhancement prevalent among the households. The livelihood status prevalent in the sample households could be addressed through the level of improvement in per capita calorie consumption. The employment and income generation was assessed through the number of man days created additionally from the NAP project during study period. The total income generated from all the sources like agriculture, livestock rearing, NTFP collection and sale, wage labor from afforestation related activities were collected, analyzed and discussed under the following heads.

4.2.3.1. Livestock Population in the Sample Households
4.2.3.2. Employment and Income Generation to the Sample Households
4.2.3.3. Forms of Livelihood and Dependency among the Sample Households
4.2.3.4. Distribution of Income among the Sample Households
4.2.3.5. Per Capita Calorie Consumption among the Sample Households
4.2.3.6. Status of Poverty among the Sample Households

4.2.3.1 Livestock Population in the Sample Household

The tribal livelihood security was closely associated with the agriculture and allied activities coupled with collection, processing and sale of NTFP. Among these, the livestock assets and its status are very important to assess the economic impact. The animal population classified as work animals, milch animals, sheep and goats and other animals per household were analyzed and the results are presented in Table 41.

It is revealed from the table that the percentage increase of animals per household was found to be 33 per cent. Among various categories of animals, the population of cow was found to be reduced remarkably to a level of 66.67 per cent followed by the reduction of work animals (33 per cent). On the other hand, the population of sheep
was found to be increased to a level of 120 per cent over the base year (2002). It is evident from the study that the number of work and milch animals present in the households were drastically reduced during 2007 and it was also observed that the population of Sheep and Goats increased significantly. An average, an increase of 5 animals per household could be seen.

4.2.3.2. Employment and Income Generation to the Sample Households

The extent of contribution by FDA in generation of employment and income was analyzed and the results are presented in Table 42. The CFC generated 164 man days of employment during 2007 and it was 25 per cent more over the base year (2002). Though the income generated from all sources in absolute terms was found to be increasing and accounted for 114 per cent over the base year 2002, the tribes in the CFC were living below the poverty line. Only the Coimbatore FDA had actively involved in enhancing the gross income and employment generation activity to the tribes. The gross income generated from all sources was found to be at Rs. 16489 per annum in Coimbatore FDA followed by the Nilgiris FDA (Rs. 12215) and Anamalai FDA (Rs. 11348).

4.2.3.3. Forms of Livelihood and Dependency among the Sample Households

The principal livelihood sources for the tribes are agriculture, livestock rearing, forestry activities including plantation development and NTFP collection and wage labor. The details of participation in these activities among the tribes were analyzed and the results are presented in Table 43.

The Table indicated that the percentage of households involved in Agriculture and allied activities was found to be the highest in Anamalai FDA. The principal reason for the multiple intensive agricultural activities in Anamalai FDA was due to availability of rich source of irrigation water, fertile soil and increased productivity. Other two FDAs experienced almost stagnation of 22 per cent. The livestock activity and its contribution towards employment to the tribes hovered around 7 per cent only.
Forestry is the principal activity providing employment to the tribes through plantation development activity and collection of NTFPs and other developmental works such as soil and moisture conservation works, construction activity in the lands of tribes. The forestry activity contributed 37 per cent of employment generation but it is observed that the contribution is stagnant during 2007.

4.2.3.4. Distribution of Income among the Sample Households

The distribution of income was judged and analyzed using the Gini Ratio of income inequality.

4.2.3.4.1 Lorenz Curve and Income Distribution

The Lorenz curve is a graphical representation of the cumulative distribution function of the empirical probability distribution of income. The percentage of household is plotted on x axis, the percentage of income on the y axis. In the figure the red line is the Egalitarian Line and the blue line showed the extent of income distribution of the particular FDA. The curve was drawn for income distribution of the tribal household during 2002 and 2007 situation. Inequality in income distribution continues in Anamalai FDA even after the inception of FDA (Figure 3). Inequality in income distribution was found to be reduced considerably in Coimbatore FDA during post project situation (Figure 4). Similar is the case in The Nilgiris FDA (Figure 5).

4.2.3.4.2 Gini Concentration Ratio of Income Inequality

The Gini Ratio known as the Index of Income Concentration is a statistical measure of income equality ranging from zero to one. Smaller the Gini Ratio lesser the inequality. A measure of 1 indicates perfect inequality, i.e. one person has all the income and the rest have none, whereas, ‘0’ indicates perfect equality. That is all people have equal share of income. To study the impact of income distribution, Gini Ratio was examined and the results are presented in Table 44.
It was evidenced from Table 44 that the sample households present in CFC experienced the income distribution almost equal among the households as reflected in the Gini Concentration Ratio. The Gini Concentration Ratio was arrived at 0.27 and 0.23 during 2002 and 2007 respectively in CFC. During 2007, the inequality was further reduced and turned almost to equality. This was the case in almost all the three FDAs revealing the unique living standards of tribes in the study environment. To reduce inequality further, concentration of income and employment generation activities need to be strengthened.

