



# Forum of Arctic Research Operators

## FARO Annual Meeting 2019

ASSW, Arkhangelsk, Russia

26 May 2019, 11:00 -18:00

Venue: NArFU Intellectual Center, room 301

## Minutes

### 1. Opening and reporting Session (Jennifer Mercer, FARO Chair)

Jennifer Mercer (FARO Chair) welcomed participants to the 2019 annual meeting and briefly introduced FARO. During an introduction round, NPOC's were asked to say their name and affiliation, their first FARO meeting, and the #1 operational challenge in the Arctic for their country (see list below). All others presented themselves and their interest in FARO.

#### Operational challenges in the Arctic listed by country:

USA: Ageing infrastructure, advancing new technologies

Poland: Geophysical surveys, challenges for access, bartering

France: Advancing new technologies, access, limited funding for access

Germany: MOSAiC expedition, replacement of Polarstern icebreaker

Korea: Increased demand – same infrastructure. Cold adapted technologies

Japan: Expanding scientific disciplinary coverage, data sharing, speaking 'different languages'

China: new icebreaker, international cooperation

Czech Republic: sustained funding for research station

Russia: understanding neighboring ecosystems and change, connections.  
Implementation of mega transects

Portugal: increase funding for arctic research. No infrastructure, develop cooperation

Denmark: connecting science and society, develop geographically dispersed observatory system and consolidate cooperation in Denmark

Greenland: transport and logistics, getting researchers out in the field

United Kingdom: national capability pays for researchers' planes etc. in Antarctica, but not in the Arctic

- Minutes of the FARO annual Meeting 2018 in Switzerland were approved.
- Jennifer Mercer (Chair) presented the agenda, and the agenda was adopted with no changes.
- Report from the Chair:
 

2018 was the first year as Chair, where Jennifer got into the new role and had good use of the almost monthly meetings with the FARO ExCom. These meetings included: updates from member countries, managing FARO business, responding to ad-hoc requests and approval of documents for web posting. On the FARO website, it is now possible to find the 'FARO History document' made last year, 'Organizational Roles', 'Benefits of Membership', and Risk Management resources organized by region. Many documents have been updated since the last meeting, and the work on the website continues.

FARO brochures, stickers and pens were produced to hand out at meetings and conferences. In October 2018 Marie Frost Arndal joined the FARO secretariat, and launched the FARO Facebook and Twitter accounts. Everyone is encouraged to use the social media accounts, and to help link the accounts to FARO relevant content.

## 2. Arctic Science Cooperation agreement

- Elmer gave an introduction to The Arctic Science Cooperation agreement, with the purpose to enhance cooperation in scientific activities, in order to increase effectiveness and efficiency – access is the keyword for infrastructures, data and research areas. Countries are to appoint a Competent National Authority (CNA) as a contact person whom to experienced bottlenecks can be reported for further discussion among CNAs. Non-arctic countries are also encouraged to appoint a CNA to allow their citizens to report bottlenecks for arctic science cooperation. Standardized reporting formats are already available from some countries. Next meeting will be at ASSW 2020. (slides are available on the FARO website)

## 3. Upcoming multidisciplinary campaigns endorsed by IASC

- Presentation of MOSAiC by Uwe Nixdorf (slides available on the FARO website)

The MOSAiC expedition will follow in the path of Fridtjof Nansen by letting the Icebreaker Polarstern drift in the ice near the North pole 2019-2020. Several icebreakers and aircrafts will be used for resupply support, including from Russia, US, China and Sweden.
- T-MOSAiC by Diogo Folhas (slides available on the FARO website)

T-MOSAiC aims to coordinate complementary activities that will both aid and benefit from MOSAiC (especially the modelling components) by extending the work to the lands surrounding the Arctic Ocean. The project has several action groups, where chairs are currently being selected. The project will use existing data and make data available and will include a cross cutting integrative component.

