

## **CHAPTER 4: RESEARCH FINDINGS AND DISCUSSION**

### **4.1 INTRODUCTION**

The Research questions which this study has attempted to answer are as under:

- ▶ What are the traditional livelihoods of forest fringe dwellers of Tripura?
- ▶ What are the alternate livelihood generation opportunities promoted by the JICA project?
- ▶ Has the implementation of this project affected the traditional livelihood activities of the forest fringe dwellers and resulted in augmentation of their income.
- ▶ What are the institutional mechanisms established by the Tripura JICA Project that would lead to sustainability of this project.

A questionnaire was designed and administered to villagers/ SHG members in order to get information regarding the traditional forms of livelihood of the forest fringe dwellers and the interventions by the project impacting their livelihoods,

a) the traditional forms of livelihood; whether they are still there and what interventions have been made by the JICA project. The effect (if any) on the income generation consequent to the project was also sought to be ascertained.

b) The activity wise income was also sought. The respondent's were specifically asked whether the practice of Jhum cultivation was being done by them earlier (before JICA project) and whether it is still continuing. Information regarding the annual income they had earned earlier from Jhum was also sought. Other than that, the non-tangible benefits like improvement in forest cover, more availability of NTFP, skill development, formation of institutionalised mechanisms was also sought to be obtained.

A copy of the questionnaire is placed as an Annexure.

Fifty respondents in Sampari Badal JFMC and another 50 respondents from Changpreng JFMC were administered this questionnaire. As most of the respondents were not knowing English, two to three English knowing JFMC members helped in filling the questionnaire. However each respondent individually signed the duly filled questionnaire in the local language.

### **4.2 FINDINGS**

Fifty villagers located under Sampari Badal JFMC in Sepaijala District of Tripura responded very enthusiastically to the questionnaire. Several interesting observations have emerged from evaluation of the responses. First of all, it appears that women are very actively involved in the project as can be gauged from the fact that almost all (barring a few) respondents were women. About half of the respondents were below poverty line. Almost all of them had four to six family members which shows that most households are nuclear and

very few joint families are there. Most families had one to two earning members only. No family had more than two earning members

One of the most important traditional forms of livelihood was NTFP collection. Some of them were involved in agriculture (mainly plantation work) and were getting daily wages for the same. Very few respondents appear to be having sizable land holdings. This is evident from the fact that most respondents have given income from agricultural activity in rupees per day and only very few have given a consolidated figure of annual earnings. This indicates that most people have either no or little land to their name. In fact most of them appear to be landless.

Almost all respondents were earlier working for the MGNREGA scheme. Many of them are still working for the MGNREGA scheme after the project but as brought out in the previous chapter there is major fund convergence in this area and many activities of the project are being carried out by funds from MGNREGA scheme. The average annual income from MGNREGA is Rs 17,000/ per household.

Some (7-10%) respondents have also stated that they did piggery and fishery work even before the JICA project was launched.

It was also seen that almost 35 to 40% respondents have stated that they did the Jhum cultivation before the JICA project. The income generated from Jhum ranged from as low as Rs. 2000 per year to as high as Rs 15000 per year. Jhum (Slash and Burn) has been found to be a highly unsustainable ecological activity where large swathes of forest are first burnt and used for planting crops. The Jhum cultivators then move to the next swathe of forest land after harvesting the crop for that cycle. This process goes on and huge tracts of forest land are destroyed. Almost all respondents who were practicing Jhum cultivation earlier have stated that they are no longer doing Jhum after the project.



*Figure 4.1 Jhum (Slash and Burn) cultivation*

Regarding the new forms of livelihoods introduced after the intervention by the project, in the Sampari Badal JFMC the main activities of JICA are fishery and piggery. Almost 90% of the respondents are engaged in one or both of these Income Generating Activities (IGI). A

few respondents (3-4 only) are involved in basketry work. About 15% of the respondents are also doing plantation work for JICA.

