Project Completion Report

On

Promoting Nutrition Sensitive Aquaculture in Thanchi

Submitted to

WorldFish

Bangladesh Aquaculture and Nutrition Activities (BANA)
World Fish, House 2/B, Road, Banani, Dhaka, Bangladesh

Submitted by

BNKS
"Organization for Women & Children Development"

Bolipara Nari Kalyan Somity (BNKS), Address- Shoila Shova, Balaghata, Bandarban Sadar, Bandarban Hill District 4600

Date of Submission: 26th September 2022

Abbreviation

FtF	Feed the Future
BANA	Bangladesh Aquaculture & Nutrition Activity
EANA	Enhancing Aquaculture & Nutrition Activity
HTs	Chittagong Hill Tracts
EC	Executive Committee
GC	General Council
LVMF	Local Volunteer Mediators Forum
BNFE	Bureau of non-formal education
CDA	Chittagong Development Authority
ANC	Aquaculture & Nutrition Coordinator
UANO	Upazila Aquaculture & Nutrition office
F&A	Finance & admin officer
UF	Union Facilitator
SS	Support staffs
FCR	Food conversion Ratio
GAP	Good aquaculture practice
BMP	Best Management practice
FFD	Farmer's Field Day
ToR	Terms of reference
DoF	Department of Fisheries
SMC	School Management Committee
OSP	Orange Sweet Potato
MEL	Monitoring Evaluation and Learning
DAE	Department of Agriculture Extension
MoHFW	Ministry of Health & Family welfare
AIN	Aquaculture Income & Nutrition
ZOR	Zone of Resilience
PIU	Project Implementation Unit
BHDC	Bandarban Hill district council
UNO	Upazila Nirbahi Officer
UH&FPO	Upazila Heath & Family planning officer
ToT	Training of Trainer
DO	Dissolve Oxygen
UCBL	United Commercial Bank Limited
BAA	Bangladesh Aquaculture Activity

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Executive Summary

Bandarban is a land of hills. Most of the people are of ethnic origin. There is a high demand for fish in the local markets in Bandarban. In spite of the high demand, fish production is very low compared to the other areas of Bangladesh. Such lower production is due to a number of confounding factors that include lack of technical knowledge, unavailability of fish fry/fingerlings and feeds and other aquaculture inputs, and water crisis in the ponds/creeks. The fish farmers do not get sufficient technical support from relevant organizations (GO/NGO). Higher fish demand with lower productivity results in higher price in the local market. As a result, the poor people in the area cannot buy fish for their consumption and the levelof nutrition from fish in household is very poor.

Thanchi Upazila is one of the remotest upazila in Bangladesh, located at the Southeast parts of Bangladesh which is about 142 Km far from Bandarban district Sadar. It consists of four unions namely Bolipara, Remakry, Thanchi, and Tindu. Total population is 16992 (male-9438, female- 7554) (2,885 HHs) with a low density of 17 persons per Km. Indigenous communities such as marma, Murong, tripura and Khyang belong to this Upazila. Most of the areas are covered with high hills. The main livelihood strategies of the people are agriculture (72.10%), trading (3.91%), service (2.49%), non-agricultural laborer (1.48%), etc. The mean literacy rate is reported at 15.1% (male- 21.4%, female-7%). Market challenges in Thanchi are include lack of access to information on improved aquaculture, quality inputs such as good quality fish seeds, feeds, and other inputs at reasonable price at the locality in time; high price of inputs; limited access to forward markets; poor road access to hilly rural areas and hard to reach at the farm gate; poor access to private services especially on fish harvesting and transportation services which are expensive.

There are many obstacles in the field of fish farming in the Bandarban Hill District. As a result, the fish farmers from the local communities do not show much interest in fish farming in the area. Getting good quality fish fry is a big challenge for the farmers here. Transportation of fish fry is a major problem for fish farmers in almost all areas except the urban areas of Bandarban Hill District.

The fish did not grow as expected due to non-sale of quality fish fry by outsider fish fry sellers (patilawala). As a result, there is reluctance among fish farmers towards fish farming. Due to lack of regular communication or coordination between local fish farmers with outsider fish fry sellers, neither the farmer nor the fish fry sellers can be informed about when, where, how much and what kind of fish fry will be needed and whether it will be available as per the demand. As a result, the farmers have no predominance of their own opinion. As there is no concept of fish farming in new or advanced technology, fish is farmed in the traditional way. Besides, there is not much focus on fish farming as an alternative to meet the nutritional way. Besides, there is not much focus on fish farming as an alternative to meet the nutritional deficiencies with fish farming. Contrary to popular belief in fish farming, fish farmers suffered more losses. Due to non-production of fish feed locally in Bandarban, fish farmers fail to procure fish feed as per the demand at the right time. As a result, most of the fish feed has to be brought out; in this way the farmer has to face loss in both time and money. In Bandarban Hill District no group has yet been formed to collect fish with cast nets. As a result, when buying fish from farmers, the buyer or farmer has to hire fish collectors with cast nets from other areas. This is hurting both the farmers and the buyers in one way or another and the fish buyers are losing interest in buying fish from the farmers in remote areas.

The project has some specific objectives, respectively a) to increase the use of technology related to fish farming among the poor fish farmers in the marginal areas of Bandarban Hill District, b) to increase knowledge and practice related to nutrition in the marginal areas of Bandarban Hill District, c) to increase the chances of getting fish fry by creating of fish nurserers from the local communities, d) to increase the production of fish and vegetables to solve the problem of malnutrition of poor people, e) to increase the income of marginalized poor people especially women, youth and adolescents through alternative livelihoods and f) to achieve the issues of increasing the use and demand of quality fish-based products to the local community.

The implementation of the PNSAT project started on 16th March, 2022 and was successfully completed on 30th Semtember, 2022. Some of the sensitive issues in the implementation of the project are to select the eligible fish farmers according to the project criteria, belief in conventional farming methods, unwillingness to adopt new methods and technologies, collection of improved fish fry, increase women's participation, create interest among youth in participation in fish farming, to ensure the participation of fish farmers during training in scattered areas, the creation of local fish fry nurserers and the various local social practices that may hinder the implementation of this project have to be taken seriously.
To ensure to get quality fish fry among local fish farmers, 2 local nurserers have been created who will be able to supply fish fry from the next season. Liaison has been established with local wholesale fish buyers, fish feed sellers and fish fry sellers so that local fish farmers can benefit commercially. Marginalized populations, especially women fish farmers, have been included in the project with priority and assistance has been provided to increase the alternative income by involving the youth and adolescents in family fish farming

Farmers have started fish farming in poly culture through technology transformation in fish farming. As a result, it is possible to cultivate different species of fish at the same time. Through market linkages between fish farmers and market actors (hatcheries, nurseries and wholesale fish sellers), the opportunity for local fish farmers to sell their produce has increased many times over. By creating 2 fry producers through the project at the local level, local farmers will be able to easily purchase fish fry from next season.Through the observance of Farmers Field Day, it has been possible to impart knowledge on topics like technology transformation to all at the local level. Through various trainings and visits, linkages have been developed among the fish farmers with the officials of the government fisheries and agriculture departments at the district and upazila level. The smooth implementation of the above works has ensured the sustainability of the project.

After all, There are about 50 ponds or creeks in Bolipara and Thanchi Sadar unions which are distributed scattered. The fish farmers of Thanchi upazila are deprived from extension services on fish culture due to absence of aquaculture development project of NGOs and shortage of human resources of Department of Fisheries in Thanchi. There is a great opportunity to work with fish farmers in Thanchi to improve their lives through nutrition-sensitive aquaculture. The successful interventions will be scaling out among the fishers of other 2 unions. The profitability analysis shows that the intervention will increase the profitability of the fish farmers, nursery operators and other market actors. Therefore, the interventions will be sustained and will be copying by other farmers. BNKS wants to assist the smallholder fish farmers who are deprived for fish culture in Thanchi Upazila from private and government organizations with the support of FtF Bangladesh Aquaculture Activity. The intervention plans to develop the fish farmers in Thanchi as aquaculture entrepreneurs addressing the systemic constraints of different market actors to aquaculture development facilitating and developing the market actors especially carp fish nurseries, mola nurseries, fry traders (Patilwalas), feed dealers/agents, fish harvesting groups, transporters to ensure the supply of necessary goods and services to the producers and linking producers with forward markets for the successful promotion of integrated carp-mola polyculture with dike cropping in sustainable manner engaging both men, women and youth.