4.2.3.5. Per Capita Calorie Consumption among the Sample Households

The details of components of food basket to be adopted by a consumer for the daily diet prescribed by the National Institute of Nutrition (NIN), Hyderabad is given in Table 45. Accordingly a grown up consumer (One Consumption Unit) should consume 2400 Calories per consumption unit per day in rural area, for which the quantity of each food items is also prescribed which is put together arrived at 830 grams per day. Out of 830 grams, Cereals accounted for 44.58 per cent, vegetables 21.09 per cent, Milk 12.05 per cent, Oil and Fats accounted for 4.82 per cent and Meat and sugar each accounted for 3.61 per cent to the total food items prescribed.

4.2.3.5.1. Per Capita Calorie Consumption in the Households of Anamalai FDA

It is revealed that the tribes were consuming Rice and generating calories above the required level as recommended by NIN. The calorie intake from rice was found to be marginally higher than the recommended level of 1384 calorie during the study period (Table 46). During 2007, it is evident that higher level of calorie intake from Rice was noticed when compared to 2002 situation. Similar was the case in animal products. The NIN recommended the level of 87 calorie from meat and meat products. But the consumers in tribal environment consumed excess of 21.61 per cent over the recommended level. It was mainly due to the abundance of meat from wild source. In Anamalai FDA, similar situation was evident.
With regard to the intake of calorie from sugar, it was found to be 180 per cent more than the recommended calorie from sugar during 2007. Hence the intake of sugar had to be reduced. At the same time, the milk consumption was found to be very less during 2007 and hence the level of milk consumption should necessarily be increased. Need based awareness creation on increasing the consumption of fruits, vegetables and oil is also to be emphasized for balancing the nutrition. The calorie intake from oil consumption was found to be 65.61 per cent less than the recommended level.

4.2.3.5.2 Per Capita Calorie Consumption in the Households of Coimbatore FDA

Among the FDAs, the calorie consumption differed widely. This is mainly due to the availability of certain commodities abundantly to the households. The calorie consumption level in the households of Coimbatore FDA is furnished in Table 47.

The intake of calorie from Rice was found to be 27 per cent higher than the recommended level. It was mainly due to easy availability of the produce through public distribution system at subsidized price. Calorie drawn by consumption of pulses was found to be marginally increased in the households during 2007. The increase in the consumption was accounted to be 30.23 per cent and was found to be 60 per cent less than the recommended level of calorie drawn from pulses.

The NIN recommended the level of 87 calorie from meat and meat products, but the consumers in tribal environment consumed excess of 11.21 per cent more than the recommended level in Anamalai FDA. This is not the case in Coimbatore FDA. Here the calorie intake from meat and meat products was found to be reduced (13.10 per cent) below the recommended level. It was mainly due to the shift in the interest from non vegetarian dishes to vegetarian dishes. The calorie drawn during 2007 was found to be reduced.

As regards the intake of calorie from sugar, it was found to be 173 per cent more than the recommended calorie from sugar in respect of households of Coimbatore FDA. Hence the
intake of sugar had to be reduced. At the same time, the milk consumption was found to be very less in 2007 situation and hence the level of milk consumption should necessarily be increased. Need based awareness creation on increasing the consumption of fruits, vegetables and oil is also to be emphasized for balancing the nutrition. The calorie intake from oil consumption was found to be 61.39 per cent less than the recommended level. It also needs to be emphasized among the tribes to raise the oil rich crops like sesame and groundnut in the study environment, so as to generate more oil for their own consumption. However, the total calorie intake recommended by NIN (2400 Calories) was almost fulfilled in Coimbatore FDA. The households of Coimbatore FDA consumed 2350 Calories during 2007 which was not at all prevalent among the households of Anamalai FDA and the Nilgiris FDA. It might be due to the higher level of awareness and the impact of comparatively more welfare oriented programmes taken up particularly in Coimbatore FDA.

4.2.3.5.3 Per Capita Calorie Consumption in the Households of the Nilgiris FDA

The details of Calorie intake among the households of the Nilgiris FDA are presented in Table 48. The norms suggested by the NIN, Hyderabad are given in the parentheses for easy comparison.

From Table 48 it could be inferred that the intake of calorie from Rice was found to be 14.67 per cent higher than the recommended level. It was mainly due to easy availability of the produce through public distribution system at subsidized price. The calorie intake by the households of the Nilgiris FDA was comparatively lesser than the Coimbatore FDA. The calorie drawn by consumption of pulses was found to be increased in the households during 2007 situation. The increase in the consumption was accounted to be 17.69 per cent during the same period and it is found to be 65 per cent less than the recommended level. The NIN recommended the level of 87 Calorie from meat and meat products. But the consumers in tribal environment consumed 32.41 per cent more than the recommended level in the Nilgiris FDA. Here the Calorie intake from meat and meat products was found to be more than the recommended level.
As far as the intake of Calorie from sugar is concerned, it was found to be 198 per cent higher than the recommended calorie from sugar in respect of households of the Nilgiris FDA. At the same time, the milk consumption was found to be very less during 2007 and hence the level of milk consumption should necessarily be increased. Need based awareness creation on increasing the consumption of fruits, vegetables and oil is also to be emphasized for balancing the nutrition. The Calorie intake from oil consumption was found to be 59.28 per cent less than the recommended level.