#### 4. Arctic organisations, networks and projects of relevance to FARO

*Slides for all presentations are available on the FARO website*

- SecNet (Sergey Kirpotin)

Siberia is one big wetland and the Siberian Environmental Change Network (SecNet) is a Siberian Mega-Transsect, making a 'research line' and network, with gradients from south to north. There are several research stations along this line, and an East-West transect has been added. Mainly focused on terrestrial research. The aims of SecNet are to identify, model and forecast the climate-caused changes in the Siberian environment.

- PAG (Jianfeng He)

The Pacific Arctic Group (PAG) is a distributed network of biological observatories, initiated in 2008. PAG provides an overview of infrastructure and cruise plans on their website. PAG is open for cooperation and work with others to study marine mammals and birds. Their next meeting will take place in October 2019 in China, focusing on projects.

- SIOS (Heikki Lihavainen)

Svalbard Integrated Observing System (SIOS) has 24 member institutions from nine countries. Aims to improve and optimize research conditions in Svalbard for its members. It is a multi-domain research infrastructure. Main event includes 'Polar night week' held in January 2019 with 70 participants from around the world. 'The State of Environmental Science in Svalbard – an annual report' is the latest report from 2018 with recommendations and priorities. Written by 44 authors from 39 different institutions, and is available on SOIS website. Next 'Polar night week' is in 2020, January 14-18.

- SAON (Jan René Larsen)

SAON has a vision of a connecting, collaborative and comprehensive long-term pan arctic observing system, that serves societal needs. Aims to act as an umbrella for other efforts/initiatives and coordinate these. Recently developed a new strategy and implementation plan, with the goal to create a roadmap to an Arctic integrated observing system. SAON originated through IPY – effort to get an overview of observation data. Work on Federated search or a 'one window search', and builds a layer on top of other initiatives to allow users easy data access. Arctic Data Committee will host the meeting 'Polar data Forum' on 18 November 2019 in Finland. The Arctic Observing Summit is the SAON outreach event, which will be held at ASSW 2020.

- AFoPS (Hiroyuki Enomoto)

The Asian Forum for Polar Sciences is a non-governmental organization established in 2004 to encourage and facilitate cooperation for the advancement of polar sciences among countries in the Asian region (both poles). Chair is currently Japan (2 year rotation). AFoPS Annual General Meeting will be held in Tokyo, Japan 31 October to 1 November 2019.

- IARPC (Jennifer Mercer)

The primary purpose of the Interagency Arctic Research Policy Committee, a US initiative, is to coordinate the science efforts from Federal, State, academic, NGO, industry, indigenous and international organizations. The IARPC Collaborations hub serves the entire Arctic research community, including government and non-government, national and international.

The IARPC has revised the Principles for Conducting Research in the Arctic, see: <https://www.iarpcollaborations.org/principles.html>

Online database available, and IARPC encourages international participation and is open to anyone.

## 5. Updates from Countries (all National Points Of Contact)

Country presentations – to include FARO related issues of hot news items, new efforts, updates on existing efforts:

- Poland, Denmark, France, Czech Republic, Germany, Japan, USA, Portugal, Korea, UK, China and Russia

(slides from the listed countries are available on the FARO website)

## 6. Sharing of best practices across domains

European Polar Board – minimizing environmental impact of research (Renuka Badhe)

- EPB can soon celebrate its 25 years anniversary in 2020 (announcement will be ready soon). EPB is hosted in The Netherlands and covers both Arctic and Antarctic. Supports scientific cooperation and provides a platform for networking between members and with relevant organizations. New Polar Infrastructure catalogue just printed, and can be found online at: [www.europeanpolarboard.org](http://www.europeanpolarboard.org)
- EPB has specific action groups, such as “Action Group on Polar Infrastructure” and “Action Group on Environmental Impact of Polar Research and Logistics”. The latter develops guidelines for members, but are also useful to the community outside. EPB would like to do this in partnership with as many as possible, like FARO.
- EPB had a Breakout session in Arctic Circle, October 2019 in Iceland “Minimising the footprint of Arctic Research” together with INTERACT. FARO Secretariat was represented in the Panel. Report available online.
- Planned workshop on 1 August at COMNAP meeting.

