Norad

DEPARTMENT FOR EVALUATION

Report 8/2022

Evaluation of Norwegian support under the Nansen cooperation in the fisheries sector

Commissioned by

Department for Evaluation, Norad

Carried out by

NIRAS Sweden

Written by

This report has been prepared by NIRAS Sweden AB. The evaluation team consisted of Åke Nilsson (Team Leader), Mary Frances Davidson (Capacity Development and M&E Expert), Dr Tumi Tómasson (Fisheries and EAF Expert) and Gustav Engström (Data Scientist).

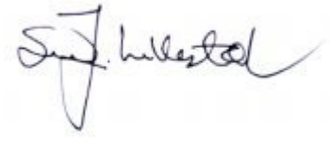
Preface

Norway has a long tradition of supporting development cooperation in the fisheries sector. Currently, this support is primarily coordinated through the Fish for Development programme in the Knowledge Bank administered by the Norwegian Agency for Development Cooperation (Norad). The Knowledge Bank was created by the Norwegian government in 2018 to leverage Norway's stock of knowledge and experience from management of its natural resources, including its marine and fisheries resources.

This evaluation is looking into the single most significant component of the Fish for Development program, the EAF-Nansen Programme. The evaluation covers Norwegian support during the period 2006-2021. The main purpose of the evaluation is to acquire information about the performance of the program and draw lessons for future implementation of the programme.

The evaluation credits Norwegian support for strengthening the knowledge base for introduction of the Ecosystem Approach to Management of Fisheries Resources (EAF), together with increasing knowledge and awareness among the direct beneficiaries, at the individual level. It also credits the support for its role in expanding regional cooperation in the sector.

While confirming the gains at the individual level, the findings suggest that the gains at societal level are yet to be realized in the partner countries. The evaluation calls for a stronger focus on institutionalization of capacity building, gender equality and turning the ecosystem approach to fisheries into practice as one moves forward.



Oslo, 5 December 2022
Siv Lillestøl
Acting Director, Department for Evaluation

Acknowledgements

This evaluation was carried out for NIRAS Sweden AB. The evaluation team comprised Åke Nilsson (Team Leader), Mary Frances Davidson (Capacity Development and M&E Expert), Dr Tumi Tómasson (Fisheries and EAF Expert) and Gustav Engström (Data Scientist). The report is the product of its authors, and responsibility for the accuracy of data included in this report rests with the authors. The QA was undertaken by Graham Haylor with support from Jerome Gouzou and Matilda Svedberg. The findings, interpretations, and conclusions presented in this report do not necessarily reflect the views of the Evaluation Department.

The evaluation team would like to thank staff of NIRAS that supported them, as well as staff from Norad, IMR and FAO, and the large number of stakeholders and beneficiaries in Africa and Asia, who provided the information necessary for the team to carry out its work.

Content

Acronyms and abbrevations

ASCLME	Agulhas Current Large Marine Ecosystems
AUC	African Union Commission
BCC	Benguela Current Commission
BCLME	Benguela Current Large Marine Ecosystem
BOBLME	Bay of Bengal Large Marine Ecosystem
CCLME	Canary Current Large Marine Ecosystem
CECAF	Fishery Committee for the Eastern Central Atlantic
COREP	Regional Fisheries Commission for the Gulf of Guinea
DFN	R/V Dr Fridtjof Nansen
EAF	Ecosystem Approach to Fisheries management
EQ	Evaluation Question
FAO	Food and Agriculture Organisation of the United Nations
FCWC	Fisheries Committee for the West Central Gulf of Guinea
FFA	Force Field Analysis
FfD	Fish for Development programme
FMC	Fisheries Management Cycle
GCLME	Guinea Current Large Marine Ecosystem
GEF	Global Environment Facility
IEZ	Inshore Exclusion Zones
IUU	Illegal, Unreported and Unregulated
IMR	Institute of Marine Research
kWdays/year	Thousands of working days per year
LME	Large Marine Ecosystem
M&E	Monitoring and evaluation
MDPA	Multi-Dimensional Poverty Analysis
MEAL	Monitoring, Evaluation, Accountability and Learning
MFA	Ministry of Foreign Affairs
MTR	Mid-Term Review
NatMIRC	National Marine Information and Research Centre (Namibia)
NOK	Norwegian Kroner
Norad	Norwegian Agency for Development Cooperation
NW Africa	Northwest Africa
RFB	Regional Fisheries Bodies
RFMO	Regional Fisheries Management Organisation
RSN	Regional Fishery Body Secretariats' Network
RV	Research Vessel

SDG	Sustainable Development Goal
SEAFO	Southeast Atlantic Fisheries Organisation
SIOFA	Southern Indian Ocean Fisheries Agreement
SRFC	Subregional Fisheries Commission
SSF	Small-Scale Fisheries
SWIOFC	Southwest Indian Ocean Fisheries Commission
SWOT	Strengths, Weaknesses, Opportunities and Threats (analysis)
ToC	Theory of Change
ToR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USD	United States of America Dollar

Executive Summary

This report presents the results of an evaluation of Norwegian support under the Nansen cooperation in the fisheries sector, initiated in 1975.

The objective of the evaluation is to assess the long- and medium-term outcomes of the Norwegian assistance under the Nansen cooperation and its associated activities covering primarily coastal countries of Africa. The evaluation covers the period from the start of the EAF-Nansen Project[1] in 2006 up to and covering the current implementation of the EAF-Nansen Programme[2] , which started in 2017 and is planned to come to an end in 2023.

The EAF-Nansen Project incorporated the concept of an ecosystem approach to marine fisheries (EAF), having the long-term objective of strengthening regional and country-specific efforts to reduce poverty and create conditions to assist in the achievement of food security through development of sustainable fisheries management regimes and specifically through the application of the ecosystem approach to fisheries. The immediate objective was to provide fisheries research institutions and management administrations in participating countries with additional knowledge on their ecosystems for use in planning and monitoring, and to further the acceptance of the key principles of EAF.

The currently ongoing EAF-Nansen Programme supports the implementation of EAF in the marine environment to promote sustainable use of marine living resources and improved protection of the marine environment. Having a long-term objective of improving food and nutrition security for people in partner countries through sustainable fisheries, it has the expected outcomes of providing scientific advice, supporting fisheries management and building institutional capacity.

The EAF-Nansen Programme aims to achieve its outcomes partly through undertaking surveys of the coastal zone of the partner countries using a research vessel, training of professionals in the fisheries sector in sampling and analysing data and strengthen institutional capacity to analyse the data and feed this into fisheries management in partner countries and regions.

Norad has been the main financing partner of the two interventions. The main implementing partners have been the Food and Agriculture Organisation of the UN (FAO), which has been the formal executing agency, and the Norwegian Institute of Marine Research (IMR). The budgets for the two interventions have been NOK 511 million and NOK 638 million respectively.

The evaluation has applied a mixed methodology, collecting data through desk review, stakeholder

1 Project title: Strengthening the knowledge base for and implementing an ecosystem approach to marine fisheries in developing countries.

2 Programme title: Supporting the application of the ecosystem approach to fisheries management considering climate and pollution impacts

interviews, geospatial analysis, an online questionnaire survey including SWOT analysis, and a Force Field Analysis carried out online.

Findings

RELEVANCE

Relevance of objectives

Data collected by the research vessel DFN[3] are relevant to partner countries. The irregular nature of DFN survey coverage, and limitations to access to the data, limit their value as a global public good for sustainable management of marine resources and the environment.

EAF-Nansen is also considered by stakeholders to be a valuable avenue for expanding regional cooperation for conservation and sustainable use of marine resources and the environment, which has been substantial but could be further strengthened.

EAF-Nansen is relevant to the strategic goals motivating Norwegian multilateral partnerships, in this case with FAO, and with Norwegian cross-cutting agendas including gender equality and protection of the marine environment.

Relevance of design

Both the EAF-Nansen Project and the EAF-Nansen Programme are characterised by the absence of robust theories of change, which makes it challenging to assess the overall design of the interventions.

The components of the interventions are relevant, and useful for effective management of the marine resources of the partner countries.

There is a perceived mismatch between data collection and partner country needs among national stakeholders, especially with regard to artisanal fisheries that are highly relevant to poor coastal communities, yet to a large extent inaccessible to DFN. There are thus limitations to linkages between the survey vessel to poverty alleviation and food security agendas, but higher relevance in relation to UN collaboration and climate change work.

EFFECTIVENESS

Data collection and access

Data sharing routines are not uniform across different countries. This means that the availability and applicability of collected data for the assessment of fisheries stock is inconsistent.

Capacity development

Whilst there are many steps on the change paths that link the EAF-Nansen training activity and working towards the policy goal of food security and reducing poverty, the training programmes have helped building knowledge and skills for many, which is one of the steps in that path.

Almost two thirds of trainees report that the skills and techniques acquired under EAF-Nansen training helped them to apply an ecosystems approach to fisheries management in their country. Notwithstanding, whilst there is increased knowledge and awareness about EAF among managers and decision makers through training, stakeholders feel insufficiently supported to put the ecosystem approach to fisheries into practice.

3 R/V Dr. Fridtjof Nansen

The development of institutions in the partner countries, including the promotion of gender equality, is perceived by national stakeholders to be hindered by a lack of strategic thinking and plans for capacity development. Attention to gender equality has increased during the later stage of the programme.

Building capacity and expertise is perceived being a programme strength by survey and interview respondents in partner countries, and awareness and knowledge of the ecosystem approach among survey respondents is increasing.

Policy and management

Policy and management recommendations have not yet been effectively realised. Key informants from partner countries indicate that issues with poor governance and commitment and will to improve policy and management is still a limitation to implementation.

Participation and cooperation

Involvement of scientists from stakeholder institutions is most valued - along with training, better knowledge of resources, strengthened scientific networks, publishing and collaborative learning. However, local participation and cooperation with academic institutions is perceived as weak by stakeholders in partner countries.

EFFICIENCY

Data collection

Survey data collected by DFN are relevant to partner countries, but their availability to fisheries managers has been inconsistent. Survey reports were often delayed or missing, but as of 2021 all survey reports including previously pending ones, have been finalized, except for some that are pending for final formatting.

There have been survey planning problems related to inadequate process for participant selection for cruises, which has been exacerbated by short notice in identification of who will participate in surveys. This has been partially addressed through pre-survey meetings. The survey operations in general have been efficient.

During the Covid 19 pandemic, programme operations were suspended and the Nansen vessel was chartered at no cost to the programme and in a way that would not affect the programme implementation. Formal minuted meetings assessed the context and the options for chartering the vessel and concluded an agreement.

Organisation

The organisational structure, regulated through tripartite agreements between Norad, FAO and IMR, has been considered efficient, although there remains a potential for further improvements.

The programme is characterised by timely disbursement of funds for planned activities.

COHERENCE

Potential coherence with the outcomes and impacts of other Norwegian or international development assistance programmes in the partner countries is largely unreported in progress reports, but has taken place at bilateral level in several countries, reportedly with some successful results. Limited cooperation with other programmes and between countries is perceived by stakeholders to hinder the knowledge base for the sustainable management of fisheries.

SUSTAINABILITY

Capacity building

The value that key Informants attach to engaging with EAF-Nansen surveys, as well as its training programmes, workshops and seminars, predict good absorption and retention capacity of the expertise.

Ownership and commitment

Joint transboundary planning of surveys and information sharing among countries are lowly ranked by key informants as a factor for improving fisheries policy and management in line with EAF.

Data accessibility

There are perceived weaknesses according to national stakeholders, of the EAF-Nansen approach around sharing data, and supporting partners to act on it, in ways that can support fisheries management.

The use and storage of data, and capacity to analyse and interpret data, does not indicate that programme benefits can easily continue after assistance concludes.

Conclusions

CONCLUSION 1

The lack of a full-fledged Theory of Change is an obstacle to the effective implementation of the programme, making any attempt to unravelling causal pathways to the goal of poverty reduction impossible. A Theory of Change is a vital planning tool to effect change in complex contexts. The EAF-Nansen Project document implied a change theory, and the EAF-Nansen Programme documentation has a rudimentary diagram depicting change towards impact. However, there are many steps on the change paths that link the EAF-Nansen Programme activities and working towards improved management of fisheries, and indeed a policy goal of reducing poverty. Furthermore, the transition from one level of results to another relies on assumptions that are critical to understanding the extent to which different results are likely to be achieved or not. The lack of reporting on progress related to poverty reduction is to some extent due to a lack of clear identification of the multi-dimensional nature of poverty and, importantly, the non-existence of a monitoring system that could identify changes along the result pathways. Weaknesses in the organisational set-up of the programme, brought up by representatives of implementing partners, also need to be addressed

CONCLUSION 2

At an operational level, the efficient and successful implementation of the EAF-Nansen Programme Science Plan will be compromised if the perceived weaknesses of the EAF-Nansen approach - around sharing data, and supporting partners to act on it, in ways that can support an effective ecosystem approach to fisheries management - are not addressed.

CONCLUSION 3

EAF-Nansen's capacity building, through training programmes, workshops and seminars is well regarded among stakeholders in partner countries, regions and Large Marine Ecosystems, and is increasing awareness and knowledge of the ecosystem approach. However, it has been repeatedly recognised over many years that the translation of awareness and knowledge among managers and decision makers into an effective ecosystems approach to fisheries management is progressing slowly, missing targets, and hindered by issues beyond awareness and knowledge. This is a strong message for planners and architects of future ToCs to think creatively about. There are examples from the current phase of more direct influence on national and regional initiatives, and opportunities for funding commitment and involvement, including in the development and implementation of small projects.

CONCLUSION 4

Regional cooperation, for conservation and sustainable use of marine resources and environment is essential, and valued by programme stakeholders. There is also unanimity among stakeholders across all Large Marine Ecosystems associated with the programme that EAF-Nansen is an important avenue for expanding regional cooperation further.

CONCLUSION 5

Reporting of progress related to issues around environment, poverty, gender, and small-scale or artisanal fisheries, is scant or missing among much of progress reporting over the past 14 years. As these are all elements of Norway's, as well as the UN's strategic development goals, it is concluded that this is major shortcoming. With regard to links to other development projects, the programme has cooperated substantially with regional fisheries bodies and with other interventions in partner countries, sometimes with good results.

CONCLUSION 6

A relatively small percentage of trainees and cruise participants have been women, and inclusion of gender equality in progress reporting has been low. However, there has been an increase of attention to this theme during the later years.

CONCLUSION 7

A significant number of partner countries depend on EAF-Nansen survey data. In this regard, the effectiveness of the programme and its potential to contribute to sustainable management of marine resources and environment is compromised in several important regards, including irregularity of coverage, poor data access and poor dissemination. Data collected in areas beyond national jurisdiction can be regarded as "global public goods" and when the data policy is revised, data on ocean climate ocean acidification, marine pollution, biodiversity and even mesopelagic resources should be treated the same way whether they have been collected inside or outside partner countries' exclusive economic zone. The operation of a state-of-the-art vessel in large marine ecosystems around the African continent and parts of Asia, is a key innovation of EAF-Nansen. This provides many opportunities for raising awareness, building capacity and supporting regional cooperation, to name but a few. However, a primary opportunity, given the paucity of state-of-the-art vessels operating in this region, has been collecting and making available survey data. Whilst some countries, such as Morocco and Angola, have new vessels, the 20+research vessels found around Africa are characterised by Institute of Marine Research (IMR) and Food and Agriculture Organisation of the United Nations (FAO) as "on the water" and "more or less operational". Many suffer specific functional and technical problems, and have crews, often with only basic skills and some experience.