The study inferred that the Calorie intake among the households was very less when compared to the norms of NIN. Only the households of Coimbatore FDA, were closer to the norms in respect of Calorie intake. But the recommended level of calorie from food basket was not followed. An interesting finding was that the households of Coimbatore FDA face the calorie shift from non vegetarian to vegetarian food calories. In respect of Anamalai FDA and the Nilgiris FDA, they preferred to have Calories from non vegetarian diets. Higher consumption of non vegetarian could be observed only in Anamalai FDA followed by the Nilgiris FDA.

4.2.3.6. Status of Poverty among the Sample Households

The poverty status prevalent during the study period (2002 – 2007) was analyzed and the results are presented in Table 49. The number of households living below poverty line was found to be reduced during the 2007 and the reduction was 19 per cent. In respect of the average income earned per BPL household, the increase was accounted to be 127 per cent. The absolute income increase was found to be Rs.8697 in respect of BPL households. Higher income per BPL household earned was arrived at Rs.9392 per annum only in Coimbatore FDA.

The number of households moved to the Above Poverty Line based on the norms was arrived at 121 accounting to 53 per cent over the base year (2002). With regard to income of the households living above poverty line, income increase in absolute terms
in CFC was found to be increased from Rs.10176 to Rs.15348. The highest average income earned per APL household was arrived at Rs.16116 per annum in Coimbatore FDA. In a nutshell, during the investigation period, it was found that the number of households reached APL from BPL is considerable.

4.3 FACTORS. INFLUENCING PARTICIPATION OF TRIBES IN FDA ACTIVITIES

The factors which influenced the participation of tribes in FDA activities are discussed under the following heads:

4.3.1 Frequency of Fodder Collection by the Sample Households
4.3.2 Quantity of Fodder Collected by the Sample Households
4.3.3 Frequency of Fuel Wood Collection by the Sample Households
4.3.4 Quantity of Fuel Wood Collected by the Sample Households
4.3.5 Factors. Influencing Fuel Wood Collection in Different FDAs
4.3.6 Collection and Sale of NTFP in CFC
4.3.7 Factors Influencing Collection of NTFP in Different FDAs
4.3.8 Factors Influencing participation of Tribes in FDA activities
4.3.9 Constraints Faced by the Households in Different Activities

4.3.1 Frequency of Fodder Collection by the Sample Households

The increase in the livestock population also motivates the households to go for collection of more fodder as some of the animals are not at all permitted to graze inside the forest. In these circumstances, the collection of fodder and its frequency assumes importance and hence these details were analyzed and presented in Table 50. Among the households, the frequency of fodder collection had been documented and the frequencies in vogue among them were fodder collection Every Day, Twice in a week, once in a week and once in a fortnight.
It was shown from Table 50 that the frequency of collection of fodder among the number of households was found to be predominantly in the categories viz., once in a Week and Twice in a Week. Both frequencies were accounting for an increase of 40.74 and 68.42 per cent over the base year (2002) respectively. Besides these frequencies, the frequency of once in a Fortnight was found to be increased to a level of 300 per cent over the year 2002. In CFC as a whole, increase in the number of households involved in fodder collection could be arrived at 51 per cent over the year 2002. The FDA had created impact in terms of increasing fodder plantations and hence the number of households and the frequency of collection of fodder increased significantly.

4.3.2. Quantity of Fodder Collected by the Sample Households

In respect of quantity of fodder collection, the attributes like number of households involved in fodder collection, distance travelled to collect the fodder and the absolute quantity collected from the forest fringes were incorporated. These were analyzed and compared with their status at 2002 and the details are presented in Table 51.

It was evident from the study that the number of households actually involved in fodder collection during 2007 was found increased which was accounted for 56 per cent in the Western Zone and 51 per cent in the Hilly Zone. An overall increase in the fodder collecting households in CFC was found to be 61.11 per cent more than the base year (2002). The reason behind the increase in the number of households involved in fodder collection was due to rise in the number of animals per households in the study area.

FDA wise analysis indicated that there was no change in the number of animals owned per household in the Hilly Zone. But the Western Zone experienced with increase in the number of animals per household after establishment of FDA. When compared, the quantity of fodder collected during the 2007 situation was found to be almost the same as that of 2002 situation in the Hilly Zone. The reason might be that the households in the Hilly Zone were completely dependent on the green fodder for their livestock,
whereas in the case of Western Zone, agricultural residues and crop residues were also substituted in feeding the animals and hence the quantity of fodder collected was found to be the same amidst increase in the animals per household in 2007. Though the absolute quantity of fodder removed between 2002 and 2007 was found to vary much. The percentage change from 2002 to 2007 was found to be static and hovers around only 43 percent in the study area.

In respect of distance travelled to fetch fodder for the livestock, CFC experienced a reduction in the distance during the 2007 situation which accounted for 18.67 per cent over the base year (2002). The distance travelled to fetch the fodder by the household in the Hilly Zone was found to be the least when compared to the Western Zone. This was because of the close accessibility of the fodder resources. The impact was visible in 2007 in Anamalai FDA followed by Coimbatore FDA, where the reduction in the distance travelled to fetch fodder was found to be 29 per cent and 14 per cent respectively over the base year (2002).