1.0 Project Background

1.1 Brief about the sectoral constraints

- Bandarban is a land of hills. Most of the people are of ethnic origin. There is a high demand for fish in the local markets in Bandarban. In spite of the high demand, fish production is very low compared to the other areas of Bangladesh. Such lower production is due to a number of confounding factors that include lack of technical knowledge, unavailability of fish fry/fingerlings and feeds and other aquaculture inputs, and water crisis in the ponds/creeks. The fish farmers do not get sufficient technical support from relevant organizations (GO/NGO). Higher fish demand with lower productivity results in higher price in the local market. As a result, the poor people in the area cannot buy fish for their consumption and household nutrition.
- Quality fish fry are not available in Bandarban. The fish farmers here are totally dependent on outsider fish fry sellers. This problem is especially evident for fish farmers in remote areas. As a result, fish farmers in the region are at risk to get quality fish fry as per the demand at the proper time.
- At the local level, no group or community has been formed in the area for fishing with cast nets. As result, local farmers or wholesale fish buyers have to hire a team to catch fish from outside when buying or selling fish from ponds or creeks. This causes financial loss to both the buyer and the seller. On the other hand, this picture is more depressing in remote areas.
- Due to the remoteness, it is not possible for the fish farmers of this area to have regular contact with the outside fish fry sellers. Due to which there is a risk of getting fish fry at the proper time and coordination with fish fry sellers is not possible. Vendors are reluctant to come to the area due to the difficulty of transporting fish fry due to inaccessibility. As a result, fish farmers in this remote area forced to buy fish fry at higher prices.
- Except for the district and upazila headquarters, no specific fish market or place has been established at local level. As a result, fish farmers in remote areas could not get a fair price by selling their fish. For that reason, the fish farmers were losing their interest in fish farming along with the financial loss.
- Geographical inaccessibility as well as poor communication system and distance from one para to another have made intercommunication more difficult. Communicating with fish farmers in this area was a really difficult task, especially during the monsoon season.
- During the monsoon season, the banks of the creeks break due to flash flood. Considering this, the risk of the farmers involved in the project being able to protect the dams from flash floods or landslides has acted as a constraint for the project.

1.2 Rational of the intervention/model/business idea what will potentially fit the need of constraints

In arrange to extend aquaculture production and progress dietary and financial condition of the individuals of Thanchi Upazila of Bandarban, suitable technologies should be introduced within the zone so that the restricted asset can produce a critical yield and make the showcase more reasonable for the individuals of all classes. As most of the lakes and rivers hold water as it were for 6-7 months, proficient utilize of these waterbodies will be to present quick developing angles. In this respect, carp-mola polyculture, will be presented within the neighborhood lakes. At whatever point conceivable, for greatest utilization of the asset, lake dykes will be utilized for supplement wealthy vegetable and orange sweet potato generation. refined in exceptionally brief term (for 6-8 months) for their utilizations and exceptionally less sum angle sold in closest advertise in Thanchi Upazila. Ladies particularly see after this sort of angle culture activity. A add up to of 50 beneficiaries will be chosen for angle culture.

Care will be given to ensure that the target beneficiaries use appropriate production technologies and refrain from using toxic or harmful substances to keep the fish safe for human consumption and the environment clean. In all cases, at least 80% of the target beneficiaries will be women.

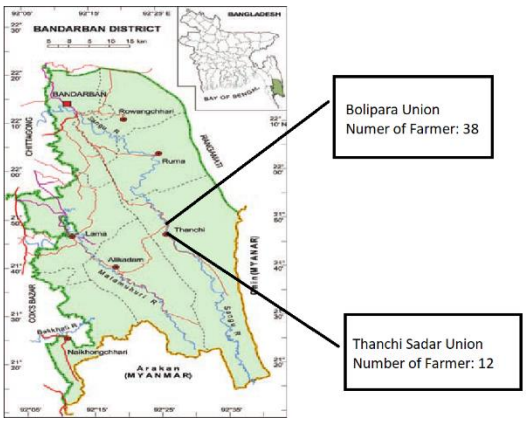
The project's interventions will encourage the localities to adapt to the aquaculture production system, which will increase household productivity. Through increased fish consumption and nutrient intake, the higher productivity will ultimately have a positive impact on the nutrient requirements of the households. In addition, the extra fish will be sold to the market, increasing availability in the neighborhood market and supporting the value chain participants in the Bandarban district. The aquaculture market system will be strengthened and given more room for women and young people to participate actively in its parts as a result of community involvement.

1.3 Project objectives

- To increase aquaculture technologies among the poor fish farmers in the rural areas of Bandarban district
- To increase the nutritional knowledge and practices in the rural areas of Bandarban district.
- To make the availability of fish seeds through fish nursery establishment
- To enhance fish and vegetable production to address malnutrition of the poor people.
- To increase income of the rural poor people especially women, youth and adolescent and promote livelihood option.
- To promote quality fish-based products for community nutrition
- To increase income of the rural people especially women and youth and promote livelihood option
- To Linkage establish among the trader, retailer, suppler and with producer and ensuring the quality and availability of feed in the hard to reach area.
- To sensitize adolescent girls and boys and young women and men in aquaculture & nutrition.

1.4 Geographical coverage (a graph would be great)

Working areas: Upazila	**Union**
Thanchi	**1. Bolipara** **2. Thanchi Sadar Union**



1.5 Key matrices achieved

To enhance the aquaculture technologies and Nutrition activities, PNSAT project implemented different activities directly with 50 targeted beneficiaries (pond, creak).Selection of 50 beneficiaries, conducted 35 batches farmer training session with 98% attendance of 5 technical module, development of new 2 nurseries, input distribution, market linkage workshop, establishment of 54 pond signboard and Billboard, organize farmer field day, monthly, quarterly & annual meeting, timely submitted all types of reports, minutes, real time data entry and finally submitted the deliverable were the key achievement of the project. By doing the assigned activities farmers' knowledge, attitude & engagement of target beneficiaries on aquaculture and nutrition activities have increased. Through market linkage events maximum beneficiaries came to know the backward and forward aquaculture service provider in these area.

There were 1 market linkage meeting, 2 Farmer's Field Day at upazila and union level organized by BNKS to strong the linkage between local fish farmers and market actors easily. A total of 26 participants were participated in market linkage sessions which sessions.

The biggest problem of fish farming in this area is getting reliable fish fry and fish feed at fair prices in remote areas. Therefore, coordination between hatchery owners/nurserers/fingerling sellers as well as strong business relationship must be ensured. 2 nurserers from local community have created, who have been able to make a profit by establishing contact with various hatchery owners and transporters of fingerling

1.6 A bit about the subgrantee

BNKS is a NGO established in 1991 by a group of energetic like-minded women social workers with a view to promote the socio-economic and cultural status of the marginalised and socially excluded peoples of the Chittagong Hill Tracts of Bangladesh.

BNKS Has started working form Bolipara and Sadar unions of Thanchi Upazila, and will continue the learnings and experience of aquaculture among the existing and new aquaculture participants of Thanchi upazila. Considering the adoption rates of the project interventions, BNKS continue the activities in nearby Ruma upazila where no aquaculture development activities were taken. In our any future project proposals especially for the livelihood programs, we will promote successful nutrition sensitive aquaculture activities engaging youth and women.

Vision :
BNKS envisions to ensure an enhanced standard of life for the people living in the country with especial emphasis on the CHTs and other parts of vulnerable areas through mainstreaming them to the current development paradigm of the country.
Mission :
To improve the social, economic and cultural status of the marginalized people of the Chittagong Hill Tract Community especially the women and children in a sustainable way through developing their knowledge, conscience, capacity and services
Core Values:

- Inclusiveness and empowering
- Innovation and creativity
- Integrity and openness
- Effective and Efficiency

Goals and Objectives:

- HEALTH: The community people especially women and children have access to primary health service and that their knowledge on health care services are increased. Rural people of Bandarban Hill

District do not have access to health services due to the remoteness and landscape of the area and difficulties in communication. Many health facilities and services are derelict and un-manned due to this people are not aware of basic health services that should be available to them.