CONCLUSION 8

A significant effort focussed on improving programme links and dialogue with national fisheries stakeholders could benefit planning for engagement and capacity building, including addressing the perceived weak cooperation with national universities to disseminate EAF principles, the widely held view among national and regional stakeholders that local views are excluded, and for maximising the benefit of training, as well as data collection in relation to local needs. It is concluded that this will also improve prospects for the sustainability of benefits beyond programme assistance.

Recommendations

RECOMMENDATION 1

It is recommended that a detailed ToC is developed for the programme, that encompasses a more comprehensive understanding and articulation of the components of change that are required, how they link to contribute to outcomes and impact, and what the challenges, limitations and assumptions are. This would be a valuable resource, not only to support activity planning, but it would be a pre-cursor to conducting a full contribution analysis of the programme to elucidate what is effective and what EAF-Nansen's contribution to higher-level objectives and goals has been, including in relation to poverty reduction. Coupled to this, it is recommended to develop a MEAL system, based on the ToC, that could track changes at different result levels, test the validity of assumptions and provide learning within the programme. The current organisational arrangement with a tri-partite agreement between Norad, FAO and IMR should be revisited.

RECOMMENDATION 2

It is recommended that the Fisheries Management Cycle is supported to function better as a training network by making data rapidly and readily available, and planning and providing further skills upgrading to those managing fisheries in how to use EAF-Nansen or other survey data. This will likely require changes to operational protocols to increase efficiency, e.g. around timely reporting, as well as greater commitment to effective data sharing, and addressing barriers to use.

RECOMMENDATION 3

Whilst continuing with training, it is recommended also to facilitate the implementation of the ecosystem approach to fisheries management through a broader contribution, to address issues of governance, and of commitment and will - to improve policy and management, and to understand and address the perceived mismatch between data needs and data collection. This may involve greater engagement with artisanal fisheries and their management, for instance through an expanded small-projects component, and where the EAF-Nansen vessel is not best placed to do this, the programme might implement more coastal projects and training relevant to inshore artisanal fisheries to a range of stakeholders, including involving and engaging the private sector and government at different levels. Building capacity might be well complemented by a programme phase that also encourages institutional change, to a larger extent than previous phases.

RECOMMENDATION 4

It is recommended that the EAF-Nansen Programme, with its UN connection, continue to leverage further the confidence that stakeholders have in FAOs capacity to effectively support regional cooperation in management of fisheries and addressing challenges to the marine environment by identifying locations and regional issues that it might positively influence through bespoke programme activities. This may help to address some of the existing issues around effective implementation of the ecosystem approach to fisheries management.

RECOMMENDATION 5

It is recommended that programme reporting is overhauled, so that reporting of progress is against specified strategic as well as operational elements. This is likely to require prescribed reporting formats and associated incentive structures.

RECOMMENDATION 6

It is recommended that a special effort be made to systematically monitor the implementation of the gender strategy and that the progress reports highlight the activities carried out and the results achieved in gender mainstreaming at management, project activities and communication levels.

It is recommended that the planning of the collection and communication of survey data is overhauled. Data is the currency of fisheries management, and with all stock assessment models the more spatially and temporally comparable data that there is - the more useful it becomes. The programme should aim to maximise the usefulness of the data it can collect, within any operational constraints, and to ensure it is communicated and stored in ways that also maximise its utility. In addition, it is not best practice for the vessel of a development programme to 'crowd out' the research vessels from the countries it aims to support. It is recommended that ways be sought to facilitate training for the crews of the African research vessel fleet. Once that were done, there may be ways for survey planning and execution to be done in coordination and conjunction with African research vessels.

RECOMMENDATION 7

It is recommended that the planning of the collection and communication of survey data is overhauled. Data is the currency of fisheries management, and with all stock assessment models the more spatially and temporally comparable data that there is - the more useful it becomes. The programme should aim to maximise the usefulness of the data it can collect, within any operational constraints, and to ensure it is communicated and stored in ways that also maximise its utility. In addition, it is not best practice for the vessel of a development programme to 'crowd out' the research vessels from the countries it aims to support. It is recommended that ways be sought to facilitate training for the crews of the African research vessel fleet. Once that were done, there may be ways for survey planning and execution to be done in coordination and conjunction with African research vessels.

RECOMMENDATION 8

It is recommended that engagement and communication strategies are revised with the objectives to further expand contact and increase the voice of national counterparts in decision making, in order to address issues of mismatch between data required by users and data actually provided by EAF-Nansen, weaknesses in participant selection, some instances of late minute planning around selection of trainees and improved follow-up.

1

Introduction and background

1.1 Purpose of this evaluation

This evaluation explores the Norwegian support under the Nansen cooperation in the fisheries sector during the period 2006 – 2022. The evaluation covers two phases of the cooperation, in the following referred to as EAF-Nansen, which are summarised as follows:

(1) The EAF-Nansen Project '**Strengthening the knowledge base for and implementing an ecosystem approach to marine fisheries in developing countries**' from 2006-2011, followed by an additional interim period of one-year extensions from 2012 to 2016. The project incorporated the concept of an Ecosystem Approach to Marine Fisheries (EAF)[4]. Its long-term objective was to strengthen regional and country-specific efforts to reduce poverty and create conditions to assist in the achievement of food security. It aimed to do this through development of sustainable fisheries management regimes, and specifically through the application of the ecosystem approach to fisheries in developing countries. The immediate objective was to provide the fisheries research institutions and management administrations in the participating countries with additional knowledge on their ecosystems for use in planning and monitoring, and to further the acceptance of the key principles of EAF. The total budget for the EAF-Nansen project amounted to NOK 510 702 million (ca. USD 60 528 million).

(2) The EAF-Nansen Programme '**Supporting the application of the ecosystem approach to fisheries management considering climate and pollution impacts**', started in 2017 with the deployment of a new research vessel, R/V Dr Fridtjof Nansen (DFN)[5], and is scheduled to end in 2023. The programme supports the implementation of EAF in the marine environment, to promote sustainable use of living marine resources, and improve protection of the marine environment. Its long-term objective is to improve food and nutrition security for people in partner countries through sustainable fisheries. Its expected outcomes are that fishery research institutions provide relevant and timely scientific advice for management; that fisheries management institutions manage fisheries according to the EAF principles; and that fisheries research and management institutions have appropriate human and organisational capacity to manage fisheries sustainably.

EAF-Nansen has been implemented under a tri-partite agreement between the Food and Agriculture Organisation of the UN (FAO), the Institute for Marine Research (IMR), Norway, and the Norwegian Agency for Development Cooperation (Norad) as the financing partner. The allocated budget for the EAF-Nansen programme excluding the cost for investment in the new vessel is NOK 637 550 million (ca. USD 65 240 million).

The **purpose of the evaluation** is to acquire information about the performance of the Nansen cooperation and any associated fisheries management assistance at the regional and national level and draw lessons for future implementation of the EAF-Nansen programme (see Terms of Reference in Appendix 1).

This evaluation draws upon, and aims to complement and add value to other evaluations that have covered the Nansen cooperation, notably the Mid-Term Review (MTR) of the EAF-Nansen Project in 2009, the evaluation of the EAF-Nansen Project in 2013 and the Mid-Term Review of the EAF-Nansen Programme carried out in 2021.

4 In 1995, FAO had approved its Code of Conduct for Responsible Fisheries and in 2003, the ecosystem approach to fisheries was adopted as a guide to implementing the code

5 The current vessel is the third DFN vessel being used for surveys during the Nansen cooperation.

In the following sections, the term EAF-Nansen will be used to refer to the two phases in general. When referring to a specific phase, the terms EAF-Nansen Project or EAF-Nansen Programme will be used.

1.2 Overview of the evaluation report

Section 1 of this report situates the analysis within the context of fisheries in five Large Marine Ecosystems (LMEs) along the Atlantic and Indian Ocean coasts of Africa, although DFN also made occasional forays into the Bay of Bengal LME.

Section 2 consists of a presentation of what has been evaluated, i.e. an effort to define the evaluation object itself (what EAF-Nansen is) and what its main activities were during the period covered by the evaluation (what EAF-Nansen has done).

Section 3 provides an account of the approach and a brief summary of the methods used. A full explanation of the methods used for data collection was presented in the evaluation inception report.

In Section 4, the findings are developed in relation to the following OECD-DAC criteria, as specified in the terms of reference (ToR) of the evaluation:

— **Relevance** in relation to Norwegian development policy objectives of reducing poverty, sustainable development, multilateral partnerships, mainstreaming gender, and social accountability in the management of the fisheries resources; relevance in relation to the programme's contribution to "global public goods" for sustainable management of marine resources and environment; and relevance in relation to partner countries' policy objectives.

— **Effectiveness** Using log frames of both phases as a basis for the evaluation of effectiveness.

— **Efficiency** in governance and management of the Nansen cooperation for delivering the intended results – how the cooperation has been governed and managed, especially with respect to the procedures, expected roles and responsibilities, monitoring and evaluation, and internal control in the program management infrastructure.

— **Coherence** with other Norwegian or international development assistance programmes in the partner countries, and the extent to which synergies are being achieved.

— **Sustainability** concerning the net benefits that are likely to continue after the completion of the assistance. This includes institutional sustainability assessed in terms of the absorption and retention capacity of the expertise developed.

The analytical framework reflects the evaluation questions that were specified in the ToR and, in the interest of utility, the answers provided to each evaluation question are structured around key findings related to that particular topic.

The conclusions and recommendations arrived at based on the findings, are presented in Sections 5 and 6.

1.3 EAF-Nansen in the context of fisheries in Africa

Fisheries development has progressed differently across countries and Large Marine Ecosystems (LMEs). This section presents the characteristics of the fisheries and the main problems faced by the countries where EAF-Nansen has been implemented. EAF-Nansen has a regional focus relating to LMEs, which are defined by major current systems and the extent of the continental shelf. There are three LMEs along the Atlantic coast of Africa, which are all highly productive and include two of the four major eastern boundary upwelling areas in the world, i.e. the Canary Current Large Marine Ecosystem (CCLME) and the Benguela Current Large Marine Ecosystem (BCLME). On the Indian Ocean side there are two much less productive LMEs (Table 1 and Map 1). For example, South Africa has a coastline of over 2000 km along the Indian Ocean, but only reports about 10,000 Metric Tonnes catch from the Indian Ocean mostly through subsistence and recreational fishing[6], while the catch from the Atlantic waters of the BCLME amounted to 435,000 Metric Tonnes in 2019.

6 Baust S, Teh L, Harper S and Zeller D (2015) South Africa's marine fisheries catches (1950–2010). Pp. 129–150 In Le Manach F and Pauly D (eds.) Fisheries catch reconstructions in the Western Indian Ocean, 1950–2010. Fisheries Centre Research Reports 23(2). Fisheries Centre, University of British Columbia [ISSN 1198–6727].

Table 1: **CCLME** – Statistics related to fisheries characteristics and economic importance for coastal Africa by LME[7].

Country	Population 2020 (million)	GDP 2020 (USD per capita)	Fisheries as % of GDP	Total catch 2019 (tonnes)	Marine catch 2019 (tonnes)	Small-scale percentage 2019	Inland catch (tonnes)	Aquaculture 2019 (tonnes)	Annual fish consumption 2017 (kg per capita)
Canary Current Large Marine Ecosystem (CCLME) :									
Morocco	1,3	3059	2,5	1 458 594	1 443 092	nda	15 502	1 325	19,5
Mauritania	4,6	1702	6,0	720 850	705 850	nda	15 000	0	9,2
Senegal	16,7	1472	1,8	513 479	480 231	85	33 248	1 210	19,2
Gambia	2,4	773	1,8	56 199	54 529	75	1 670	35	27,5
Guinea Bissau	2	727	3,3	6 711	6 561	25	150	5	1,3
Cabo Verde	0,6	3064	0,8	17 084	17 084	50	0	5	11,2
CCLME TOTAL					**2 707 347**		**65 570**	**2 580**	

Table 1: **GCLME** – Statistics related to fisheries characteristics and economic importance for coastal Africa by LME[7].

Country	Population 2020 (million)	GDP 2020 (USD per capita)	Fisheries as % of GDP	Total catch 2019 (tonnes)	Marine catch 2019 (tonnes)	Small-scale percentage 2019	Inland catch (tonnes)	Aquaculture 2019 (tonnes)	Annual fish consumption 2017 (kg per capita)
Guinea Current Large Marine Ecosystem (GCLME)									
Guinea	13,1	1194	2,5	362 193	310 494	80	51 699	806	10,6
Sierra Leone	8	509	9,1	202 100	200 000	80	2 100	2 100	25,6
Liberia	5,1	633	3	16 569	16 052	60	517	250	4,8
Cote d'Ivoire	26,4	2326	0,8	108 638	76 796		31 842	4 500	20,9
Ghana	31,1	2505	4,5	392 991	302 991	70	90 000	52 360	25,3
Togo	8,3	915	1,3	25 526	19 109	30	6 417	1 000	12,6
Benin	12,1	1291	1	73 485	44 710	dominant	28 775	5 742	17,6
Nigeria	206,1	2047	0,5	825 013	451 669	80	373 344	289 543	9,1
Sao Tome and Principe	0,2	2158	4	6 024	6 024	100	0	0	18,1
Cameroon	26,5	1537	3	296 954	265 969	>90	30 985	2 500	18,1
Equatorial Guinea	14	7143	0,5	6 419	5 419	>90	1 000	15	13,7
Gabon	2,2	6882	9	29 000	18 000	nda	11 000	45	30,9
D.R. Congo	89,6	1846	nda	238 000	8 000	nda	230 000	3 300	5
GCLME TOTAL					**1 725 233**		**857 679**	**362 161**	

