



Fiskerifaglig Forum

Norwegian forum for development cooperation
in fisheries, aquaculture and aquatic environment

Report from FFFs seminar 2019

Education and competence building in development cooperation: what works, what have we learned, and how can we improve?

Time and place: 13th-14th March 2019, Pynten meeting room, Institute of Marine Research, Bergen

Participants: In total almost 50 people registered for the seminar, including the 17 invited speakers. The programme for the seminar can be found in Annex 1

Summary of presentations

Part 1

Tora Aasland, president of the Norwegian UNESCO-commission

Sustainable Development Goals: The UNESCO strategy to develop partnership for the goals in education and science relevant to fisheries management (SDG17)

Aasland gave an overview of the background for the establishment of UNESCO, its' mandate and approach to supporting member countries to develop competence, skills and capacity – also with reference to the Sustainable Development Goals (SDGs). Two initiatives by UNESCO were mentioned in particular; the strategy for technical and vocational education and training (TVET) and the Ocean Literacy initiative. The link below is to the Ocean Literacy toolkit in the Unesco digital library.

<https://unesdoc.unesco.org/ark:/48223/pf0000260721>

Ragnhild Tunesvik, Head of Department, Diku-Norwegian Agency for International Cooperation and Quality Enhancement in Higher Education

International partnerships in education and training

Tunesvik presented the new organization Diku, and its' mandate of strengthening the quality of Norwegian higher education. She then presented the main programmes that support and fund educational cooperation with other countries. These are (i) NORPART: supporting cooperation between academic institutions and mutual short term student mobility, next call for funding will be in 2021(ii) Building skills for jobs: to link educational institutions and private enterprises to enhance TVET in selected developing countries, no new calls for funding planned, (iii) the Panorama exchange programme in education and research with institutions in the BRICS countries. In the NORPART programme, currently there are only two project in the fisheries. In the Skills for Jobs programme, Tunesvik mentioned two projects one for aquaculture in Vietnam coordinated by NHO, and one in Uganda on farming and aquaculture coordinated by Caritas.

Mark Gibbons, professor, University of Western Cape

Addressing critical competence gaps in marine science - a personal perspective from southern Africa

Gibbons gave two examples of research cooperation where he and other researchers from South Africa had cooperated with researchers abroad. He pointed out that even if these projects had produced many research papers, and developed tools for assessing biomass of for example jellyfish, the projects could not be termed complete successes as long as the tools were never used. He also pointed to the lack of national strategy for

developing new fields of expertise in South African Universities when the current academic staff comes from roughly the same academic field of study. Gibbons presented a new study of the nationality and extent of collaboration in the about 800 research papers from 2000-2016 about the environment and/or resources in the Benguela Current Large Marine Ecosystem programme. One of the main takeaways was the very few research papers that involved intraregional cooperation/co-authorship. One issue is a strong adherence to intellectual property rules that may preclude participators as coauthors of papers.

Main takeaways: Collaboration is vital for knowledge generation and the development of a local skills base is vital. Training and competence building should be focused on skills that are relevant and deployable (e.g. do not train people on very advanced equipment that will not be available in their daily work). To foster local, and regional south participation in international research collaborations plan inclusively – early. “SOFT skills” development, for example language skills, are very important to foster inclusive participation and collaboration. DO NOT EXPECT instant results – mentorship and follow-up.

Part 2

Claire Armstrong, professor, University of Tromsø

16 years of cooperation with Nha Trang (Fisheries) University (NTU) – Experiences, challenges and potential for future collaboration.

Armstrong explained how the collaboration between UiT and NTU had evolved over a long period, and how it gradually had moved: from a study programme focused on social science to being more multidisciplinary (Marine Ecosystem management and climate change), from students from Vietnam coming to Tromsø to a degree with international students in Vietnam, and from the majority of teaching resources coming from Tromsø to coming from Vietnam. She pointed out that the cooperation has also provided inputs to the teaching and study programmes in Tromsø, and the cooperation is now at a stage where researchers in Tromsø get invitations to participate in Vietnamese funded research projects. Armstrong pointed out that Norad’s expectations about sustainability of the outcomes of a project they have funded is not necessarily something one should want. Sustainability of what? It is not obvious that NTU will want to teach the master programme that has been developed for “ever”. She also pointed out that while the cooperation with the university over a long time has increased competence and capacity within academia in Vietnam, the situation for the government institutions dealing with fisheries, environment etc is still lagging behind. Armstrong emphasised that development cooperation should build on the institutions where we have positive experience, and use these as hub’s for developing programmes of capacity development in new countries in the south to encourage south-south cooperation and mutual learning.

