

# SAFETI Newsletter

Issue 2

October 2018 -  
June 2019



## Successful Crop Rescues Family

Mr Pinaki Mandol is a prawn farmer of Ar Para village of Sundoli Union, Abhoynagar Upazila of Jashore District, involved in prawn-carp traditional farming for the last 20 years. His family has a 50 decimal (0.5 acre) gher which they use for rice cultivation during the dry season. As this land is close to a beel area, it is inundated with water during the rainy season - so the only option left for their livelihood is prawn-carp cultivation.

Throughout their life of prawn-carp farming, they have used traditional methods and never achieved their hoped-for levels of production. Because they did not know about modern science-based technology, they used to stock prawn post larvae (PL) in the gher without cleaning the black mud from the pond bottom, and

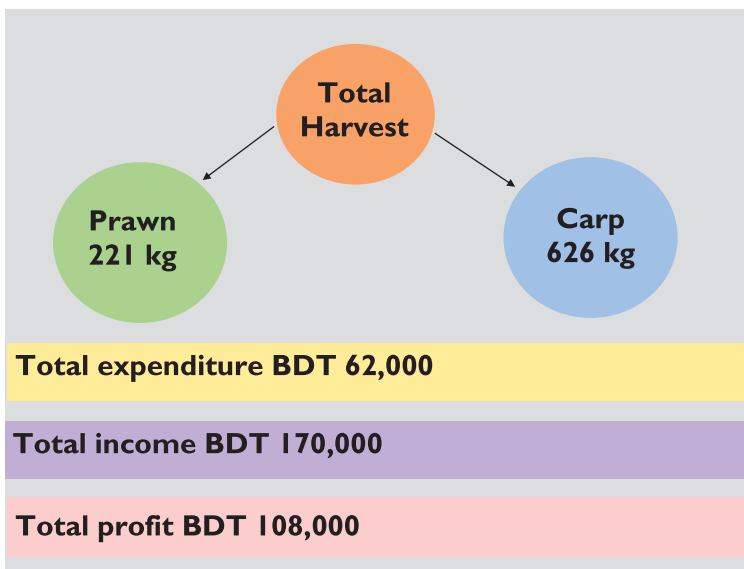
*"If we had not obtained good production this year, then we would have been in great trouble,"*  
~ Pinaki Mandol

**Safe Aqua Farming for Economic and Trade Improvement (SAFETI) Project**  
*Supporting the Bangladesh Shrimp and Prawn Sector*

the prawns were often affected by disease. They stocked PL with no real plan, not even counting them.

When the SAFETI team discussed with Pinaki about the improved prawn-carp polyculture methodology the project is promoting, his family showed interest in adopting and investing in it. As one of 25 farmers in the local group, they received three modules of training on semi-intensive prawn-carp polyculture. Recognizing their interest and willingness to invest, the SAFETI team selected the family as demonstration farmers for the other 24 farmers in the group.

Guided by the SAFETI team, they excavated their gher to 5 feet depth, established a separate nursery for PL rearing, surrounded the gher with blue net to ensure biosecurity and fed the prawns and fish regularly. *“The blue net was very helpful for us; mice and other animals could not enter the gher. The gher used to fill up with weeds and unwanted plants, but this year it stayed clean for the entire farming period,”* said Pinaki. This was the first time they had stocked PL in a separate nursery and counted them carefully. They reared 6,000 PL, with 85% survival, and were able to stock 5,000 juveniles and 315 carp fingerlings in the main gher.



The farming family working together in their gher

Their total expenditure included purchase of 525 kg of pellet feed and a five-year depreciated cost of the pond excavation and netting. Pinaki said, *“Because we were recording all this information in the record book SAFETI provided, all the data can be easily remembered. We took a loan from TMSS (SAFETI partner NGO) of BDT 40,000, and were able to repay it with the money from the sales.”*

Pinaki said, *“12 or 14 of the farmers of the group of 25 followed some of the steps and saw the benefits this season. As investment is needed for this improved technology, a number of farmers did not have the confidence to make the necessary changes. But the farmers who continued using traditional methods could not make satisfactory profit. Now my results have motivated them to adopt the improved farming technologies in 2019.”* Many of his neighboring farmers came to visit on the day of harvesting. Now they are also showing interest and asking them about the technology.