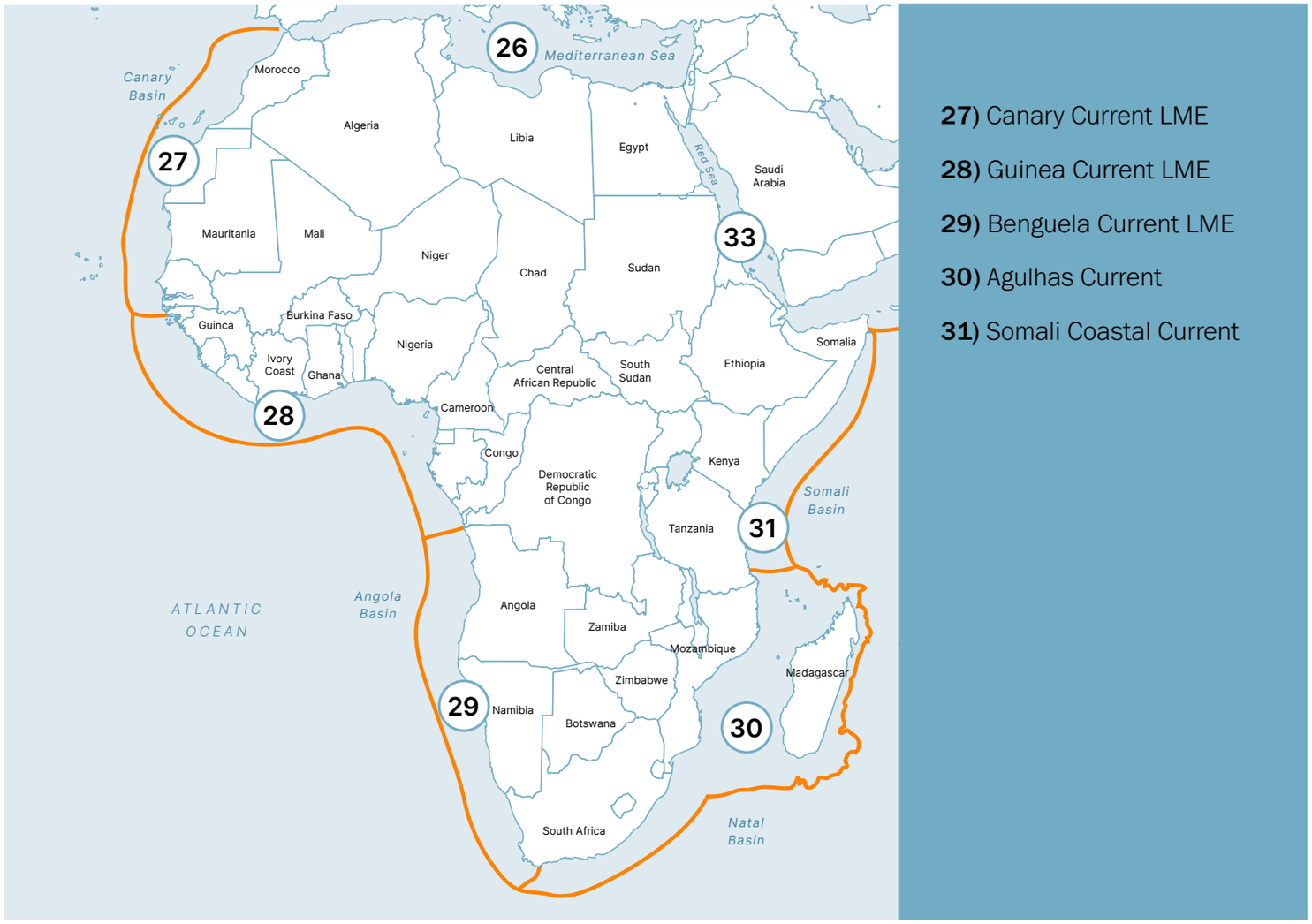
Table 1: **BCLME** – Statistics related to fisheries characteristics and economic importance for coastal Africa by LME[7].

Country	Population 2020 (million)	GDP 2020 (USD per capita)	Fisheries as % of GDP	Total catch 2019 (tonnes)	Marine catch 2019 (tonnes)	Small-scale percentage 2019	Inland catch (tonnes)	Aquaculture 2019 (tonnes)	Annual fish consumption 2017 (kg per capita)
Benguela Current Large Marine Ecosystem (BCLME)									
Angola	32,9	1776	15-20	409 262	385 762	30	23 500	1 925	20.2
Namibia	2,5	4179	3	467 050	464 250	0	2 800	389	12,5
South Africa	59,3	5656	<1	435 682	434 782	0	900	7 190	6,4
BCLME TOTAL					**1 284 794**		**27 200**	**9 504**	

Table 1: **ASLME** – Statistics related to fisheries characteristics and economic importance for coastal Africa by LME[7].

Country	Population 2020 (million)	GDP 2020 (USD per capita)	Fisheries as % of GDP	Total catch 2019 (tonnes)	Marine catch 2019 (tonnes)	Small-scale percentage 2019	Inland catch (tonnes)	Aquaculture 2019 (tonnes)	Annual fish consumption 2017 (kg per capita)
Agulhas Current Large Marine Ecosystems (ASLME)									
South Africa	59,3	5656	<1	445 682	10 000	50	900	7 190	6,4
Mozambique	32,1	448	10	392 221	274 791	dominant	117 430	2 458	12,5
Comores	0,9	1421	7,5	17 600	17 600	dominant	0	0	15,3
Seychelles	0,1	10764	1,2	135 432	135 432	5	0	0	57,9
Mauritius	1,3	8628	1	34 143	34 143	90	0	3 232	24,1
Madagascar	27,7	471	6,6	114 082	99 544	90	14 538	5 236	5,7
Tanzania	59,7	1076	1,4	470 309	85 953	dominant	384 356	16 594	7
Kenya	53,8	1878	0,8	125 583	27 583	dominant	98 000	18 550	3,1
Somalia	15,9	438	1	30 000	29 800	nda	200	0	2,2
ASLME TOTAL					**714 846**		**615 424**	**53 260**	

In several countries, coastal communities live primarily on fish as a source of food and livelihoods. These sources of food and income are threatened by observable overfishing and destruction of habitats due to coastal development, oil and gas exploration, and changes in the ocean environment brought about by a changing climate.



Map 1: Location of African LMEs

World Map of Large Marine Ecosystems; Canary Current LME (27), Guinea Current LME (28), Benguela Current LME (29), Agulhas Current (30) and Somali Coastal Current (31) LMEs[8].

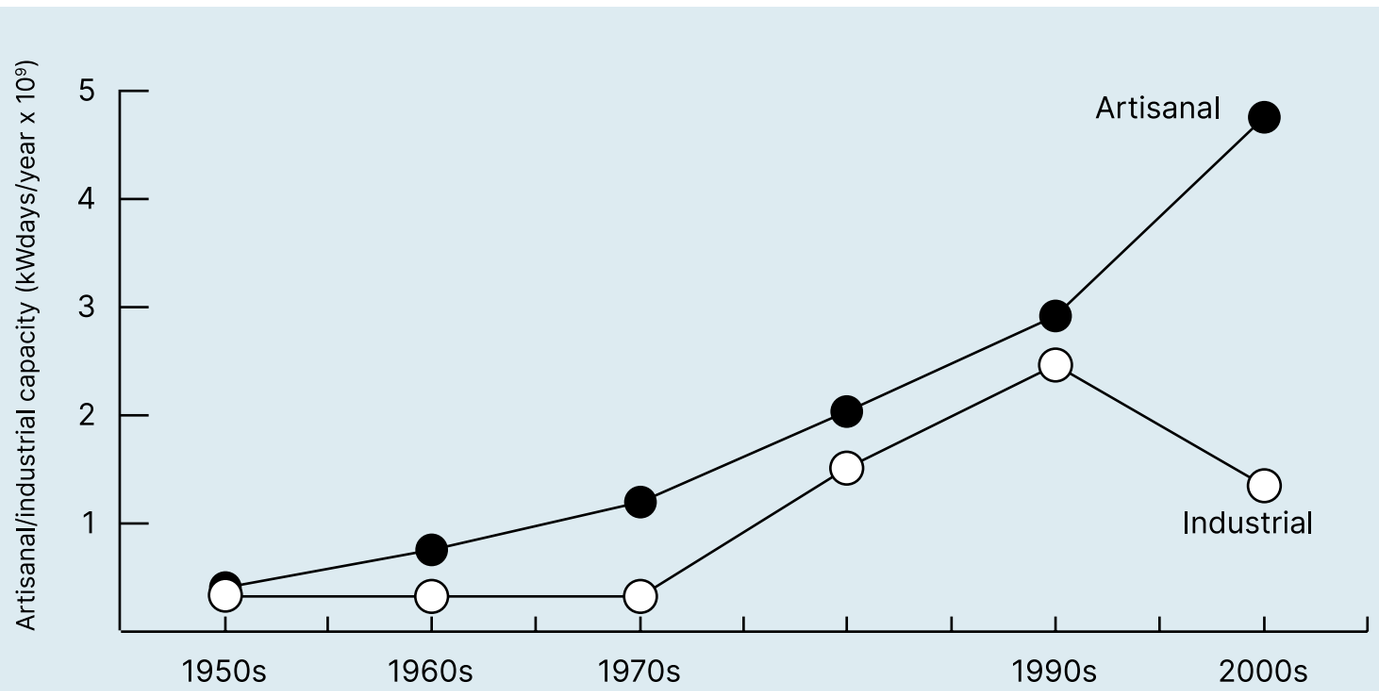
7 Data on population size and national per capita GDP are sourced from the World Bank database while data relating directly to fisher-ies and aquaculture are from FAO, both the statistical database and the fisheries country profiles, and in some cases supplemented by other sources that are then referred to. It should be kept in mind that data and information provided in the country profiles are updated at irregular intervals and while information for some countries has been updated within the last couple of years, there is some information that may be up to 10 years old. Information on fisheries contribution to GDP also varies a lot and must be seen in relation to overall per capita GDP. However, the overall picture that emerges has bearing on the evaluation

8 http://lme.edc.uri.edu/images/Content/Downloads/DigitalMaps/LME66.pdf

The importance of small-scale fisheries

Marine fisheries are dominated by small-scale operators[9] in all LMEs except for the BCLME. These fisheries are generally subject to some measures of control through gear or area limitations, but they are essentially open access fisheries. The fishing effort of the fleet has been increasing steadily over time, both by increased number of vessels and fishers, but also through larger and more efficient craft and improved technology. This "technological creep" is evident in most small-scale fisheries (SSF) that over time are using larger vessels, more efficient gear and vessels increasingly propelled by engines. Several countries have implemented Inshore Exclusion Zones of 5 – 9 miles for the SSF, but conflicts with industrial fisheries are widely reported, both because trawlers fish too close to shore, but also because SSF are not limited to the Inshore Exclusion Zones and are able to fish further out at sea. It has been estimated that the fishing power of SSF along the Atlantic coast of Africa was about 5 times higher in the 2000s than it was half a century earlier in the 1950s (Graph 1). Throughout this period there has been an exponential growth in SSF. Until the 1990s, there was a similar growth in industrial fisheries. During the first decade of the current century, however, the fishing capacity of the industrial fleet halved and was less than one third of the capacity of the SSF. Sierra Leone has recently introduced a new category of "semi-industrial vessels" which eventually could be subject to different regulations than artisanal fisheries, but so far they are only required to pay higher licence fees. The unchecked growth of the small-scale fleets make it difficult for countries to respond effectively to scientific advice on the state of their stocks.

Graph 1: Total fishing effort in kWdays/year for the West Africa small scale/artisanal and industrial fisheries sectors, expressed in averages per decade[10]



9 Small-scale operators are often also referred to as artisanal fishers although that term is also sometimes used to refer to those who fish mainly for subsistence or sell their catches to local consumers.

10 Belhabib, D., Greer, K. and Pauly, D. 2017. Trends in Industrial and Artisanal Catch Per Effort in West African Fisheries. Conservation Letters, March 2017 pp 1-10.

Most industrial fishing is foreign owned

Most industrial vessels are foreign owned and operate through joint venture agreements or licences/agreements, e.g. with the European Union. The only African countries with a substantial domestic fleet of industrial vessels are South Africa and Nigeria. Most of the Nigerian trawlers are small and engage in shrimp fisheries for export or high value demersal[11] species. However, there has been an increase in trawling for small pelagic[12] species in West Africa due to an increased demand by factories producing fish meal. Several countries, including Liberia and Sierra Leone, have seen a substantial decrease in the number of trawlers in the last decade and their numbers are below the target set by their governments. In early 2022, trawlers from China and Turkey were observed in Sierra Leone. The vessels were in poor repair and clearly approaching the end of their working life. The low operating costs (for example, Chinese vessels appear to be fully depreciated and use subsidised fuel directly imported from China) mean that the trawlers can make profits at relatively low catches. This is a strong indicator that the stocks are overfished, which has also been confirmed by surveys carried out by the DFN.

Commercial aquaculture is starting to take off in Sub-Saharan Africa, increasing the demand for fish

Globally, aquaculture is growing and aquaculture development is, and has been, high on the agenda for most African countries, although until recently the focus has mostly been on small-scale pond culture in rural areas. Nigeria, where the growth of the sector went hand-in-hand with the intensification and commercialisation of the industry and availability of commercial feed, is by far the largest producer of farmed fish in Sub-Saharan Africa. Strong growth of aquaculture is observed in Ghana, Kenya, Tanzania and Uganda, increasing the competition for small pelagic fish for fish feed production, which further increases the pressure on the resource.

Most of the beneficiary countries import more fish than they export

Fish is one of the most important contributors to animal protein in the diet in the partner countries, with some exceptions such a Guinea Bissau, Kenya and Liberia, which all have per capita consumption of less than 5 kg/year (see Table 1), as compared to the global average of about 20 kg/year. Most countries export high valued species, such as shrimp and demersal fish, and import less expensive small pelagic fish. Most countries consume more than they produce. Nigeria, for example, imports over one million Metric Tonnes/ year. High population growth in Africa (on average 2.5-3.0% in partner countries) increases the demand for fish. High demand for fish puts pressure on the resources and contributes to the increase in small-scale fisheries. Only four countries in Africa can be considered major exporters of fish: Morocco, Mauritania, Senegal and Namibia. The more expensive fish is mainly exported to high-end markets in Europe and Japan, while small pelagic species such as Sardinella and horse mackerel provide important supply of fish to other African countries.

Illegal fishing is rampant in many coastal states in Africa

Illegal fishing and the migration of fishers across borders are commonly mentioned in the FAO country profiles. While foreign artisanal fishers appear to be generally accepted, recent studies into illegal, unreported and unregulated (IUU) fishing of industrial operators indicate that the

11 Bottom dwelling species

12 Mid-water species

problem is both widespread and incurs large losses to national governments[13].

Serious overfishing is reported for most beneficiary countries

Depletion of fish stocks due to overfishing is reported in all the LMEs, including in South Africa and Namibia which do not have large small-scale fisheries. This is also the case for the shallow water demersal stocks in Liberia and Sierra Leone, where there has been a dramatic reduction in the number of trawlers operating in the last decade. Other countries reporting serious overfishing include Ghana and Guinea.

