

NF-POGO-DTU-Aqua shipboard training onboard the R/V DANA HERAS cruise

Training Report

Name of Trainee: Motaher Hossain Bhuiyan

Name of Supervisor (Parent Institution): Md. Abdus Sattar (Marine Fisheries Office, Government of Bangladesh)

Supervisor (Host Institution): Susan Mærsk Lusseau (DTU National Institute for aquatic Resources, Denmark)

Dates of Training: 30 June 2025 to 14 July 2025

Topic of Training: NF-POGO-DTU-Aqua Shipboard Training onboard the R/V DANA – HERAS Herring Acoustic Survey

Section A

(To be completed by the fellow)

It is the responsibility of the trainee to forward this form to the host and parent supervisor, and to submit a fully completed version to the POGO Secretariat. Please note that the complete report will be made public on the OTP website; Private comments should be included in a separate confidential form.

1) Please provide a brief description of activities during the training period:

During my NF-POGO–DTU Aqua shipboard training on the R/V DANA IV (HERAS cruise), I participated in both acoustic survey operations and fish laboratory work in the North Sea. The training began with safety briefings and a practical demonstration of emergency procedures. For the first part of the voyage, I worked with the acoustic team located near the bridge, using Simrad echosounders with two transducers to detect and monitor herring (*Clupea harengus*) and sprat (*Sprattus sprattus*) schools. I learned to operate the acoustic software, interpret echograms, identify species signatures, and mark potential fishing areas on survey maps. Once fishing sites were selected, the crew deployed midwater or bottom trawls, sometimes with buoyancy balls for depth control. I assisted in plotting trawl positions, managing survey data, and preparing visual summaries from trawl-door and net sensors. In the fish laboratory, I helped sort the catch by species, separate herring and sprat into size classes, and record length–weight measurements. Selected samples were preserved for later analysis at DTU Aqua (e.g., otolith ageing, DNA work). I also took part in CTD casts to measure conductivity, temperature, and depth, identifying thermocline layers, and in WP2 plankton sampling, followed by microscopic examination of the collected plankton. This hands-on training provided me with practical experience in modern fisheries survey techniques, data handling, and biological sampling, which will be directly applicable to my professional work in Bangladesh.

2) What applications of the training received do you envision at your parent institution?

At my parent institution, the Marine Fisheries Office under the Department of Fisheries, Bangladesh, I can apply the knowledge and skills gained in several ways:

- Introducing advanced acoustic survey techniques for assessing pelagic fish stocks in the Bay of Bengal, including interpreting echograms and detecting fish schools using echosounder technology. I have a plan to join to research voyages on our national research vessel R/V Meen Sandhani, operated by the Department of Fisheries, to apply the methods learned on R/V DANA in our local marine environment.
- Improving data collection and processing protocols by adopting standardised survey mapping, trawl sensor data analysis, and sample documentation methods used on R/V DANA. Consulting and training colleagues in the use of international survey protocols, contributing to capacity building within the national fisheries monitoring programme.
- Enhancing biological sampling practices for small pelagic species, including size-based sorting, length–weight recording, and otolith preservation for age determination.
- Incorporating environmental parameters (e.g., thermocline depth from CTD data) into stock assessment and management recommendations.

This will help strengthen Bangladesh’s capability to sustainably manage marine resources, particularly pelagic fish stocks, by adopting best practices learned during the HERAS survey.

3) Please provide your comments on the Fellowship Programme.

The NF-POGO–DTU Aqua Shipboard Training Programme was an outstanding professional development opportunity. The hands-on experience aboard R/V DANA allowed me to work directly with advanced acoustic survey systems, modern sampling techniques, and experienced international scientists.

The training was well-structured, combining practical at-sea operations with clear explanations of theory, and the host supervisor ensured that I was involved in a variety of activities throughout the voyage. Living and working alongside a diverse scientific and technical team was highly enriching, both professionally and culturally.

I greatly appreciate the support provided by POGO, DTU Aqua, and the ship’s crew in making this training possible. The skills and knowledge gained will contribute directly to my work in marine fisheries management in Bangladesh and will also help foster future collaboration between our institutions.

PRINT NAME

Motaher Hossain Bhuiyan

Date: 01/08/2025

Section B

(To be completed by the host supervisor and returned to the trainee)

Please note that the complete report will be made public on the OTP website; Private comments should be included in a separate confidential form.

1) Please provide your comments on the performance of the trainee.

During his fellowship with us Mr Bhuiyan showed us everyday that he deserved the placement. He was curious about and participated in all aspects of the survey operations and gained hands on experience in acoustic operations and data interpretation, fishing operations and sampling of both catches and environmental parameters such as temperature, salinity and distribution of zooplankton. He actively sought to understand the wider concepts of acoustic theory and survey design as well as the place of the survey in a fisheries management context.

He worked well both independently and as part of the team and was very well liked by all. He was always pleasant, polite and engaged in conversations and just in general a nice person to be in the company of.

Mr Bhuiyan showed great willingness to engage in all the aspects he was give opportunity to participate in and carried out the tasks given with enthusiasm, curiosity and diligence. During this survey, it is very much up to the trainee to maximise their own learning. Mr Bhuiyan managed his own time well independently with both participation in the ongoing work and also managed to read up on survey manuals and peripheral literature and took every opportunity to discuss these to gain a better understanding of the context of the survey. Mr Bhuiyan is an intelligent student and I sincerely hope he gets to pursue his ambitious goals to improve fisheries management in his home country, starting in his present position.

I wish him all the best for his future endeavours and feel privileged to have hosted him in this learning opportunity.

2) Is this exchange likely to lead to future collaboration with the trainee's parent institution? If so please give example(s) of how this collaboration may be pursued.

No formal collaboration has been initiated with the trainee's parent institution at present time. Given the alignment of interests between the trainee's parent institution and DTU Aqua it is possible to imagine future collaboration in the form of training opportunities. There is however at present no easy forum for such exchanges.

3) Please provide your comments on the Fellowship Programme.

The fellowship programme provides great opportunity to experience first-hand and receive training in the practical use of advanced ship based marine science equipment and techniques. It provides not only training in specific skills, but also inspiration for projects and new approaches to tackle challenges in home institutes and countries. The exchanges through the fellowship programme are also a great way to promote greater international understanding and tolerance through developing personal relationships across sometimes very different cultures. The programme benefits both the trainee and the host institute in this way.

PRINT NAME

Susan Mærsk Lusseau

Date: 14/8/2025

SECTION C

(To be completed by the parent supervisor and returned to the trainee)

Please note that the complete report will be made public on the OTP website; Private comments should be included in a separate confidential form.

1) Do you agree with the above comments and do you have any additional feedback you wish to provide?

Yes, Well wishes for Mr. Bhuiyan for his upcoming future endeavours.

PRINT NAME

Md. Abdus Sattar

Date: 13/ 08 / 2025