4.3.3. Frequency of Fuel Wood Collection by the Sample Households

Collection of fuel wood is an important activity of the households in the study environment. For cooking, heating and smoking purposes, the tribals need fuel wood which is periodically collected by the households. Hence, the frequency of fuel wood collection was analyzed and the details are presented in Table 52.

Among the enlisted frequencies in Table 52, fuel wood collection ‘Twice a Week’ was found to dominate among the households in generally followed by ‘Once a Week’. When compared to 2002 and 2007 situations, the frequency of ‘Twice a Week’ faced a marginal reduction and the frequency of ‘Once a Week’ faced a marginal increase. These decrease and increase in the fuel wood collection accounted for 2.68 per cent and five per cent over the base year respectively. However, in CFC as a whole, the frequency of fuel wood collection ‘Once a Fortnight’ was found to have a remarkable increase
accounted for 166.67 per cent over the base year (2002). The number of participants in the frequency of ‘Once a Fortnight’ was found to be very less in absolute terms. In the study area, the frequency of ‘Every Day’ collection of fuel wood was found to face a reduction of 77.27 per cent over the base year (2002). It was observed from this study that there is a shift from every day to ‘Once a Week’ and ‘Once a Fortnight’ which was due to the alternative employment available to the households.

4.3.4. Quantity of Fuel Wood Collected by the Sample Households

The details of quantity of fuel wood collected in the households and the distance travelled to fetch the fuel wood were analyzed and the details are presented in Table 53. The quantity of fuel wood collected in CFC accounted to be 5 to 6 kgs per visit and the increase was accounted to be 26 per cent over the base year (2002). On analyzing the distance travelled to fetch the fuel wood, it was found that there was a reduction of distance which was accounted to 36 per cent over the base year (2002). It is also revealed that the NAP project had created fuel wood plantations in the accessible areas and hence the distance travelled to fetch fuel wood was found decreased. The FDA wise analysis indicated that the distance travelled to collect fuel wood was found decreased much in respect of the Nilgiris FDA.

4.3.5. Factors Influencing Fuel Wood Collection in Different FDAs

The factors which found influencing fuel wood collection were identified and the extent was analyzed and presented in Table 54.

4.3.5.1. Factors Influencing Fuel Wood Collection in Anamalai FDA

The regression results presented in Table 54 showed that the fuel wood collection was influenced by size of the family, number of trips performed per annum and the distance travelled in Kms per trip. The Co-efficient of Determination ($R^2$) realized from the regression for the 2002 situation was found to be 0.71 and for 2007 situation it was 0.78. The explanatory variables included in the regression explained 71 per cent of
variation in the 2002 situation and 78 per cent in the 2007 situation. ‘F’ Value delineated in the table during the study period revealed the equation fitted with the explanatory variables was found to be the best fit. A significant ‘F’ means that the fitted regression model was adequate.

From Table 54 it could be inferred that one unit increase in the size of the family would motivate the household to increase quantity of fuel wood collection by 295 kg per year keeping all other variables at constant level. In respect of number of trips, one unit increase in the number of visit for fuel wood collection, the additional quantity collected would be 8.37 kg per annum keeping all other variables at their mean level during 2002 situation. These two variables were found to be significantly contributing to the dependent variable, the quantity of fuel wood collection at one per cent level revealing most significant and five per cent level revealing significant level respectively.

In respect of 2007 situation, one unit increase in the size of the family would motivate the household to increase the quantity of fuel wood collection by 518 kg per year keeping all other variables at constant level. In respect of number of trips, one unit increase in the number of visit for fuel wood collection, the additional quantity collected would be 2.86 kg per annum keeping all other variables at their mean level. These two variables were found to be significantly contributing to the dependent variable, the quantity of fuel wood collection, at one per cent level revealing most significant and five per cent level delineating at significant level respectively.

When compared the factors influencing fuel wood collection during the study period, the size of the family was contributed strongly contributing to the fuel wood collection and was found to be highly significant. Additional quantity of fuel wood collection might be due to requirement of fuel wood for multiple purposes like heating, and charcoal preparation. In respect of number of trips performed per annum, the impact was not much pronounced during the 2007 situation which revealed that the households
collected the fuel wood to the required level at one time and not much interested in paying additional visit per annum. It might be due to the collection of fuel wood only for domestic purpose in Anamalai FDA.

4.3.5.2. Factors Influencing Fuel wood Collection in Coimbatore FDA

The fuel wood collection was influenced by size of the family, number of trips performed per annum and the distance travelled in Kms per trip and it was presented in Table 55. The Co-efficient of Determination ($R^2$) realized from the regression for the 2002 situation was found to be 0.61 and 2007 situation as 0.71, which revealed that the explanatory variables included in the regression explained 61 per cent of variation during 2002 and 71 per cent of the variation during 2007. ‘F’ Value delineated in the table during study period revealed that the equation fitted with the explanatory variables was found to be the best fit. A significant ‘F’ means that the fitted regression model is adequate.

