

A study report on

“Effectiveness of community participation towards sustainability: a case study on an NGO initiated and community led mangrove afforestation project at coastal area of Bangladesh”

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January, 2024

## Table of Contents

A. Introduction .....	3
B. Background of the project: .....	4
I. Location of the project:.....	4
II. Involvement of community people.....	5
III. Nursery Setup-a unique initiative: .....	5
IV. Species of the trees:.....	6
C. Objective of the study:.....	7
D. Study area: .....	8
E. Methodology:.....	9
F. Results and Findings.....	10
G. Limitations of the study: .....	16
H. Recommendation and conclusion .....	17
I. References: .....	18

## Table of Figure

Figure 1: Project Locations.....	4
Figure 2: Nursery Development Cycle .....	5
Figure 3: Different types of saplings .....	6
Figure 4: Study Area .....	8
Figure 5: KII with Local Gouvernement representative .....	10
Figure 6: Focus Group Disussion (FGD) with women.....	11
Figure 7: Community group members briefing different stages of te mangrove afforestation.....	12
Figure 8: Focus Group discussion with community people .....	12
Figure 9: Mangrove nursery by FRIENDSHIP.....	13
Figure 10: Awareness raising messages.....	15
Figure 11: Bees at Mangrove forest.....	15
Figure 12: Manrove affrestation at river bank by FRIENDSHIP.....	16

## A. Introduction

A significant amount of natural forest of Bangladesh has been damaged by many reasons in last several decades. To ensure a healthy natural environment, a country should have at least 25% of forest land of its total area. But the country's actual forest cover is estimated to be 6.7% of its entire land mass; nonetheless, many species have already gone extinct locally [1]. As a result, Bangladesh has become a forest-poor country with a per capita forest area of less than 0.02 hectares, one of the lowest in the world [2]. The forestry sector currently employs nearly 10 million persons per year and contributes approximately 1.76% to the national GDP. Although forestry contributes relatively little to the national GDP, as currently measured, it makes a substantial contribution to the country's "comprehensive wealth" when assessed from a broader perspective of environmental economics and natural capital [3, 4, 5].

The government has taken many afforestation and reforestation initiatives to increase the forest coverage of the country. It also encourages and promotes the co-management of the afforestation projects, as well as Non-Government initiative of afforestation and reforestation. As part of this, some NGOs have taken projects on afforestation and reforestation, mostly at the southern coastal belt of the country. FRIENDSHIP is such an organization who has taken mangrove afforestation initiative at the coastal areas of the country. [6]

As the NGOs are donor fund driven [8] and, most of the cases, their novel initiatives comes to an end with the closure of external fund, so the sustainability of those initiatives are always a question. To address this issue, the NGOs try to engage local government institute (LGI), as well as community people, with the project, so that the LGI and community can carry forward the outcomes. FRIENDSHIP also engaged local community with their mangrove afforestation project. [6,7]

FRIENDSHIP , a non- government organization, began a five years mangrove afforestation project in 2018 on about 40 hectares of mudflats surrounding coastal villages of Satkhira district, with a view to reducing the pressure on Sundarbans through forestation, improving ecological balance and reducing carbon dioxide from the atmosphere, protect embankment, increased livelihood of climate victims by creating employment opportunities.

The study is intended to assess the depth of communities' participation in this mangrove afforestation, as well as the effectiveness of their involvement towards ensuring the sustainability of the project. It also tried to explore the scope of community participation more comprehensively or in a different way, if any.

## B. Background of the project:

### I. Location of the project:

Shyamnagar and Assasuni Upazila of Satkhira district were the two working Upazila for the mangrove afforestation project. FRIENDSHIP initiated the mangrove plantation project in April-2018 about 22 hectares of lands in Shyamnagar Upazila, and 18 hectares in Assasuni Upazila of Satkhira district in its first phase which ended in March-2023. The organization also started its second and third phase of mangrove plantation in September-2020 and October-2021 with an intention to cover another 60 and 40 hectares of land respectively. 2nd phase is implementing in Assasuni Upazila and 3<sup>rd</sup> phase is implementing in both Shyamnagar and Assasuni Upazila of Satkhira district.