The survey also shows that piggery is the activity from which the maximum amount of income is generated. On an average, the SHG members who were involved in piggery business earned from Rs.6000 to Rs.10000 per annum from the business. Though many members were also involved in fishery work, however, the income from the same was less than that from piggery work. This is perhaps compensated by the fact that piggery is a much more labour intensive activity and requires daily work on part of the SHG member to feed, clean, bathe and look after the animals. Fishery on the other hand requires lesser amount of labour input in the initial phase when fish seedling is procured and released into the ponds. When the fish grow they are caught with fishing nets and sold.



*Figure 4.2 Pig shelter under construction in a JFMC*

It was also noted that the few respondents who were doing basketry work were not involved in piggery or fishery work but were getting an almost equal income from basketry work alone.

It is seen that the respondents have shown their income from JICA related activities (piggery, fishery, basketry or plantation) as the total income they have received since the formation of the Self Help Group for that particular project. For example all the respondents doing piggery work have shown their total income for the last five financial years for piggery. Similarly the respondents doing fishery work have shown their income in the last three financial years from fishery and income from basketry business has been shown for the last two financial years. It appears that in this JFMC the piggery business and plantation work had started in financial year 2010-11, the fishery business in 2012-13 and the basketry work only in 2015-16. However, not all respondents are doing that activity since the beginning. Many respondents have joined the activity in subsequent years. While the piggery and fishery business are very

popular, the basketry work, though highly profitable is yet to pick up. This is perhaps because it has only started recently.



Figure 4.3 Pig rearing

It is also seen that the income of each SHG member from the same activity is almost similar. This shows that profits from the venture are divided equally among the various households undertaking that particular business under the aegis of the SHG. Of course, some SHGs are performing better than others for the same activity. The total income of the families (from JICA as well as from non JICA work) varies from Rs. 38,000 to Rs. 63,000. The non JICA activities are NTFP collection and some MGNREGA work. Most of the SHGs doing work under the JICA project were formed in 2010 and the number of members in each SHG vary from 10 to 12. Many respondents were in the Executive committee of the JFMC. This JFMC has 119 members.

Regarding the non-tangible benefits, almost all respondents have stated that there has been an increase in the availability of NTFP (mainly bamboo, Arjun flower, broom grass, elaichi and gandhaki) There is also an increase in forest cover and bio diversity. Most of the members were very active in attending meetings of the SHGs and JFMCs.

The second survey was done in Chengpreng JFMC. The questionnaire was administered to 50 respondents. Again due to language problem, one or two members have helped in filling the questionnaire in English though all have signed individually in the local language. Most of the respondents are women and seem to be very actively involved in the SHG activities. Regarding the traditional livelihoods, NTFP collection has again emerged as one of the most important means of livelihood earlier. This income was supplemented by agriculture, MGNREGA and daily wage work. Some (very few) people engaged in piggy and fishery

work earlier. Many respondents have stated that vegetable and firewood collection also provided livelihood in the past.

Again 30-40% of respondents also engaged in Jhum cultivation earlier. The income from Jhum ranged from Rs 2000 to Rs 10,000 per year. None of the respondents engaging in Jhum earlier are doing it any more.

After IGA intervention by JICA, piggery and fishery are the major livelihoods in this area. Almost 90% respondent households engage in either one or both the activities. Piggery is more profitable than fishery but also require more inputs in terms of labour and daily work. MGNREGA plantation activities continue to supplement the income of the households by about Rs 10,000 on an average. Another rather profitable project activity being done by about 25% respondents in this JFMC is Agarbatti making. The annual profits, since this activity started in 2014-15, is quite high. It varies from Rs 23,500 to about Rs 50,000 per year. The SHG members who have opted for this activity also show the maximum annual income for their households. The total income of the household in this JFMC has a very wide range. It ranges from as low as Rs 29,000 annually to as high as Rs 82,320 annually. The households with SHG members pursuing the Agarbatti making work are the ones with the highest income in the JFMC. There are many households (all engaged in Agarbatti making) with an annual income of over RS 70,000/-. No member is seen to pursue basketry work unlike the Sampari Badal JFMC. Many respondents were JFMC executive committee members. This JFMC has 90 members.