Peter Gullestad, former Fisheries Director

What are the basic competence needs in fisheries management?

Gullestad focused on the types of competence and educational background that is needed for successful fisheries management. Based on his experience as director of the Norwegian Directorate of Fisheries he emphasised that a fisheries administration has a mandate both to put forward policy proposals (input) and to implement government decisions (output). The main takeaway is that this involves not only marine scientists, but a broad range of educational backgrounds including economists, statisticians, lawyers, sociologists, etc., and it is essential that these are working together. Concerning lawyers, Gullestad’s view is that these should preferably be trained “close to home” so that they are versed in their local legal language. He also pointed out that “marine science” is only the first step in fisheries management – and in fact the “easy” part. The main challenge is to build organisations/institutions that are capable of transforming the advice from marine science into workable and implemented policies in the management of fisheries. Only then will we have “good governance”.

Heidrun Wergeland, professor, Department of Biological Sciences, University of Bergen

Education and research collaboration with Vietnam

Wergeland presented examples of the long lasting cooperation between the UiB, the Department of Biology and Nha Trang University and the regional institute of aquaculture in Nha Trang. This cooperation has involved education, both Master students and PhDs, under different funding schemes for about 20 years. She pointed out that the long-distance supervision of Master and PhD students from Norway could be challenging, not just academically. Difficulties with the economic situation of the students, knowledge about administrative

routines in different systems can also be a challenge. She also pointed out that for these students, it is important that they are involved in projects at home, that they base their master thesis on research questions that are relevant in their home country and spend time at home while working on their thesis.

Gabriella Bianchi and Kathrine Michalsen Research and survey coordinators of the Nansen Programme, Institute of Marine Research

Competence building in the Nansen programme: results and challenges

Bianchi gave an overview of the different phases of the Nansen programme. She noted that while the Programme has always had fishery research as a primary objective (with the Rv Dr Fridjof Nansen) capacity development and improved fisheries management were not among the programme objectives in its early years. She stressed the importance of considering the three dimensions of capacity development, including individuals, institutions and the environment that the institutions operate in. The EAF Nansen programme has evolved towards taking a more holistic approach over time. She also stressed that capacity development requires long-term partnership, involving committed people on all sides. She also pointed out the importance of the collaboration with UiB in the Nansen programme as well as Norad being a partner and not only a financier of the programme.

In the current and fifth phase of the Nansen programme, capacity development involves all three dimensions: individuals, institutions and an enabling environment. FAO is setting up a technical training network with hubs among universities in Africa. Bianchi stressed the need to also have funding for PhD and Master students, this would both be important for capacity building, but would also be a cost-effective way of getting “science” out of the large amounts of data collected by the Nansen Surveys.

Michalsen talked about the onboard training activities during the cruises, where there typically could be up to about 20 local participants who should be trained in sampling protocols and survey techniques. Challenges mentioned were questions about whether the right people from partner countries are onboard/trained, or whether the local partner institutions are the most appropriate or whether there should be more partner institutions. Also there is a challenge in finding the right balance between scientific objectives and on-board training, as high quality sampling is not always compatible with training and education of participants. The issue of limited ability in terms of time and money to follow up on samples collected and the training of participants.

Bjørn Erik Axelsen, Programme director, Institute of Marine Research:

Long term capacity building in Angola

Axelsen provided examples of the various types of capacity development that has been in focus during the more than 30 years of on and off cooperation with Angola. Capacity development has ranged from practical hands-on-training to formal training in specific areas like statistics and database management to formal university education. He also stressed the experience of the need for long term commitment, and for a strategic cooperation between education and R&D.

Part 3

Felicite Ahitantsoa, Managing director at Tilapia de l’Est Madagaskar

A development model of tilapia farming for rural development in Madagaskar

Ahitantsoa gave a presentation of the development of the cooperative Tilapia de l’Est, which is a cooperative for the farming of tilapia covering all aspects of the process from the hatching of fingerlings to the transport and sale of farmed tilapia. 338 farmers are members, fish farming for the members typically come in addition to agricultural activities. Competence building for aquaculture production has to a large extent taken place in cooperation and exchange with competence centres in Asia, hence an example of south-south cooperation and capacity development. Cooperation on a breeding programme with NMBU, and support for business and organizational development from Norges Vel. She emphasised the need for training of trainers, and the continued training of technical teams that could assist and train farmers in practical aquaculture. She also stressed the importance of not only training in practical fish farming operations, but also the need for administrative and business competence and simple accounting procedures for the farmers.