From the Table 55, it was found that one unit increase in the size of the family would motivate the household to increase the quantity of fuel wood collection by 388 kg per year keeping all other variables at constant level. In respect of number of trips, one unit increase in the number of visit for fuel wood collection, the additional quantity collected would be 5.13 kg per annum keeping all other variables at their mean level during 2002 situation. These two variables were found to be significantly contributing to the dependent variable, the quantity of fuel wood collection at one per cent level revealing most significant.

In respect of 2007 situation, one unit increase in the size of the family would motivate the household to increase the fuel wood collection by 427 kg per year keeping all other variables at constant level. In respect of number of trips, one unit increase in the number of visit for fuel wood collection, the additional quantity collected would be
10.78 kg per annum keeping all other variables at their mean level. These two variables were found to be significantly contributing to the dependent variable, the quantity of fuel wood collection, at one per cent level revealing most significant.

When compared the factors influencing fuel wood collection during the investigation period, the size of the family was found to be strongly contributing to the fuel wood collection at 2007 situation. Additional quantity in fuel wood collection might be due to the nature of usage of fuel wood for multiple purposes like heating and charcoal preparation. In respect of number of trips performed per annum, the impact was much pronounced through its coefficient values during the 2007 situation unlike in Anamalai FDA. It might be due to the collection of fuel wood both for domestic and commercial purposes especially for charcoal production and sale in nearby semi urban environment of Coimbatore FDA.

4.3.5.3. Factors Influencing Fuel Wood Collection in the Nilgiris FDA

The regression results presented in Table 56 revealed that the fuel wood collection is influenced by size of the family, number of trips performed per annum and the distance travelled in Kms per trip. The Co-efficient of Determination ($R^2$) realized from the regression for the 2002 situation found to be 0.72 and the 2007 situation realized the R2 of 0.56 revealed that the explanatory variables included in the regression explained 72 per cent of variation in the 2002 situation and 56 per cent in 2007. The ‘F’ value delineated in the table during the investigation period revealed that the equation fitted with the explanatory variables was found to be the best fit. A significant ‘F’ meant that the fitted regression model was adequate.

From Table 56 it could be inferred that one unit increase in the size of the family would motivate the household to increase the quantity of fuel wood collection by 425 kg per year keeping all other variables at constant level. In respect of number of trips, one unit increase in the number of visit for fuel wood collection, the additional quantity collected
would be 5.76 kg per annum keeping all other variables at their mean level during 2002. These two variables were found to be significantly contributing to the dependent variable, the quantity of fuel wood collection at one per cent level revealing most significant and five per cent level delineating at significant level respectively.

In respect of 2007 situation, one unit increase in the size of the family would motivate the household to increase the quantity of fuel wood collection by 447 kg per year keeping all other variables at constant level. In respect to number of trips, one unit increase in the number of visit for fuel wood collection, the additional quantity collected would be 5.29 kg per annum keeping all other variables at their mean level. These two variables were found to be significantly contributing to the dependent variable, the quantity of fuel wood collection, at one per cent level revealing most significant and five per cent level delineating at significant level respectively.

When comparing the factors influencing fuel wood collection during the study period, the size of the family was found to be strongly contributing to the fuel wood collection at 2007 situation and found to be highly significant. Additional quantity in fuel wood collection might be due to the nature of usage of fuel wood for multiple purposes like heating and charcoal preparation. In respect of number of trips performed per annum, the impact was not much pronounced during the 2007 situation through its coefficient values (Table 56) revealing that the households were collecting the fuel wood to the required level at one time and not much interested in paying additional visit per annum. It might be due to the collection of fuel wood for only domestic purpose in the Nilgiris FDA.

**4.3.6. Collection and Sale of NTFPs in CFC**

Collection of NTFPs and sale are the principal activities among the tribes for their livelihood. In this respect, the principal NTFPs available in CFC were documented and presented in Table 57. In the study environment, there were seven kinds of principal NTFPs available and the same were collected during different seasons, processed and
sold to the consumers through VFCs / SHGs. Few produce were available for collection and offered scope for employment throughout the year like collection of broom grasses and mosses.

Among the NTFPs listed, *Terminalia chebula* (Kadukai), *Sapindus emarginatus* (Poochakai) and *Acacia coicinna* (Chikakai) were found to fetch the highest income to the households. The study inferred that during 2002 situation, the NTFPs were collected and sold through open public auction. Whereas during 2007 situation, the NTFP collection activity was taken care of by the Members of tribal VFCs and the NTFPs were collected by the tribal VFCs or SHGs and sold in the open markets by following the procedure laid down by the Government of Tamil Nadu (Annexure IV). In this respect, assessing the factors which are found influencing the collection of NTFPs in the study environment becomes inevitable and hence the details were analyzed and presented FDA wise.

4.3.7 Factors Influencing Collection of NTFPs in Different FDAs

The factors influencing the NTFP collection were identified and the extent of influence was analyzed and the results are presented in Table 58, 59 and 60. The dependent variable viz., NTFP collection was expressed in monetary value which included both wage earning from the NTFP collection and profit from the sale of NTFPs.