INTERACT – (Elmer Topp-Jørgensen)

- INTERACT is an EU funded network of 86 terrestrial research stations in the Arctic and adjacent boreal and alpine areas. The project aims to build capacity to observe, understand, predict and respond to change in arctic climate and ecosystems. The project offers transnational access, remote access and virtual access to research stations in all Arctic countries and beyond. Several reports on ‘Best practices’ are made or planned within the Station Managers’ Forum, see below:

#### Station management, best practices for:

- 'INTERACT Management planning for arctic and northern alpine research stations – Examples of good practices' is available at <https://eu-interact.org/publication/interact-management-planning-arctic-northern-alpine-research-stations-examples-good-practices/>
- 'Report on reducing environmental impact of station operations' ( a Zero emission report) made together with COMNAP station (Princess Elisabeth Antarctic Station) is planned to be ready later this year. The purpose of the report is to help station managers reduce emissions and minimize impacts, and should be used as an inspiration catalogue.
- 'INTERACT Research and monitoring report' recommends minimum of monitoring system, describes scientific networks with best practices and disciplines studied at the stations. Available at <https://eu-interact.org/publication/research-and-monitoring/>
- Drones pocket guide available on INTERACT website
- Local communities: guidelines for stations on how to develop dialogue with local communities, develop joint monitoring programs and ethical guidelines. Case studies from Russia, Greenland and Finland. Planned to be ready in 2020.

#### Well prepared visitors:

- new handbook 'INTERACT Fieldwork Planning Handbook' just printed and available on <https://eu-interact.org/publication/interact-fieldwork-planning-handbook/> or by request to Elmer. This book covers all phases from developing the research idea, planning phase, arrival at the station and the actual field work and what to do upon returning home. A smaller 'pocket version', that can be brought to the field, is planned to be finished within a few months.

#### COMNAP (Uwe Nixdorf)

- COMNAP is an organization for countries with national Antarctic programs. It is a non-political fully independent organization with its own rules and procedures.
- A number of guidelines are developed by COMNAP's Expert Groups and Networks with the aim of assisting National Programs implementing common procedures and best practices. On the website all guidelines and best practices documents are available, such as the Antarctic station catalogue. COMNAP are now working on guidelines on Remotely Piloted Aircraft Systems (RPAS). Current work includes telemedicine and non-native species, and a new version about preventing non-native species is coming soon. Recently a SAR workshop was held in New Zealand. Documents on harassment policies can be found on a member-only webpage. All other Best practices documents are shared publicly on the website: <https://www.comnap.aq/Publications/SitePages/Home.aspx>
- Antarctic Environmental Monitoring Handbook can be found at: [https://www.comnap.aq/Publications/Comnap%20Publications/comnap-scar env monitoring handbook jun2000.pdf](https://www.comnap.aq/Publications/Comnap%20Publications/comnap-scar%20env%20monitoring%20handbook%20jun2000.pdf)

### ARICE (Nicole Biebow)

- ARICE is an icebreaker network project funded by the EU since 2018. The project builds capacity for operation of arctic icebreakers and offers transnational access for researchers to icebreakers.
- Network activities includes best practices on how can you access research vessels and what you need in terms of documents, etc.
- Planned workshop in Hamburg in June 2019 on facilitating long-term sharing.
- ARICE funds part of the MOSAiC summer school 2019, and supports 5-6 young scientists.
- Application deadline for ARICE ship-time proposals 2019 is 3 July 2019.

### ISAAFFIK (Lise Lotte Sørensen)

- A gateway to Arctic scientific overview and collaboration across borders, started in 2014. Several partners from Denmark, Greenland, NSF (USA), AWI, CEOS (Canada)
- Gives an overview of the logistics, infrastructure, courses (safety courses) and projects in the Arctic (past, present or planned). Data links and registration of Search and Rescue resources added in 2018. Includes also information on jobs, news etc.
- NSF project data is automatically transferred to ISAAFFIK.
- The system can be used all over the Arctic, see <https://www.isaaffik.org/>

### Open discussion about Best practices

Elmer suggested, that FARO could be a forum for sharing best practice documents from organizations and infrastructures, including discussions on how to learn from each other and how to get the best practices/guidelines made available.