Edgar Brun, director of section for fish health, the Veterinary institute

Competence building in aquatic animal health management

Brun focused on the various competence needs to develop functioning aquatic animal health management, and the need to develop awareness at all levels of the importance of this component for sustainable aquaculture production. He also identified the different competence needs at different levels: government, veterinarians and fish farmers. Brun pointed out that veterinary competence about terrestrial animals is relevant also for aquatic animals, and should be built on to bridge competence gaps. Further, he mentioned as a criteria for success in building competence the need to be aware of the socio-cultural environment of the operations.

Bjarne Gjerde, senior researcher, Nofima, Ås

Knowledge building for running selective breeding programs for aquaculture species

Gjerde pointed out that only a very small share (less than 10%) of global aquaculture production is based on improved species, while close to 100% of agriculture production is based on species from selective breeding programmes, even though breeding programmes have a high benefit to cost ratio. Gjerde gave examples of competence building in breeding programmes: for tilapia in the Philippines and for the development of the rohu carp in India. In both cases, there were no funding for master students or PhD students. Gjerde stressed as an important success criteria for any competence building done through for example PhD studies and scientific studies in Norway that the persons who get training and education need to have a strong scientific environment to return to in the home country. For example by giving scholarships to persons with permanent positions in relevant institutions in their home country and with conditions on returning afterwards. He also stressed the need to establish strong links between academic departments and the industry for the benefit of both.

Hans Magnus GjØen, professor, Norwegian University of Life Sciences

Competence building by combining scientific projects and education

GjØen also focused on competence building in various projects for breeding of farmed fish, and mentioned several examples of breeding programmes, often financed by the quota programme where students would conduct a breeding programme as part of their thesis with supervision from researchers at NMBU who were financed by research funds. This combination is now difficult to achieve with the termination of the quota programme. NMBU established a master programme in Aquaculture in 1989, and about 90 % of the students over the last decade have come from developing countries. Students only need 9 months in Norway during the first year of course work, the rest of the degree many are back in their home-country doing field work for their thesis. GjØen indicated that this was important for the success of the programme. He also pointed out that the termination of the quota programme for students from the south is a problem for getting international students to this degree. In terms of factors for success and failure in projects, GjØen pointed out that too short projects, difficult bureaucracy and/or corruption was a problem. He also mentioned that incapable or poorly motivated key staff (which often meant PhD students) meant asking for trouble. If there are educational goals in cooperation projects, GjØen thought that the Norwegian universities should be involved in the selection of the right candidates. Factors for success are good relationships among the parties, long term projects backed by political stability/will. Activity centered education and local ownership and decision making.

Part 4

Oddrun Samdal, vice-University Director for Education, University of Bergen

Future role of education in developmental programs - Perspectives from the University of Bergen

Samdal discussed the available programmes for funding of student exchange currently available in Norway: Panorama and NORPART. UiB has 3 Norpart projects 2017-21, and 3 new coming after the second call: 2019-23. During the first 3 years UiB has had 39 students coming in, no students going out. Compared to an annual average of 94 south students coming annually to UiB during the quota programme. Samdal pointed out that with the termination of the quota programme UiB did not only lose the possibility of having full degree students from the south for a period of two years, but also lost a framework for institutional cooperation with universities in the south. UiB has proposed that the time is ready for a new quota programme that could be a combination of the quotas and the Norpart programme, and that fosters cooperation with partner institutions. Samdal also mentioned that as UiB is part of the International Association of Universities SDG cluster, and with

the leadership for SDG 14: Life under Water, UiB plans to develop a multidisciplinary MA programme. Inputs to what this programme should include are most welcome.

Bente Moen, Director at Centre for International Health and Global Challenges, University of Bergen
Is a MOOC useful?

Moen presented the massive open online course (MOOC) on Occupational health that she and her colleagues at the Centre for international health has developed. She gave a good presentation about the structure of the course, how the student numbers have developed and how it could be combined with getting a certificate or even taking an exam at UiB giving 3 ECTS credits. The presentation also provided some impression about the amount of work involved in developing a MOOC. Moen stressed that MOOCs can be very useful and can easily be repeated and adjusted once the initial heavy investment is made. It is important that MOOCs are sufficiently interactive. It is a lot of work, but can be very fun.

