

Promoting Affordable Improved Fish Feed, Services and Linkages to Increase  
Profitability of Aquaculture Farmers

## Project Completion Report

Submitted by

**Padma Feed**



Submitted to

**Feed the Future Bangladesh Aquaculture Activity**

**WorldFish**



**31 August 2023**

Project Title	<b>Promoting Affordable Improved Fish Feed, Services and Linkages to Increase Profitability of Aquaculture Farmers</b>	
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## Abbreviation

ADG	-	Average Daily Weight Gain
FCR	-	Feed Conversion Ratio
DoF	-	Department of Fisheries
BOD	-	Biological Oxygen Demand
CH	-	Carbohydrate
DO	-	Dissolved Oxygen
FAO	-	Food and Agricultural Organization
FFDA	-	Fish Farmers Development Agency
SGR	-	Specific Growth Rate
EC	-	Electro Conductivity
PPM	-	Parts Per Million
PPT	-	Parts Per Thousand
TAN	-	Total Ammonia Nitrogen
TDS	-	Total Dissolved Solids
ABL	-	Average Body Length

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## **1.0 Executive Summary**

In Bangladesh, aquaculture production systems are extensive and improved extensively along with a few semi-intensive and intensive systems. The aquaculture production for the pond, seasonal water body, and baor (oxbow lake) is 4.96, 1.50, and 1.82 MT/ha respectively (2018-19) which are still behind the production potential. It is observed that the productivity of smallholder farmers is significantly low. The sectoral constraints for low aquaculture production are:

- Unavailability of good quality fish feed at the community level
- High cost of feed and other inputs
- Repeated increase in feed cost every year
- Commercial feed companies depend on imported raw materials, increasing feed prices

In the existing context, fish price is not increasing as rapidly as feed cost is increasing which affects the profitability of fish farming and creates frustration among the fish farmers.

### **Objective of the project**

- Ensuring access to farmers of cheap and low cost and quality fish feed
- Enhancing fish production through community feed feeding
- To make the fish farmers technically skilled by imparting fish farming and business-related training to the fish farmers in the project area
- Expanding the business of community feed centers

The project is working in total 7 upazilas (sub-districts) of Barishal (3 upazila), Gopalganj (2 upazila), and Madaripur (2 upazila) districts because these areas are high levels of potential for aquaculture.

The project is working to increase the productivity of fish farmers, access to quality input, market linkage, and business promotion. It also targeted to create, develop and engage local service providers to ensure extension services, and improved fish feed within the farmer's community. Not only that, but the project also takes planned to strengthen partnerships with private sector businesses, investors, and the government to develop a value chain.

One-Stop Service Center was a platform where a bunch of services were available for different market actors, especially for smallholder farmers at the community level. It was different from a traditional dealer point or retailer point where several free and fee-based services can be found beside the core product business. The services include a) reliable improved feed and other inputs at an affordable price, b) technical services on modern culture practices like formal & informal training, information on BMPs, new technologies, and techniques, c) water quality testing services, d) advisory services like pond visits and advice over the phone, e) providing extension materials like leaflets, brochures, posters, etc. on different modern techniques and practices, f) transport services for delivery of products i.e. feed, seed, aqua medicinal products (AMP), etc. to farm gate, g) machinery support and last but not the least i) linkage support i.e. connecting farmers to forward market, access to finance, etc.

Initially, the community feed center was established 14 OSSCs in 14 different aquaculture communities in Barishal, Gopalganj, and Madaripur districts. They were provided with improved fish feed at a cheaper price. They were done so, due to reducing costs in sourcing raw materials and maintaining quality. Their marketing cost is lower than a commercial feed due to community support, less distribution cost, no additional promotional cost, etc. The center marketed its feed through these 14 OSSCs and 200 farmers on average were related to each adjacent OSSC. In addition, to feed sales, these OSSCs were provided technical services like formal & informal training, water, and soil quality testing facilities, extension material support & advisory services to the farmers which were to educate and build customer trust. Consequently, it helped increase the customer base as well as sales volume.

Finally, The intervention has completed 2,962 smallholder farmers, 28 local service providers, and 14 dealers & retailers who have operated 14 one-stop service centers as owners in the Barishal region. Among the 2,962 farmers, 27.5% were youth and 39.5% were women and among 28 LSPs 10% were youth and 5% were women. 10% of the OSSC owners will be youth. Farmers were reached through technical sessions i.e., Business promotion and BMPs meetings, modern production technologies, Promotional campaigning, etc. 140 Business promotion and BMP meetings were conducted where an average 21 participants were present in each session in those sessions, and print materials like leaflets, brochures, etc. were disseminated among the farmers. 14 ponds demonstration on feed performance were also done for the farmers. Additionally, farmers were reached through water testing services, disease prevention services, advisory services, and direct feed sales. LSPs & OSSC owners were reached through capacity-building training on technical aspects. Additionally, OSSC owners

were capacitated on business management and record keeping. After that, they facilitated Product promotion events for the farmers and informal training and advice to them. B-to-B linkage events were arranged for linkage among the potential other feed dealers and lead farmers to understand the Padma feed business & AMP services. Finally, which were helping to add several OSSCs and LSPs to the Promotional Campaign, sharing video documentation that includes the product, service, costing, and success story for the continued, potential farmers. LSPs were engaged in feed sales and advisory services besides the OSSC. OSSC was branded with a signboard, decorated Shelf /Rack, test kits, festoon, and poster so that farmers can easily identify the center.

Besides, Padma Feed conducted feed quality testing (Proximate/ Composition analysis) and reviewed the formulation with the help of WorldFish Experts. This activity was done by building customers' and relevant stakeholders' confidence in Padma Feed. In addition, Padma Feed were developed and distributed, Video documents, and promotional & IEC materials to their targeted customers.

Learning from project areas such as the small-scale fish farmers in the project area are not aware of the need to feed the fish. It is also not known that lime has to be applied to the pond. Farmers in the project area are very keen to receive fish farming training.

Through the project, there has been a drastic change in the fish farmers of the area. Now farmers are feeding low-cost and quality and good padma feed instead of high-cost market feed. Farmers' fish production is increasing after feeding Padma feed. Not only this, the feed customers of dealers and LSPs are increasing through the project.