The family has a small piece of land where they cultivate rice for home use; the field also provides feed for their cattle. This year they will put the mud excavated from the gher on the field to raise its level and add nutrients. They plan to take a loan of BDT 100,000 and lease 3 *bigha* (1 acre) of land so that they can expand their production of prawn and carp using the SAFETI methodology. Pinaki said, *“We will forget what we practiced before. We will only follow the SAFETI technology.”*



## SAFETI Collaborations with the Private Sector

SAFETI actively promotes collaboration with private companies in its work to support development of Bangladesh shrimp and prawn farming. Private companies are key players in the sector and can add long term sustainability to project interventions. The project is working with 16 private-sector organizations that include: international broodstock suppliers, hatcheries, nurseries, farmers, feed mills and processors, large agri-business companies taking a vertically integrated approach to investment in the sector, banks that have loaning programs for small-holder farmers, laboratories that provide disease screening and training services, and more than 20 local retailers that provide inputs to shrimp and prawn farmers. The range and number of private sector collaborators is expected to continue to expand over the coming year.

One very productive collaboration has been with MKA Hatchery in Cox's Bazar for the development of local production of polychaete worms. These are a key feed item for the successful breeding of shrimp in captivity. MKA is the first hatchery in the country to work with Specific Pathogen Free (SPF) parent stocks, importing them from Moana Technologies of Hawaii. Since they started operations several years ago MKA was dependent on imported frozen worms from Europe, that represented a significant input cost and are not as effective a feed as the live worms. MKA took a pioneering step to develop local production of live worms, and SAFETI was pleased to make a small supporting contribution to the work under a cost sharing agreement signed in July 2018. After many months of development, MKA achieved a major breakthrough in worm production and has seen substantial benefits to their shrimp breeding program, now they have their own local supply of live worms.



MKA and SAFETI at signing ceremony



FishTech and SAFETI at signing ceremony

Another company expanding involvement in the sector is FishTech (BD) Limited. FishTech are suppliers of chemicals, feeds and other inputs to the Bangladesh aquaculture industry and since 2018 have been expanding into shrimp and prawn seed and feed production. SAFETI has been supporting their program to domesticate Freshwater Prawn, and to develop a hatchery to work with SPF black tiger shrimp broodstock for seed production. The collaboration was formalized under an MoU signed in February 2019.

During the ongoing 2019 farming season, SAFETI has been collaborating with the Agata feed company in field trials of locally produced shrimp and prawn feeds, and also working with two shrimp nurseries in Satkhira to support improvement of their systems to utilize seed produced from SPF shrimp broodstock in more biosecure conditions and supply the seed to SAFETI farmers.

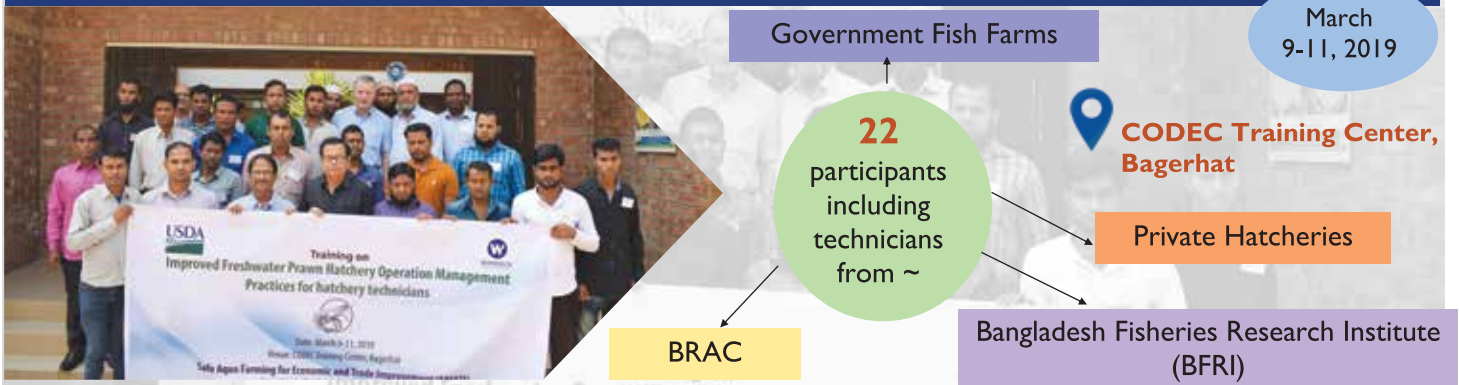
## SAFETI Collaboration with the NGO BRAC

BRAC is the largest non-government development organization in the world and has a long history of involvement in the aquaculture sector in Bangladesh through providing fish and prawn seed to farmers. Like other prawn hatchery owners, BRAC has faced poor production of prawn seed since 2009. With partner Auburn University, SAFETI has been collaborating with BRAC in the 2019 production season in a trial at the BRAC hatchery in Barisal to introduce improved methods for production of seed.