Arild Hoksnes, Innovation manager, SHM aReality AS, Molde

Remote support and 3D training - opportunities and experiences with the use of industrial AR (augmented reality)

Hoksnes explained a little bit about what AR is, and how it can be used and may transform how we do things. He gave examples of AR systems they are developing for ferries in the Molde area, where the machine engineer could be in an office servicing several ferries simultaneously. One thing that becomes clear with increased use of AR is that this often needs to be accompanied by new regulation. In the case of the example with the ferries: AR will need a change in the rules about who can be allowed to make the actual physical engine repairs on the boat when the usually certified person provides guidance through AR systems. Food for thought in terms of whether AR may be something that could be useful for capacity building in development cooperation.

Jeppe Kolding, professor, Department of Biological Sciences, University of Bergen

Fisheries and education are cornerstones of Norwegian development cooperation – why are we still in need of fisheries scientists?

Kolding's main message was that terminating the quota programme, or the Norad fellowship programme, has not been a wise move. During the period 1982-2008, 214 students from 40 countries in the south completed degrees in fisheries management or fisheries biology sponsored by Norad, but no students since 2009. Kolding referred to evaluations of development cooperation that has pointed out that technical assistance is often not effective, while the long-term capacity development in the fisheries through training, education and research has developed the human resource capacity in the sector and many has remained in the sector. Kolding stressed the many advantages of financing students to full degrees in Norway: the students get not only knowledge in their field of study, but also learn about Norwegian society and institutions. Former students constitute an important network for future cooperation to build on, and these students often remain "ambassadors" for Norway throughout their careers. Kolding pointed out that the termination of the quota programme had implications for the cooperation between UiB and IMR. He also mentioned as a problem the lack of funding for higher education in the Nansen programme, this was in line with the presentation by Bianchi and Michalsen (see part 2 above)

Bjarne Garden, Assistant director, The Knowledge Bank, Norad

Transferring knowledge for capacity development. Success criteria to achieve lasting impact. Garden gave a short presentation of the Knowledge Bank in Norad, where Fish for Development is one of the programmes. He pointed out that capacity development can occur at 3 levels: the individual and the institutional level as well as the institutional environment. Traditionally development cooperation has not focused much on the latter, but we should realize that it is difficult to "build an island of success in a sea of disaster". Garden stressed that institutional cooperation is an input and not a goal in itself, and it is important to be explicit on the goal for the institutional cooperation is: what is the desired change to be arrived at, and what are the needed inputs to arrive at this change. He then summarized some of the main lessons based on the Norwegian support to capacity development (Norad report No. 10/2015):

1) Understand the context

- 2) Strong ownership and commitment by all stakeholders
- 3) Ensure implementation capacity
- 4) Recognize individual, organizational and institutional levels of CD
- 5) Adopt a flexible and adaptive approach
- 6) Combine long-term commitment with «quick wins»

Discussions and main takeaways

A common theme in the above presentations was the importance of partnerships in developing and improving cooperation in capacity building, the need for developing partnerships from both sides, and planning for involvement well in advance of sending the actual funding applications.

There was a discussion about the pros and cons of the NORPART programme that has replaced the previous quota programme where students from the south took full degrees in Norway, whereas now they take their degrees at home, and only come for shorter exchange stays. One reason for the termination of the programme was the argument that few students went back to their home countries. Norpart can potentially reach more students than a more selective quota programme, but so far the result is a substantial decline in the number of students from the south at Norwegian universities. The need for a new programme that makes it possible also to fund students that take a full degree in Norway was clearly acknowledged. At the same time, the point was raised that we cannot for ever be giving fisheries courses in Norway; we need to ensure that this is also offered at the regional level, and we need to ensure that there is flexibility in funding schemes such that capacity building also can take place at the regional level or in other countries where that is deemed the most appropriate..

Another issue raised was that a division in funding programmes into programmes funding research and programmes funding education is often problematic, since in many projects with educational cooperation, there is also a research component (master thesis work and PhDs). Often there is a lack of funding for the necessary research component in the educational programmes.

It was stated that marine science is the easy part of capacity development, it was called a “low-hanging fruit”, and further that increasing the educational levels in governmental institutions is a low hanging fruit. Gibbons pointed out that it is important that the Nansen programme should to a larger extent establish partnerships with local academic institutions in partner countries, as for example the mentioned partnership with the University of Western Cape. Also, the problem with not having local participants on Nansen cruises with relevant background and the right motivation is partly related to the fact that FAO pays local participants per diem rates that make the economic incentives for going on surveys stronger than the scientific incentives for some participants.

Many participants pointed to the importance of development projects in general lasting for a longer period. It is imperative that projects are planned and financed for an adequate number of years related to their main goals.