4.3.7.1 Factors Influencing Collection of NTFPs in Anamalai FDA

It was evidenced from Table 58 that the NTFP collection was significantly influenced by the size of the family, number of man days per annum and distance from the market. The Co-efficient of Determination ($R^2$) realized from the regression for 2002 situation was found to be 0.67 and it was 0.71 for 2007 and the study revealed that the explanatory variables included in the regression explained 67 per cent of variation in the
2002 situation and 71 per cent variation in 2007 situation. ‘F’ Value delineated in the table during the study period revealed that the equation fitted with the explanatory variables was found to be significant.

It could be inferred from Table 58 that one unit increase in the size of the family would motivate the household to increase the collection of NTFP worth of Rs.129.09 per year keeping all other variables at constant level which is statistically found significant at five per cent level. In respect of number of man days engaged in NTFP collection per annum, one unit increase in the number of man days engaged in collection, the value of NTFP realized additionally found to be Rs.14.31 per annum keeping all other variables at their mean level during 2002 situation which is found to be statistically significant at one per cent level. The variable distance from the tribal village to the market clearly indicated that it influenced the collection of NTFPs significantly. If one unit increase in the distance of potential market from the household, the tribal household is capable of collecting Rs 10.76 worth of NTFPs which is found to be significant at five per cent level. The coefficients of the dummy variables included in the study revealed that they are not significantly influencing the dependent variable, the value of NTFP collection. The three variables such as size of the family, number of mandays engaged in collection and distance from the tribal village to the market were found to be significantly contributing to the dependent variable, the value of NTFP collected in Rupees per annum. In general, the study revealed that the density of forest has not played a vital role in collection of higher quantity and value realization per unit of the produce as these areas are coming under the sanctuary and the tiger reserve. The tribal households may not venture into the deep and dense forest due to the threat from wild life. The tribes travel to forests also depends on the nature and type of NTFPs to be collected by them.

In respect of 2007 situation, one unit increase in the size of the family would motivate the household to increase the value of NTFP collected by Rs. 194.43 per year keeping all other variables at constant level. It also indicated that the marginal increase in the income from forest produce either due to the increase in the size of the family or
increase in the number of man days per annum for collection of NTFPs. However, one cannot deny that the existence of NTFP yielding plants nearer to the tribal villages could also have influenced considerably for increasing the number of man days in collecting the NTFPs. One unit increase in the man days engaged in NTFP collection, the additional income realized would be Rs. 35.23 per annum keeping all other variables at their mean level. In respect of distance from the market, the tribal households were found motivated because of potential market nearby and hence the collection of NTFPs could be increased to the level of Rs 32.10 keeping all other variables at their mean level which is significant at five per cent level. If one could compare the contributions of pre and post project situation (2002 and 2007) the income generation from NTFP activity found to be increased marginally due to the existence of potential market nearby as well as increase in the number of man days for collection of NTFPs in the post project (2007) situation. These three variables were found to be significantly contributing to the dependent variable, the value of NTFP collection, at five per cent, one per cent and five per cent levels respectively.

4.3.7.2. Factors Influencing Collection of NTFPs in Coimbatore FDA

It was evidenced from Table 59 that the NTFP collection was influenced by size of the family, distance travelled in kms per trip, number of man days per annum, Distance from the market, the condition of forest whether open or dense or very dense. The Co-efficient of Determination ($R^2$) realized from the regression for 2002 situation was found to be 0.69 and it was 0.71 for 2007 and the study revealed that the explanatory variables included in the regression explained 69 per cent of variation in the 2002 situation and 71 per cent variation in 2007 situation. ‘F’ Value delineated in the table during the study period revealed that the equation fitted with the explanatory variables was found to be the best fit. A significant ‘F’ means that the fitted regression model was adequate and correct.
It could be inferred from Table 59 that one unit increase in the size of the family would motivate the household to increase the collection of NTFP worth of Rs.478 per year keeping all other variables at constant level which is statistically found significant at one per cent level. In respect of number of man days engaged in NTFP collection per annum, one unit increase in the number of man days engaged in collection, the value of NTFP realized additionally found to be Rs.10.73 per annum keeping all other variables at their mean level during 2002 situation which is found to be statistically significant at five per cent level. The variable distance from the market clearly indicated that it influenced the collection of NTFPs significantly. If one unit increase in the distance of potential market from the household, the tribal household is capable of collecting Rs 84 worth of NTFPs which is found to be significant at one per cent level. If the condition of the forest improves from open to dense forest; the value of NTFP collected additionally would be Rs.675 per annum which is found to be statistically significant at five per cent level and if the forest improves from dense to very dense, the tribal households are capable of collecting Rs 2605 worth of NTFPs keeping all other variables at their mean level which is also found to be statistically significant at one per cent level. These five variables were found to be significantly contributing to the dependent variable, the value of NTFP collected in Rupees per annum. In general, the study revealed that the density of forest played a vital role in collection of higher quantity and value realization per unit of the produce. However, it cannot be generalized for all the forest situations. The tribes travel to forests also depends on the nature and type of NTFPs to be collected by them.