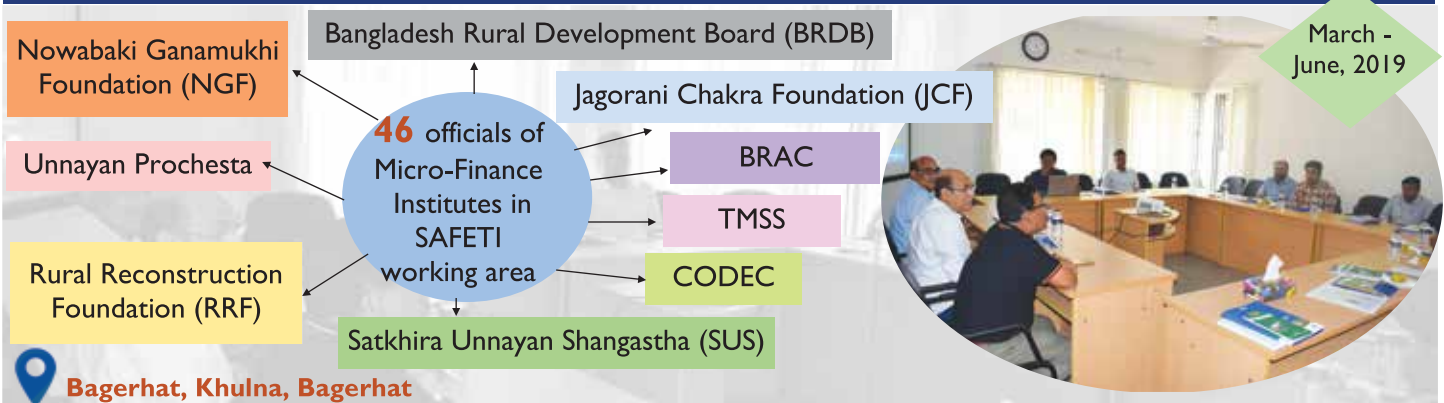
## Training, Workshops, Seminars, Meetings

### Training on “Improved Freshwater Prawn Hatchery Operation Management Practices”



The training course was designed to support hatchery technicians in adopting improved hatchery management practices and hygiene measures and to develop their knowledge and skills. The aim is to increase prawn PL production and raise awareness among technicians of the advantages of using Specific Pathogen Free (SPF) and domesticated broodstock to ensure reliable production of quality PLs.

### Consultation meetings with “Micro-finance Institutes for Increasing Access to Finance for SAFETI Farmers”



The objective of the meetings was to explore the potential for increasing access to finance for SAFETI farmers. The SAFETI team shared the objectives and activities of the project, the farming technologies being promoted, the production potential and estimated income-expenditure. The SAFETI team highlighted the need for micro-finance support for boosting the production and income of farmers and requested the representatives of the micro-finance institutes to explore new mechanisms for supporting SAFETI farmers.

### Consultation meeting on “Technical and Economic Feasibility of Shrimp Hatchery Operation Using Domesticated & Genetically Improved SPF Broodstock for Sustainable Development



The meeting informed hatchery owners and technicians on the technical and economic feasibility of using domesticated specific pathogen free (SPF) and genetically improved broodstock for sustainable PL production and sustainable hatchery operations. Also discussed with stakeholders was the need for capacity building (public and private) for both operation of improved hatcheries and regulation of the sector.