## **2.0 Introduction**

### **2.1 Background of the Project**

Aquaculture plays an important role in the economy of Bangladesh in terms of food, nutrition, income, employment, and foreign exchange earnings. In Bangladesh, the price of fish food has increased several times, but the price of fish has not increased. On the other hand, in the case of fish farming, 70% is spent on fish food. The market challenges are:

- Lack of access to quality feed from reliable sources
- High cost of feed and other inputs
- Lack of knowledge of BMP, modern technologies, and improved farming practices, especially proper utilization of feed, seed & other inputs
- Lack of market information and access to forward market

- Lack of extension/technical support for farmers and other service providers
- Unavailability of water & soil quality testing facilities
- Access to finance in the production season

Through Padma Feed in the project area, farmers have the opportunity to ensure low-cost, good-quality feed. There is an opportunity to arrange feed supply as per the requirement of farmers.

## 2.2 Proposed Solution

Padma Feed Center, a community-based feed center, used the One Stop Service Center (OSSC) concept to address community concerns by focusing on smallholder farmers. These OSSCs served as a link between community feed centers, dealers, retailers, Local Service Providers (LSP), and farmers. Padma Feed sourced inexpensive but high-quality raw materials from dependable sources to make an enhanced feed that was affordable to smallholders at the community level. They were able to expand their business and boost customer confidence by providing affordable better feed, technical services, and linkage support to farmers in the fish farming communities of seven upazilas in three districts in the Barishal region.



## 2.3 Objectives of the Partnership

Objectives of this Sub-Grantee agreement are-

- Access to quality feed from reliable sources
- Comparatively low cost of feed and other inputs
- Improve knowledge of BMP (modern technologies, and improved farming practices, especially proper utilization of feed, seed & other inputs )
- Market information and access to forward market



- e. Extension/technical support for farmers and other service providers
- f. Availability of water & soil quality testing facilities
- g. Access to finance in the production season

## 2.4 Geographic Coverage

This intervention was implemented in 7 Upazilas of 3 districts of Barishal region. The Upazilas, union, and districts are:

District	Upazila	Union
Barishal	Agailjhara	Goila
		Bakal
		Bagdha
		Ratnopur
	Uzirpur	Satla
		Jollah
	Gournadi	Batazor
		Mahilara
Madaripur	Madaripur	Kendua
		Jhawdi
	Kalkini	Dasar
		Gopalpur
Gopalganj	Gopalganj	Roghunathpur
	Kotalipara	Kandi
		Amtoli
		Kolabari

## 2.5 Project KPI and Budget Summary

Key Performance Indicator (KPI) of this project of Padma feed has shared below:

Activity	Means	Unit	Targets	Achievements	When	MOV
ToT on Technical and Business Aspects to project staffs, OSSC owners & LSPs	# of training	Number	2	2	Feb'23	
	# of participants	Number	51	51		

Activity	Means	Unit	Targets	Achievements	When	MOV
Business promotion and BMP for farmers	# of training	Number	140	140	Mar-Jun'23	5% above
	# of participants	Number	2,800	2,962		
B to B linkage events for other Dealers and prospect LSP	# of events	Number	2	2	Apr'23	
	# of participants	Number	24	24		
One Stop Service Center (OSSC) establishment	# of OSSC	Number	14	14	Apr'23	

**Notes of KPI:**

- UHC: Unique Head Count (multiple counting systems do not apply)
- MoV: Means of Verification (should be evidence-based and qualify the standards)
- This should capture disaggregated data by sex and age (male, female, adult, and youth) at a minimum. Any child should not be counted as a participant/ reached under this service delivery by the sub-grant
- This will count participants (UHC) reached directly, those participating in the markets strengthened by the project and reached as part of a deliberate service strategy e.g., training (who attended for the full time), events, demo ponds which should be supported by the valid evidence e.g., training attendees' record sheets
- The training attendance record sheets should maintain Activity recommended formats/ templates and capture required data/ information and duly signed/ stamped
- Ensure data quality across the process

Summary Budget	% of WorldFish	% of Grantee	Total	FtF BAA	Grantee
<b>Total Activity Cost (BDT)</b>	50%	50%	<b>7,126,530</b>	<b>3,563,930</b>	<b>3,562,600</b>
<b>Equivalent USD (Ex Rate-102.87)</b>	50%	50%	69,277	34,645	34,632

Included here is the amount co-funded by **PADMA FEED**. The partner was reported to WorldFish as part of the regular reports of the actual amount of co-funding contribution for that period.

The following modifications to the budget require written approval from WorldFish:

- To change the required funding amounts necessary to fulfill the stated project objectives.
- To change or temporarily replace key project staff.

- To reallocate between budget lines items an amount greater than 10% percent of the main budget line.
- To add a line item to the budget.
- To sub-grant or subcontract any portion of this budget to a third party.

### **3.0 Project Performance**

#### **3.1 Outreach Summary**

Orientation was given to 5 project staff on organizing Padma feed by WorldFish as per the project design. The project staff consists of 1 Project Manager, 3 Business Promotion Officers, and 1 Admin & Accounts Officer. Out of 5 project staff, 100% were male, and 20% were youth. A total of 65 people participated in the training of trainers program. The program was completed in total 2 batches and out of them the main participants were 14 dealers, 28 LSPs, and 5 project staff. The event was organized by WorldFish and organized by Padma Feed. Out of 65 participants, 100% were male participants and 30.76% were youth who received ToT on Technical and Business Aspects. 2962 farmers got training on business promotion and BMP for farmers. Out of 2962 farmers, 61% were male farmers, 38.9% were female farmers, and 27.67% of youth received training. In the B-to-B linkage events, 14 OSSCs and 27 LSPs were present and participated in different sessions. Out of 55 participants, 96.36% were male, 3.63% were women, and 29.09% youth who attend the program. Selection of 14 One Stop Service Center owners as per project design and provision of 1 table, chair and a shelf along with a water chemical quality test kit and 1 signboard has been completed. Supply of WorldFish's IEC materials and Padma feed leaflets and festoons to the One Stop Service Center is assured. With the establishment of the one-stop service center, the decoration of dealers' shops is more beautiful than other shops and the number of customers is increasing day by day. Fishermen are coming to the One Stop Service Center in case of any problems in their fishing and from there they get water chemical quality tests, and service regularly. Out of 14 OSSC owners, 100% were male, and 14.28% were youth. As per the design of the project, 14 fish farmers' ponds were first selected as demonstration ponds. After that, all the pre-stocking management work of the 14 farmers' ponds was carried out. Allocated lime, probiotics, and fish fry have been supplied to farmers from the project. A total of 37400 pieces of tilapia fingerlings and 630 pieces of carp (Katla, Rui) fingerlings have been supplied to 14 farmers in farmers' ponds. Farmers are advised to feed the fish nursery feed after release into the pond. Feeding of starter feed is recommended after 15 days of nursery feed. Fish farmers are feeding Padma feed in demonstration ponds with their own funding. LSP and BPO are regularly testing the chemical