A context characterised by a broad range of challenges

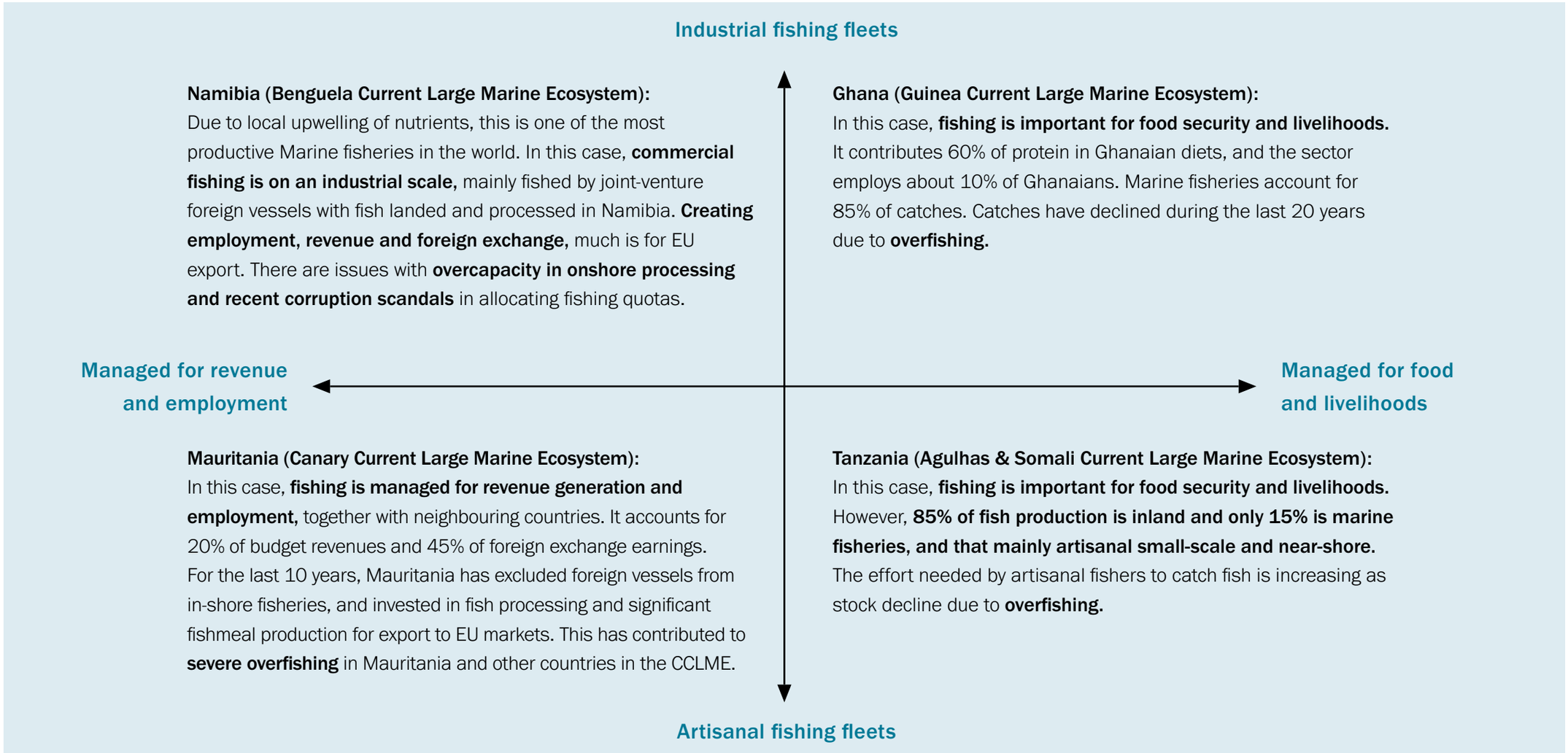
To illustrate the range of challenges and fisheries management objectives in a variety of contexts, Figure 1 (next page) describes four examples of fisheries in four different LMEs. They range from artisanal fisheries, which primarily exploit coastal stocks, which the DFN cannot monitor, to industrial fleets in productive marine environments where EAF-Nansen data can play a key role in fisheries management. They also range from contexts where the main objectives are revenue generation and employment, to where food security and livelihoods of poor people are most relevant.

Norway and Iceland and several other countries have seen their fisheries develop and contribute significantly to economic growth and wellbeing. It is thus not surprising that fisheries was at one time a major area for development cooperation. But both nations had small populations with access to large marine resources, largely unexploited. Small-scale fishing in open vessels was dangerous and unlike what is the situation in most African countries, economic development led to the reduction of such fisheries as other opportunities to make a living became more attractive, also making management of the fisheries a feasible option. This is not the case in most African coastal countries. Neither does there exist large virgin stocks further off shore as these are being exploited by foreign vessels from developed countries including China, when fisheries management limits their opportunities at home (Ye and Guiterrez, 2017)[14], As long as there is no attractive alternative to making a living, small-scale fisheries will be difficult to manage. The main challenges to sustainable and prosperous fisheries in most of the partner countries, are the rapidly increasing populations, lack of alternative livelihoods for a large number of people who today rely on fisheries for food and income, and the influx of excess fishing capacity from developed countries.

13 Doumbouya, A., Camara, O.T., Mamie, J., Inchama, J.F., Jarra. A., Ceesay, S., Gueye, A., Ndiaye, D., Beibou, E., Padilla, A. and Belhabib, D. 2017. Assessing the Effectiveness of Monitoring Control and Surveillance of Illegal Fishing: The Case of West Africa. Frontiers in Marine Science, https://doi.org/10.3389/fmars.2017.00050; Sarr, Q., Kindong, R., Tian, S., Sow, F.N., Ka, M. and Seye, O.N. 2022. Diagnosis of the Senegalese Marine Fisheries Profile during the Last Two Decades: A Perspective toward Fisheries Management. Reviews in Fisheries Science &Aquaculture DOI: 10. 1080/23308249.2022.2057184

14 Ye Y. and Guiterrez N.L. 2017. Ending fishery overexploitation by expanding from local successes to globalized solutions. Nature Ecol-ogy & Evolution 1. Article number: 0179. We thank anonymous stakeholder for pointing this out to us.

Figure 1: Case studies of different fisheries contexts[15]



15 Within the Namibian fisheries: The Hake (demersal fish) and other high valued species such as crustaceans are exported to high value markets, while the Horse Mackerel (a small pelagic species) is frozen whole onboard and exported to several regional markets, notably the DRC

2

The evaluation object

2.1 What is EAF-Nansen?

The EAF-Nansen Project and the EAF-Nansen Programme have their origin in the Nansen cooperation in the fisheries sector that was initiated in 1975 with Norwegian funding. The research vessel was then, as it is now, managed by the Institute of Marine Research (IMR), Norway, and the cooperation was implemented under the auspices of UNDP allowing the vessel to sail under the UN flag, which facilitated operations in transboundary waters. In 1989, the Nansen cooperation became a formal part of FAO activities, but the IMR kept its mandate to plan and manage the work programme of the vessel. In 1994, a new R/V Dr Fridtjof Nansen (DFN) was commissioned. The management of this vessel and the work programme were also entirely decided by Norad and IMR.

At the world summit on sustainable development held in Johannesburg in 2002, it was agreed that the ecosystem approach to fisheries (EAF) management should be adopted by 2010. FAO saw this approach as suitable to implementing its Code of Conduct to Responsible Fisheries[16]. In 2006 when the EAF-Nansen Project started, FAO became responsible for the management of the project, while the IMR provided scientific services and was responsible for the operation of the research vessel. The adoption of EAF became a major focus of the project through training courses and country projects on selected fisheries activities.

During the EAF-Nansen Project, which was implemented until 2016, the mandate of the vessel was only to undertake surveys where recipient partners and countries could provide 50% of the vessel operating costs. FAO secured co-funding of the programme through cooperation with several LME programmes funded by the Global Environment Facility (GEF), but several cruises were also co-financed by Norad country programmes. Even so, the co-funding requirement proved to be complicated and time-consuming to manage and there were intense consultations on the continuation of the EAF-Nansen Project, which was extended on an annual basis for several years. In 1975, DFN was a 'state-of-the-art' research vessel, which remained true for the next two < work has been on coastal and island states in Africa and the Bay of Bengal, most of the consultations have taken place through regional fora and international bodies[17], while consultations at the national level were limited. The FAO annual project progress reports on the EAF-Nansen Project clearly demonstrate how the discussion evolved around a new research vessel and the science plan for the EAF-Nansen Programme. This has led to increased emphasis on research in areas of global importance for the scientific community in the EAF-Nansen Programme starting as the latest DFN was commissioned in 2017. FAO continued to serve as the executing agency and the IMR as an implementing partner. Details of the two interventions are provided in Table 2.

16 FAO 1995; Garcia et al. 2013

17 Among the regional and international bodies consulted were the CECAF, CCLME, BCC and others and associations and international expert groups to UN organisations such as the IOC of UNESCO, the joint group of experts on the Scientific Aspects of Marine Environmental Protection of the IMO, Global Oceans Assessment, the International Atomic Energy Agency, UNDP, UNIDO and many oth-ers

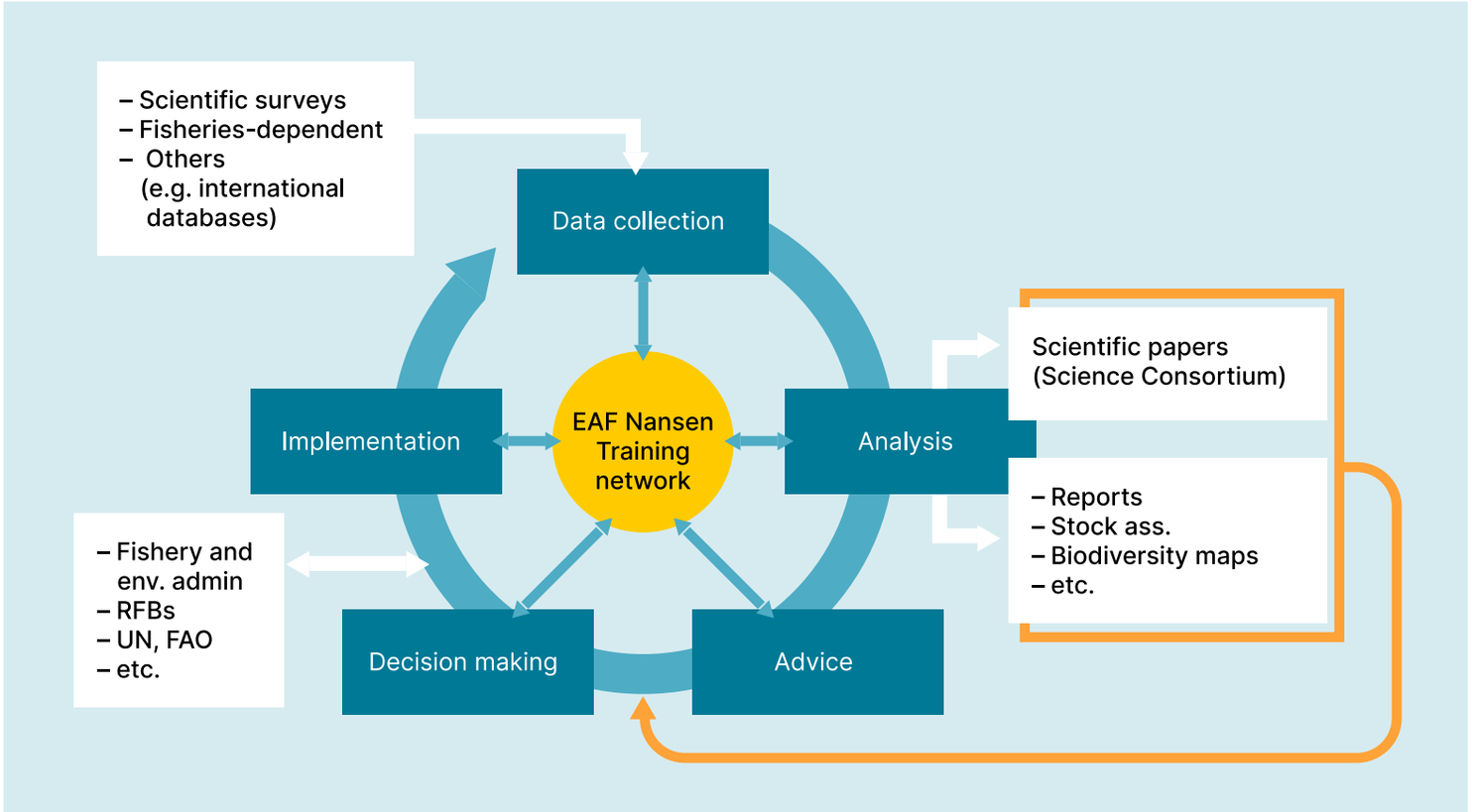
Table 2: Details of EAF-Nansen Project and EAF-Nansen Programme

	EAF - Nansen Project (2006-16)	**EAF - Nansen Programme (2017-2023)**
	Strengthening the knowledge base for and implementing an ecosystem approach to marine fisheries management in developing countries.	Supporting the application of the ecosystem approach to fisheries management considering climate and pollution impacts.
	GCP/GLO/690/NOR	GCP/INT/003/NOR
Long-term objective (impact)	Strengthen regional and country-specific efforts to reduce poverty and create conditions to assist in the achievement of food security through development of sustainable fisheries management regimes and specifically through the application of the ecosystem approach to fisheries in a number of developing countries at global level, with an early emphasis on Sub-Saharan Africa.	Improve food and nutrition security for people in partner countries through sustainable fisheries.
Intended outcomes	To provide the fisheries research institutions and management administrations in the participating countries with additional knowledge on their ecosystems for their use in planning and monitoring, and to further the acceptance of the key principles of EAF.	Fishery research institutions provide relevant and timely scientific advice for management. Fisheries management institutions manage fisheries according to EAF principles. Fisheries research and management institutions have appropriate human and organisational capacity to manage fisheries sustainably.
Funding agency	Norad	Norad
Agreement partners	Norad-IMR-FAO	Norad-IMR-FAO
Executing agency	FAO	FAO
Target beneficiaries	Participating countries; existing and emerging regional organisations (such as the Benguela Current Commission and the South-West Indian Ocean Commission); national and local governments officials in research institutions and management administrations; and other key stakeholders such as commercial and artisanal fishers, academic researchers and NGOs.	National fisheries and environmental management and science/research institutions; fishers and fishing communities in participating countries; Regional fisheries bodies and related national, regional and international projects and organisations.
Implementation period	16 December 2006 – 30 September 2017	2017-2023
Budget according to agreement and addenda	NOK 510,702 million	NOK 637,550 million
Disbursed	NOK 504,232 million	NOK 670,343 million[18]
Additional co-financing from partner countries (actual)	USD 24,337 million	

18 Up to and including 2021)

According to FAO, "EAF is a risk-based management planning process that covers the principles of sustainable development including the human and social elements of sustainability, not just the ecological and environmental components."[19] According to the EAF-Nansen Science Plan there should be a strong emphasis on the formulation of management plans based on EAF in the EAF-Nansen Project, and the implementation of these plans should be brought into focus in the EAF-Nansen Programme, which started in 2017. Input to these plans should come from the DFN surveys. This is being done through the Fisheries Management Cycle (FMC), where data are collected, analysed and the results to be presented in an accessible form to managers who would, once a year, review new available information on different aspects of the management plan and adjust the implementation accordingly. The use of the FMC in relation to EAF-Nansen is explained and illustrated in the EAF-Nansen Programme Science Plan (Figure 2). The FMC underscores the dynamic nature of fisheries management, the need to respond to changes in conditions in the fish stocks, and the need to understand the underlying causes of such changes. Collection of data, analysis and interpretation is an essential feature of the FMC. Regular standardised surveys of fish stocks forming a time-series are important for effective management of fish stocks, although isolated and irregular surveys can also be of considerable value, especially in data-poor situations.