## Training of Input Suppliers on “Improved Shrimp and Prawn Farming and Sustainable Ethical Business”



**219** participants  
received 1-day Training

September  
16-29, 2018

**179** leading retailers were  
selected by SAFETI

**10 Upazilas of Khulna, Jashore, Satkhira  
and Bagerhat**

**20** local retailers have  
started selling inputs for  
semi-intensive farming

Through this training local retailers were introduced to the technologies being provided to farmers by the SAFETI project. In general rural retailers do not have access to high-quality inputs and they are unaware of how to assess the quality of inputs and of correct usage. The training elaborated these key technical issues. In addition, retailers were taught about banned products and business ethics of selling good quality inputs to farmers and providing them with the right information on usage. SAFETI is linking retailers with high-quality input suppliers such as ACI, KCI, Fish Tech, INVE Aquaculture, Uni President, CP etc.

## Three International Consultants Visit

Shawn Coyle of Kentucky State University, USA worked with SAFETI in Barisal March 22 - May 3, 2019, to assist with a freshwater prawn improved hatchery methodology trial being run at the BRAC hatchery. Mr. Coyle guided the installation of Recirculating Systems (RAS) in selected tanks at the hatchery, and assisted hatchery staff to build the systems using local materials, and operate them with improved solids-removal methodologies, feeding regimes, and water treatment systems. As part of the trial, a suite of analyses was carried out on water quality and disease incidence. The trial run led to the production of 1.5 million post larvae compared to zero production in 2018 and generated valuable insights into bacterial population progression during the culture cycle, which will guide future improvements to the methodology. Disease screening of the samples is ongoing through project partner WorldFish. To build on these results a second hatchery run using the RAS commenced in late June. The findings and recommendations stemming from this work will be shared with private sector hatcheries and government research departments to help increase the production and supply of quality prawn post-larvae to farmers.



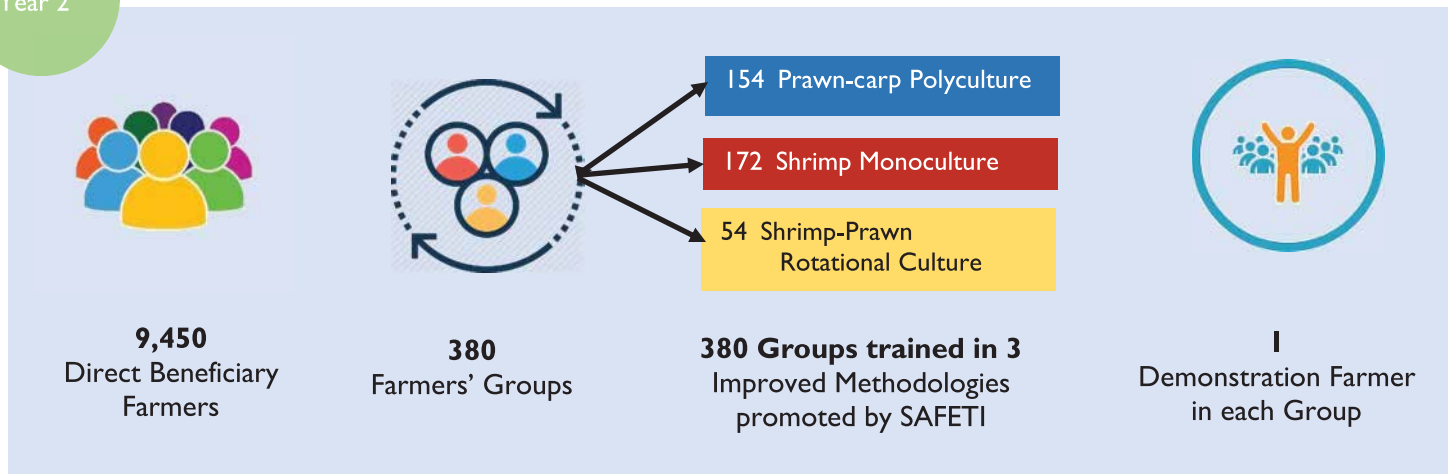
Prof. Bill Daniels of SAFETI partner Auburn University, USA, visited the project

April 23 – May 1, 2019 to support the freshwater prawn hatchery trial being run in Barisal in collaboration with BRAC, visit private prawn hatcheries suffering production problems in Kuakata and SAFETI prawn farming demonstrations in Khulna, and provide guidance on this issue that augmented that of Mr. Coyle.