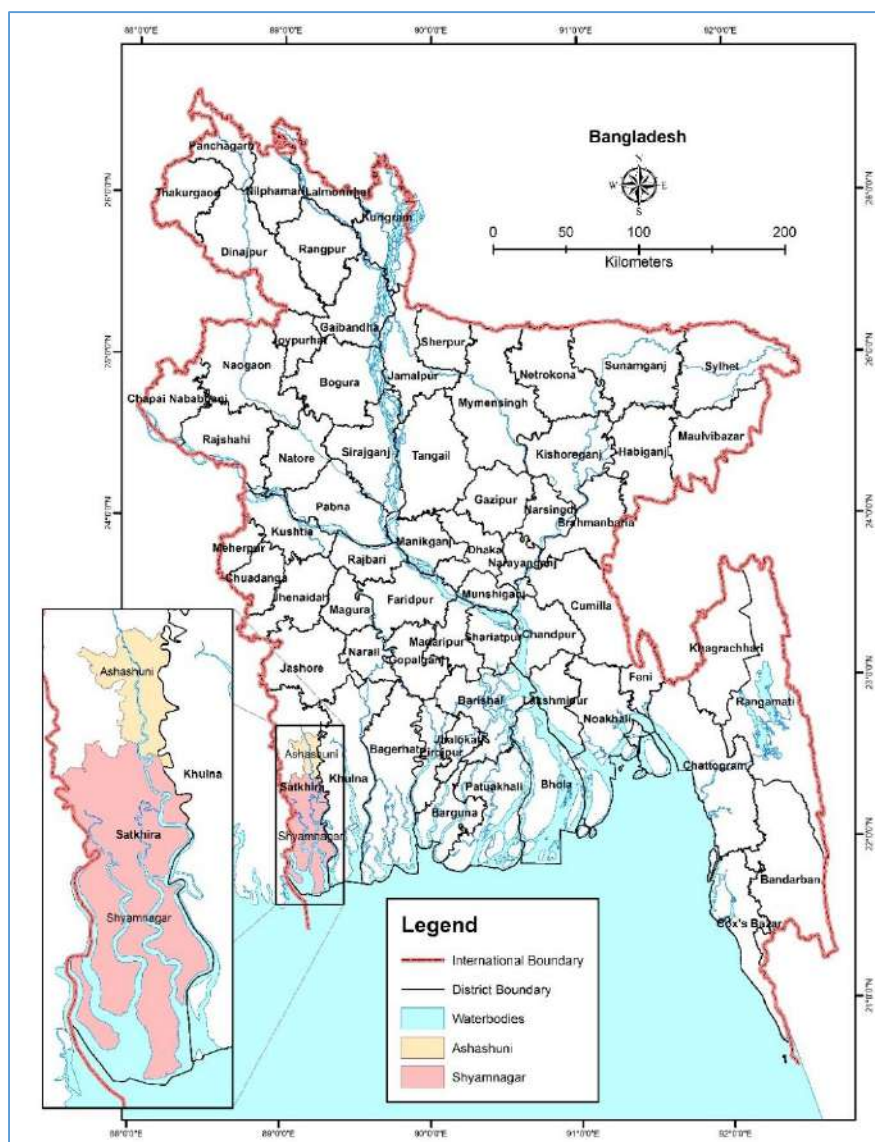


Figure 1: Project Locations

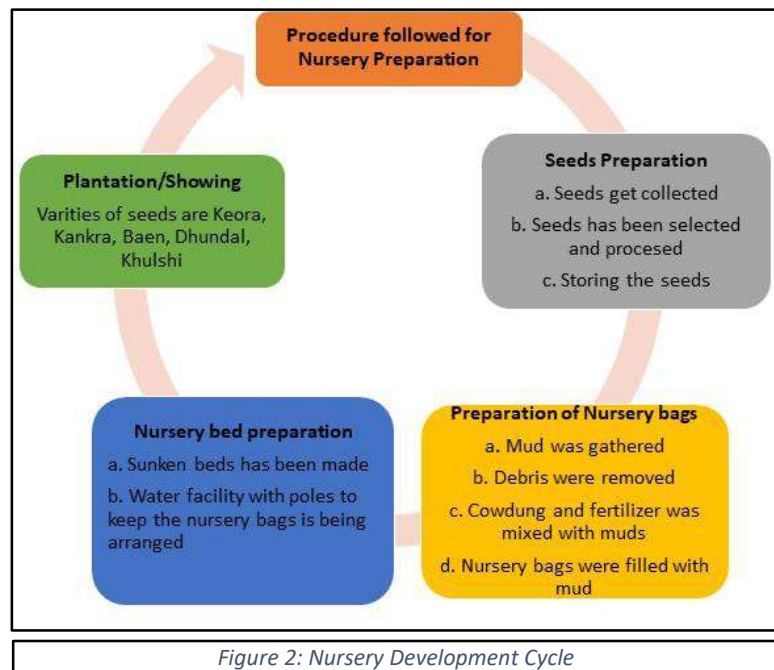
## II. Involvement of community people

FRIENDSHIP has tried to involve local communities at different stages of the project, from project design to completion. Different kinds of community consultation sessions were organized by the organization. To ensure the community participation and their active involvement, 40 community groups has been formed by the organization, 30 person per group, with a male-female ratio of 50:50, to manage the mangrove plantations. Most of the male members are day labor and female members are housewife. Age range is 18-50 years but very few numbers are old aged greater than 50 years. Those people draw benefits from this area in the form of keora fruit, branches for fuelwood, and fodder for livestock after the tree has reached a certain height. In addition, the FRIENDSHIP NGO has provided training to diversify local incomes (e.g., honey collection, duck rearing, plantation, and nursery management). The group was chosen after consultation with the local community. The group members sit monthly basis and perform various activities to ensure effective implementation of the project.

Along with this, the project has involved community people, local elites, Union Parishad and Upazila Parishad members (local government representatives) etc. at different level of the project. Details of their involvement will be articulated at results and findings section.

## III. Nursery Setup-a unique initiative:

Mangrove saplings are not very available at the project areas. Initially, the project was to collect sapling from far away and transport those to the project location. Considering the hurdle of managing the saplings and transporting those to the project location, the project initiated developing a mangrove nursery at the project areas through engaging the local community with the support of forest department. Two nurseries were established in Nakna village under Assasuni Upazila and Mirgang village under Shyamnagar upazilas. The sursery development cyclone is given below



#### IV. Species of the trees:

The establishment of mangrove plantations is heavily reliant on careful site selection as well as planting strategy and species selection. There is a sizable intertidal mudflat in the vicinity that could be used for mangrove plantations. Many species were chosen after taking into account many aspects such as the rate of siltation, the properties of the soil, the extent of exposure to waves and tidal currents, etc. Six species were chosen to be transplanted into the plantation area. The species are:

- I. Keora (*Sonneratia apetala*)
- II. Baen (*Avicennia officinalis*)
- III. Khulshi (*Aegiceras corniculatum*)
- IV. Kankra (*Bruguiera gymnorrhiza*)
- V. Golpata (*Nypa fruticans*)
- VI. Goran (*Ceriops dacandra*)