Figure 4.4 Fishery

Regarding the non-tangible benefits, almost all respondents in this JFMC have stated that there has been an increase in the availability of NTFP (mainly bamboo, fire wood, vegetables, Arjun flower, broom grass, elaichi and gandhaki). There is also an increase in forest cover and bio diversity.

#### 4.3 ANALYSIS

During analysis of these findings it comes out clearly that the traditional means of livelihood of these areas were mainly NTFP collection, wages from MGNREGA, agricultural activity (usually daily wage based), Jhum (slash and burn) cultivation and a limited amount of pig rearing and fishery.

The livelihoods intervention brought about by the JICA project are:-

- (i) Augmenting the piggery and fishery work through scientific interventions into a sustainable model with higher rate of return. This has been done in an institutionalised way using JFMCs and SHGs, taking of loans through Revolving Funds, extensive training and Capacity Development and hand holding.
- (ii) Jhum cultivation, which formed an important form of livelihood generation earlier, is almost non-existent now, in these areas after the project.
- (iii) Basketry and Agarbatti enterprises are new enterprises operationalized by the project, through scientific intervention, value addition to the basic products and developing a value chain and facilitating marketing.
- (iv) NTFP collection has been enhanced as the availability of the NTFPs has been increased considerably because of the continuous measures for their regeneration as well as sustainable use.

It is without doubt that there has been augmentation in the income of the beneficiaries due to the project related interventions. The income sources have also become more reliable and consistent. There has been significant increase in the availability of the NTFPs not only in terms of quantity but also the quality. New income generating activities have been added and the previous ones strengthened. Scientific interventions, and capacity development have played a major role in this. There is stress on micro planning, project making, book keeping, community hand holding for these activities. The ecologically harmful activity of Jhum has been almost stopped. It can easily be said from this survey that the income of the SHG households participating in these activities has at least doubled. This is because a considerable part of their income is coming from these project related activities.



*Figure 4.5 Agarbatti sticks*

MGNREGA had been a source of income in these areas earlier also. Now as brought out earlier, project activities like plantation work, regeneration of NTFP, making of check dams for fisheries and other building and asset creation work are also being got done through MGNREGA wages. This fund convergence scheme has ensured continuity of wages to the beneficiaries through MGNREGA.

During discussion with the Chief Conservator of Forests, (Territorial), it was also brought out that the JFMCs under the project areas are doing well and there also is more development in these areas on account of the project work.

#### 4.4 SUSTAINABILITY OF THE INSTITUTIONS

The project period is coming to an end in July 2017. Several institutions have been put in place to ensure the further continuation of the activities in a sustainable manner. Robust grassroots level JFMC institutions have been created. Each JFMC has 2-3 SHG which are pursuing livelihood activities. The Revolving Fund placed at the disposal of the JFMCs is in almost all cases successfully utilised in providing loans to the SHG. It is understood that most SHGs have already returned the loans and have taken 2<sup>nd</sup> and in some cases, even third loan for the next cycle of the Income generating Activity. This itself points to the sustainability of the IGAs created under the project.

A permanent institution called NCE (NTFP Centre of Excellence) was established in 2008 under the Tripura JICA Project. It is now a premier institution in its area of specialization providing services not only within the state but also in the entire North-eastern Region. The centre is working in the area of research and production, resource survey, training and extension, value addition and marketing of NTFPs in Tripura. It has emerged as an important hub for disseminating technical knowledge about sustainable management of NTFPs through market survey, newsletter, pilot trials, setting up community common facility centres (CCFCs), facilitating scientific harvesting, value addition and marketing of NTFPs of economic importance and product certification in NTFP sector. It lays special emphasis on practical training, and skill development and developing models for NTFP based economic activities.

The NCE also started a Newsletter called MANJARI (Mobilising Attention to NTFPs and JFMCs among Rural Institutions) in October, 2014. Each issue of the newsletter focuses on a particular NTFP. The aim was to establish linkages and share knowledge pool on various aspects of NTFPs among the field Practitioners, Managers, Researchers and other Stakeholders. Topics on a wide range of NTFPs were covered contributing valuable information from scientist, experts and Field Managers. The NCE has been envisaged to be a leading service provider in the NTFP sector in the entire North East Region. It undertakes dissemination of information and awareness to target groups for which the Newsletter was also used a tool.