quality of pond water (pH, ammonia, and dissolved oxygen) in the demonstration ponds. Along with that, BPO is helping the farmers to keep all the income and expenditure information of the pond in the record book. Sampling of fish was done every 15 days and it was kept in the record book. Out of 14 demo pond farmers, 92.85% were male, and 7.14% were female. 8000 leaflets and 25 sets of festoons were produced and distributed as per the project design. An 6 minute 27-second video documentary was created focusing on the Community Feed Center which was shown in the promotional campaign. A total of 14 batches of promotional campaigns have been completed in the project area as per the project design. A total of 742 participants took part in the promotional campaign. Purchase of floating and submersible feed mills completed by Padma Feed. A total of 12 samples of feed were tested and the results were satisfactory for the nutritional quality of the feed. 2 batches of project coordination meetings have been completed out of 26 participants, 100% were male, and 23.07% were youth attending the program. National Fisheries Week 2023 was celebrated on 25 July at Shaheed Sukant Abdullah Hall of Agailjhara Upazila, Barishal. At 10.00 a.m., the discussion meeting started, in which the upazila chairman, upazila executive officer, Senior Upazila Fisheries Officer, Upazila Nirbahi officer, and other departmental employees of the upazila and other supporting organizations such as Padma Feed and other organizations participated. 5 participants from Padma feed on National Fish Week' 2023. International Women's Day 2023 was celebrated today at Shaheed Sukant Abdullah Hall of Agailjhara Upazila, Barishal. At 10.00 a.m., the International Women's Day procession started, in which the upazila chairman, upazila executive officer, upazila executive officer, upazila women's affairs officer, and other departmental employees of the upazila and other supporting organizations such as Padma Feed, BRAC and other organizations participated. 5 participants from Padma feed on International Women's Day 2023. A 1-day training on the environment and climate risk management was organized by WorldFish in Dhaka and 2 people from Padma Feed participated there. A total of 21 people attended the training. Out of a total of 21 people, 18 men, and 3 women were present. Monthly progress reports 7 completed as per project design. As per the project design 7 success story collected. One project completion report was completed.

### 3.2 Key Performance Indicators

Sl. No.	Activities	Target (Number)	Achievement (Number)	Achievement (%)
1	Project orientation for project staff	1	1	100%
2	ToT on Technical and Business Aspects to project staffs, OSSC owners & LSPs	2	2	100%
3	Business promotion and BMP for farmers	140	140	100%
4	B to B linkage events for other Dealers and prospect LSP	2	2	100%
5	One Stop Service Center (OSSC) establishment	14	14	100%
6	Pond Demonstration on Feed Performance	14	14	100%
	Promotional activities			100%
7	Brochures/Leaflets	8000	8000	100%
8	Festoons	25	25	100%
9	Video documentation for business promotion	1	1	100%
10	Promotional Campaigning	14	14	100%
11	Production capacity strengthening (Machinery Purchase & Installment)	1	1	100%
12	Feed quality testing (Proximate Composition analysis) for formulate fish feeds	12	12	100%
13	Project Coordination meeting	2	2	100%
14	National Fish Week and Day Observe (International Women's Day and Youth Day)	3	3	100%
15	Attending training on environment and climate organized by	1	1	100%

Sl. No.	Activities	Target (Number)	Achievement (Number)	Achievement (%)
	WorldFish ( as applicable)			
16	Project closing meeting	1	1	100%
17	Monthly Progress Report	7	7	100%
18	Project Completion report	1	1	100%
19	MEL data collection, processing and submission (as applicable)	7	1	14%
20	Success story collection and dissemination (as applicable)	7	7	100%

### 3.3 Activity Performance

#### Project orientation for project staff

As per project design orientation program was held on 12 February 2023 at the BDS office, Kaurpar, Agailjhara, Barishal. Detail shared project objectives, activities, implementation method, activities plan, job description, and financial management by the WorldFish team through power point presentation. Out of 13 participants, 100% were male, and 15.38% were youth.

#### ToT on Technical and Business Aspects to project staff, OSSC owners and LSPs

14 OSSCs and 28 LSPs have received ToT. Out of 65 participants, 100% were male participants and 30.76% were youth who received ToT. The training session started with the introduction of the trainer with the beginning of the event, the project manager asked everyone to introduce themselves by mentioning their name, profession, working union, and interest.



Figure 1 ToT On Technical and Business Aspect

The trainer, in consultation with the trainees, set the basic guidelines to be applicable during the training days in order to maintain a productive and organized training program. The trainees agreed upon several guidelines for the training like putting their phones on silent,

coming on time, respecting others' ideas, not interfering when others talk, etc. These guidelines were noted down on a flip chart and pasted to the wall for the rest of the workshop. Then the participants were asked about their expectations from the training and what they expected to learn during the one day. After this session was proceeded further by the trainer explaining the main purpose of the Project Management and what the trainees will learn about it, by pointing out major topics to be covered during the one day of the training. The rest of the time the training went ahead normally where there were presentations used to display major points of discussion the points were then discussed by the trainers and the participants shared their views and experiences about the topics discussed. There used to be a tea break morning at 10:00 am which lasted for ten minutes and then a lunch break for one hour at 1:30 pm. After the lunch break the session would continue, sometimes with an energizer performed by the trainer and the participation of all the trainees. This was aimed at vitalizing the trainees back for the class after they took lunch and felt heavy and sleepy. The session would continue after the lunch break and different methods were used by the trainer for delivering the content and also involving the participants. A ten-minute tea break was observed on the day at 04:00 pm and the session would end at 05:00 pm. There were several facilitation techniques used by the trainer which included question and answer, brainstorming, case study discussions, and practical implementation of some of the topics by trainees on video clips. The multitude of training methodologies was utilized in order to make sure all the participants get the whole concept and practice what they learn because only listening to the trainers can be forgotten, but what the trainees do by themselves they will never forget.