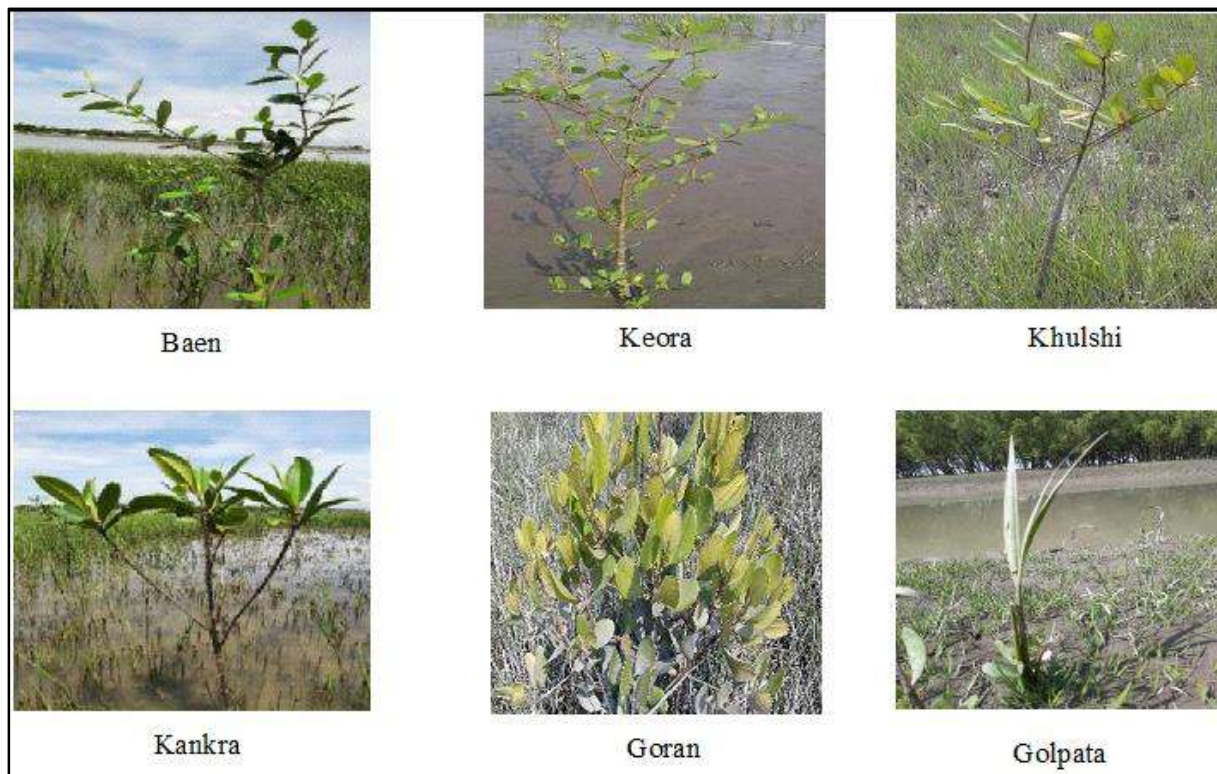


Figure 3: Different types of saplings

Photo : FRIENDSHIP

### C. Objective of the study:

As mentioned earlier, the study is intended to assess the depth of communities' participation in this mangrove afforestation, as well as the effectiveness of their involvement towards ensuring the sustainability of the project. It also tried to explore the scope of community participation more comprehensively or in a different way, if any.

#### **The key Objectives of the Study**

- i. To assess the degree of communities' involvement at different stages of implementation of the mangrove afforestation project
- ii. To evaluate the effectiveness of community participation through the lens of financial efficiency and sustainability
- iii. To explore further opportunities/scope of effective community participation; and also the associated challenges & communities' perspective in it.

#### D. Study area:

The study was conducted at Shyamnagar and Assasuni Upazila of Satkhira district. The first phase intervention, i.e. the afforestation project which initiated in April-2018 and ended at March-2023, was covered for this study. The FGD, KII, community consultation, field observation etc. were performed mostly at Munshigang and Ramjannazar union of Shyamnagar Upazila and observation was performed in Protapnagar union of Assasuni Upazila