The project has created several other permanent institutions like Vocational Training Institutions, Multi Utility Centres, market sheds and PMU buildings. These should be continued to be used in the coming years. There has been detailed planning in project design, value addition, and creation of market networks.

Lot of emphasis was given in the project to training and Capacity Development. The model for training was to develop Trainers in the community who would continue to impart training to new entrants. Several ToTs (Training for Trainers) were organised over the years on almost all aspects of the project.

Many permanent enterprise units like distillation plant for Gandhaki, broom making units, workshops with lathe machines for bamboo turning work, mechanised agarbatti stick rolling unit etc. were established. In addition, several permanent outlets for handicraft products have been established.

Computer training was done as one of the initial activities and monitoring systems (MIS Reports and IGA Monitoring were established in the initial stages of the project). A Bamboo treatment plant was also set up by the project. Under the Artisan development programme of the project, 45 Mini CCFCs were set up, 22 of them were for broom making and the remaining 23 were for handloom and handicraft making. These were done after proper skill gap analysis.

These institutions need to be sustained even after completion of the project. It has to be ensured that difference in the livelihoods through these Income Generating activities would continue.

#### 4.5 CONVERGENCE OF FUNDS

It is noted that there were several occasions of fund convergence of the project with other schemes. 58 MUCs (Multi Utility Centres) were constructed in convergence with the ICDS, locally known as the Anganwadi scheme. A Muti utility centre has a Vocational Training Centre as well as an Anganwadi Centre. It is understood that fund from the Anganwadi scheme of Rs 0.9 lakh was merged with the project fund for construction of Multi Utility Centres. For the Agro forestry project convergence with MGNREGA fund was done and Rs. 70 lakh was paid to the workers as wages for the project work as per MGNREGA rates. In



addition, a further Rs 275 lakh from MGNREGA fund was also used for construction of check dams for fisheries.

As per the project, the Revolving Fund to be placed at the disposal of each JFMC was originally Rs. 1 lakh. Several JFMCs expressed that they were not able to simultaneously give sufficient loans to all the SHGs under them for undertaking the IGA activity. Once they had given loan to one or two SHGs, the remaining SHG(s) had to wait for return of the loan to the JFMCs before they were able to get loan and start their income generating activities. The State Government of Tripura took cognizance of this problem and released an additional fund of Rs. 231 lakh to the project for providing additional Revolving Fund (RF) to the JFMCs. As a result, it is understood that the RF placed under each JFMC by the project has increased from Rs. 1 lakh to Rs. 1.5 lakh. This has contributed significantly to the income of the SHGs as several SHGs under that JFMC could now simultaneously take the loan from the JFMC and immediately start their enterprise.

For further enhancing the loans to the SHGs, several cooperative banks have also come forward and extended 320 loans of Rs. 172 lakh. This has further enhanced the capital of the beneficiary SHGs and enabled it to take up the IGA on a larger scale. For this purpose SHGs are graded and loans given to the better performing SHGs.

The project also in reciprocation organised the construction of toilet block, animal sheds, overhead water tanks and nurseries with MGNREGA funds.

It is seen that a lot of convergence in the form of funds as well as infrastructure and cooperation has come forward from all sides to make the project successful. It is understood that an exposure tour of presidents of JFMCs to other States where JFMC programmes have done well, like Tamil Nadu and Andhra Pradesh were organised by the Project. This was done so that the JFMC president get exposed to similar practices in other States and benefit from them. Exchange of best practices could also be done. In another exchange programme, JFMC personnel from Tamil Nadu also visited the project sites.

#### 4.6 VALUE ADDITION OF NTFPs

It is seen that a large portion of livelihoods/ income generation of the forest fringe dwellers is centred around NTFPs. This is true traditionally and even after the project came into existence. The project noted that there were already well thought out and customised grass root level institution of JFMCs whose potential should be harvested to build up capacity for trade in NTFPs to the advantage of the marginalised sections of the society. A lot of work of the JICA Project is therefore NTFP centric. As is evident from the project documents and the research findings given above, the project has been successful in meeting almost all of its objectives, including augmenting income from NTFP related activities.