### **Business promotion and BMP for farmers**

The main purposes of the project are working to increase the productivity of fish farmers, access to quality input, market linkage, and business development. Also targeted to create, develop and engage local service providers for ensuring business development, extension services, technical support of fish culture for farmers, and awareness of dietary diversification within the community. To build up a strong linkage between OSSC owners, LSP, and farmers had been



*Figure 2 Business Promotion and BMP Events*



organized farmers' training at the field level. 2962 farmers got training on business promotion and BMP for farmers. Out of 2985 farmers, 61.03% were male farmers, 38.96% were female farmers, and 27.67% of youth received training. Business Promotion Officer and trained OSSC owner, and LSPs prepared the draft training schedule to organize farmers' training. Together project staff and LSPs finalized the farmer's training schedule. According to the schedule, LSPs started training in the field with the help of the project Business Promotion Officer. Both LSPs and farmers selected suitable training places, they preferred the pond side as a training place. Sitting arranged and they used chairs to sit down. Farmer's training is divided into six sessions pre-stocking fingerling management, during stocking management, post-stocking management, business concept, and nutrition. In the training, they used festoons, banners, and real materials as training materials. They hung a festoon and banner in front of training participants. They used fertilizer, feed, and lime to do a practical session. To test the abundance of natural feed they used gamchha and glass instead of plankton nets. The duration of the training session was 4.00 hours. One LSP had been organized successfully one training daily. The LSPs were the main facilitator in the training but Business Promotion Officer also took part as a co-facilitator in the training. The project Manager cum Technical Experts were present in the session as observers. They provided feedback to LSPs and Business Promotion Officer after completion of training.

### **B to B linkage events for other Dealers and prospect LSP**

The broad objective is to develop the knowledge, abilities, attitudes, and professional qualities that LSPs require for the management of farmer groups, business promotion, and service delivery. The LSPs will work as aquaculture experts, extension agents, good communicators, and business promoters after completion of the training program. In the B-to-B linkage events, 14 OSSCs and 27 LSPs were present and



Figure 3 B to B Linkage Events for Stakeholders



participated in different sessions. Out of 55 participants, 96.36% were male, 3.63% were women, and 29.09% youth who attend the program. There was a total of 3 facilitators facilitated in the training, where 3 were Padma Feed part. The training course had been divided into a total of 5 sessions based on project activities. In the training sessions also did practical sessions on natural feed tests, pH tests, and ammonia tests. To do more participatory and fruitful training, the facilitator uses documentary videos, flip charts, show ppt, individual practice, and practical demonstrations. There was a total of 5 project staff, 3 Padma Feed staff, 14 OSSCs, 28 LSPs, and 1 ACI company participant in the training program. Among OSSC owners and Isps some were aqua input sellers like lime, rice polish, and fertilizer; some were feed dealers, and some were fingerling producers and fish culture. All are doing business at the rural level and their duration of business on an average of 5 years. They came from 7 upazilas (Madaripur, Kalkini, Agailjhara, Gournadi, Uzirpur, Kotalipara and Gopalganj) of the project working area. The training course had been designed for 1 day. With this, the training was conducted on 26 & 27 April'2023. On the training day, the session would start at 9:00 am and end at 05:00 pm. On the training day, there were two ten-minute tea breaks; 10:00 am and 4:00 pm. There was an hour lunch break at 1:30 pm. At the beginning of the training, the Project Manager facilitated the introduction session among the participants, facilitators, and training organizers in a little bit different way. In the session, introduced participant to the name, profession, working union, and interest but not him/herself. This way finished the introduction session and the participants filled happily. The training session started with the introduction of the trainer with the beginning of the event, the project manager asked everyone to introduce themselves by mentioning their name, profession, working union, and interest. The trainer, in consultation with the trainees, set the basic guidelines to be applicable during the training days in order to maintain a productive and organized training program. The trainees agreed upon several guidelines for the training like putting their phones on silent, coming on time, respecting others' ideas, not interfering when others talk, etc. These guidelines were noted down on a flip chart and pasted to the wall for the rest of the workshop. Then the participants were asked about their expectations from the training and what they expected to learn during the one day. After this session was proceeded further by the trainer explaining the main purpose of the Project Management and what the trainees will learn about it, by pointing out major topics to be covered during the one day of the training. The rest of the time the training went ahead normally where there were presentations used to display major points of discussion the points were then discussed by the trainers and the participants shared their views and experiences about the topics discussed. There used to be a tea break morning at 10:00 am which lasted for ten minutes and then a lunch break for one

hour at 1:30 pm. After the lunch break the session would continue, sometimes with an energizer performed by the trainer and the participation of all the trainees. This was aimed at vitalizing the trainees back for the class after they took lunch and felt heavy and sleepy.

### **One Stop Service Center (OSSC)**

Business and skill development of dealers, and LSPs through a one-stop service center. At the same time, fish production of fish farmers will increase and they will know about better fisheries management. Selection of 14 One Stop Service Center owners as per project design and provision of 1 table, chair and a shelf along with a water chemical quality test kit and 1 signboard has been completed. Supply of WorldFish's IEC



*Figure 4 One stop Service Center ( OSSC)*

materials and Padma feed leaflets and festoons

to the One Stop Service Center is assured. With the establishment of the one-stop service center, the decoration of dealers' shops is more beautiful than other shops and the number of customers is increasing day by day. Fishermen are coming to the One Stop Service Center in case of any problems in their fishing and from there they get water chemical quality tests, and service regularly. Out of 14 OSSC owners, 100% were male, and 14.28% were youth.

### **Pond demonstration on feed performance**

Implementation of demonstration ponds will allow the local people to see the performance of Padma Feed and also increase awareness of Padma Feed. On the other hand, the results of the Padma feed will prove to be better than other feeds in the market.

As per the design of the project, 14 fish farmers' ponds were first selected as demonstration ponds. After that, all the pre-stocking management work of the 14 farmers' ponds was carried out. Allocated lime, probiotics, and fish fry have been supplied to farmers from the project. A total of 37400 pieces of tilapia fingerlings and 630 pieces of carp (Katla, Rui) fingerlings have been supplied to 14 farmers in



*Figure 5 Pond demonstration on Feed Performance*

farmers' ponds. Farmers are advised to feed the fish nursery feed after release into the pond. Feeding of starter feed is recommended after 15 days of nursery feed. Fish farmers are feeding Padma feed in demonstration ponds with their own funding. LSP and BPO are regularly testing the chemical quality of pond water (pH, ammonia, and dissolved oxygen) in the demonstration ponds. Along with that, BPO is helping the farmers to keep all the income and expenditure information of the pond in the record book. Sampling of fish was done every 15 days and it was kept in the record book. Out of 14 demo pond farmers, 92.85% were male, and 7.14% were female.