- LIVELIHOOD: Community peoples' participation in profitable income is increased and their overall economic status is improved. The main occupation of the people is Jhum cultivation (slash and burn cultivation) however this practice is often for subsistence farming. Due to lack of communication infrastructure it is difficult for rural people to sell their produced products at market and often results in dealing with unnecessary middle men.
- EDUCATION: All community people of Bandarban have access to education and that their capacity and knowledge is improved through education and training. The overall literacy level of Bandarban is 39.5%, Men's literacy is 56.22% and Women's is at 23.5%. According to the communities extreme poverty hinders the parents from sending their children to school. Families prefer their children to engage in household and agricultural works. Other problems include distance and education not in mother tongue language.
- RIGHTS: All communities and local institutions know and practice their basic rights. So that people and services able to develop to empower the community to meet their basic needs.
- CULTURE: Local people of Bandarban are free to practice and reserve their own cultures, values and customs. There are 13 different ethnic groups that are co-habiting the area of Bandarban Hill District. However due to extreme poverty people are unable to practice their cultural traditions. Traditional cultures are being mainstreamed into each other, values and customs are being forgotten.
- CLIMATE: People and the environment are protected and living sustainably alongside another. Community people of Bandarban are facing many problems due to climate change and practices that are affecting the local environment. The seasons play an active role in the rural people's life, especially farming however the seasons are becoming more and more disrupted with monsoon coming earlier and heavier each year. The area is subject to landslides due to heavy rainfall in the wet season, deforestation, forest fire and land reforming to create more land for development.

1.7 Field implementation team

SL	Name	Degisnation	Mobile
01	Mohammad Jahed Hasan Bhuain	Project Coordinator	01676936417
02	Chain Thwai Marma	Market Development Officer	0 1879778893

1.8 Brief budget summary

Sl	Position of Project Staffs	FtF BANA Contribution in BDT	Grantee Contribution in BDT	Total cost BDT
1	**Staffs Salary**	**455,000**	**227,500**	**682,500**
2	**Staffs Benefits**	**37,800**	**18,900**	**56,700**
3	**Equipment, Supplies and Operation Cost**	**114,750**	-	**114,750**
4	**Travel**	**42,500**	-	**42,500**
5	**Activity Cost**	**629,950**	-	**629,950**
6	**Direct Cost**	**1,280,000**	**246,400**	**1,526,400**
7	**Others Cost**	**128,000**	-	**128,000**

2.0 Project Implementation

2.1 A brief about the pictorial business model/activity model/ intervention model and its description

The proposed interventions have created relationship among different value chain actors in the local market system through transactional activities and respective dependencies. Relationship have developed among farmers and the entrepreneurs on mini-nurseries and fish feed manufacturing companies, feed traders within the project through trading of fish seed and fish feed that can be regarded as value chain in the market. Besides, involvement of dealer/retailer of the vegetable seeds through training sessions has created linkages among them with beneficiaries and the beneficiaries have abled to buy quality seeds from them after the project period. Farmers can sell their fish in the local market through retailers/arotdars this will create a long-term relationship among local depots

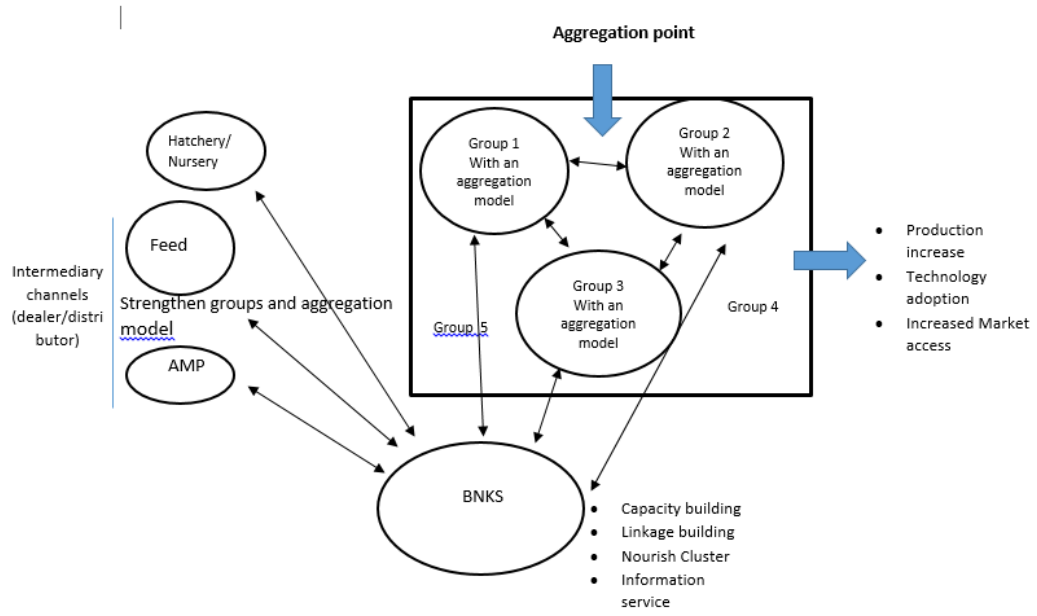


Figure I: Business model of BNKS for promoting nutrition sensitive aquaculture in Thanchi

Target Market actors:

Creek and pond owners-50 persons, fish nurserers-2 persons, fry traders (Patilwala), feed seller, aqua-inputs sellers, harvesting group (5-6 members), fish traders, etc. Under these interventions at least 50% will be women. Out of total beneficiary about 20% will be youth.

From the business model, the mentioned market actors will be benefitted as following.

Fish farmers: The technical knowledge of fish farmer on fish culture will be increased. The farmers will get quality, diversified and nutrition rich fish species fingerlings near to their farm timely at lower prices and they will get services of fish harvesting group. There will be increased bonding among farmers for collective inputs purchasing and marketing of beneficiaries' farm produces at lower costs.
Fish Nurserer: The quality fish fingerlings will reach in the remotest area and reach near to the door step farmers. Job will be created and they will keep role in fish production and BMP.
Fry traders: 6 fingerling traders will be developed. So that fingerlings will be transported safely and acclimatized properly that will reduce mortality of fingerlings.
Fish feed seller: when the fish culture will popular in this area, there will create huge demand for fish feed. Thus the feed selling business will profitable. The farmers will get feed near to their hand.
Aqua-inputs (Lime, Oilcake, rice bran etc.) seller: The intervention will create demand for the aqua-inputs. The seller will be benefitted by supplying the inputs. The farmers will get aqua-inputs near to their hand.
Fish harvesting group: Their demand will be created for nursery owners as well as farmer's level for partial and full harvesting and fry traders and fish seller level.
Fingerlings transporters: Job will be created for transporting spawn from Nursery to farmer's level.

Approved Gantt chart for the intervention

#	Activities	Total Activities	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22
5A	Details Implementation Plan	1.00	1						
5.01	Staff Recruitment	1.00	1						
5.02	Project Orientation	1.00	1						
5.03	ToT for project staff on Nutrition Sensitive Aquaculture (3 days)	1.00		1					
5.04	Bi-monthly Progress Review and Planning Meeting	3.00		1		1		1	
5.05	Community Meeting for Farmer identification & selection	6.00	3	3					
5.06	Capacity building training for the Fish farmers on Nutrition-Sensitive Aquaculture including Nutrition, Gender (Women Empowerment, Joint Decision-making, workload sharing etc.)	50.00		10	10	10	10	10	
5.07	2 days Capacity building training on Carp mola fish nursery technologies, business planning and development for fish nurserers	1.00		1					