Andrew Kuljis, President of Aquatic Farms Ltd, Hawaii, USA, worked with the project April 20 - May 2, 2019 to develop policy recommendations for the shrimp and prawn farming sector under SAFETI's agreed work program with the Department of Fisheries (DoF). His mission began with an orientation briefing from the Director General DoF, and over the course of visits to Khulna Division and Cox's Bazar, as well as meetings with key stakeholders in Dhaka, he compiled information to support the recommendations in his report. The report is being finalized for submission to DoF, who had requested the study to assist them with their review and update of the National Shrimp Sub-strategy 2006 (in line with the National Fisheries Strategy 2006). The Government intendeds to update their Sub-strategy, with emphasis on increasing the supply of disease-free (SPF/PCR tested) shrimp PL/seed for farmers, to assist the private sector to achieve the national target of establishing at least 5 SPF hatcheries by 2020.

2018  
Year 2

## Year 2 (2018) and Year 3 (2019) SAFETI Farmers

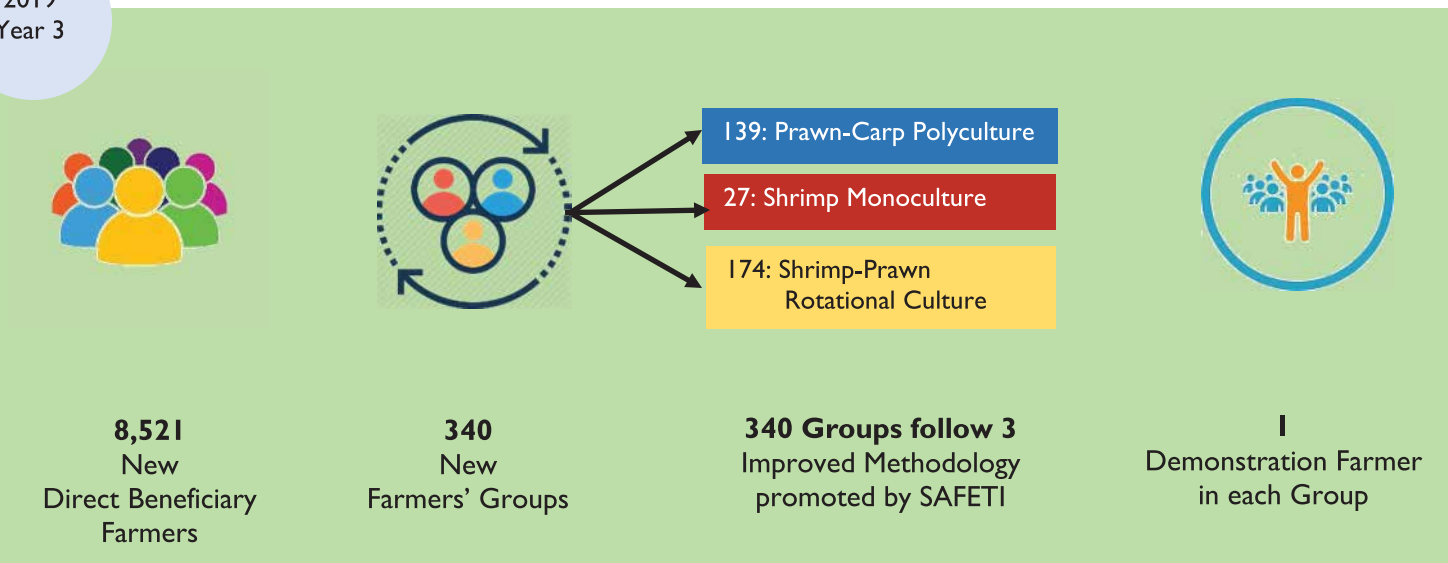


## Group Location

4 Districts

10 Upazilas

61 Unions

2019  
Year 3

Analysis of demonstration farmer data for Y2 (2018) revealed that the semi-intensive production methods promoted by SAFETI that aim to double the current level of production per hectare from that which was identified in the 2016-17 baseline survey of 252 kg/ha./yr for black tiger shrimp (*bagda*), and 305 kg/ha./yr for giant freshwater prawn (*golda*) and without the need of aeration systems – are viable.

The project target is to reach an average level of production of 500 kg/ha.yr by 2021. It is encouraging that 79% of the Year 2 demonstration farmers exceeded this targeted production rate.