Figure 2: Science-management cycle
Source: EAF-Nansen Programme Science Plan, 2020[20]



19 FAO - EAFnet - About EAF

20 https://www.fao.org/3/cb2432en/cb2432en.pdf

2.2 What has EAF-Nansen done?

EAF-Nansen has been in operation for almost 16 years and has been reviewed a number of times during that period. This context section is not intended to imply findings from the evaluation team but rather to set the findings within an appropriate context.

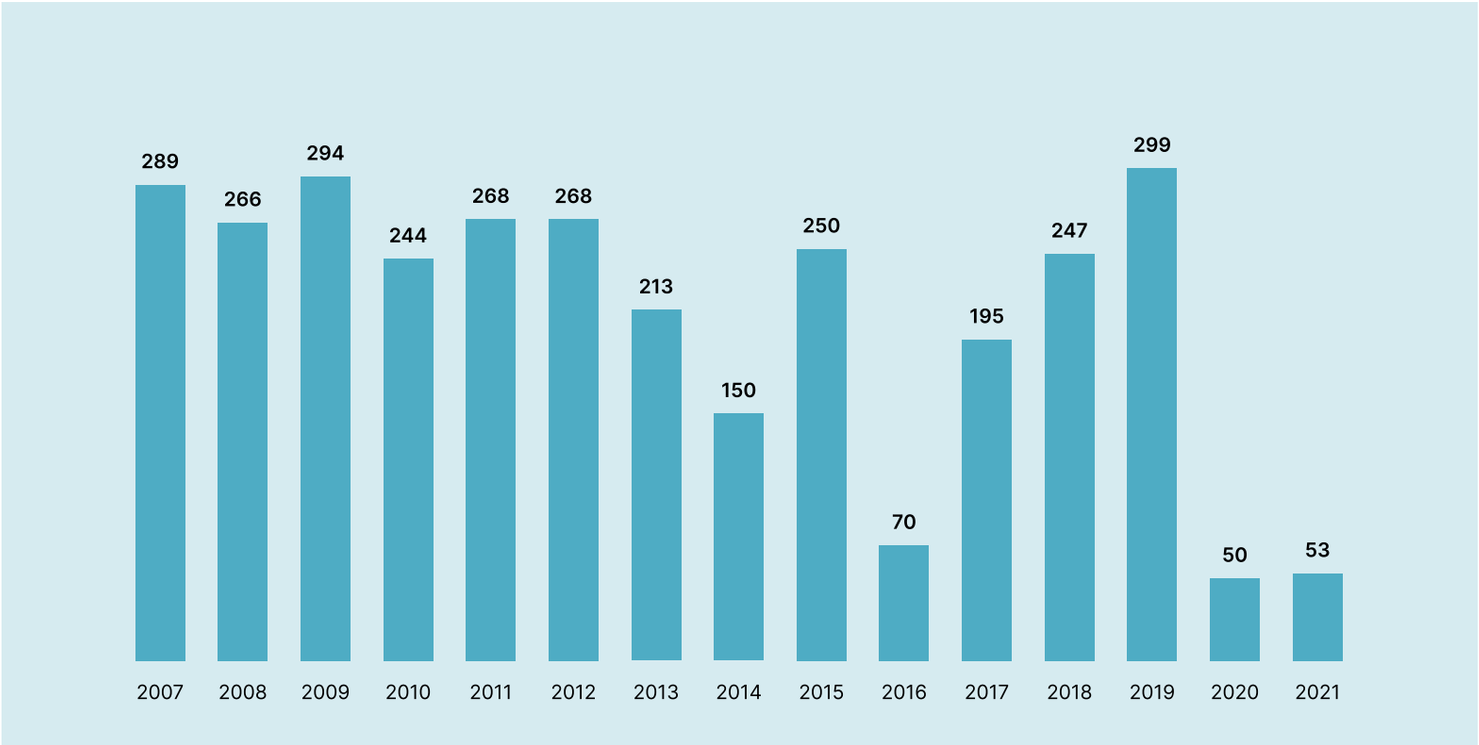
The activities undertaken by EAF-Nansen have been manyfold and include research done using a 'state-of-the-art' research vessel, the implementation of EAF in a large number of countries, training onboard the research vessel, through organised courses, post-graduate studies, through mentoring or working group activities, communication through survey reports, conferences, newsletters and maintaining a well-functioning website. The main activities reported in the annual reports 2007-2021 have been summarised in chronological order in Appendix 4. In the following paragraphs, some of the major activities are presented.

2.2.1 Research surveys planned and carried out by the DFN

For most years the number of survey days range from 250-300 days. A number of surveys have had to be postponed, rescheduled or cancelled because of safety concerns arising from piracy or epidemics. The vessel has been serviced regularly in Cape Town or Las Palmas over Christmas and New Year, but major breakdown and repair in 2014 reduced the number of survey days. The second DFN was decommissioned in early May 2016, and the current DFN began surveys a year later.

In total, 265 survey days were clocked during the 12 months of operations in 2016-2017. The COVID-19 pandemic then interrupted research surveys in 2020 and 2021.

Figure 3: Survey days DFN 2007-2021



Most surveys have been carried out in the BCLME (around 45%), which is similar to the number of surveys carried out in the CCLME, GCLME and the ASCLME combined (see separate geospatial analysis report produced by the evaluation team). The three countries bordering the BCLME, South Africa, Namibia and Angola, all have research vessels, but have experienced problems operating them. It should also be kept in mind that the programme has also provided technical support to demersal and acoustic surveys in the CCLME, maintaining time series needed for stock assessment purposes. The coverage of the BCLME was impressive during the EAF-Nansen project with surveys carried out in the area every year. The work was dominated by fisheries surveys, but also included two surveys in Angolan waters on pollution from oil and gas extraction and several ecosystem surveys. The newest vessel worked the area in 2019, with three fisheries surveys, two ecosystem surveys and one survey of mesopelagic[21] areas carried out.

The coverage of other LMEs was more sporadic. This can in part be explained by the need to secure the required contribution to vessel operating costs from partners, which led to some “sailing for the money” as one stakeholder interviewed during this evaluation put it. The geographical coverage was also large with forays into the Bay of Bengal Large Marine Ecosystem (BOBLME) in 2010, 2013, 2015 and in 2018. Piracy was also a factor that impacted coverage, both in the GCLME and the BOBLME, but especially in 2018 in the northern part of the Indian Ocean side of Africa. The vessel worked in the CCLME towards the end of the EAF-Nansen Project in 2012-2015 when one ecosystem and four fisheries surveys were carried out. The EAF-Nansen Programme started in the CCLME with three fisheries surveys and one mesopelagic survey in 2017, and carried out four fisheries surveys, two ecosystem surveys and one survey related to oil and gas exploration during the period 2019-2021. The vessel spent the entire year of 2018 in the Indian Ocean, mainly in the ASCLME but also almost four months in the BOBLME. Since the start of the EAF-Nansen Programme there has been a noticeable shift in the types of surveys carried out, with increased emphasis on ecosystem surveys, and the realisation of five mesopelagic surveys. The new vessel is more efficient than the previous ones, in that it is able to carry out multiple tasks simultaneously with larger scientific crews carrying out more diverse research in each survey than in the past.

2.2.2 The planning for, and use of EAF-Nansen survey reports

The work of EAF-Nansen is divided into surveys, which are subdivided into survey legs. In most cases, there is a change in the scientific staff and participants from partner countries after each leg. It is not entirely clear what defines a survey and what defines a leg. In most cases, a report is written on one leg, although occasionally there may be two legs reported on in the same report.

The scientific team leader from the IMR is usually responsible for the production of a survey report, with the reports intended to be written as a cooperative effort with other IMR scientists and participating scientists from partner countries.

It was intended that there would be a strong emphasis on the use of the FMC in the implementation of EAF management. This means that new information on the ecosystem and data on fish stocks and fisheries would be reviewed annually and reflected in management actions. The value of the surveys is thus greatest when done in a timely fashion on changes in the size, distribution and abundance of fish stocks for the annual

21 Intermediate depths of the sea between the depth to which light reaches and the deep ocean

reviews. Data from the EAF-Nansen surveys have been made available to working groups of Fisheries Committee for the Eastern Central Atlantic (CECAF) and other regional organisations with scientific staff of the IMR often taking part in stock assessment. EAF-Nansen has also supported the establishment of fisheries resources working groups in the South West Indian Ocean Fisheries Commission (SWIOFC) and the Benguela Current Large Marine Ecosystem (BCC).

2.2.3 Capacity building

Training is an integral part of most of the activities of the programme, but the most consistent training activity is carried out onboard the research vessels. Pre-survey meetings and post-survey workshops are also important platforms for capacity building.

The number of participants, their gender and country of origin is available in annual reports from 2013 onwards and is summarised in Table 3. Of the persons receiving on-the-job training on the vessel during that period, about 25% were women. It should be noted that it is not uncommon that the same person takes part in more than one survey, and in some cases participants from partner countries were recruited as experts on the surveys. The number of partners receiving training on the vessel varied from one survey to another, but the average was about 10 during the period 2013-2016, and increased to an average of around 18 partners when the new vessel came into operation. The average stay on-board was 22 days.

In addition to participants from partner countries, there were usually 2-4 participants each year from other countries, and some FAO staff (there were, for example, 18 such participants in 2015). Based on the available data, 22% of participants were female during the EAF-Nansen Project period and rose to 27% in the EAF-Programme period.

Table 3: Summary of onboard training of fisheries professionals from partner countries

Year/number of survey days	Number of surveys	Number of male participants from partner countries	Number of female participants from partner countries	Number of partner countries represented	Average number of stay-on-board days
2013/213	8	85	nda	11	27
2014/150	6	48	21	4	22
2015/250	9	103	16	16	28
2016/70	4	18	12	5	18
2017/195	10	118	53	20	23
2018/247	12	176	67	14	19
2019/299	14	174	60	17	22
2020/41	2	27	6	4	20

Whilst formal university courses on EAF and the use of the EAF-Nansen database were undertaken during the project phase[22] these types of courses were less prominent during the programme when training relating to mesopelagic surveys and ocean acidification studies for the first time. The number of participants in these activities was not reported separately, but rather as a part of summary statistics for all workshops held.

2.2.4 Research and scientific publications

Research activities and surveys of the DFN during the EAF-Nansen Programme were intended to become more focussed on issues of international concern, such as climate change, which includes ocean acidification and pollution in relation to oil and gas exploration, and microplastics, as indicated in the title of the research programme and the science plan which was finalised in 2020. A special budget line was established to facilitate publications of scientific articles. There was increased emphasis on surveys at intermediate depths, habitat mapping and studies on biodiversity, although acoustic and demersal surveys that form the basis of stock assessment is still important. These are rarely published in the scientific literature when standard methods are used. However, no publications were reported on mesopelagic resources either, nor on research relating to climate change or pollution. Scientific publications were reported for the first time in the annual report for 2018, when 70 publications were said to be in the preparation stage, based on cooperation between experts from IMR and scientist in partner countries. By the end of 2021, a total of 49 publications had been listed in the annual reports, including 23 on taxonomy, mostly descriptions of new species or species identification. Other topics included studies on nutrition (7), ecology/biodiversity (11), oceanography/ocean climate (4), genetics (2) and potential new fisheries (1).

2.2.5 Field projects

Fisheries surveys conducted by the research vessel focused on shared stocks. Data provided is important for the work of regional organisations, such as the Fisheries Committee for the Eastern Central Atlantic (CECAF) and Benguela Current Large Marine Ecosystem (BCC), which provide advice to member countries on the status of stocks. EAF-Nansen has also been engaged at the national level and several in-country projects, variously referred to as “baby projects” or “field projects”. Such projects were established to enhance the uptake of EAF in member countries. During the EAF-Nansen Project, efforts were made to address the policy and legal environment to support the establishment of EAF in the countries. A total of 16 national projects and one regional project that included four countries were established. These field projects have provided a focus on near-shore fisheries in shallow areas, such as beach seine projects in Benin, Cote d’Ivoire, Ghana and Togo, and shrimp projects in Cameroon, Gabon, Nigeria and Mozambique. However, coastal stock assessment data provided by DFN surveys are thought to have been of direct relevance in other cases, such as to the sardinella project in NW Africa. More recently. the Shared Sardinella Initiative, which includes Mauritania, Morocco, Senegal and The Gambia, has been launched holding its first regional meeting in June 2022. Small pelagic fish represent about 70% of all catches in this region, the principal species being Sardinella aurita (round Sardinella) and S. mederensis (flat Sardinella). The stock of round Sardinella is considered overexploited and lack of data precludes reliable assessment of the flat Sardinella[23].

22 Appendix 4 in the terminal report for the Nansen project.

23 Sardinella fisheries: quickly disappearing vital source of food and nutrition security in Northwest Africa. EAF-Nansen Programme Newsletter 15/10/2021. https://www.fao.org/in-action/eaf-nansen/news-events/detail-events/en/c/1444341/
Senegal initiates management plan for Sardinella fisheries. EAF-Nansen Programme Newsletter 12/08/2022. https://www.fao.org/in-action/eaf-nansen/news-events/detail-events/en/c/1601999/

3

Methodology

This evaluation started with an inception period that culminated in the production of an inception report detailing the evaluation methodology, which was approved by Norad. A full description of the methods used in this evaluation was presented in the inception report. This chapter describes how the methodology was used, to reflect on its usefulness, and on the reliability of the data collected, and thus on the validity and utility of the findings, conclusions and recommendations presented in this report.

3.1 Approach

During the inception period, the NIRAS team adopted a four-step approach for the development of the evaluation framework.

In the absence[24] of a fully-fledged Theory of Change (ToC), **the first step** consisted of highlighting the change pathways for the two EAF-Nansen phases. In this evaluation, ToC is defined as an on-going process of reflection to explore change and how it happens – and what that means for the part any organisation, project or programme play in a particular context, sector and/or group of people[25].