5.08	Activities	Total Activities	Mar -22	Apr-22	May -22	Jun -22	Jul -22	Aug -22	Sep -22
#	Day long capacity building training for fish harvesting group on harvesting & post harvesting technology and fish marketing	1.00						1	
5.09	Day observation _IYD-Aug 12, NFW-July, Nutrition day-April 23-29	3.00		1			1	1	
5.10	Farmers' Field Day to demonstrate results-2 unions	2.00							2
5.11	Market linkage events among aquaculture market actors (1 events)	1.00				1			
5.12	Demo pond set up- 2 no (30 dec.)					2			
5.12.1	Fingerlings (1200 fingerling X 1 Pond) (3"-4")	########				2,400			
5.12.2	Feeds	250.00				250			
5.12.3	Lime & Fertilizer	2.00				2			
5.12.4	Signboard	2.00				2			
5.13	Extension inputs Support for Aquaculture Participants								
5.13.1	Fingerlings for fish farmers (250 fingerlings/pond) Pond-50	########				6,250	6,250		
5.13.2	Mola fish (250 gm/ pond)	50.00				25	25		
5.13.3	Fish Feed (25 kg)	########				625	625		
5.13.4	Spawn for Nurserer (1 kg/ nurserer)-2	2.00			2				
5.13.5	Nursery feed (50 kg/ nurserer)	100.00			100				
5.13.6	Vegetable seeds for dyke cropping & OSP Vine	50.00					50		
5.13.7	BMPs and renovation (Black soil removal, Dyke repairing etc.)	15.00			7	3	5		
5.13.8	Seine Net for Harvesting group	1.00						1	
5.14	Aggregation center development	1.00						1	
5.15	IEC material develop & printing								
5.15.1	Pond record books	60.00		60					
5.15.2	Festoon printing (WorldFish) for Training facilitation	14.00		14					
5.15.3	Pond sign board	52.00			52				
5.15.4	Module printing (photocopy) for staffs	2.00		2					
5.16	Attending training on environment and climate organized by WorldFish	1.00					1		
5.17	Learning Sharing meeting and Project Close-out	1.00							1
5.18	Program Progress Report	7.00	1	1	1	1	1	1	1
5.19	Project Completion report	1.00							1

		Activities	Total Activities	Mar -22	Apr-22	May -22	Jun -22	Jul -22	Aug -22	Sep -22
		MEL data collection, processing and submission (as applicable)								
		Success story collection and dissemination (as applicable)								
		Staffs Salary and Benefit	6.50	0.50	1	1	1	1	1	1
		Equipment, Supplies and Operation Cost	6.50	0.50	1	1	1	1	1	1
		Travel-	6.50	0.50	1	1	1	1	1	1

2.3 List of activities conducted

#	Activities	Deliverables	Planned in Quantity	Achieved (with quantity)	Remarks
5A	Details Implementation Plan	Approved DIP	1	1	DONE
5.01	Staff Recruitment	Advertisement, CVs, Appointment letter, Joining letter,	2	2	DONE
5.02	Project Orientation	Report, Attendance Sheet, Group Photo	1	1	DONE
5.03	ToT for project staff on Nutrition Sensitive Aquaculture (3 days)	Report, Attendance Sheet, Group Photo	1	1	DONE
5.04	Bi-monthly Progress Review and Planning Meeting	Report, Attendance Sheet, Group Photo	3	3	DONE
5.05	Community Meeting for Farmer identification & selection	Report, Group Photo	6	6	DONE
5.06	Capacity building training for the Fish farmers on Nutrition-Sensitive Aquaculture including Nutrition, Gender (Women Empowerment, Joint Decision-making, workload sharing etc.)	Report, Attendance Sheet, Group Photo	1	1	DONE
5.07	2 days Capacity building training on Carp mola fish nursery technologies, business planning and development for fish nurserers	Report, Attendance Sheet, Group Photo	1	1	DONE
5.08	Day long capacity building training for fish harvesting group on harvesting & post harvesting technology and fish marketing	Report, Attendance Sheet, Group Photo	35	35	DONE A total of 7 teams have been formed with 50 farmers
5.09	Day observation _IYD-Aug 12, NFW-July, Nutrition day-April 23-29	Report & Group Photo	3	2	DONE

#	Activities	Deliverables	Planned in Quantity	Achieved (with quantity)	Remarks
5.10	Farmers' Field Day to demonstrate results-2 unions	Report, Attendance Sheet, Group Photo	2	2	DONE
5.11	Market linkage events among aquaculture market actors (1 events)	Report, Attendance Sheet, Group Photo	1	1	DONE
5.12	Demo pond set up- 2 no (30 dec.)				
5.12.1	Fingerlings (1200 fingerling X 1 Pond) (3"-4")	Invoice, Master roll, photo	2400	2400	DONE
5.12.2	Feeds	Invoice, Master roll, photo	250	250	DONE
5.12.3	Lime & Fertilizer	Invoice, Master roll, photo	2	2	DONE
5.12.4	Signboard	Invoice & Photo	2	2	DONE
5.13	Extension inputs Support for Aquaculture Participants				
5.13.1	Fingerlings for fish farmers (250 fingerlings/pond) Pond-50	Invoice, Master roll, photo	12500	12500	DONE
5.13.2	Mola fish (250 gm/ pond)	Invoice, Master roll, photo	50	50	DONE
5.13.3	Fish Feed (25 kg)	Invoice, Master roll, photo	1250	1250	DONE
5.13.4	Spawn for Nurserer (1 kg/ nurserer)-2	Invoice, Master roll, photo	2	2	DONE
5.13.5	Nursery feed (50 kg/ nurserer)	Invoice, Master roll, photo	100	100	DONE
5.13.6	Vegetable seeds for dyke cropping & OSP Vine	Invoice, Master roll, photo	50	50	DONE
5.13.7	BMPs and renovation (Black soil removal, Dyke repairing etc.)	Invoice, Master roll, photo	15	7	7 ponds have been rehabilitated due to geographica l location
5.13.8	Seine Net for Harvesting group	Invoice, Master roll, photo	1	1	DONE
5.14	Aggregation center development	Invoice, Report, photo	1	1	DONE
5.15	IEC material develop & printing				
5.15.1	Pond record books	Invoice, Soft copy	60	60	DONE
5.15.2	Festoon printing (WorldFish) for Training facilitation	Invoice, Soft copy	14	14	DONE
5.15.3	Pond sign board	Invoice, Soft copy	52	52	DONE
5.15.4	Module printing (photocopy) for staffs	Invoice, Soft copy	2	2	DONE
5.16	Attending training on environment and climate organized by WorldFish	Invoice, Invitation letter	1	1	DONE
5.17	Learning Sharing meeting and Project Close-out	Report, Attendance Sheet, Group Photo	1	1	DONE
5.18	Program Progress Report	Report	7	7	DONE
5.19	Project Completion report	Report	1	1	DONE

2.4 Activity wise implementation details with pictures *(small pictures alongside the right margin of the documents)*

2.4.1 **Staff Recruitment**

According to the agreement BNKS published advertisement in local newspaper for staff recruitment and recruited 2 staffs.

2.4.2 **Project Orientation**

A long Project Orientation meeting" held on 10 April 2022 at Head Office, Balaghata, Bandarban. ZOR Coordinator and Aquaculture Specialist of FtF BANA, WorldFish, ED and BNKS & representative of BNKS attended in the meeting. All field level project staffs participated in the meeting. The objective of the meeting was to orient all project staff about the project activities, mode of operation, working strategy, organizational norms etc. ZoR Coordinator briefed the WorldFish activities and highlighted the FtF Bangladesh aquaculture activities around the country aspects. Aquaculture Specialist and Aquaculture and Nutrition Coordinator discussed the details project activities, target beneficiary, mode of operations etc. Accounts and Finance Officer of Tahzingdong briefed the organizational rules and regulations which need to follow. Total 11 participants attended in the meeting among them male-9 and female-2

2.4.3 **ToT for project staff on Nutrition Sensitive Aquaculture (3 days)**

As per the activity plan BNKS was organized a 3 days long ToT on basic Aquaculture, Gender and Nutrition on 19 April, 2022 to 21 April, 2022 at BNKS Head Office hall room, Bandarban. The participants learnt on modern technology of Carp-mola fish culture in ponds and creeks, facilitation techniques and address on malnutrition. The training was facilitated by Specialists of WorldFish.