In the following paragraph, a case study of one of the NTFPs of the area, namely, Broom grass has been discussed. The interventions made by the project in terms of scientific harvesting, regeneration, value addition and marketing of this NTFP is detailed below. The outcomes of these interventions are also brought out.

Broom grass

“Broom Grass” is one of the important NTFPs in the area. The NCE had been facilitating its scientific harvesting and trade since 2010-11. In 2013-14, JFM beneficiaries under 19 forest ranges under the project earned an income of Rs. 226.54 lakh and a total volume of 459 metric ton of Broom Grass was collected. It was found that earlier in the absence of proper sensitization, the harvesting of Broom Grass by plucking was adversely impacting its regeneration. After scientific management which led to its appropriate regeneration, greater amounts are being harvested. In 2015-16, 768 Metric tons of the grass were collected.

The project has published a Newsletter on Broom Grass. This publication has several scientific articles on the subject. For example it has an article by a Scientist from the Rain Forest Research Institute in Jorhat in Assam who talked of the Economic analysis of inter cropping Broom Grass with Pigeon Pea (Arhar). Based on data collection and his research, he predicted a profit a Rs. 606 lakh per hectare when inter-cropped with Arhar. Other articles included developing of models for growing and regenerating the grass and spacing for the various species.

A SWOT Analysis on Broom Grass cultivation at Depacherra in North Tripura based on information collected through JFMCs was done. It was concluded that policy intervention is required to encourage its sustainable harvest by regulating the market price based on quality grading. Further incentives to the growers were proposed by giving them higher price for collection and production. It is understood that the Government has also notified the minimum price / royalty fee for the produce of NTFPs. The problematic areas in marketing were also discussed and remedies brought out.

To inculcate the feeling of belonging and to bring out its tradition roots, a local poem on Broom Grass was also printed in the publication. Pamphlets on important aspects of the NTFP in local language are also circulated.

Regarding infrastructure, 20 mini CCFC were constructed and 300 people trained in making brooms. 287 hectares of broom grass plantations were raised in 2015-2016.



Figure 4.6 Broom making

According to the project, a total of 2835 metric tons of broom grass worth Rs 14 crore was collected from 2011 to 2015. For the year 2015-16, approximately 8 lakh brooms will be formed. 4500 families have directly benefited from direct collection. The value addition will generate employment for another 1000 families.

#### SUPPORT FROM STATE MACHINERY

The analysis shows that the project received in cooperation from all the concerned department of the state government. All the line departments, such as the department of horticulture or fisheries or industry or textiles or rural development or PWD extended full support to the project. This appears to be one of the reasons that the project achieved success. There was active involvement from the highest levels of political as well as administrative bureaucracy was there. A message from the CM of the state goes to say that he believes that the JBIC Project shall usher in a new era in the conservation efforts of his Government and generation of job opportunities. He further hopes that the people of the state especially those belonging to the weaker sections and dependant on forests for their livelihood would be highly benefited and as a whole, this project would help Tripura to prosper further.

During discussions, the CEO of the project, who is an Indian Forest Service Officer informed that the Management Information System (MIS) of the project is a very robust mechanism whereby they get regular updates about the activities of the project. He himself constantly liaises with other departments whenever required. The CEO informed that 'awareness generation' among the people was of utmost importance. He informed that as part of awareness generation campaign, they have recently prepared a team of artists who perform 'street plays' on the subject. The plays are so designed that they not only generate awareness in simple local language, but simultaneously also provide training on the scientific management of the Income Generating activities.



*Figure 4.7 Street plays about use of NTFPs*

Discussions with the Project incharge in JICA India office in New Delhi also revealed that one of the foremost reasons for success of the project was that there was a very high degree of cooperation and involvement of all the associated departments of the state government. Road blocks in implementation, if any, were resolved immediately by mutual discussion and cooperation.