The evolution of the change pathway between the two phases might be summarised as follows:

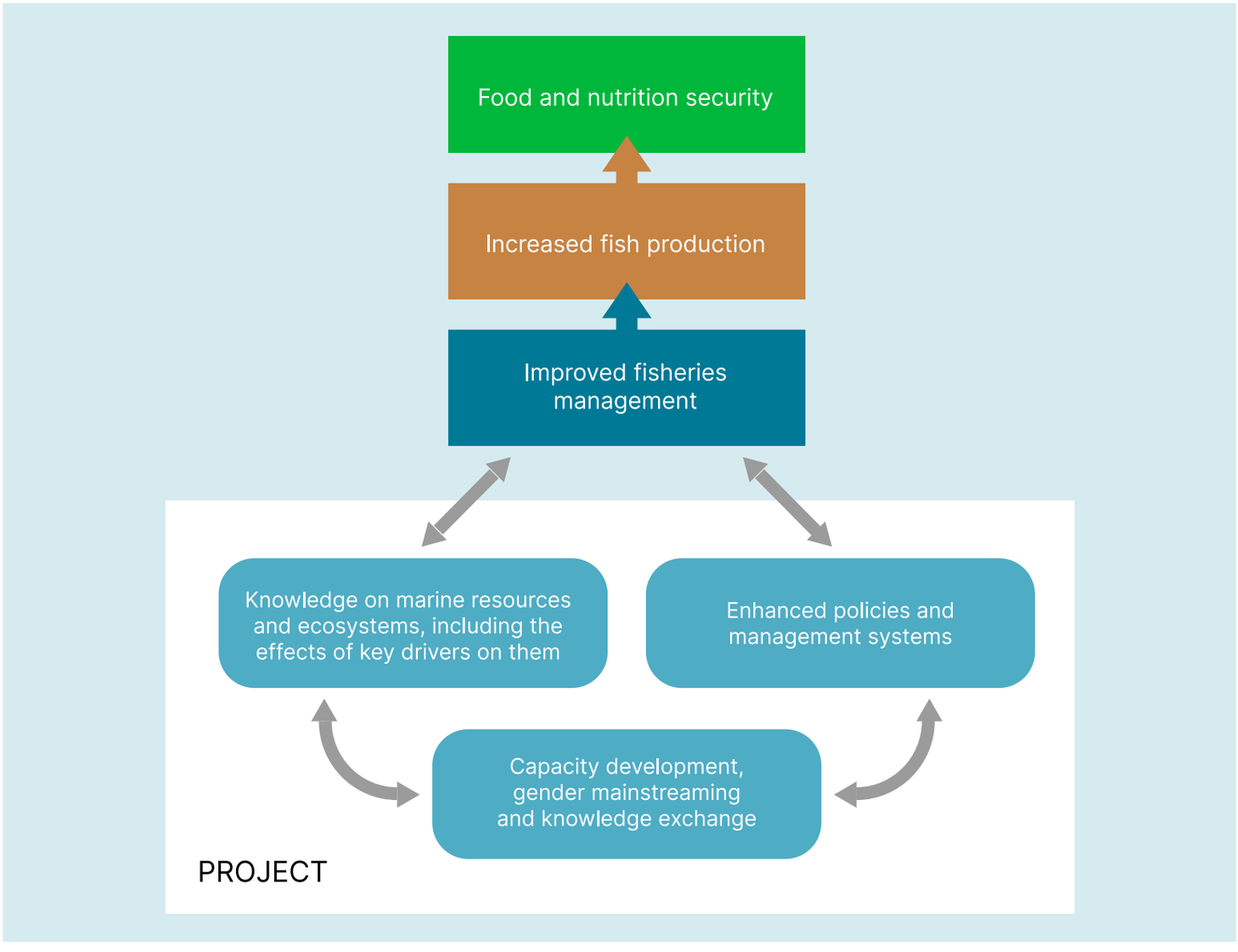
— Phase one stipulates that "the development of sustainable fisheries management regimes, and specifically through the application of the ecosystem approach to fisheries in developing countries, will strengthen regional and country specific efforts to reduce poverty and create conditions to assist in the achievement of food security".

— Phase two (Figure 4 next page) implies a more explicit change pathway. A helpful way to interpret this might be that: The enhanced capacity of individuals and organisations, specifically marine research organisations in partner countries, to organise sampling, to collect, store and analyse data, and therefore to generate knowledge, combined with the enhanced management of marine resources through an EAF framework, contributes to improved fisheries management, which in turn contributes to increased fish production and ultimately may contribute to enhanced food security.

24 The review team was not provided with a specific ToC document, and are unaware of a ToC, just the graphic (presented in Figure 4 of this report). The graphic represents a simplified visualisation of a possible ToC, however the causal links amongst project components appear incorrect, and many of the linkages within the graphic provide insufficient detail to begin to identify causal pathways, the mechanisms operating, the opportunities for attribution, and the internalt and external assumptions that need to be considered.

25 This is adapted from the definition of a ToC by James, C. (2011) 'Theory of Change Review: A Report Commissioned by Comic Relief'. London: Comic Relief.

Figure 4: EAF-Nansen Programme change pathway (Phase 2)



The second step consisted of validating the evaluation criteria and their respective questions, as well the set of indicators that the evaluation team would principally focus on to evaluate the programme.

The third step consisted of applying the evaluation criteria and questions to the change pathway of the evaluation object (Graph 2).

The fourth and final step of the evaluation approach consisted in binding together its different components. The evaluation team produced an analytical matrix highlighting the links between the evaluation criteria, questions, indicators and methods for data collection. The final version of the evaluation matrix is presented in Table 4 on pagte 21.

3.2 Methods for data collection

The evaluation team has integrated different methods for this assignment. These are adapted to the various types of informants and information that the evaluation team believed were necessary to collect in order to provide solid evidence to answer the evaluation questions. The evaluation team incorporated a mix of five key complementary methods that allowed it to analyse a large amount of information and, more importantly, to triangulate the data collected. These methods were adapted to the summative[26] and formative[27] nature of the evaluation, as it aimed to generate learning that Norad and key EAF-Nansen stakeholders can use to inform the new phase of the programme.

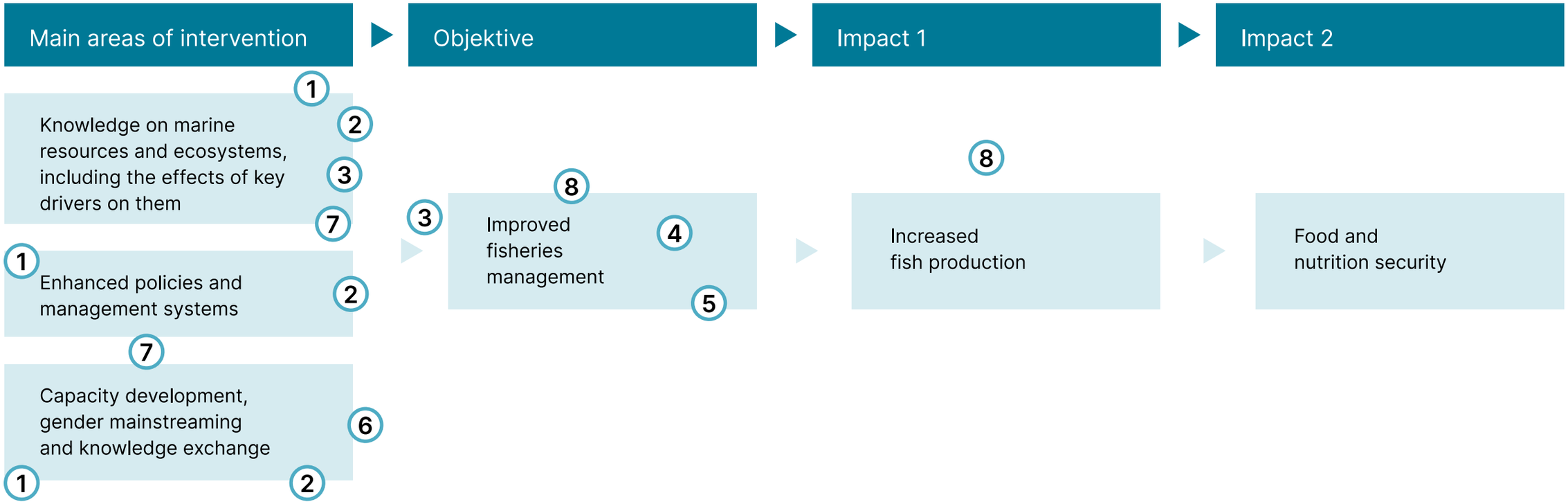
3.2.1 Document review

With the assistance of the Evaluation Department at Norad, Norad staff responsible for EAF-Nansen intervention, FAO, IMR and other stakeholders, the evaluation team had access to around 450 documents, which have been a valuable source of information during the evaluation. A list of documents that this evaluation refers to is provided in Appendix 2. A desk review was conducted and submitted as an intermediate deliverable for the evaluation. In addition to the analysis of previous evaluations and reviews, the desk review focused on annual progress reports, minutes from meetings, survey reports, newsletters and online materials, strategy documents including the EAF-Nansen communication, gender, and capacity building strategies. It also included initial inputs from early interviews with some of the key stakeholders. The desk review allowed the evaluation team to refine the evaluation matrix and specific questions under each evaluation criterion. This work informed the data collection phase (the approach to the questionnaire survey, the Force Field Analysis (FFA), and the interviews), as it clearly synthesised the existing body of knowledge on the relevance, effectiveness, efficiency, coherence, and sustainability of EAF-Nansen, and allowed the identification of issues/questions that this evaluation should further investigate.

26 Summative evaluation looks at the impact of an intervention on the target group. This type of evaluation is arguably what is consid-ered most often as 'evaluation' by project staff and funding bodies- that is, finding out what the project achieved.

27 Formative evaluation is generally any evaluation that takes place before or during a project's implementation with the aim of improv-ing the project's design and performance

Graph 2: Evaluation criteria and questions applied to the change pathway of the evaluation object



Relevance

EQ.1. Is the programme relevant in relation to partner countries?

EQ. 2. Is the programme relevant in relation to the achievement of Norwegian development policy objectives?

EQ.3. Is the programme relevant in relation to contribution to "global public goods" for sustainable management of marine resources and environment?

Effectiveness

EQ. 4. Has the programme been effective in improving overall marine resources management, human development, and public and private sector development in the partner countries?

EQ. 5. Has the programme been effective in supporting the development of institutions in the South that are de-facto equipped to assist the partner countries in applying an ecosystem approach to fisheries management of their fisheries resources?

Efficiency

EQ. 6. How well the cooperation has been governed and managed, especially with respect to the procedures, expected roles and responsibilities, M&E and internal control in the program management infrastructure and what is the operational efficiency?

Coherence

EQ. 7 Has there been coherence with other Norwegian or international development assistance programs in the partner countries; where it is considered as a decisive factor in determining programme outcomes and impacts?

Sustainability

EQ. 8 Are programme net benefits likely to continue after the completion of the assistance provided by the programme?

3.2.2 Stakeholder mapping

The main approach for data and information collection was to engage with as many relevant programme partners, stakeholders and beneficiaries as possible (partner countries, regional and national fisheries bodies, agencies and research organisations, and related national, regional and international projects and programmes) and more specifically with the three agreement partner organisations, Norad, FAO and IMR. For this purpose, a robust stakeholder analysis was conducted at the onset of the evaluation. Appendix 3 provides a detailed list of individuals and organisations consulted during the evaluation process.

3.2.3 On-line interviews

A total of 29 individuals, representing the stakeholders and beneficiaries mentioned in the section above, have been the main target groups for on-line interviews (Appendix 3). Most interviews were organised using the Zoom platform, and they were carried out as semi-structured interviews with specific interviewee-adapted questions relating to the evaluation questions and indicators relevant for each particular interview. All interviews were private and confidential. Individuals were drawn from Norad, FAO, IMR and focal points from 9 countries, mainly from the Eastern Atlantic LMEs but including BCLME (Namibia).

3.2.4 Surveys

The evaluation team launched 3 surveys on the Survey Monkey platform:

— One general survey ("main survey") addressed to around 200 stakeholders and programme beneficiaries (see Appendix 6 and Appendix 7). A total of 99 responses were received (almost 50%). A large questionnaire was designed around the evaluation questions and indicators, taking into consideration the main outcomes of EAF-Nansen. Key institutional partners were sent the survey, as well as national, technical and project focal points, and representatives of LME partner organisations. The survey was also sent to a group of fisheries scientists and managers in partner countries, some of whom had participated in EAF-Nansen activities, and others not. This was done in an attempt to capture the reach of EAF-Nansen's work, to determine if the outcomes of the programme were observable in a wider group beyond those who participated directly in EAF-Nansen's activities. Respondents were asked to identify where they come from, or with which regional or international organisation their work is associated. Representatives from regional organisations included the SWIOFC, GCLME, CCLME, BCLME. There were also responses from the UN FAO and Norway but the majority of the responses were from partner countries (individuals from 20 participating countries participated in the survey).

— One SWOT survey integrated in the main survey (see Appendix 8).

— One separate Force Field Analysis survey ("FFA survey"), which was managed in two steps using the Survey Monkey platform (see Appendix 9 and Appendix 10). The FFA aimed to provide information, based on the perceptions of this cross-section of implementers and stakeholders, about factors that influence the performance and effectiveness of the program. In the first step, the respondents were asked to specify the factors that support or hinder the achievement of the three intended EAF-Nansen Programme outcomes respectively. Factors were grouped under generic headings by the evaluation team and the participants in the survey were again contacted and asked to rank the importance of each factor. In the second step, the survey was sent to 99 stakeholders, of which 21 responded (21 %). Respondents represented FAO, IMR, EAF-Nansen focal points and two RFOs.

3.2.5 Geospatial Analysis

Due to the multitude of locations targeted by the programme activities, a geographical mapping was carried out in the early stage of the data collection phase, in order to see in which locations the programme has been presence in most, and to give an indication of where the evaluation could dig deeper, possibly by carrying out field visits. This work resulted in the production of a separate report and the analysis provided information for selecting a limited number of context country case studies, providing information about the fisheries context in each country (see Figure 1).

3.3 Reflections on the evaluation process

This section aims at highlighting lessons learned during the evaluation process. It addresses limitations due to external constraints, methodological issues and some possible questions to finalise this evaluation.

Contextual constraints

As foreseen during the inception phase and clearly highlighted in the risk matrix of the inception report, the COVID-19 pandemic has posed major limitations on the evaluation. All interviews have been carried out on virtual platforms. While this has functioned well in the case of individual interviews or workshops with stakeholders, the pandemic prevented the team from undertaking field visits to collect primary data. The field work would have been valuable to collect the perceptions of local stakeholders and beneficiaries in partner countries, and to collect further quantitative and qualitative data at a local level. However, and this issue is addressed in the next section, this method proved impossible to implement in the strict sense of the term.

The pandemic also posed a problem to the intended collection of data for the Multi-Dimensional Poverty Analysis (MDPA). Focusing on gathering data to enable a robust analysis of the MDPA, and of causal links between the activities implemented by EAF-Nansen and poverty reduction, was attempted during a few initial interviews. Efforts were made to explain this method sufficiently clearly, but this was found to be too challenging in the absence of physical presence in a workshop environment, time consuming, and hardly feasible in the absence of a ToC governing EAF-Nansen. It was therefore decided to concentrate on other parts of the evaluation.