2.4.4 Bi-monthly Progress Review and Planning Meeting

Three Bi monthly progress review and planning meeting conducted within the project period at Thanchi and Bandarban sadar Upazila. The meeting organizes and facilitated by PC, MDO and participated the meeting. The major topics discussed - achievements of the last two month, challenged faced & outcome, learning's, admin and finance issues and planning for the next month. Along with all project staffs Aquaculture specialist, Executive Directors also participated most of these meetings. Through these meetings, the staffs get a proper guideline to achieve the target activities.

2.4.5 Community Meeting for Farmer identification & selection

Total 6 community meeting organized to identify the target beneficiaries and orient the project among the community where participated Chairman and councillor of Union Parishad, local elite, Karbari, Headman and farmers where total participants were 162 among the male are 96 and female are 66. "Market Development

Officer" facilitated the sessions and briefed the project activities and sought cooperation from them. Identified interested farmer through community meeting, 7 groups have been formed (Bolipara-5 and Thanchi sadar union-2). Total beneficiaries 50 among them male 5 and female 45. In the meeting one president is selected by the group members themselves. Project staffs had discussed activities like training, inputs, technical supports and other facilities during final group formation session.

2.4.6 Capacity building training for the Fish farmers on Nutrition-Sensitive Aquaculture including Nutrition, Gender

According plan 7 sessions on Aquaculture- 01 (pre-stocking management) have been conducted in Bolipara and Thanchi sadar union. The main topics of Aquaculture session -01 was (Ponds selection , Control of aquatic weed, Repair pond dike andpond bottom, cleaning black soil, predator control,pre stocking lime and fertilizer application etc) MDO used Banner, Fetoon, session plan , pre test and post test, real materials and hands on practical activities during session. Total 50 farmers attended the training session where Male-7, female 43.

Total 7 sessions on Aquaculture- 02 (Stocking management) has been conducted in Bolipara and Thanchi sadar union. The main contents of and Aquaculture session -02 was (Specics selection, stocking density, good & bad fry identification, fry transportation and adoptation etc). Total 50 farmers attended the training session where Male-7, female 43.

Total 7 farmer training sessions had been conducted on Aquaculture-03 sessions have followed by participatory discussion using real material and practical demonstration. The main topics of Aquaculture-03 session were-post stocking lime & fertilizer application, supplementary feeding, water parameter testing, general problem of fish cultivation and cost benefit analysis etc, Total 50 participants attended the meeting where 5 male and Female 45.

7 farmer's group session had been conducted on Nutrition at Bolipara and Thanchi sadar union. All the sessions have followed by participatory discussion using real material and practical demonstration. The main topics of Nutrition Were-Nutrition circle, Care of pregnant, lactating mother & youth girl etc. Total 50 participants attended the meeting where 5 male and Female 45

2.4.7 Two days Capacity building training on Carp mola fish nursery technologies, business planning and development for fish nurserers

PNSAT Project conducted 2 days long training for fish nursery owners at Project office, Bolipara, Bandarban where 2 nurseryand 6 assistance participated. Different aspects of nursery management were discussed with hands on event delivered and the participants actively participated in that event. S.M. Zafrullah Shamsul, Aquaculture Specialist of FtF BANA attended in the training conduct different sessions along with Project Coordinator of PNSAT Project, BNKS

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2.4.8 Day long capacity building training for fish harvesting group on harvesting & post harvesting technology and fish marketing

PNSAT Project conducted a days long training for fish harvesting group at Project office, Bolipara, Bandarban where 6 member of a group participated. Different aspects of harvesting management were discussed with hands on event delivered and the participants actively participated in that event. S.M. Zafrullah Shamsul, Aquaculture Specialist of FtF BANA attended in the training conduct different sessions along with Project Coordinator of PNSAT Project, BNKS

2.4.9 Day observation

Nationa Nutrition week 2022 observed in Bangladesh on April 28, 2022 in Thanchi Upazila. PNSAT project BNKS also participated and observed events of National fish week-2022 at Thanchi Upazila in Bandarban Hill District. Market Development Officer and mass people along with them PNSAT Project staff. Besides, during this period PNSAT Project also implemented various activities such as hanging banner and festoon in important places such as Local people, fish markets and various restaurants, tea stalls and others of Thnachi Upazila.

National Fish Week-2022 observed in Bangladesh on July 21-27, 2022, in its continue BNKS obserbe in the first time of Thanchi Union. PNSAT project BNKS also participated and observed events of National fish week-2022 at Thanchi Upazila in Bandarban Hill District. Market Development Officer and mass people along with them PNSAT Project staff. Besides, during this period PNSAT Project also implemented various activities such as hanging banner and festoon in important places such as Upazila Parishad, fish markets and various restaurants, tea stalls and others of Thnachi Upazila.

2.4.10 Farmers' Field Day to demonstrate results-2 unions

According to targeted activity 02 FFD had been conducted in the month of September 2022 at Boilpara & Thanchi sadar union. 1st FFD conducted on 13th September-22 at aillmara para community centre, Bolipara Thanchi Total 53 (M-29, F-24) participants attended the event, 2nd FFD conducted on 14th September-22 at Zining aung para, Thanchi, Bandarban 51 participants attended

All FFD venue was decorated with banner, prepared 03 both (Fisheries, Nutrition & farmer) inside the venue . Farmer Member of zining aung and local Elites were present in the FFD session. Successful farmer sharing their story of achievement. At the end of the meeting prizes (crest) was distributed to the successful farmers

2.4.11 Market linkage events among aquaculture market actors

To build up the linkage and bonding with different aquaculture market actors A day long "Market linkage event among aquaculture market actors." had been organized on 27 June, 2022 at Aill Mara Para Community center, Bolipara, Thanchi, Bandarban by BNKS. S.M Zafrullah Samshul (Aquaculture Specialist-WF), Dr. U Ba Thwai Marma (Incharge BNKS), Mohammad Jahed Hasan Bhuain (Project Coordinator-BNKS), Chain Thwai Marma (Market development Officer-BNKS) and 22 aquaculture market actors participated in that program (Fish feed seller, Satata Poultry-01, Fish Farmer-11, Local Nursery Farmer and Ma Madsha Hatchery -05, Fish seller-1, Fish harvester-01, Fisher man and patilwala-3).

2.4.12 Demo pond set up

Demonstration ponds (demo ponds) have an important role as communitybased resource centers. They show the results from the improved technologies and practices related to fish, especially Carp- -Mola polyculture, and horticulture for other community members including beneficiary and non-beneficiary households. To its continuity BNKS has provided inputs for setting up 2 demo pond in Thanchi upazila.

BNKS provided 05 bag 25 kg grower sinking feed (Aftab Sufal) and 1200 piece fingerling to each target farmers. Total 2 aquaculture farmers received 10 bags in weight 250 kg (10* 25kg) fish feed and 2400 piece fingerling from BNKS. Satata poultry a feed agent and Ma motso Hatchery of Lama Upazila distributed the feed and fingerlings in BoliPara Union. The feed and Fingerling was distributed to farmers in Bolibazar. Feed distribution done very early in the morning and farmer, BNKS management team and previous women member was present during distribution time. BNKS PC & MDO maintained the master roll during distribution of feed to target beneficiaries

2.4.13 Extension inputs Support for Aquaculture Participants

As a part of fish feed input support to target beneficiaries BNKS provided 01 bag 25 kg grower sinking feed (Aftab Sufal), 250piece fingerling, 250 gm mola fish to each target farmers and 1 kg spawn each nurserer. Total 50 aquaculture farmers received 50 bags in weight 1250 kg (50* 25kg) fish feed, 12500 piece fingerlings, 12500 gm mola seed and 2 kg spawn nurserer from BNKS. Satata poultry a feed agent and ma motso hatchery of Lama Upazila distributed the feed, fingerlings, mola seed and spawn in Thanchi Upzilla and BoliPara Union. The feed and fingerslings was distributed to farmers in three nearest Station. Feed and fingerlings distribution done very early in the morning and farmer, BNKS management team and previous women member was present during distribution time. BNKS PC & MDO maintained the master roll during distribution of feed to target beneficiaries

2.4.14 Aggregation center development

An Aggregation Center was set up at Bolibazar at Bolipara for the smooth landing, stocking and sale of fish produced by the fish farmers involved in the project. An Aggregation Center was supported by Feed the Future Aquaculture in Bangladesh, And BNKS acts as the implementing partner. By this, common farmers and Bajaj fish sellers will get the benefit of selling and stocking fish in a more convenient and improved location. In addition, buyers and sellers often faced difficulties due to stormy rains and hot sun. The construction of this Aggregation Center will reduce most of the mentioned problems.