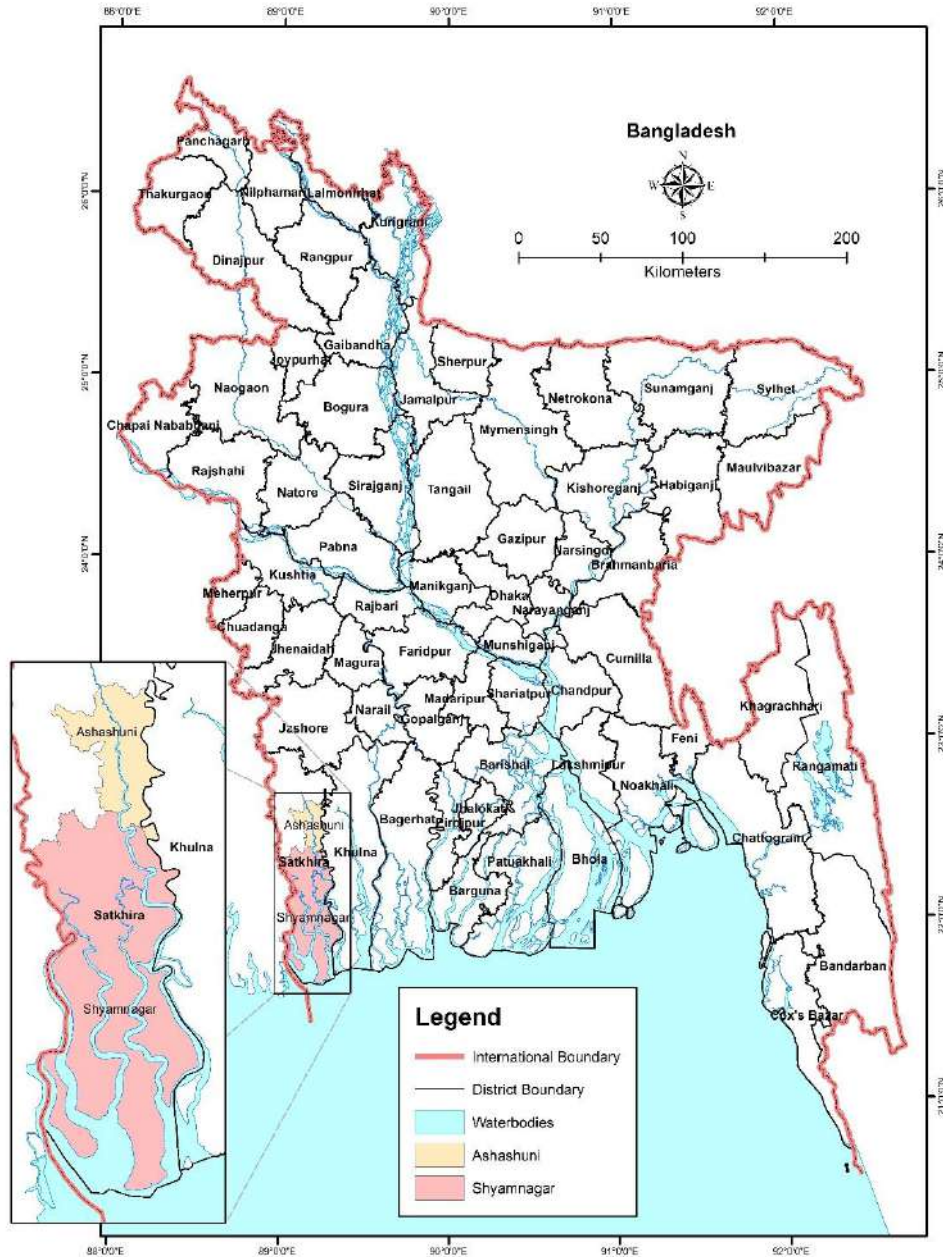


Figure 4: Study Area



## E. Methodology:

Mixed methodology for data collection and analysis was followed to conduct the study. Both qualitative and quantitative methods were applied for data collection and analysis. Information was collected through Key Informant Interview (KII) and Focus Group Discussion etc. with relevant stakeholders. Field visit was performed at the implementation area to collect data by direct observation as well.

Key informant Interview (KII) were conducted with key stakeholders of the project, like Local Government Institute (LGI) representative(s), community leader, relevant personnel of the project implementation team. Those interviews were done with a view to understanding their perspective on involving local communities, and themselves as well, with this project. The experiences of those stakeholders over the period of time, since the implementation of the project, were captured from those interviews/ discussions.

Focus Group Discussion (FGD) were conducted with the community group members, who are/were responsible for the day to day activities of the forestation initiative. Their involvement process in this project, their perspective, initial thoughts while involving themselves with this project, current expectation etc. were captured through conducting the FGD. The associated challenges in implementing this project were also captured from those FGD.

A household level survey was also conducted at the adjacent household of the project area. Gap in existing community involvement arena; future scope of effective involvement and relevant activities; views of the community people about the project and its effectiveness; associated challenges etc. was covered through this household survey. A random sampling survey method was applied to conduct the survey. Online based data collection tool was used to collect data/information from the adjacent household.

### Method: Focus Group Discussions

- A. **Sample size:** 4
- B. **Tools:** Discussion Guide
- C. **LOI:** 60-90 Minutes
- D. **Target respondents:**
  - I. Community people (Women only)
  - II. Community people (Mixed sex)

### Method: Key Informant Interview

- A. **Sample size:** 12
- B. **Tools:** Discussion Guide
- C. **LOI:** 30-45 Minutes
- D. **Target respondents:**
  - I. LGI representatives
  - II. Local elites
  - III. Project Personal
  - IV. Caretaker

### Method: Observation

- A. **Sample size:** 3 areas
- B. **Tools:** Checklist
- C. **LOI:** 120-150 Minutes/area
- D. **Geographic coverage:** Afforestation area, nursery, vulnerable community, river bank

### Method: Household Survey

- A. **Sample size:** 60
- B. **Tools:** Checklist (online based)
- C. **LOI:** 15-25 Minutes
- D. **Target respondents:**
  - I. Community people (adjacent to afforestation site, ideally not afforestation community group member)

## F. Results and Findings

The author visited the project areas and interviewed some key project personnel, local government representative, and local elites, paid volunteers of the project and people from adjacent community to perform this study. Direct observation was also performed at the interventions areas, specially the afforestation and nursery area to see the present status of the project. Those activities was performed between November-2023 to January-2024. It can be mentioned that the project was already been closed at the time of performing those activities.