In respect of 2007 situation, one unit increase in the size of the family would motivate the household to increase the value of NTFP collected by Rs. 186.69 per year keeping all other variables at constant level. It also indicated the decline in the income from forest produce because of existence of alternate employment opportunities to the tribes. One unit increase in the man days engaged in NTFP collection, the additional income
realized would be Rs. 34.97 per annum keeping all other variables at their mean level. In respect of distance from the market, the tribal households were found reluctant and demotivated and hence the collection of NTFPs could be reduced to the level of Rs 54 keeping all other variables at their mean level which is significant at five per cent level. It might also be due to the existence of Village Forest Committees in the tribal environment to cater the needs of procurement and sale proceeds of NTFPs and hence the variable distance from the market is on the negative sign with significance.

In respect of condition of the forest improves from dense to very dense; the value of NTFP drawn additionally would be Rs.1319.69 per annum keeping all other variables at their mean level. If one could compare the contributions of pre and post project situation (2002 and 2007) the income generation from NTFP activity found to be reduced considerably due to the existence of alternative employment opportunities in the post project (2007) situation. These four variables were found to be significantly contributing to the dependent variable, the value of NTFP collection, at five per cent, one per cent and five per cent levels respectively.

4.3.7.3. Factors Influencing Collection of NTFPs in the Nilgiris FDA

It was evidenced from Table 60 that the NTFP collection was influenced by size of the family, number of man days per annum and the dummy variable, the condition of the forest if density improves from dense to very dense the NTFP collection was influenced significantly. The Co-efficient of Determination ($R^2$) realized from the regression for 2002 situation was found to be 0.81 and it was 0.71 for 2007 and the study revealed that the explanatory variables included in the regression explained 81 per cent of variation in the 2002 situation and 71 per cent variation in 2007 situation. ‘F’ Value delineated in the table 60 during the study period revealed that the equation fitted with the explanatory variables was found to be significant.

It could be inferred from Table 60 that one unit increase in the size of the family would motivate the household to increase the collection of NTFP worth of Rs.185.85 per year
keeping all other variables at constant level which is statistically found significant at one
dercent level. In respect of number of man days engaged in NTFP collection per annum,
one unit increase in the number of man days engaged in NTFP collection, the value of
NTFP realized additionally found to be Rs.16.67 per annum keeping all other variables at
their mean level during 2002 situation which is found to be statistically significant at
one per cent level. If the condition of the forest improves from dense to very dense
forest; the value of NTFP collected additionally would be Rs.542.71 per annum which is
found to be statistically significant at five per cent level during pre-project situation and if
the forest improves from dense to very dense, the tribal households are capable of
collecting Rs 1011.11 worth of NTFPs during post project situation keeping all other
variables at their mean level which is also found to be statistically significant at one per
cent level. These three variables were found to be significantly contributing to the dependent
variable, the value of NTFP collected in Rupees per annum. In general, the study revealed
that the density of forest have not played a vital role in collection of higher quantity and
value realization per unit of the produce during pre project (2002) situation.

In respect of 2007 situation, the size of the family has not influenced significantly
whereas in the pre project situation it had influenced at one per cent level. The non
influence during the post project situation might be due to prevalence of alternative
employment opportunities available to the tribal households. This peculiar situation in
the Nigiri FDA might be due to the many developmental activities implemented under
the Hill Area Development Program. Hence, the number of persons involved in
collection of NTFPs is not much pronounced during the post project situation. In respect
of variable, number of man days, One unit increase in the man days engaged in NTFP
collection, the additional income realized would be Rs. 36.08 per annum keeping all
other variables at their mean level which is found to be significant at one per cent level.
In respect of the variable, distance from tribal villages to the market, the tribal
households were found reluctant and demotivated and hence the collection of NTFPs
was found declined to the level of Rs 19.63 keeping all other variables at their mean
level which is significant at five per cent level during the post project (2007) situation. It might also be due to the existence of Village Forest Committees in the tribal environment to cater the needs of procurement and sale proceeds of NTFPs and hence the distance from the market variable is on the negative sign with significance. If the condition of the forest improves from open to dense forest; the value of NTFP collected additionally during the post project (2007) situation would be Rs.560.95 per annum which is found to be statistically significant at five per cent level and if the forest improves from dense to very dense, the tribal households are capable of collecting Rs 1011.11 worth of NTFPs keeping all other variables at their mean level which is also found to be statistically significant at one per cent level. However, it cannot be generalized for all the forest situations. The tribes travel to forests also depends on the nature and type of NTFPs to be collected by them.

If one could compare the contributions of pre and post project situation (2002 and 2007) the income generation from NTFP activity was found to be marginally reduced due to the existence of alternative employment opportunities in the post project (2007) situation. These four variables were found to be significantly contributing to the dependent variable, the value of NTFP collection, at one per cent, five per cent, one per cent and five per cent levels respectively.