Not only that, farmers and fish sellers are provided with 10 plastic crates and 5 digital weighing machines so that they can properly carry and weigh their fish and sell it.

3.0 Project performance and milestones (not more than 3 pages)

#	Activities	Planned in Quantity	Achieved (with quantity)	Remarks
5A	Details Implementation Plan	1	1	DONE
5.01	Staff Recruitment	2	2	DONE
5.02	Project Orientation	1	1	DONE
5.03	ToT for project staff on Nutrition Sensitive Aquaculture (3 days)	1	1	DONE
5.04	Bi-monthly Progress Review and Planning Meeting	3	3	DONE
5.05	Community Meeting for Farmer identification & selection	6	6	DONE
5.06	Capacity building training for the Fish farmers on Nutrition-Sensitive Aquaculture including Nutrition, Gender	1	1	DONE
5.07	2 days Capacity building training on Carp mola fish nursery technologies, business planning and development for fish nurserers	1	1	DONE
5.08	Day long capacity building training for fish harvesting group on harvesting & post harvesting technology and fish marketing	35	35	Done A total of 7 teams have been formed with 50 farmers

#	Activities	Planned in Quantity	Achieved (with quantity)	Remarks
5.09	Day observation _IYD-Aug 12, NFW-July, Nutrition day-April 23-29	3	2	DONE
5.10	Farmers' Field Day to demonstrate results-2 unions	2	2	DONE
5.11	Market linkage events among aquaculture market actors (1 events)	1	1	DONE
5.12	Demo pond set up- 2 no (30 dec.)			
5.12.1	Fingerlings (1200 fingerling X 1 Pond) (3"-4")	2400	2400	DONE
5.12.2	Feeds	250	250	DONE
5.12.3	Lime & Fertilizer	2	2	DONE
5.12.4	Signboard	2	2	DONE
5.13	Extension inputs Support for Aquaculture Participants			
5.13.1	Fingerlings for fish farmers (250 fingerlings/pond) Pond-50	12500	12500	DONE
5.13.2	Mola fish (250 gm/ pond)	50	50	DONE
5.13.3	Fish Feed (25 kg)	1250	1250	DONE
5.13.4	Spawn for Nurserer (1 kg/ nurserer)-2	2	2	DONE
5.13.5	Nursery feed (50 kg/ nurserer)	100	100	DONE
5.13.6	Vegetable seeds for dyke cropping & OSP Vine	50	50	DONE
5.13.7	BMPs and renovation (Black soil removal, Dyke repairing etc.)	15	7	7 ponds have been rehabilitated due to geographical location
5.13.8	Seine Net for Harvesting group	1	1	DONE
5.14	Aggregation center development	1	1	DONE
5.15	IEC material develop & printing			
5.15.1	Pond record books	60	60	DONE
5.15.2	Festoon printing (WorldFish) for Training facilitation	14	14	DONE
5.15.3	Pond sign board	52	52	DONE
5.15.4	Module printing (photocopy) for staffs	2	2	DONE
5.16	Attending training on environment and climate organized by WorldFish	1	1	DONE
5.17	Learning Sharing meeting and Project Close-out	1	1	DONE
5.18	Program Progress Report	7	7	DONE
5.19	Project Completion report	1	1	DONE

4.0 Key Innovation of the project

Community group formation meeting

PNSAT project, BNKS arranged and successfully organized 6 community meeting in different places of Thanchi Upazila & by the community meeting 7 farmers group was formed (Bolipara Union-5, Thanchi sadar Union- 2. Through individual household visit 50 farmers was selected to implement the project activities and all farmer's data have been recorded in MEL data base system. through online posting by using a software. Thus, make a database for all final farmers according to related criteria. So, anytime need to find the all data of any farmers easily got from that data base.

Farmers selection process:
The farmer's selection process was a real innovative activity to achieve the objectives of the project. In order to increase the participation of women, priority has been given to women fish farmers as farmers of the project. Poor fish farmers have been selected as project farmers.

Framer Training:
PNSAT project successfully organized 7 batches of farmer training on 5 technical module (Aquaculture Nutrition, Gender, Homestead vegetable cropping etc) during the project period. In an average 98% participants were attended the training program and all farmer training recorded in MEL dat base system in due time.

Training for Entrepreneurs

PNSAT project successfully organized 02 days technical training for fish nurserer. All 2 Nurserers attended the training session and by the training now they are more confident to established more nursery pond to support the farmer in their community

Developed IEC materials:
PNSAT project BNKS has developed some information, education and communication materials like module, leaflet, Festoon, Banner printing and distributed to the field level. with support of World Fish relevant specialist e.g. Aquaculture, nutrition, communication, gender, Market system, environment, knowledge management etc.

Input distribution:
PNSAT project distributed different aquaculture inputs like fish fingerling, mola seed, fish feed to the farmers which helped farmer to know about the quality inputs as well as established linkages with the service providers. Besides aqua inputs PNSAT project also distributed vegetable seed and OSP vine to encourage farmer to produce vegetable in the pond dike which ultimately helped framer for more income and intake more house hold nutrition.

Market linkage:
Through market linkages between fish farmers and market actors (hatcheries, nurseries and wholesale fish sellers), the opportunity for local fish farmers to sell their products have increased many times over. It was a good innovation regarding the financial profit

Farmers field day (FFD)
The demo pond has set up for observing the quality, growth, diseases of fish and through FFD increase farmer's confidence and good practices among farmers. 2 FFD has obserbed at 2 union (Bolipara union and Thanchi sadar union).

5.0 Sustainability of the business/ intervention model

One of the major challenges is maintaining the sustainability of the project after implementing a project within a short period of six months. By implementing a number of activities within a half year period of the Nutrition Sensitive Aquaculture project has been improved capacity building among the aquaculture farmers able to carry on their culture activities as well earlier their stage. Through implementing the project BNKS developed a remarkable number of skilled human resources which would help to run the project demonstration as well as field level marketing channel in sustainable manner. Besides that, BNKS build a win win network with quality fish seeds sources throughout the country. After completion of the project the activity is running in the community level people. Introduced Mola brood and OSP vine & aware mass community people about nutrition through courtyard meeting which boost up nutrition status at household level especially children or adolescents as well as aware about health hygiene issues. Now, they use tippy tap for their cleanliness and also

motivated other of the community to use tippy tap. At present, household level farmers apply modern fish culture technology to increase their production. Farmers now sowing vegetables and do artificial propagation for more vegetable production which

One of the biggest challenges is maintaining the sustainability of the project after implementing a project for a short period of one year. By implementing a number of activities within a one and half-year period of the PNSAT project, the family nutrition deficit of the fish farmers will be filled on the one hand and fish farming will be financially profitable. The objectives of the project will be achieved only if the activities scheduled in the project are successfully implemented at the field level and the sustainability of the project will bemaintained if the objectives are achieved. Therefore, it remains to be seen to what extent BNKS has succeeded in sustaining the PNSAT project.

nurserses have developed from local communities. Now nursersers are able to supply fish fry from next season. Market linkage has built up between the consumers, fish sellers, fish feed sellers and nurserers. As a result, opportunity has increased to profit from selling of fish fry locally. Fish farmers in remote areas will be able to purchase fish fry from local fish nurserers. As a result, there is no need to depend on any outsider fish fry sellers. This is a positive indicator of sustainability for the project.

Technology transformation has successfully introduced to the local fish farmers. Fish farmers are now implementing the mix or polyculture fish culture on their own ponds or creeks. The technology has given the farmers to culture more species of fish at a time.

Through the PNSAT project market linkage has developed and buildup between the local fish farmers and market actors, based on this linkage local fish farmers able to make financial profit from fish culture and selling their fish or fish fry. To strong the linkage 1 market linkage workshops have organized with all different level market actors successfully.

Some successful activities like Farmer's Field Day observed/campaign were done for developing and to increase relationship between farmers and different level market actors and stakeholders to strong the market linkage process in this area.