### I. Findings under specific Objective#1: *The degree of communities' involvement at different stages of implementation of the mangrove afforestation project.*

I. **Involvement of Local Government Representative:** The author interviewed 4 former and current local Government representatives (Union Parishad members) from the project working areas. The key findings of the interviews are stated below

- i. The organization had several discussions with the local government representatives, local communities and local elites to find out the suitable land and species for the mangrove afforestation. They feel that their opinion have reflected in selecting the vulnerable sites and appropriate saplings.
- ii. They were also involved in mobilizing community people to get involved with this afforestation and was also involved in selection process of the group members. They also aware the community people to protect the afforestation land from domestic animals
- iii. The organization conducted quarterly consultation and progress sharing meeting with the Union Parishad (UP) members. Those meetings created a scope for the LGI members to exchange views and different conflict resolving.
- iv. They also state that the involvement of women, as caretaker and group member, was an effective step to ensure equity and financial solvency for their family.



Figure 5: KII with Local Gouvernement representative

II. **Involvement of Local community people:** The author conducted 4 Focus Group Discussion with the local community people to know their involvement process in this project, their perspective, initial thoughts while involving themselves with this project, current expectation etc. Both afforestation group members and non-group members were present in those FGD. One FGD was conducted with only women and rest were mixed in terms of gender. The key findings of the interviews are stated below

- i. Maximum participants of those FGD stated that they were aware of the afforestation initiative. Many of the participants that they were involved in some consultation meeting where their views and expectations were captured. They have also found that many of their expectations were reflected in reality.



*Figure 6: Focus Group Discussion (FGD) with women*

- ii. The location of the afforestation land was selected with the consultation of local community people and local government members. The vulnerable area were identified through PRA process where the community people took part actively. Social map was prepared for each community by the community people which also helped to identify the appropriate location of the afforestation.
- iii. One member from each community group were recruited as caretaker of the mangrove afforestation. At first, responsibilities of the community caretaker were discussed in each group and collected application from interested candidates. Based on the relevant experiences of the interested candidates, one caretaker was assigned for each group. It has given a sense of ownership to the community.

- iv. The community people were directly involved to manage the nursery and plantation. They were engaged in collecting mangrove seeds from forest and river, preparing bed, plant sampling at land, fencing of the artificial forest and overall management of it. Many community people informed that they had worked as day labor for performing those activities. Both male and female were involved to perform those activities. Through this way, a group of community people have got hands on training on the entire cycle of mangrove afforestation, as well as found a livelihood option for them.



Figure 7: Community group members briefing different stages of mangrove afforestation.

- v. The community group members stated that FRIENDSHIP has oriented them on homestead gardening, duck and cattle rearing, forest management etc. which resulted in reducing their dependency on the forest. At the same time they have got an alternative livelihood opportunity.



Figure 8: Focus Group discussion with community people

- vi. 258 community persons were involved in seed collection, 235 community people were involved in nursery work, and 29 community people participated in mangrove sapling transplantation work in this project

**III. Involvement of community member as caretaker:** 3 Key Informative Interview (KII) were performed with 3 caretaker of the mangrove afforestation at different areas. Two were men and one was female. They were to take care of the nursery and afforestation activities.



- i. All of them informed that the entire afforestation process, including nursery preparation and management, was very new to them and they have learnt a lot from it. But now they have found it interesting and financially beneficial for them.
- ii. Though the project has already been closed, but they still try to take care of the plants and aware people in that regards.