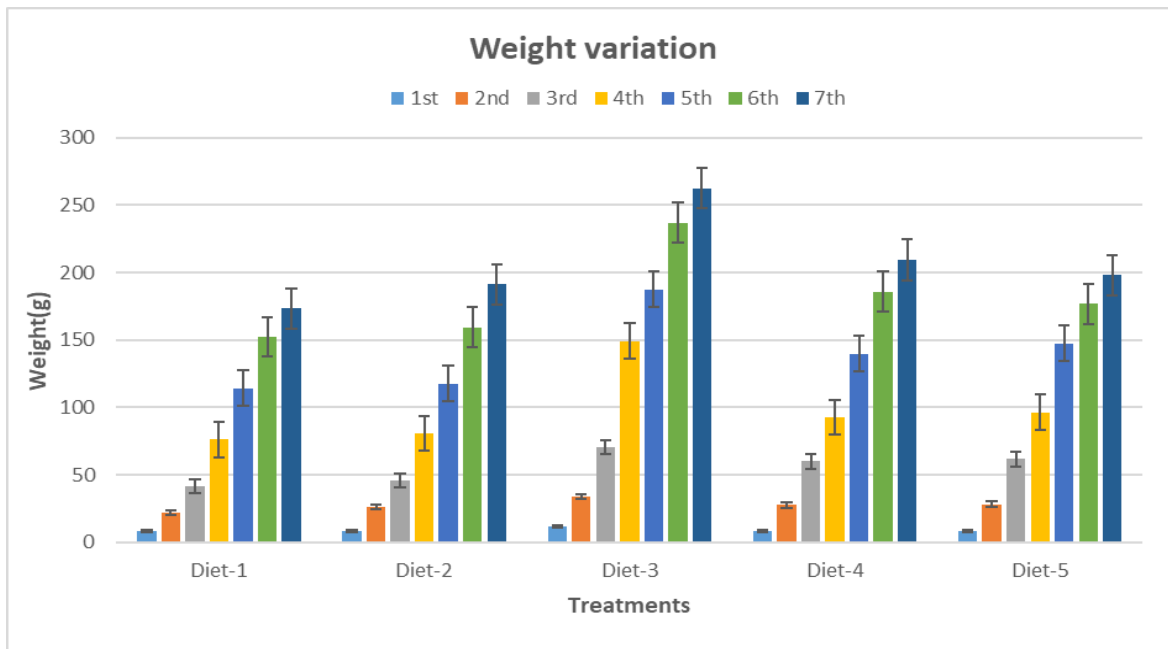


Figure-1: Average weight variation among 5 treatments in the culture period

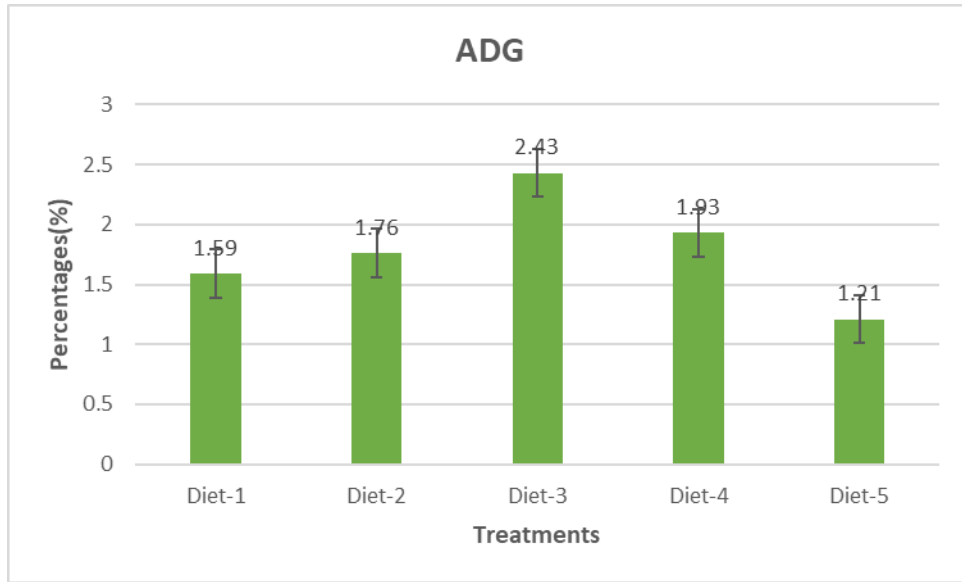


Figure-2: Average daily weight gain variation among 5 treatments in the culture period

### **Brochures/Leaflets**

As per the project design, 8000 leaflets were made and printed. It is distributed to farmers, OSSC, and LSPs. Farmers got information about fish feed (Padma Feed) through leaflets.

### **Festoons**

25 set festoons were made and printed. It is distributed to OSSC for business promotion. Also, it is used in business promotion and BMP for farmers' training and other events as per project design.

### **Video documentation for business promotion**

Video documentation was created on the community feed center that is Padma Feed with a demonstration pond, innovative feeding technology, training on business promotion and BMP for farmers, and water quality test. It discovered amazing feed performance to the local community through visualization.

### **Promotional Campaigning**

The main objective of the promotional campaign is to promote the community feed center's feed, share the quality of the feed, and highlight the fact that the fish production of the farmers is increasing by feeding this feed and that the price is comparatively lower than other feeds in the market. The general public of the area participated in the campaign and by watching various video clips (on fish farming and feed) the local people were able to understand the importance of providing food to fish farming. Approximately 560 people from the local market participated in the campaign. The people of the area expressed their opinion that they will use the feed of the community feed center in the pond. The duration of the campaigning session was 2.00 hours. There is a total of 742 farmers participated in campaigning. Out of the to participate, 318 are from Barishal district, 212 from Gopalganj district, and 212 are from Madaripur district.



*Figure 6 Promotional Campaigning*

### **Production capacity strengthening (Machinery purchase)**

This part was implemented by the Padma Feed owner. Already Padma Feed purchased sinking and floating feed machinery. 1 MT feed production per hour through a floating feed mill and 5 MT feed production through a sinking feed mill.