4.3.8 Factors Influencing Participation of Tribes in FDA Activities

Participation is normally influenced by some of the factors, identification of those factors and presenting the same is helpful to the decision makers to fulfill the needs of stakeholders. In this respect, the possible variables which influence the participation of tribes were identified and an Index developed for the same following the method delineated in Chapter 3. To construct the Participation Index, the variables taken into consideration were Awareness on the membership of VFC, Number of meetings attended, Attitude towards Forest Department, Attitude towards VFC and Involvement in discussions during the conduct of meetings.
The details of participation index as dependent variable and the explanatory variables are delineated in Table 6. The variables taken into consideration to analyze its influence on the participation index were Educational status of the head of the household, Educational status of women in a tribal household, Age of the head of the household, Size of the family of the household, Annual Income in Rs per household per annum and the Condition of the forest expressed as dummy variables viz., Dense and Very Dense Forest if it improves from open to dense and dense to very dense.

Table 6 revealed that the Participation Index was strongly influenced by the educational status of the head of the household and condition of the forest if it improves from open to dense and dense to very dense. These three variables were statistically significant at one per cent level keeping all other variables at constant level. All other variables included are not significantly influencing the participation index.

4.3.9 Constraints Faced by the Households in Different Activities

If any field activity is not progressing to the desired level, it indicates the presence of constraints which need to be immediately addressed to expedite the progress. Similarly, the FDA also faced certain constraints which need to be looked into and redressed to have an all round development. While implementing various FDA activities the sample households expressed their problems and are tabulated as follows.

4.3.9.1 Constraints Faced by the Sample Households in Crop Production Activity

The sample households in CFC faced certain constraints in income and employment generation activities. Analyzing the constraints with respect to each activity will provide way to develop appropriate strategies for redressing the constraints. The constraints faced by the households in crop production activity are delineated in Table 62.

Anamalai FDA, being the protected area, the crop production activity was found to be affected by wild life. This constraint was ranked as number one by the households of
Anamalai FDA. It was widely prevalent in all the FDAs during 2002 and 2007 situation except in Coimbatore FDA during 2007. The first constraint was the size of land holding to the households of Coimbatore FDA. It was mainly due to the small size of land holding. For want of adequate land, the tribal households were unable to indulge in agricultural activity. The wild life damage scored second rank as the electric fence erected in certain places prevented the wild life from entering into the lands and human habitation.

Next important constraint was the lack of technology adoption in the holdings of sample households in addition to the constraint reported was theft. In Anamalai FDA, it was found to be an important constraint and ranked second during 2002 situation. Unauthorized harvest of agricultural crops by unknown miscreants resulted in loss to the owner of the farm.

4.3.9.2 Constraints Faced by the Households in Livestock Production Activity

The constraints faced by the households in livestock production activity was restricted to small grazing area, lack of veterinary care to the animals, high input price, Wildlife damage, lack of market facility and high purchase price of livestock. The status of these constraints in the minds of households and periodicity of problems occurred were recalled by administering the questions repeatedly to check recall bias if any in ranking the constraint, the details were analyzed and are presented in Table 63. Among the constraints, wild life damage was found to be the principal constraint faced by all the sample households and hence ranked as number one constraint. In Coimbatore FDA alone, the constraint scored second rank during 2007 and revealed that the land holdings were properly protected with electric fence and trenches to prevent the wild animals from crossing and damaging the crops. The second rank went to the procurement price of the animals. Higher procurement price of animals forced the households to sell one or two animals in the market to buy productive lactating animals to meet the milk requirement. Lack of veterinary care was also found to be another constraint.
4.3.9.3. Constraints Faced by the Households in the Activity of NTFP Collection

The principal constraints in NTFP collection activity are low wage rate, depletion of NTFP stocks, threat from wild animals, harassment by forest officials, lack of prompt payment of wages, distance to travel for NTFP collection. Among these constraints, the low wage rate was found to be the principal constraint and ranked as number one among all the households of all FDAs in the CFC. The details were analyzed and are presented in Table 64.

From Table 64 it was evident that the constraint of low wage rate could very well be solved by changing the wage rate for collection, processing and procurement of NTFPs by VFC or SHG themselves as the NTFP lease units were allotted to tribal VFCs at free of cost. Studies also report that there has been a decrease in incomes from NTFP collection after the establishment of VFC. The reason for this was that the successful individual contractor used to bid for collection of NTFPs in lease units would also invest in watch and ward over the NTFP resource rich environment, particularly Amla and Tamarind rich environment. This would ensure a maximum harvest with minor loss due to crop raiding animals. The second constraint was found to be delay in payment of wages. The District Forest Officer concerned should arrange to review the functioning of VFCs periodically and initiate corrective measures to solve the problems of tribes. Next important constraint was harassment by lower level Forest Department Officials.

4.4 POLICY OPTIONS FOR SUSTAINABILITY OF FDAs

The current study has thoroughly examined the existing FDA activities and identified key issues which could be resolved only through additional guidelines and necessary policy options. Hence, the policy issues viz., Integration of All Forestry Schemes, Creation of Institutional mechanism through JFMCs Federation, Capacity Building, Income and Employment Generation and Implementation of Innovation Projects along with guidelines for effective implementation of the program are identified (Table 65). These policy issues were the outcome of the current study based on the periodic
deliberations, interviews and discussion with Forest Department, Tribal Communities and other Officers from the Line Department. It is felt that the following policy issues are only indicative and needed thorough understanding before recommendation as a guideline or a policy issue.