Analyzing the results obtained from the above discussion, it can be confirmed that the PNSAT project has been successfully implemented. The fish farmers and sellers included in the project will continue this activity for their own success. Besides, good business relations have been established with fish farmers such as local wholesale fish sellers, fingerling sellers, fish feed and fertilizer sellers. As a result, the farmers will undoubtedly get the cooperation of the government department in any kind of problem. Again, they will be able to solve small problems through inter-communication among themselves. Therefore, BNKS can say with certainty that the long-term sustainability of this project will be maintained in the positive attitude that has been seen among the fish farmers and fish-based products and sellers to make themselves successful.

6.0 Impact of the business/intervention model on the overall business in the intervention period

After successfully completion farmers training and follow-up support by field staff a remarkable impact have seen in project area like farmer now can smartly told the basic technology of aquaculture and start practicing in their pond. They are communicating with nurserer for fingerling. Collect mobile number of other aquaculture service providers. They are searching leaflet on technical aspect of aquaculture. Searching harvesting and marketing to sale their product etc. Through Farmers Field Day secondary farmer known about the success of the aquaculture intervention which create opportunity to adopt same technology to their pond in near future

PNSAT project provided training on carp mola polyculture, dike cropping/home stead gardening, hygiene and basic nutrition. The farmers have been given training on vegetable production on pond dikes/homesteads where they have learned methods of pit preparation for seed sowing, fertilization, irrigation, biological control of pests and insects, artificial pollination, harvesting, cooking process, marketing, etc. The farmers have sowed these seeds on their pond dikes and homestead and are taking care of the seedlings. They are now choosing right foods that are affordable to them considering nutrition. They are also using soap for handwashing as a basic practice to ensure hygiene among the household members. During field visit we observed that farmers started utilizing their gained knowledge and brought change in their total farming behaviour in pond preparation, fertilization, feeding regime, dike cropping especially artificial pollination etc. As a result of practicing improved methods of aquaculture and vegetable cultivation, farmers have got higher production compared to the past.

6.1 sales figures| sales trend over the intervention period (quarter on quarter sales)
-Not applicable
6.2 Customer outreach trend over the intervention period (quarter on quarter reach)
-Not applicable
6.3 Dealer, retailer, distributor trend over the intervention period (quarter on quarter)
-Not applicable
6.4 geographical reach (quarter on quarter)
-Not applicable

7.0 Business Risk and Intervention Strategy

During implementing period of the project some risks were rises and killing the time of project.Therefore, to achieve the target BNKS has applied some strategy in the field to overcome the risks. The business risk and strategies are as follows:
Business Risk:

- During the monsoon season, there was a risk of breaking the dike of the ponds/creeks.
- As the pond was far away, the risk of fish theft was high.
- Opposing to popular social norms, men and women should be interested in fish farming in the ponds or creeks together.
- Mola fish fry carrying is a big risk for the fish farmers. As there is no other method has invented to transport the mola fish fry safely for a long period.
- There are also a big challenge and risk as well for transportation of fish fry at remote areas. Sellers do not show interest to go with fish fry in this area.
- Unavailability of fingerling, fish feed and other necessary items as per the demand of fish farmers at the right time.
- Since not all fish farmers were from the same neighborhood, the risk of absenteeism was very high when training was conducted at a specific location during the monsoon season.

Intervention Strategies:
Some strategies were taken during the project period to overcome the risks. Those are as follows:

- Drainage system has been arranged on one side of the pond to remove excess water from the ponds/creeks.
- Along with the cultivation of vegetables, arrangements were made to plant the macha around the pond used for growing vegetables.
- Arrangements were made to monitor the condition of the fingerlings along with regular feeding.
- Farmers have been contacted and counseled through regular phone calls where mobile networks are available. And where there was no mobile network, home monitoring and counseling has ensured by visiting the paras at regular intervals.

- In order to ensure that fish farmers can get fingerling, fish feed, fertilizers and other items on a regular basis as per their requirement and in a time frame, communication and coordination has been established with the famous fingerling sellers, fish feed sellers, fertilizer sellers and officials in charge of government fisheries department at upazila level.

After all, Fish pouching, flash flood, Over flow of rain water still a risk of aquaculture business in Thanchi Upazila hill area. Outside predators frequently eat & kill fishes in small seasonal pond. Availability of net and harvesting group, aqua inputs saler are not available in Thanchi Upazila. Cost of transportation and marketing price very high which is a business risk for farmer in this area

Availability of quality inputs to farm gate, harvesting and marketing fish product with fare price is still a risk of this business model.
The project activities enhance the motivation of the fish farmers for cultivation of fish in their ponds which result will produce more fish and more marketing but Ice is not available to transport fish in market. PNSAT provide training on carp-mola poly-culture, pond dike gardening, nutrition, hygiene and gender to raise their awareness as well as including community people of that area. Provide training on hygiene practice and taught them use and importance of tippy tap. Besides, prepare some leaflets and distributed in the community level during project period.

8.0 Project budget and financial management

BNKS submitted the financial reports to WorldFish according to the timetable below

Reporting Schedule:

Report Description	**Period Covered**	**Due Date to WorldFish**
March 2022 Financial report	For the period of March 2022	3 April 2022
April 2022 Financial report	For the period of April 2022	2 May 2022
May 2022 Financial report	For the period of May 2022	2 June 2022
June 2022 Financial report	For the period of June 2022	3 July 2022
July 2022 Financial report	For the period of July 2022	1 August 2022
August 2022 Financial report	For the period of August 2022	1 September 2022
September 2022 Financial report	For the period of September 2022	1 October2022

Financial reports including the following information:

a. Budget versus actual expenses, with current reporting period data and grant to date data.

b. Detailed list of expenses that include description, transaction date, amount, expense category, exchange rates used to convert to reporting currency.

c. Cost Share or matching progress report for period. (if necessary)

d. Supporting documentation, as necessary.

e. Fund balance status – cash received from WorldFish versus expenditures reported to WorldFish

BNKS received direct cost of the project from WorldFish total BDT. 14,08000/- and total expenditure of the project period was BDT. 12,30,207 The total expenses of Personnel budget was 4,93,929/-. The supplies and equipment & operation cost was BDT. 1,06,715/- Travel cost was BDT. 64,365 /-, Activity/Program Cost was BDT.5,65,198/- . BNKS

9.0 Monitoring and reporting

BNKS Management monitoring the fish market regularly. Aquaculture Specialist of WorldFish regularly visited the activities and Fish market and guided accordingly. Technical progress report submitted to WorldFish at the end date of each month.
The following information was consisting:
a) Activity description
b) Target setting
c) Acievement of the activity
d) Data quality assurance and
e) Reporting plan.

Focal Point of WorldFish has provided orientation on reporting format and assist to entry data and related information on field activities. There was a focal person in BNKS who was responsible to provide progress related data as needed assisted by Project Coordinator. Project Coordinator collect data from Market development officer and then Project Coordinator has to review the progress related data through monitoring and reporting tools in a participatory way. BNKS assisted to project team on the following field activities.

- ❖ Household visiting for farmer selection/reselection and profiling data
- ❖ Developed group of farmer for suitable location to provide excellent training.
- ❖ Ensure their presence for training and monthly meeting.
- ❖ Collect actual data of all activity monitoring by attendance, photos, master roll etc.

Every months, BNKS organized a central committee meeting with all of its project coordinators to update the progress of each project. During the meeting, all implementing projects challenges, learning lessons and constraints were addressed. Based on the field situation and local context, provided necessary guidance, suggestions and instructions from the management team. As a result, the undertaken activities were achieved successfully by

involving the organizational senior members, key stakeholders, community leaders and relevant GOB department of the project working areas.
Technical Reports:

BNKS submitted monthly progress reports as per schedule.