### **Feed Quality testing (Proximate Composition)**

As per the project design 12 feed sample tested through Livestock Department, Dhaka. the results were satisfactory for the nutritional quality of the feed.

### **Project Coordination Meeting**

2 batches of project coordination meetings have been completed out of 26 participants, 100% were male, and 23.07% were youth attending the program. The honorable Managing director of Padma Feed participated in the project

coordination meeting session as chief guest and open the course. Before opening the course he delivered a speech about the history, working environment, and project objectives. He also delivered some directions which will help us to achieve the project target such as maintaining sincerity, working according to plan, time maintain, problem sharing, and following integrity and norms of service. He stayed here from 10.00 am to 1.00 pm. After the welcome



*Figure 7 Project Coordination meeting at Agailjhara*

speech, the project manager presents the project content, the progress of the project activities, what are the problems in the work, and his recommendations through PowerPoint. Presented how to execute the plan in the next two months' project activities. After the presentation of the Project Manager, the Managing Director of Padma Feed thanked the Project Manager for executing the project smoothly and on schedule. Then the financial officer of the project presented the financial progress of the project. 3 business promotion officers of the project share how they work at the field level. The project coordination meeting was attended by 10 (2 batches) project staff, 4 from WorldFish, and 12 from Padma Feed (2 batches). In the closing



ceremony were present staff of Padma Feed including project personnel. In this session, project staff said about the action plan that they will do work to achieve the target by maintaining qualitative works. The target of the project is not so long or highly ambitious, they believe that achievable. Padma Feed authority ensured the project staff that they will provide any support for managing the project successfully.

### International Women's Day

Raising greater awareness about issues impacting women's equality. Taking a stance to call out inequality while working to forge positive action. Highlighting and applauding where important gains are being made. Celebrating women's achievements and accomplishments. International Women's Day 2023 was celebrated on 8

March 2023 at Shaheed Sukant Abdullah Hall of Agailjhara Upazila, Barishal. At 10.00 a.m., the International Women's Day procession started, in which the upazila chairman, upazila executive officer, upazila executive officer, upazila women's affairs officer, and other departmental employees of the upazila and other supporting organizations such as Padma Feed, BRAC and other organizations participated. 5 participants from Padma feed on International Women's Day 2023.



Figure 8 International Women's Day

After the joyous procession, the discussion meeting started and there the chief guest Upazila Chairman, special guest Upazila Nirbahi Officer gave their valuable speech. After the speech, the cultural program started.

### National Fish Week 2023

National Fisheries Week will begin in the country on Monday, aiming to raise people's awareness about the importance of fish conservation and involve them in the socio-economic development of the country by increasing fish production. National Fisheries Week 2023 was celebrated 25 July at Shaheed Sukant Abdullah Hall of Agailjhara Upazila, Barishal. At 10.00 a.m., the discussion meeting started, in which the upazila



Figure 9 National Fish Week 2023

chairman, upazila executive officer, Senior Upazila Fisheries Officer, Upazila Nirbahi officer, and other departmental employees of the upazila and other supporting organizations such as Padma Feed and other organizations participated. 5 participants from Padma feed on National Fish Week' 2023. On this occasion, Dof, Agailjhara has chalked out different programs at the upazila level- hanging promotional material to build awareness, organizing seminars on advising fish farmers and water quality parameter tests, etc. The Padma Feed participated in discussion meetings and rally programs organized by the DoF office, Agailjhara. After the joyous procession, the discussion meeting started and there the chief guest Upazila Chairman, special guest Upazila Nirbahi Officer gave their valuable speech.

### Youth Day

International Youth Day on August 12 focuses on the difficulties that some young people are experiencing throughout the world. Half the children between the age of six and 13 lack basic reading and math skills and childhood poverty is still a prevalent problem globally. International Youth Day 2023 was celebrated on 12 August at Padma Feed mill of Agailjhara Upazila, Barishal. At 10.00 a.m., the rally started, in Padma Feed and other organizations participated. 10 participants from Padma feed on National Youth Day 2023. On this occasion, the Youth department, Agailjhara has chalked out different programs at the upazila level-

hanging promotional material to build awareness, organizing seminars on advising Youth Day etc. The Padma Feed participated in rally programs organized by Padma Feed, Agailjhara. At the end of the program, the president made a closing announcement wishing everyone good health and long life.



Figure 10 International Youth Day

### Training on Environment and Climate Risk Management

Develop a common understanding of the importance of environmental compliance and climate risk management (CRM) for the sustainability of interventions and USAID obligations. With this



knowledge, participants will be able to articulate the scope of environmental compliance and CRM and perform better in executing the Activity's EMMP. At the beginning of the program, there was an introduction phase and in this introduction phase, the names, designations, and names of the organization were mentioned. The program started at 9 am, with a welcome address by Senior Program Manager,



Figure 11 Training on Environment and Climate risk Management

WorldFish. The first part of the training then explains why environmental compliance and climate risk management are essential. After the tea break, 15 minutes 2nd part of the training is taught Environment and climate risk identification through PowerPoint presentation. Part 3 of the training discussed how to mitigate environmental and climate risks and the trainees also participated in this discussion. Part 4 of the training covers Pesticide Assessment Reports and Safe User Action Plans. After the lunch break in the 5th part of the training, environmentally sound methods of fish feed production are discussed and demonstrated through PowerPoint presentations. After a 15-minute tea break, how to farm fish in an eco-friendly manner was discussed and demonstrated through video clips. This was followed by a 30-minute open discussion in which the trainees also participated. MHM Mostafa Rahman of WorldFish was the instructor for the entire training.

### **Project closing meeting**

The honorable Managing director of Padma Feed participated in the project closing meeting session as chief guest and opened the course. Before opening the course he delivered a speech about the history, of Padma Feed. He also delivered his journey to become the owner of Padma Feed inspired by WorldFish. He stayed here from 10.00 am to 2.00 pm. After the welcome speech, the PoC of WorldFish briefly discussed project objectives,



Figure 12 Project closing Meeting

goals, and activities through a PowerPoint presentation, then the project manager presented the project content, the progress of the project activities, challenges, and opportunities through power point presentation. After the presentation of the Project Manager, the Managing Director of Padma Feed thanked the Project Manager for executing the project smoothly and on schedule. Then the partner of Padma Feed Mufti Moynul Islam gave a valuable speech to Padma Feed to ensure qualified raw materials for formulated feed. The OSSC owner Md. Asharaful Alom said about Padma Feed in his areas performance of Padma Feed. The project closing meeting was attended by 5 project staff, 2 from WorldFish, 6 OSSC owners, 5 LSPs, 5 farmers, and 7 from Padma Feed.