*SAFETI: Supporting the Bangladesh Shrimp and Prawn Sector*

## Year 2 (2018) Demonstration Farm Results

### Prawn-Carp Polyculture: 153 Demonstration Farmers

All harvested  
more than  
500 kg/ha

Prawn: **983** kg/ha  
+  
Carp: **894** kg/ha

**86%** Harvested 750->1000 kg/ha. Prawn  
**14%** Harvested 500 - 749 kg/ha. Prawn

**100%**  
made  
Profit

**Prawn Harvest**

**Average Production**

**Demo Production Status**

**Profit range/ha**  
**BDT 213,726 - 443,472**

### Shrimp Monoculture: 172 Demonstration Farmers

**60%**  
harvested  
more than  
500 kg/ha

Shrimp: **506** kg/ha

**6%** Harvested 750->1000 kg/ha. Shrimp  
**54%** Harvested 500 - 749 kg/ha. Shrimp

**76%**  
made  
Profit

**Shrimp Harvest**

**Average Production**

**Demo Production Status**

**Profit range/ha**  
**BDT 97,889 - 226,852**

### Shrimp-Prawn Rotational Culture: 53 Demonstration Farmers

**73%**  
harvested  
more than  
500 kg/ha

Shrimp and Prawn:  
**765** kg/ha

**47%** Harvested 750->1000 kg/ha. Shrimp  
and Prawn  
**26%** Harvested 500 - 749 kg/ha. Shrimp  
and Prawn

**79%**  
made  
profit

**Shrimp and  
Prawn Harvest**

**Average Production**

**Demo Production Status**

**Average Profit/ha**  
**BDT 169,382 - 407,770**



## SAFETI Partners with Bangladesh Fisheries Research Institute

On September 23, 2018, SAFETI signed a collaboration MoU with the Bangladesh Fisheries Research Institute (BFRI). The signing took place at the BFRI headquarters in Mymensingh. The MoU encompasses cooperation between BFRI and SAFETI to develop and execute a plan for research and an expanded dissemination of improved technologies for sustainable development of the aquaculture and fisheries sectors, especially as they relate to shrimp and prawn.

The signing ceremony was led by Dr. Yahia Mahmud, Director General, BFRI with Dr. John Dorr representing the SAFETI project. Several senior officials from BFRI and SAFETI were also present. The agreement creates the scope for BFRI and SAFETI to work together to design strategic research and capacity-building plans for BFRI, for shrimp and prawn, and more broadly for development of the fisheries sector.



BFRI and SAFETI at signing ceremony

## Study Tour to India and Thailand

Under the SAFETI project, partner BSFF (Bangladesh Shrimp and Fish Foundation) organized a Study Tour to India and Thailand during April 24 – May 2, 2019 for a group of ten government officers of the Department of Fisheries and Bangladesh Fisheries Research Institute, and one representative of the private sector. The tour was led by Ms. Mahbooba Panna, Joint Secretary, Ministry of Fisheries and Livestock, and accompanied by two BSFF officials, Mr. Md. Rafiqul Islam and Mr. Md. Jimi Reza, and SAFETI's Shrimp Specialist Mr Anisur Rahman. Through the helpful assistance of the BOBP (Bay of Bengal Programme), ICAR (Indian Council of Agricultural Research), CIBA (Central Institute of Brackishwater Aquaculture) in India, and NACA (Network of Aquaculture Centres in Asia-Pacific), Department of Fisheries, Thailand and CP Feeds Ltd in Thailand, the team was able to hold discussions with government and private sector officials in both countries and to visit shrimp hatcheries for production of both *P. vannamei* and *P. monodon* seed, an SPF Hatchery and Brood Multiplication Center, PCR and microbiological lab. facilities, shrimp farms and nursery operations, as well as a processing plant. The tour provided the group the opportunity to learn about the role of the government and private sector in the two countries in



Participants with Thailand DoF Officials

promoting and regulating shrimp production and exports, emerging disease issues, and the experience of India and Thailand with the introduction of the non-native species *P. vannamei*.

## Compliance Workshop on “PNGOs Financial and Administrative Guidelines”

The SAFETI Admin. and Finance team organized a “Compliance Workshop on PNGOs Financial and Administrative Guidelines” during January 15-16, 2019 in Khulna. Thirty-four participants attended in the workshop that also included eight participants from SAFETI partners and 12 Participants from Nobo Jatra project partners. The objective of the workshop was to ensure a uniform understanding among the PNGO's Financial and Admin. staff the need for full compliance with relevant policies and procedures. SAFETI presented guidelines and the participants discussed best practices in relation to project operations.



Participants at the compliance workshop

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