Renuka suggested that FARO could ask their members about what they need in terms of best practice documents, and to identify what is available already.

Environmental best practices: NSF is doing Environmental reviews, and FARO should gather this kind of information from the member countries.

Jerome mentioned an example of good practices that could be shared among stations: on their research station it is not allowed to bring your own soap, to minimize the impact of microplastics in the waste water and reduce waste. Station provides soap for all visitors. This kind of best practice and level of information should be collected and shared – easy to implement at stations. Such easy to implement examples /recommendations could be gathered from infrastructure managers and shared by FARO and NPOC's. Also INTERACT, AFoPS and others could reach out to their community and gather information.

Uwe suggested INTERACT/Elmer to join the WG meetings in COMNAP, on how to minimize the CO<sub>2</sub> foot print – the WG includes aspects of new technology and has regular meetings.

Environmental assessments are also available from Germany.

Jennifer asked if EPB could make a questionnaire FARO could send out to NPOC's, and also suggested that that FARO should make a workshop about this in the future. The idea of a combined workshop with SCAR, COMNAP and EPB should be discussed further.

Jerome suggested to provide some rough numbers to the scientists about the carbon budgets of their projects; how much carbon/day in terms of transportation, persons etc. and develop

recommendations for how infrastructures can calculate the carbon footprint, a starting point for work on minimizing the impact.

## **7. FARO initiatives – updates and discussion of new and old**

Risk management: everyone is encouraged to send any new documents or information on discrimination and harassment to the FARO secretariat, to keep the website updated.

Infrastructure: Marie will send out a reminder to all NPOC's, to check the information on stations and vessels on website.

Search and rescue: so far this topic has not been discussed much in the ExCom, but will be a topic for the next meetings. FARO should gather information from the different regions. Piotr informed about new GPS trackers being installed on their boats in Svalbard. Another issue pointed out by Piotr, was how to get the cheapest satellite communication in the Arctic. If we all negotiate together, we will stand stronger to get the best price.

Citizen science: FARO receives requests from people that want to join research projects in the Arctic - how should we respond to such requests? Safety, liability, foot print etc.

Renuka informed about a successful example on an expedition where tourists paid to join a research project and were a benefit to researchers.

Uwe: AWI has a risk assessment committee that looks at proposals. Suggested to make guidelines for good practice – for example making a 10 point document could be very helpful. Do any such documents exist?

Suggestion to change wording to 'science of opportunity' instead of citizen science.

How can FARO be more helpful and effective:

Jerome: it is important to hear from the member countries what they have in the pipeline in the coming 2-3 years, and to know of opportunities of with whom to cooperate. FARO country presentations should include a 5 year outlook for the next annual meeting.

Hiroyuki: all countries should update management and project plans every second year. The information from these meetings are very useful. Training information exchange is also needed.

Elmer: There is also an opportunity for NPOCs to share information and discuss bottlenecks in relation to the Arctic science agreement and communicate this to relevant Competent National Authorities.

It was recommended to tie the list (made in the introduction round, see page 1) to new initiatives/actions – what are the priorities of FARO members? The list will be sent out for comments from the FARO community, and the information should also be shared with EPB.

## **8. Internal business, closed session**

### **1. Finance report:**

Elmer gave an update on FARO accounting 2018, where the budget in 2018 was exceeded by \$6,494 USD. This is mainly due to the preparations for the FARO 20 years celebration event, where most of the planning occurred in 2018 instead of 2017. However, when looking at 2017 and 2018 combined, there is a small surplus in the annual account balance.

The budget and accounts are presented in US\$. The Secretariat is located in Denmark and the annual fee is collected in Danish Crowns – 10.900 Dkr per year. Differences in exchange rates over time means that it can be difficult to compare approved budgets with expenditures, if the exchange rate changes during the year. The secretariat therefore suggested to make the finance report in euro (€), as this is more stable compared to Danish crowns. Some countries may need longer time to convert their budgets to euros, so it was agreed that from 2021 FARO will change the fee to € instead of Danish crowns.

All members accepted the accounting for 2018.