In the closing ceremony were present staff of Padma Feed including project personnel. The Project Manager cum Technical Expert of Padma Feed said that the Feed the Future project takes Padma Feed as a challenge because this project has been designed based on private sector priority called Local Service Provider (LSP) Model and the project would be worked on a marketing approach. At last, the owner of Padma Feed thanked all participants prayed to Allah for success and good health, and announced the closing of the orientation session.

## 4.0 Lessons Learnt

### 4.1 Key Lessons Learnt

To get the most out of investments in training programs Padma Feed must embrace a broader role within the organization and formulate an ambitious vision for the function. An essential component of this effort is a comprehensive, coordinated strategy that engages the organization and encourages collaboration. WorldFish and USAID help to strengthen the function and position it to serve the organization more effectively.

**Create a Values based culture:** As the workforce in Padma Feed companies becomes increasingly virtual and globally dispersed WorldFish and USAID to build a values-based culture and a sense of community. In particular, millennials are particularly interested in working for values-based, sustainable enterprises that contribute to the welfare of society.

**Build an employer brand:** An organization's brand is one of its most important assets and conveys a great deal about the company's success in the market, financial strengths, position in the industry, and products and services. Investments in Padma Feed help to enhance the company's brand and boost its reputation as an "employer of choice." As large segments of the workforce prepare to retire, employers must work harder to compete for a shrinking talent pool. To do so, they must communicate their brand strength explicitly through an employer value proposition.

**Motivate and engage employees:** The most important way to engage employees is to provide them with opportunities to learn and develop new competencies. Research suggests that lifelong learning contributes to happiness. When highly engaged employees are challenged and given the skills to grow and develop within their chosen career path, they are more likely to be energized by new opportunities at work and satisfied with their current organization.

### 4.2 Challenges

- Fish farmers indicated that they could not sell their marketable fish due to transportation complexity and low market demand.
- Most of the fish farmers in the project work area use litter in the ponds and raise poultry on the ponds
- The budget for farmers' training is low
- Heavy rain during field-level training makes it difficult to get to the actual venue
- Natural calamities

- Lack of community organization
- Weak value chain
- Environmental degradation

### **4.3 Key Innovation of the Project**

#### **Auto feeder**

Farmers are easily delivering food to all parts of the pond through auto feeders. It is very easy to transport and its capacity can apply 20 kg of feed at one time.

#### **Performance of Padma Feed**

Using Padma feed in 14 demonstration ponds as per the design of the project, it has been found that the results of Padma feed are better and fish production is higher than other feeds in the market.

#### **Feed mill establishment**

Apart from setting up submersible feed mills as per the project agreement, Padma Feed has also set up floating feed mills on the advice of WorldFish.

### **4.4 Impact and Sustainability of the Intervention/ Business Model**

Padma Feed is a raising organization. The organization works for profit-making and for social beings and employment creation. Though the organization's profit margin is low, the profit margin will increase by involving OSSC as well as customers/ clients. The community fish farmers benefit from the Community Feed Center in the following way I) Low cost and improved feed II) Transport and service costs are less or free. That is why community fish farmers' profit margins were increased day by day, besides the CFC's profit margin.

#### **Changes OSSC and their technical capability**

At the beginning of the project 14 OSSC selected and their monthly feed sale was 10 to 15 MT. After engagement of intervention their OSSC looks attractive and its easily compared other feed dealers. Not only increased their feed sale but also improved their technical capability in community level through Padma Feed. OSSCs also played as an information booth and linkage-building platform where farmers got market information on the forwarding market, access to finance facilities with the different financial institutes, etc. To establish these linkages, collaboration, and coordination among relevant actors for mutual benefit, required support from Feed the Future Bangladesh Aquaculture Activity were received.

### **Employee generate**

As per project design 28 LSPs engage under 14 OSSC owners. Where one dealer got commission 8% of Padma Feed, there one LSP got 4% commission for feed sale through dealer.

### **Created Women Farmers and Youth**

Out of 2962 farmers, 39.5% were women farmers, and 27.05% were youth. At present, maximum household ponds facilitated by women farmers and youth.

### **Changes in liming to the pond of the fish farmer**

Before involvement of the intervention farmers irregularly used lime in their pond. After training of the intervention farmers used regularly lime in their pond.

### **Changes in applying inorganic fertilizer to the pond of the fish farmer**

Before involvement of the intervention farmers used cowdung in their pond. After training of the intervention farmers used inorganic fertilizer in their pond.

### **Changes in fish feeding in the pond of the fish farmer**

Farmers used regularly feeding in their pond after involvement of intervention.

### **Changing water exchange in the fish pond of the farmer**

Farmers used water exchange when pond water condition was severe.

### **Extension of mixed fish culture**

Before engagement of the intervention farmers used monoculture in their pond. After engagement of the intervention farmers used mixed fish culture in their pond.

### **Feed sale**

As per project design 2962 farmers received training and developed 14 OSSC owners and 28 LSPs through Padma Feed. As a result, Customer number increased of Padma Feed and ultimately more sale of Padma Feed. Where monthly feed sale 10 MT before engagement of project, at present monthly feed sale 30 MT after engagement of the intervention.

### **Fish production**

Fish production increased of fish farmers through training with regular follow up of the project staffs.

## **4.5 Recommendations / Future Directions**

- Padma Feed has a plan for the next three years where they want to produce and will market monthly 600 MT of fish feed. They are also planning for expanding their business area to the Barishal, Bhola, Gopalganj, shariatpur & Madaripur districts and partially in Jhalokathi & Patuakhali districts in the next three years. They will be established additional 31 OSSCs and 62 LSPs in successive two years beyond the project tenure and reach additional 5200 farmers

in that period through feed sales, formal & informal training, Promotional Campaigning, testing services, advisory services, and linkage services.

- The Community-Based Fisheries Management (CBFM) project was founded with an ambition to promote sustainable use of inland capture fisheries by empowering fisher communities to manage their own aquatic resources.
- The CBFM initiative has developed a series of fisheries management approaches for ensuring equitable access to fisheries resources for community-based organizations (CBOs).
- Farmer training at the field level can be done for 3 days instead of just 1-day training or 1 day of pre-stock management, 1 day of stock management, and 1 day of post-stock management.
- High-value fish can be given without allotment of tilapia fish in demonstration ponds.