*Figure 9: Mangrove nursery by FRIENDSHIP*

**II. Findings under specific objective#2: *The effectiveness of community participation through the lens of financial efficiency and sustainability***

Direct involvement of the community people, as well as Local Government Institutions' member, from the very beginning of this afforestation initiative has many positive implications among the communities, especially on financial efficiency and project sustainability. Discussing/interviewing with local people, local elites, LGI representative and household survey findings stated the same. Some of the findings are given below

- I. It was come to know that at the FGD that the daily wages of a women is less than a men in this area. After realizing this inequality, FRIENDSHIP started providing same wages to men and women. One of the community group member stated at one FGD that it was not expected by the local community people initially. But the situation has changed a bit nowadays.
- II. Involving the community people at nursery work has reduced the extra cost of sampling transportation at the plantation area from outside of the areas. Moreover, as the seed was collected by the community people from forest and river water, it was comparably cheap. All those resulted cost effectiveness of the plantation cycle.
- III. As community people have started collecting the dead leaves and branches of the trees, honey etc. from those forests, they willingly take care of the forest. As the community group people are also orientated on the systematic management of the forest, so they are doing it in better way. It resulted the reduction of engaging more caretaker for the afforestation, as well as ensuring the sustainability.
- IV. Developing the nursery by the community people and involving tem at all te level of sapling preparation to transportation, plantation, fencing and management of te afforestation process, a round of community people as already been developed with such expertise on mangrove afforestation. At least 6 community people informed that they plan trees at the afforestation side voluntary if they find any sampling is damaged at the forest. For ensuring the sustainability, this approach plays an effective role.

**III. Findings under specific objective#3: *Further opportunities/scope of effective community participation; and also the associated challenges & communities' perspective in it.***

According to maximum household responders and interviewees, the community people, as well as local government members, were intensively involved with the project, since its inception to the closing. They have also identified some areas where the community involvement could have been done more intensively. Those areas are given below

1. In most of the cases, the afforestation group members were engaged as the paid day labour for the nursery and afforestation related activities. It caused a bit dissatisfaction among some other neighboring households members. 27% of such household responders stated that they were willing to be actively engaged with the afforestation, as day labour. Involvement of other community people could have also been done. However, the other group members took part at various awareness activities and meetings.



Figure 10: Awareness raising messages

2. As FRIENDSHIP used the *Khas* land for the afforestation initiative and there was a group of people who shows interest to use *khas* lands for their own interest. So some conflict also raised among those people at the initial stage, but the active involvement of the local government and continuous awareness raising by them helped to overcome the situation.
3. An afforestation maintenance fund could have been developed to ensure the proper maintenance (repair of fencing, replacement of damaged sapling etc.) of the afforestation even after the project period.



Figure 11: Bees at Mangrove forest

## G. Limitations of the study:

Due to the time constrain and limitation of financial resources, the study could not covered a large sample size. The countrywide movement restriction (Hartal /Strike) and political unrest in Nov-Dec'23, the data collection activities could not been performed according to the plan. Moreover, some questions had been drop from the survey and interview due to its financial and political sensitiveness at that time. Some other study limitations of the study are given below

- 60 households' representatives have been interviewed in this study who are located at 2 unions only, though the project was implemented in 4 unions of Shyamanager and Assasuni Upazila.
- Interview of Upazila administration and forest office representatives could not been performed
- A comparison of this FRIENDSHIP initiated mangrove afforestation with similar kind of mangrove afforestation by other NGO could have been interesting to see. But due to limitation of time and resources, other NGO driven initiative(s) could not been covered



*Figure 12: Manrove affrestation at river bank by FRIENDSHIP*



## H. Recommendation and conclusion

The mangrove plantation plays an important role in the regional and national economy and climate. It will provides many direct benefits (e.g. fuel wood collection, fishing, etc.) to the surrounding communities. It will protect the lives and properties of the adjacent population from the tidal surges and tropical cyclones. The mangroves provide nursery, feeding, resting and breeding grounds, as well as shelter, for many aquatic organisms and supply particulate and sub-particulate organic matter to coastal fish populations. This forest helps in carbon sequestration and storage, and soil nutrient cycling.

Some areas could be considered to enhance the community participation and thus ensuring the sustainability of the afforestation. Some of those are given below

- The afforestation initiative should be followed up and maintained by the organization for at least 7-8 years after the plantation. By this time the tress will grow enough and expected to be free from being damaged by animals.
- An afforestation maintenance fund could have been developed to ensure the proper maintenance (repair of fencing, replacement of damaged sapling etc.) of the afforestation even after the project period.
- Group formation and functioning of group is helpful to create awareness among the people about the benefits, economic, and social importance of mangrove fauna.
- Most of the community people are poor and they need alternate livelihood activities with financial support. Creating alternative livelihood scope will reduce their dependency of the Sundarbans.

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