### **Budget 2019**

Expected income 2019 (18 member payments): \$29,392 USD. Previous discussions approved a buffer of ~\$20,000, hence expected surplus 2019 would amount to \$2,321. It was discussed whether this money should be spent on more activities, person hours or added to the buffer. It was decided to set aside the \$2,321 for the upcoming review (see agenda point 8.3), and add an extra \$2700 from the buffer, so in total there is \$5000 for the upcoming FARO review.

The proposed budget for 2019 was approved with above notes.

Elmer also informed that the financial manager at AU (the FARO secretariat Institution) spends a lot of time chasing invoices from FARO members. It was suggested that the reminders should include the FARO secretariat as cc in emails, to get an overview of which countries needs reminders, and then let the FARO secretariat send the following reminders.

The annual fee will stay the same for 2020 (10.900 Danish crowns), but in 2021 the fee will be 1500 €.

### **2. Policy concerning non-paying members**

All participants of the meeting agreed to try getting the three non-paying countries to begin paying the annual fee; Netherlands, Russia and Austria.

Uwe will contact Dick van der Kroef in the Netherlands, to see if they would now be able to pay the FARO membership. Piotr will ask his contacts in Austria. Russian member has until now been Alexander Makarov – but he has not participated in FARO meetings, nor has Russia paid the fee. Vladimir Sokolov is another option – Uwe will contact him, and it was agreed to give it another year to see if we can get an active Russian member.

Alex (Czech Republic): at the moment not sure if they will have money next year, so a reduced FARO fee would be very helpful.

### 3. Terms of Reference:

In the FARO terms of reference, it is stated that FARO should have external review to provide input and advice at least once every five years.

External review and evaluation of FARO: Larry Hinzman (IASC president) gave an overview of the review process of SAON and IASC, in which he was involved (the review reports will be circulated). Their committee was selected to be strong, as they would like an honest and critical assessment and they did discover new things. It is important to let the committee solicit information from the NPOC's – and the chair must make sure that the committee gets this input. Reviewers will need secretarial support, and it might take up to 1 year to finalize the evaluation. It might lead to new strategy plans. The cost for the review was travel money, as the time used by the committee (6-8 members) was donated. Larry did recommend an evaluation as FARO will get value out of it.

The FARO meeting participants discussed the benefits of having an external review of FARO. All agreed to work for an external review of FARO. It should be a formal work, and it should include operators, but not scientists. The review committee should include operators from non-arctic countries, for example from Australia or New Zealand (COMNAP). It should be kept simple – a small committee who knows FARO, and a mix between operators and organisations. The ExCom will take this to the next meeting for further discussion. The FARO Terms of Reference will not be updated until after a review.

### 4. Election of FARO ExCom members:

Election of one new FARO ExCom member for the period 2019-2022:

Morten Rasch (Denmark) was elected as new member of the FARO ExCom. James Drummond will step out of ExCom after one year overlap with Jennifer.

5. Next FARO Annual meeting will be in Akureyri, Iceland, 27 March - 2 April 2020.

### 6. Any other business

Nothing to report.

**FARO Participants:**

Jennifer Mercer, USA

Marie Frost Arndal, Denmark (minutes)

Elmer Topp-Jørgensen, Denmark

Sten Lund, Greenland

Piotr Glowacki, Poland

Alex Bernardova, Czech Republic

Jérôme Chappellaz, France

Uwe Nixdorf, Germany

Maria Teresa Cruz Mera Vitoriano Cabrita, Portugal

Henry Burgess, United Kingdom

Hyoung Chul Shin, Korea

Hiroyuki Enomoto, Japan

Sandy Shan, China

Sergei Priamikov, Russia

**External Presenters:**

Diogo Folhas, T-MOSAiC

Jianfeng He, PAG

Sergey Kirpotin, SecNet

Hiroyuki Enomoto, AFoPS

Heikki Lihavainen, SIOS

Lise Lotte Sørensen, ISAAFFIK

Jan René Larsen, SAON

Renuka Badhe, EPB

Sergey Kirpotin, SecNet

Nicole Biebow, ARICE