### **Impact of the intervention on the core business**

#### **Business development**

Padma feed business pattern has changed as the project is received. 2962 cultivators have been trained through the project and most of these cultivators have started using Padma feed. Through the activities of the project, the owner of Padma Feed staffed the sinking and floating feed mill.

#### **Increased Sale volume of Fish Feed**

The project provides various materials including training to 14 dealers and 28 LSPs, which allows dealers to provide all fish farming information to the growers. At the same time, the sale of feed to dealers is increasing and, accordingly, the sale of feed of Padma feed is increasing.

## Annex -1

### Impact of Investment of the Core Business

#### Popularity of Padma Feed

Padma feed has become popular in the working area of the project, especially Padma feed after the exemption of their food and return the food.

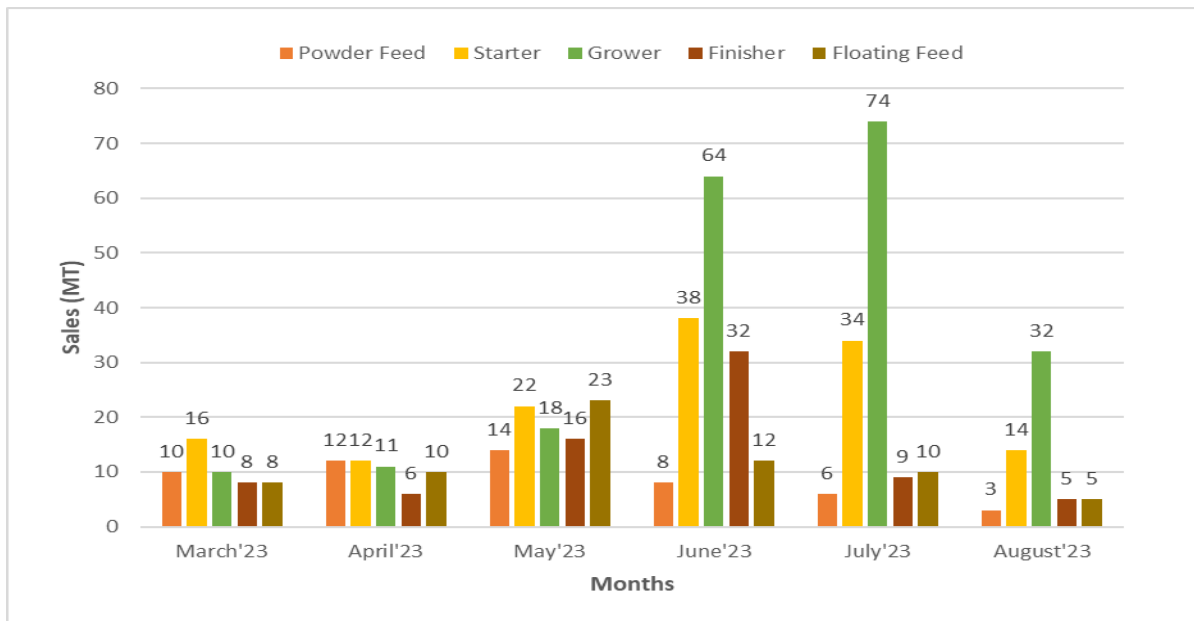


Figure: Feed sale status of Padma Feed during in the project period

## Annex -2

### Case story-1

#### Success of a Roman Kazi business entity growth performance of tilapia through Padma feed

Fish feed production and use in Bangladesh aquaculture have increased dramatically in the past 5 years, with an estimated 1 million tonnes of commercially formulated pelleted feed produced, and between 0.3 and 0.4 million tonnes of feeds produced by micro- and small-enterprises at the village level. At present, commercial fish feed is widely available in Bangladesh but due to the high cost of feed, In terms of quality, it is not that good, and fish farmers are suffering financially. Fish culture have decreased due to higher prices of feed. Since most of the feed companies in our country bring raw materials from foreign countries and make feed, the price of this feed is high. As a result, fish farmers are not able to profit from fish farming by buying feed at high prices. To address the problem, Roman Kazi started using the Padma feed made by Md. Rasel Sardar, known in his

area, in his pond. However, Roman was facing problems continuing his business due to the high prices of fish feed. Considering the context, Roman conducted to Padma feed to address the challenges.

As Padma Feed manufactures feed from locally sourced raw materials, the cost of feed is relatively low and the quality is good. Padma feed contains all nutrients and moderate amounts of carbohydrates, protein, fats, and binders. Roman Kazi using Padma feed in his pond proved that using Padma feed resulted in higher fish production and lower feed cost. Since then he became a permanent customer of Padma feed and currently his pond 5 pieces of tilapia in 1kg within 3.5 months through Padma Feed, whereas 10 pieces of tilapia in 1kg within 3.5 months through other companies' feed .





## Annex -3

### Case story-2

#### Success of a Sayed Ashraful Alom business entity selling commercial fish feed through Padma feed

Fish feed production and use in Bangladesh aquaculture have increased dramatically in the past 5 years, with an estimated 1 million tonnes of commercially formulated pelleted feed produced, and between 0.3 and 0.4 million tonnes of feeds produced by micro- and small-enterprises at the village level. At present, commercial fish feed is widely available in Bangladesh but due to the high cost of feed, In terms of quality, it is not that good, and fish farmers are suffering financially.

Feed traders and fish feed sales have decreased due to higher prices of feed. Since most of the feed companies in our country bring raw materials from foreign countries and make feed, the price of this feed is high. As a result, fish farmers are not able to profit from fish farming by buying feed at high prices and the feed sales of feed dealers are decreasing. To address the problem, Ashraful Alom started using the Padma feed made by Md. Rasel Sardar, known in his area, in his pond. However, Ashraful was facing problems continuing his business due to the high prices of fish feed. Considering the context, Ashraful conducted to Padma feed to address the challenges.



As Padma Feed manufactures feed from locally sourced raw materials, the cost of feed is relatively low and the quality is good. Padma feed contains all nutrients and moderate amounts of carbohydrates, protein, fats, and binders. Ashraful Alom using Padma feed in his pond proved that using Padma feed resulted in higher fish production and lower feed cost. Since then he became a dealer of Padma feed and currently has feed sales of 20 tonnes within 3 months, whereas other companies' feed was sold at 50 tonnes per annum. Day by day his feed sales are increasing.