Methodological issues

The evaluation team had planned to organise a workshop to provide stakeholder inputs using the results from the Force Field Analysis. A meeting where all preliminary findings of the evaluation was discussed among the main implementing stakeholders was organised, followed by written comments from the stakeholders being provided as inputs to the evaluation report.

The team had suggested the use of Contribution Analysis to inferring causality and assessing causal questions embedded in the evaluation of the programme. However, the absence of a clearly articulated ToC, which is a precondition for the use of this method, made any reference to a Contribution Analysis irrelevant. As explained in the method section of this report, the team instead used a mix of data collection methods to highlight findings and draw conclusions about the contribution of the programme to the collected and documented outcomes.

Despite these limitations, the findings, conclusions and recommendations presented in this report are reliable and of utility, as they are evidenced by sound methods that allow for both accuracy in data collection and triangulation. This is clearly demonstrated throughout the report. The findings presented in Section 4, are complemented with information about sources of evidence in Appendix 12.

Table 4: Evaluation matrix

RELEVANCE

Questions raised in ToR	Primary indicators to be used in the evaluation	Methods	Sources
Is the programme relevant in relation to partner countries? - Fisheries policy goals including food security and poverty alleviation. - Implementation of ecosystem-based management of the fisheries resources. - Regional cooperation for conservation and sustainable use of marine resources and environment.	Awareness and application of EAF toolkit in partner countries and regional fora Use of data to assess stocks and regulate fisheries Use of EAF-Nansen-generated data in regional scientific fora	Document review	Programme progress report and meeting minutes Evaluation and MTR reports Policy documents collected from partner countries Data and information from pilot projects Publications/ Data documenting context of fisheries in Africa
		Interviews	Staff of programme partners
		Survey	National, regional and technical focal points
Is the programme relevant in relation to the achievement of Norwegian development policy objectives? - Reducing poverty and achieving sustainable development. - Strategic goals motivating Norwegian multilateral partnerships. - Crosscutting issues related to mainstreaming gender, and social accountability in management of the fisheries resources.	Perception of programme influence on poverty Alignment of expected and actual programme results to Norwegian strategic goals Actual level of achievement of gender and social accountability targets	Survey Force Field Analysis	Staff of programme partners National, regional and technical focal points Publications/ Data documenting context of fisheries in Africa
		Document review Interviews	Programme monitoring data, progress reports Strategy documents Staff of programme partners
		Document review Interviews	Programme monitoring data, progress report Staff of programme partners
		Geospatial information	DFN cruise data and survey information Data and information from pilot projects
Is the programme relevant in relation to contribution to “global public goods” for sustainable management of marine resources and environment?	EAF-Nansen survey results available at national or regional level EAF-Nansen knowledge products on climate change effects on fisheries resources available.	Document review Interviews Force Field Analysis	Progress reports Annual/semi-annual meeting minutes’ Staff of programme partners Focal points

Table 4: Evaluation matrix

Questions raised in ToR	Primary indicators to be used in the evaluation	Methods	Sources
EFFECTIVENESS			
Has the programme been effective in improving overall marine resources management, human development, and public and private sector development in the partner countries?	Management plans or processes emanating from EAF-Nansen in use in countries/regions, including capacity to implement the ecosystem approach to fisheries Programme effects on local fisheries communities and private sector Awareness of EAF-Nansen activities/training at the fishing community level Use of EAF-Nansen data/capacity in support of Small-scale fisheries-focused enterprises	Document review Interviews	Progress reports Annual/semi-annual meeting minutes' Staff of programme partners Focal points Data and information from pilot projects World Bank and FAO, statistical database and the fisheries country profiles
Has the programme been effective in supporting the development of institutions in the South that are de-facto equipped to assist the partner countries in applying an ecosystem approach to fisheries management of their fisheries resources?	Use of EAF-Nansen environmental data in regional scientific organisations Collection and use of socio-economic data to support EAF	Document review Interviews	Progress reports Annual/semi-annual meeting minutes Staff of programme partners Focal points
EFFICIENCY			
Efficiency in governance and management of the Nansen cooperation for delivering the intended results –How well the cooperation has been governed and managed, especially with respect to the procedures, expected roles and responsibilities, M&E and internal control in the program management infrastructure and what is the operational efficiency?	Extent of timely/non timely disbursement of funds for planned activities and reasons for any delays Extent of timely performance of planned activities, including the provision of access to data by partners Adequacy/inadequacy of the organisational structure and attainment of outputs, considering the inputs (funds) Proportion of funds allocated to administrative activities (e.g. salaries) vis-à-vis operational activities Value for money Use of M&E system in producing useful and high-quality reporting	Document review Interviews	Progress reports Annual/semi-annual meeting minutes' Staff of programme partners Focal points Correspondence / documents related to disinvestment / investment /chartering of research vessels. Cost information concerning use of research vessels from partner countries for demersal and acoustic surveys in the CCLME

Table 4: Evaluation matrix

COHERENCE

Questions raised in ToR	Primary indicators to be used in the evaluation	Methods	Sources
Has there been coherence with other Norwegian or international development assistance programs in the partner countries; where it is considered as a decisive factor in determining programme outcomes and impacts?	Synergies with the "Oceans for Development Strategy"	Document review	Strategy document Programme documents
		Interviews	MFA, Norad, IMR and FAO staff, and staff of relevant Norwegian embassies National, regional and technical focal points
		Electronic survey	National, regional and technical focal points
	Coherence with other programmes in selected partner countries, e.g. projects under the "Fish for Development Programme"	Document review	National program documents Programme documents
		Interviews	MFA, Norad, IMR and FAO staff, and staff of relevant Norwegian embassies National focal points
		Electronic survey	National focal points
		Geospatial information	DFN survey and cruise data

SUSTAINABILITY

Are programme net benefits likely to continue after the completion of the assistance provided by the programme?	Originating from EAF-Nansen support: — Systems to store data — Capacity to analyse and interpret data — Capacity to conduct research surveys with national vessels — Ocean governance frameworks based on science — Management plans or planning processes available	Document review Interviews Survey	Progress reports National focal points and other stakeholders

4 Findings

This section presents the findings of the evaluation along with the evidence for each finding. The evidence sources are presented in more detail in Appendix 11.

Findings on Relevance:

EQ #1 Is the programme relevant in relation to partner countries?

FINDING 1
Both the EAF-Nansen Project and the EAF-Nansen Programme are characterised by the absence of robust theories of change, which makes it challenging to assess the overall design of the interventions.

The absence of a full-fledged ToC in the two phases of EAF-Nansen has led to several weaknesses in project/programme design. A ToC aims to critically explore the expected results of an intervention and how its planned activities might achieve these. In the case of EAF-Nansen, the absence of a robust ToC has led to change pathways characterised by 'missing middles', i.e., gaps between the activities implemented and the results that should result from them. A ToC also helps to think through and make explicit assumptions about the causal connections between the activities of a project/programme and the outcomes/changes that are envisaged. These assumptions are linked to a series of conditions, internal to the intervention or external, that need to be present to allow the programme to reach its expected results. The analysis of the EAF-Nansen Project document reveals one single sentence describing the change pathway, which is in fact a generic assumption about a possible causal link between sustainable fisheries management and poverty reduction/food security: *"The development of sustainable fisheries management regimes, and specifically through the application of the ecosystem approach to fisheries in developing countries, will strengthen regional and country specific efforts to reduce poverty and create conditions to assist in the achievement of food security"*. The ToC for the EAF-Nansen Programme is slightly more elaborate, in that it reduces the missing middles. However, the analysis of the project/programme documents and narrative reports does not show any reflection on the contextual and institutional conditions that might enable the envisaged changes.

Developing a ToC also means designing a monitoring system that allows the validity of the hypotheses to be tested throughout the implementation of a programme in order to maintain its relevance and allow for its effective management. There is a monitoring framework reported on in the progress reports, but focus has been on monitoring activities and to some extent outputs, but little at the outcome level.

An example of a consequence of the lack of a robust and well thought-through ToC is that the reporting by the programme of progress related specifically to poverty reduction has been insignificant. Any reduction in poverty will be as a contribution to a causal pathway to the goal of poverty reduction. Building skills and techniques are described as steps in a causal path, contributing to the goal of poverty reduction.

While the EAF-Nansen Project explicitly mentions poverty reduction in its long-term objective, the EAF-Nansen Programme does not. However, poverty reduction is an objective in Norwegian development policy, and Number One of the Sustainable Development Goals, on which that policy is based. In the EAF-Nansen Programme, substantial progress has also been made in developing small projects that have a more direct linkage to communities and potentially to poverty reduction at that level.

FINDING 2

The components of the interventions are relevant, and useful for effective management of the marine resources of the partner countries.

This finding substantiates a similar finding that was arrived at by the MTR of the EAF-Nansen Project in 2021. The questionnaire survey results from the current evaluation indicate that data on marine resources have been produced by EAF-Nansen, and their access to users at country level is indicated by the finding that a majority of potential users responding to the questionnaire survey have stated that if they want to use the data, they know where to find it. The questionnaire survey was issued to quite a wide group of recipients[28], and around 50% of the survey respondents have stated that they have limited knowledge about EAF-Nansen. In spite of this, 27% of the respondents have stated that they have actually worked with EAF-Nansen data.

Fishery management plans based on EAF concepts were prepared in 16 partner countries and one region under the EAF-Nansen Project. According to the questionnaire survey responses and interviews with EAF-Nansen implementation partners and regional stakeholders, the implementation of these plans has been slow and remained a challenge.

The authors refer to 'actual management of fisheries' as arguably the most relevant objective at the country level for the following reason: The programme's expected outcomes are that: 'Fishery Research Institutions provide relevant and timely scientific advice for management'; 'Fisheries Management Institutions manage fisheries according to the EAF principles'; and that 'Fisheries Research and Management Institutions have appropriate human and organisational capacity' to manage fisheries sustainably'. To manage fisheries sustainably' is arguably - the most relevant - because the first two outcome phrases are logically subordinate to that outcome.

As part of the EAF-Nansen Programme, management plans have been or are being prepared or updated as part of the 'small project' initiatives in northwest Africa, Gulf of Guinea and Tanzania. Judging from documentation and interviews with implementing staff and national stakeholders, these plans are developed with a relatively high level or participation and also have more direct linkages to community stakeholders, which is encouraging in relation to sustainability of results. The programme currently attempts to support implementation through the adoption of the FMC concept, where data are collected, analysed and the results presented in an accessible form to managers, who once a year review new available information on different aspects of the management plan and adjust the implementation accordingly.

FINDING 3

EAF-Nansen is also considered by stakeholders to be a valuable avenue for expanding regional cooperation for conservation and sustainable use of marine resources and the environment, which has been substantial but could be further strengthened.

Regional cooperation has been an important part of both phases of EAF-Nansen. Examples of this cooperation are many, and include regional and subregional DFN surveys, pre- and post-survey meetings, establishment and meetings of working groups, project forums, regional workshops and training courses, science plan meetings, planning groups, LME-based cooperation, scientific committee meetings,

28 See Section 3.2.4 for information about the questionnaire survey target group.

and engagement of regional bodies in three regions as regional steering committees and for other types of close cooperation. In the current phase of EAF-Nansen, regional cooperation has been established in connection with small projects in the Northwest Africa region and in the Gulf of Guinea. Based on an analysis of the available database on surveys carried out by DFN[29], around one third of the DFN surveys are interpreted as being regional, and around half of other supported activities, as reported in annual reports (see Appendix 4) , are interpreted as being of a regional cooperation nature.

In the stakeholder survey, 100% of the respondents, from all LMEs, agreed, or strongly agreed, that EAF-Nansen is an important avenue for regional cooperation. In the SWOT survey, 'cooperation' was the fifth most mentioned strength, and 'low cooperation' was the most frequently mentioned threat. Comments on programme strength included 'strengthen cooperation in the sub-region', and comments on opportunities included 'cooperation among countries for common management is more accepted today'.

Scientific publications, based on cooperation between experts from IMR and scientists in partner countries, were reported for the first time in the annual report for 2018, where 70 publications were stated to be in the preparation stage. By the end of 2021, a total of 49 publications had been listed in the annual reports, against an overall goal of 20, including 23 publications on taxonomy, mostly descriptions of new species or species identification. In the progress report for 2021, an additional eight publications were listed. There has been an increase in support to post-graduate research work using data from the programme, with 11 new recipients in 2021, which should lead to an increased rate of publications in peer reviewed journals.

There is room for support to strengthening co-operation further, because whilst 'cooperation for conservation and sustainable use of marine resources and the environment, is valued', more generally 'co-operation is perceived to be limited' by survey respondents. Taken together, these statements imply that respondents are aware of the importance of cooperation in this regard but are also aware that it is infrequently encountered. In other words, if you don't arrange with your geographical neighbours to work together to sustainably manage e.g., a fishery, both parties lose out – and such cooperation is evidently difficult to achieve. In economic science, the so-called 'tragedy of the commons' is a situation in which individual users - in this case nation states - who have open access to a resource - in this case a fishery - unhampered by shared social structures or formal rules that govern access and use, tend to act independently according to their own self-interest and, contrary to the common good of all users, causing depletion of the resource through their uncoordinated action. Achieving the level of coordination required for sustainable management through concerted efforts to co-create the social structures or formal rules that govern access and use through EAF-Nansen, could be a valuable avenue for regional cooperation.

FINDING 4

The MTR of the EAF-Nansen Project in 2009 highlighted limitations related to DFN in terms of poverty alleviation and food security agendas. However, the decision regarding a state-of-the-art vessel was based on a cost-benefit analysis that considered a scope, including UN collaboration and climate change work, and a timeframe to 2031, well beyond that of EAF-Nansen.

29 IMR, 2022: DFN Surveys, data overview.

The decision to build a new research vessel based on Option 5, which was put forward in a 2009 report on cost-benefit analysis of options for the future of EAF-Nansen was to build a new state-of-the-art research vessel suitable for ecosystem and climate-change research, 15-20 years beyond 2011. The analysis did not highlight at all 'food security or poverty alleviation', which was a longer-term objective of the EAF-Nansen Project, and 'food and nutrition security' later became an impact level objective of the EAF-Nansen Programme, that was formulated for the period 2017-23. In other words, the planning for the vessel was not based only on the current programme objectives but those that are considered will be increasingly relevant beyond the end of the current programme, but within the life of the vessel.

It should be noted that a goal-level objective within a logical framework is, by definition, outside of the scope of a programme, but constitute the highest-level objective that the programme would logically contribute to. However, a well-constructed ToC can provide the conceptual basis for progressing towards such a contribution. As discussed, related to finding 1 above, without a well-constructed ToC, planning decisions are less easily arrived at. The decision regarding the new vessel was predicated on 'jobs and mainstream economic sectors, as well as their contribution to future economic development' and to 'ensure that climate change issues in developing countries are fully considered in the global agenda'. Therefore, the decision regarding the third Nansen vessel was based on its scope during the period up to 2031 to undertake research in a more multidisciplinary and collaborative approach than what was applied earlier. Specifically, DFN was intended to be a platform for cooperation among UN and other agencies addressing the impact of climate change on the marine ecosystem. In short, the decision coming out of the cost-benefit analysis in 2009 was based on broader issues and longer timeframes than the EAF-Nansen work being assessed in the current evaluation.