Report Description	**Period Covered**	**Due Date to WorldFish**
Monthly Technical Progress Report	For the period of March 2022	3 April 2022
Monthly Technical Progress Report	For the period of April 2022	2 May 2022
Monthly Technical Progress Report	For the period of May 2022	2 June 2022
Monthly Technical Progress Report	For the period of June 2022	3 July 2022
Monthly Technical Progress Report	For the period of July 2022	1 August 2022
Monthly Technical Progress Report	For the period of August 2022	1 September 2022
Monthly Technical Progress Report	For the period of September 2022	1 October 2022

10.0 Challenges/ Lesson learned

10.1 Project design and implementation challenges

There were some challenges during implementing period of the project. Those challenges are as follows:

- It was a big challenge to have group meetings at the right time due to the distance from para to para due to geographical reasons. This situation caused more problems especially in the monsoon season. Small group discussions have been arranged to overcome this challenge. And while providing any training to the project included fish farmers, selecting a location in one of the intermediate para was an effective way for all the fish farmers to participate.
- Due to the problem of getting fish feed at the right time in Bandarban, the farmers had to go out most of the time to collect fish feed. As a result, fish farmers have lost money and time. The fish farmers have been saved from the loss of time and money when the project introduce and teach them how to make a balanced diet of fish locally. Creating a balanced diet of fish locally can save a fish farmer both time and money.
- In Bandarban fish farmers have to depend on outsider vendors to get quality fish fry. It was a big challenge for fish farmers to get quality fish fry in time. To overcome this problem, it is a significant lesson to adopt the strategy of creating fish fry producers at the local level.
- Proper feeding results in rapid growth of fish. This knowledge is a significant lesson for the project fish farmers and they have applied to their own fish farm for sustainable fish farming of the family.
- In Bandarban, there is no separate fishing team with cast nets who will buy fish from any fish farmer. As a result, the fish farmers of the project had to collect fish from the people who have cast nets while selling their fish. It was a great lesson that if there is/are/was one or more fishing teams with their own cast nets in Bandarban, then the fish farmers of this region will get a fair price by selling their own fish.
- The technology of cultivating mola-carp fish at the same time was a very valuable learning. On the other hand, no suitable means of transporting mola fish fry has yet been developed in this region. As a result, despite the interest of the farmers in the ponds or creeks in remote areas, the farmers could not proceed in the way of mola fish farming. On the one hand, it is such a challenge; on the other hand, it is instructive to start using any suitable technology for the transportation of mola fish fry in the future and to adopt a perfect way to bring about a change in the mola fish farming with other fish's in this region.
- Changing the old mindset of fish farmers in the region was a significant challenge. Enriching fish farming by continuously gaining new conceptual knowledge through training, discussion and personal communication on new methods and technologies of fish farming was an important learning point.
- The project duration was only one year. So, challenge has to be faced to ensuring the quality of work at the field level. And ensuring the inputs support from project (fingerling, fish feed and other inputs) to the project participants in proper time was one of the big challenges. However, the strategy of ensuring successful implementation of all activities in a short period of time through proper action planning and guidance was a significant lesson.
- Coordinating and developed linkage between the government fisheries department and the agriculture department with fish farmers was also one
- of the big challenges. Due to insufficient manpower in the Fisheries
- Department, it has not been possible to provide significant assistance to the fish farmers at the field level despite goodwill. As a result, a misconception arose among the fish farmers that no cooperation could be obtained through the Fisheries Department. However, it is a well-known fact that the project has put an end to this misconception of fish farmers by coordinating with the Fisheries Department and the Department of Agriculture. It was a remarkable lesson that the coordination and linkage between the Department of

- Fisheries and the Department of Agriculture has given a good start to the supply of nutrients through fish farming as well as vegetable farming on the dykes of ponds or creeks.

So the some challenages at a glance

- Male participants did not attend the training in time some cases.
- Female participants in some areas of are less interested to attend in gender training
- During Tobacco cultivation and harvesting time especially in
- October to February participants are less interest to attend the training.
- Maximum ponds are seasonal hill area are drying and farmers have to harvest the fishes and also effect to vegetable production due to crisis of water
- Mobile network
- Mobile communication/Network in remote hill area
- Availability of aqua inputs (Lime, feed, aqua medicine) in local market
- Group mobilization due to scattered distribution of fish farmers,
- Arrange suitable training venue for farmer training in rainy season
- Distribution of inputs by vendors in remote hill area Bulk collection, transportation & Long distance for marketing fish

10.2 Partnership Challenges (including grants, finance, M&E, and MSD)
-N/A
10.3 Any external Challenge
-N/A

11.0 Areas of Improvement/Recommendation

Some recommendations, which can help to gain good results in next phase of the PNSAT project, that's as follows:

- Establish a long term and sustainable relationship between the fish farmers and hatchery so that the fish farmer can get or buy fingerlings as per their requirement.
- If the project can arrange daily allowance for the fish farmers for training purpose.
- A grant support from the project would be helpful to establish a local hatchery.
- The amount of vegetable seeds should increase to grow encouragement of the farmers.
- Establish a fish harvesting group and ensure a grant to purchase the fish collection materials and equipments for necessary activities.
- Facilitate to create few permanent fish feed sellers who will sell the fish feed to the local fish farmers and maintain the feed stock as demand on local market.
- Need more technical support from NGO/LSP
- Need to developed available market actors on aquaculture
- Reach more farmers in these Upazila
- Should be more focus on technical and business training through inclusive market approach to the farmers of the community.
- Need to introduce climate service in overall agriculture (Agriculture, Fisheries & Livestock) sector.
- Should be facilitate to establish ideal fish hatchery to get quality fish seeds especially carp fishes.
- Need to build a strong linkage and make easily accessible common online market platform.
- Should be introduce native fish culture as well as established hatchery/nursery in community level.

- Need to providing more finance becomes a farmer to successful entrepreneur as well as women entrepreneurship.
- Established nutrition bank for community people through nutrition sensitive Agriculture/Aquaculture/Livestock.
- Need to linkage to access to fish feed availability in the ZOR area for commercialization of aquaculture
- Need to more focus on gender based training at root level of the community.
- E-learning, Advertisement, Leaflet, distribution to realize the importance of Aquaculture to village people
- Technical Support Center.

12.0 Conclusion

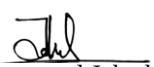
Bandarban Hill District, one of Bangladesh's three hill districts, has developed a reputation for its natural beauty.Bandarban has the greatest ethnic and linguistic diversity of the CHT's two other districts.They are also causing ethnic communities to eat differently and eat differently.The ethnic groups that live here share a lot in common, both in terms of similarities and differences;namely, collecting fish, crabs, snails, and other fish-related food from rivers and streams to remedy the nutritional deficiency.If we conduct an accurate analysis, we will discover that the amount of fish that indigenous people consume from rivers, ponds, and streams is insufficient to satisfy their nutritional deficiencies.However, none of these ethnic groups have ever considered fish farming by building ponds or creeks in streams because they adhere to traditional rules.

BNKS has implemented the PNSAT project in Bandarban Sadar (including the municipality) and Rowangchari Upazila to ensure that the poor fish farmers' families are fed and the people of the areas are involved in fish farming for financial gain.Positive actions have been taken to identify and overcome fish farming's weaknesses in this region.

In order to make it easier for fish farmers in this region to sell their products, BNKS has worked with government fisheries officials.BNKS has established business relationships with all market participants, including local wholesale fish retailers, fish fry producers and sellers, fish feed sellers, transporters of fish and fish fry, fish collectors, and medicine sellers. These relationships have been established to guarantee that fish farmers will receive financial benefits from fish farming.A new technological transformation of fish farming of various species in the same ponds or creeks has begun as a result of farmers being introduced to the mixed technology or poly culture of fish farming.In addition, fish farmers have begun to farm their own ponds or creeks using a hybrid approach to farming Mola-Carp fish, which grow quickly.

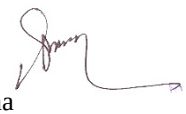
Based on these points of view, it is clear that this is the first time that fish farmers in Bandarban Hill District have received technical assistance from non-governmental organizations.With the help of technical training provided by the PNSAT project, low-income fish farmers have been able to escape the conventional trap and have become more enthusiastic about fish farming.The fish farmers of Bandarban District have been able to realize their dream of family prosperity thanks to innovative fish farming methods.The PNSAT project's success can be seen here.

Report prepared by



Mohammad Jahed Hasan Bhuain
Project-Coordinator
BNKS, Bandarban
Date: 26 September, 2022

Approved by



Peshal Chakma
Program Director.
BNKS, Bandarban
Date: 26 September, 2022

13. Appendix –

N/A

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