The MTR of the EAF-Nansen Programme established that the research vessel is a useful resource for offshore marine science. It highlighted perceived limitations in terms of addressing poverty alleviation and food security. The review also noted that there was a need for better integration of marine sciences and management for poverty alleviation.

The current evaluation has identified that many of the poverty alleviation aspects of fisheries relate to near-shore coastal environments exploited by artisanal fishers, who generally do not have motorised vessels and are therefore limited to areas close to shore, where DFN cannot easily operate. DFN is more relevant to more commercial small-scale fisheries and in particular to industrial-scale fisheries management, where the links to poverty alleviation are less direct, and rather via mechanisms such as onshore processing of fish as jobs for alleviating poverty among local populations.

EQ #2 Is the programme relevant in relation to the achievement of Norwegian development policy objectives?

FINDING 5

EAF-Nansen is relevant to the strategic goals motivating Norwegian multilateral partnerships, in this case with FAO, and with Norwegian cross-cutting agendas including gender equality and protection of the marine environment.

EAF-Nansen is relevant to the strategic goals motivating Norwegian multilateral partnerships in at least four ways:

i) **International agenda setting:** Through EAF-Nansen, Norway has a long-term presence within the development of sustainable fisheries management regimes internationally. This provides scope and legitimacy to contribute to setting international agendas for the conservation and sustainable use of the oceans, seas and marine resources for sustainable development. Prominent in this context, towards the conclusion of the EAF-Nansen Project was the establishment of Sustainable Development Goal (SDG) 14 on »Life below water«. Protecting and restoring ecosystems and sustainable fishing are two of the targets of SDG 14. The enhanced capacity of individuals and organisations, specifically marine research organisations in partner countries, to organise sampling, to collect, store and analyse data, and therefore to generate knowledge is a tangible contribution towards the implementation of SDG 14.

ii) **Accessing additional donor financing:** With the support and collaboration of FAO as its executing agency the EAF-Nansen Project was able to access over $24 million in additional donor funding. This included GEF funding supporting co-financing of project operations on behalf of recipient countries.

iii) **Accessing the competence of international organisations:** FAO is a specialised agency of the United Nations that leads international efforts to defeat hunger. It has developed and assembled significant competence to achieve food security for all and make sure that people have regular access to enough high-quality food to lead active, healthy lives. It provides access to the competence of the Fisheries and Aquaculture Division, the co-ordination capacity of the FAO Committee on Fisheries, and the renowned fisheries Knowledge Base. The collaboration with FAO on the implementation of EAF-Nansen enables Norway to sail DFN under a UN flag and effectively expands its access to a wider range of jurisdictions.

iv) **Leveraging the convening power of international organisations in relation to donors and countries:** The multilateral partnership with FAO increases Norway's scope to contribute to strengthening coordination and synergies amongst stakeholders in large marine ecosystems, to better access co-ordinated relevant donor support, and to better convene neighbouring countries and country groupings within regional organisations. The programme has benefitted from FAO's convening power and coordination capacity as regards the cooperation with RFBs in the areas where EAF-Nansen has been active, and with RSN.

In addition to the strategic goals, it is also **relevant to the cross-cutting issue** within Norwegian Development Assistance of strengthening **gender equality and inclusion** through its development assistance. In view of the importance of this cross-cutting issues, the evaluation highlights four specific sub-findings:

a) **While gender equality and inclusion received limited attention from EAF-Nansen under phase 1 and most of phase 2, the finalisation of a full-fledged gender strategy in 2019 has provided EAF-Nansen management with clear strategic tools.** During the EAF-Nansen Project and initial parts of the EAF-Nansen Programme, reporting on gender has been limited to

the relative participation of women in surveys and capacity building efforts. Data provided in Table 3 shows that during 2014-2020, the participation of women in Nansen surveys amounted to 26%. The final evaluation of the EAF-Nansen Project concluded that gender was not mainstreamed to the extent that FAO and Norad had hoped. While gender equality is central to both organisations, this was not reflected in the design and implementation of the EAF-Nansen Project. A gender audit carried out in 2013 helped to highlight the need to give more weight to gender issues in the planning and implementation of the programme. This was reflected in the organisation of training activities or workshops. This is the case, for example, of the 'Interregional workshop on the management of shared stocks and implementation of the ecosystem approach to fisheries within the framework of the EAF-Nansen Programme', held in Dakar, Senegal, on 24-26 April 2018. This workshop is typical of the work carried out during this period, with gender issues being addressed in terms of questions about the most relevant approach to be followed at the level of each country to increase the likelihood that gender will be effectively mainstreamed in all dimensions of the programme. These reflections fed into the development of a gender strategy for the EAF-Nansen Programme, which was finalised in March 2019 and published by FAO in 2020.

The gender strategy is a relevant document for several reasons. Firstly, insofar as this document was written by the same expert who carried out the gender audit, it is based on a detailed knowledge of the programme, its challenges, and the institutional context of its implementation. Moreover, the document contains a ToC for the implementation of the gender strategy, with three hypotheses on which the different stages of gender mainstreaming in the different components of the EAF-Nansen Programme are based (budgetary allocations are adequate, EAF-Nansen management promotes gender equality, and partner countries fully engage with, and show commitment to, gender equality), which makes it possible not only to highlight the rationale and the stages of the desired change, but also to monitor it and, in the medium term, to evaluate it accurately.

This strategy operates at three different and complementary levels:

— Programme management, with a specific focus on awareness raising among *»all those involved in management and oversight of the programme«;*

— Programme activities, with a focus on »enhancing sensitivity and responsiveness of programme activities to gender issues«;

— Programme communication, with a focus on showcasing the EAF-Nansen Programme's commitment to gender equality.

b) **The strategic value in support of capacity development is reported to hold limited value to key informants from partner countries**. Results from the Force Field Analysis (FFA) that ranked factors that support capacity development at institutional and human resources levels, show that gender equality and inclusion being established as strategic themes in most partner countries got the lowest ranked support (Appendix 10.)

c) **The low level of women's empowerment and of mainstreaming of gender in fisheries projects and institutions are *not* seen as important hinderances by many key informants in partner countries.** Respondents from partner countries do not consider that the low level of women's empowerment and mainstreaming of gender in fisheries management institutions in partner countries and supported projects is an important hinderance (lowest ranked support factor in FFA – Appendix 10.) However, the availability of a strategy for gender mainstreaming is ranked as number four as a factor to support the promotion of gender equality (Appendix 10, Table A4).

d) **Reporting of progress related to gender equality directly was insignificant in the early stages of EAF-Nansen implementation but has increased over time.** The gender strategy component aiming to showcase gender in reports is not yet effective. Indeed, the analysis of progress reports and of activity reports shows that the occurrence of key words or phrases over time mentioning gender was low during the EAF-Nansen Project. (see Word/Phrase Count Survey of EAF-Nansen progress reports in Appendix 5) but increased substantially during its later phase and in the EAF-Nansen Programme.

EQ #3 Is the programme relevant in relation to contribution to "global public goods" for sustainable management of marine resources and environment?

FINDING 6
Data collected by the research vessel DFN are relevant to partner countries.

The majority of surveys carried out by the DFN relate to the distribution, composition and abundance of pelagic and demersal species. The data collected are relevant to partner countries and used for stock assessment in regional fora, often with participation of experts from the implementing partners. Stakeholders in partner countries consider the data highly relevant, and almost one third of the main survey respondents stated that they have worked with the data. The stock assessment of fish stocks in industrial fisheries in the BCLME is used to set quotas for major species. However, in countries where open-access, small-scale fisheries play a more important role, it has proven to be more of a challenge to convert information into management.

FINDING 7
There is a perceived mismatch between data collection and partner country needs among national stakeholders, especially with regard to artisanal fisheries that are highly relevant to poor coastal communities, yet to a large extent inaccessible to DFN. There are thus limitations to linkages between the survey vessel to poverty alleviation and food security agendas, but higher relevance in relation to UN collaboration and climate change work.

The data collection by the large DFN vessel is focussed on transboundary stocks. That is stocks that cross the exclusive economic zone (as prescribed by the 1982 United Nations Convention on the Law of the Sea) of two or more bordering coastal states. Pelagic stocks are generally larger and have a wider distribution than demersal stocks, especially those in shallow coastal waters, which are generally targeted by small-scale artisanal fishers. The SWOT analysis in this evaluation revealed 'the data-needs mismatch' to be the second-most important threat to programme success. The analysis highlights the perception that there is a mismatch between the data collected by the DFN and the needs to assess stocks targeted by the poorest artisanal fishers. This is important because these fisheries predominate in all the large marine ecosystems within the programme with the exception of the BCLME.

FINDING 8

The irregular nature of DFN survey coverage, and limitations to access to the data, limits their value as a global public good for sustainable management of marine resources and the environment.

The evidence for this finding comes, to a major extent, from the SWOT analysis. 'Inconsistency in coverage' was mentioned as a weakness by ten SWOT respondents and was the second-most mentioned weakness of EAF-Nansen. 'Poor data access' and 'poor dissemination' were also frequent mentions.

Since SWOT analysis comprises open-ended questions and comments chosen by the respondents and not by the evaluation team, any high-frequency responses or comments initiated by respondents represent strong evidence. For clarity, we understand inconsistent to mean – 'not staying the same throughout', 'lacking in harmony between the different parts or elements'. Sometimes, as a result of the design of the data strategy and the communication approach - data was made available in a timely way, and sometime not. The applicability of the data as a result of the design of the survey strategy, that in turn was dependent to an extent on the objective, and consequent design of DFN, are sometimes relevant to partner countries fisheries management and sometimes not. Therefore, the objective and design of the intervention limits the extent to which the intervention is able to be sensitive to the capacity needs of fisheries staff, the policies of partner governments, the priorities of partner governments fisheries departments, and any environmental consequences of fishing practices that are unable to be assessed by EAF-Nansen, yet which in many cases are much more prevalent than those which EAF-Nansen can assess in a given LME.

Because of the nature of most fisheries management models, repeated data collection can often increase the utility of the data set in fisheries management. Although the DFN surveys are strategically planned based on science and in collaboration with partners, the limitation in availability of the vessel means that several years may pass in between surveys in one location, which reduces the usefulness of the data, thus adding to the weakness that data is far from always accessible to potential users.

A further meaning of inconsistency is defined as 'acting at variance with professed principles'. A professed principle might be e.g. to strengthen country-specific efforts to reduce poverty. In the case of Namibia, specific efforts in reduction of poverty might be said to be through employment in fish processing of catch from an industrial fishing fleet. However, marine fisheries are dominated by small, open-access fisheries, and include poor, artisanal operators in all LMEs except for the BCLME. Efforts to reduce the poverty of people found in coastal areas who fish in near-shore, open-access fisheries, that DFN cannot operate in, are less likely to include scientific determination of the state of these stocks on which the livelihoods of most poor people depend. As a consequence, the objective and design of the intervention lacks harmony between different parts in terms of equity. The extent to which the objectives and design are sensitive to the political economy i.e. macroeconomic phenomena such as growth, distribution, inequality, and trade, and how these phenomena are shaped by institutions, laws, and political behaviour are at best, to coin a phrase, likely to be 'inconsistent'.

Findings on Effectiveness:

EQ #4 Has the programme been effective in improving overall marine resources management, human development, and public and private sector development in the partner countries?

FINDING 9

Data sharing routines are not uniform across different countries. This means that the availability and applicability of collected data for the assessment of fisheries stock is inconsistent.

The term effective here, includes in its definition 'achieved' or 'expected to achieve'. If collected data is not available for the purpose of fish stock assessment in a national context, the effectiveness of the programme that collects it is diminished. If this is to be expected to change, then progress will need to be sought to change data sharing protocols in some partner countries. Data collected by DFN is stored in a database operated by IMR, and accessible by national or international researchers only with authorisation by partner countries. The MTR of the EAF-Nansen Programme concluded that the general data policy is restrictive and an impediment to the full use of the information collected. Data sharing within institutes in partner countries may vary considerably (CF F8). The advantages and disadvantages of the current data policy is under discussion and it is expected that it will be improved, including as regards data-sharing principles.

It is likely that restrictive data sharing policies relate to concerns around commercial values of fisheries, and related tariffs, in the form of licence fees, etc. There may therefore be another step to facilitate, in the so far rudimentarily defined causal pathways within the ToC, in order to advocate on behalf of resource managers, through representations to data guardians about the impacts of their restrictive policies. It is important to note that the disparity among countries and institutes in data sharing was also brought out in interviews in the current evaluation. As a relevant piece of corroborating evidence, it has also been experienced over the years with fellows attending the GRO-Fisheries Training Programme in Iceland and specialising in stock assessment, with some fellows accessing data with relative ease, while others have experienced different levels of difficulty, or even an outright refusal to make use of such data in their individual research projects.

FINDING 10

Whilst there are many steps on the change paths that link the EAF-Nansen training activity and working towards the policy goal of food security and reducing poverty, the training programmes have helped building knowledge and skills for many, which is one of the steps in that path.

Among respondents to the questionnaire survey in this evaluation, 44% agreed that the new skills and techniques they had acquired from EAF-Nansen training helped them to work towards the reduction of poverty in their country. This varied between respondents from different LMEs. Around one third of respondents from GCLME, CCLME and BOBLME, but over 62% in ASCLME and over 57% in BCLME were of that opinion. The lower percentages correlate with LMEs that have been less served by DFN surveys. Whilst the highest percentage LMEs correlate with countries where poverty and fisheries are closely linked. For example, the ASCLME is largely an artisanal fishery, managed for food and livelihoods, and fisheries decline would be more closely related to poverty issues. The BCLME is managed at an industrial scale for revenue and employment and much of its catch is exported, however the tangible poverty alleviation benefit e.g. in Namibia, whose coastline is impacted by the Benguela Current, emerges from much needed employment opportunities in onshore processing. Namibia suffers one of the largest Gini coefficients[30] in the world and employment and income for the poorest is vital to address wealth inequality.

30 A measure of statistical dispersion intended to represent the income inequality or the wealth inequality within a nation or a social group.

Training modules vary from on-board trainings and workshops before and after survey tours, open-ended programmes such as on the topic of EAF itself, EAF policy development, EAF-oriented management planning, and use of the EAF Implementation Monitoring Tool. In the context of this and the other survey answers above, it is clear that training is valuable and useful to participants even if they are not directly involved in the use of data collected under EAF-Nansen.

EQ #5 Has the programme been effective in supporting the development of institutions in the South that are de-facto equipped to assist the partner countries in applying an ecosystem approach to fisheries management of their fisheries resources?

FINDING 11

Almost two thirds of trainees report that the skills and techniques acquired under EAF-Nansen training helped them to apply an ecosystems approach to fisheries management in their country. Notwithstanding, whilst there is increased knowledge and awareness about EAF among managers and decision makers through training, stakeholders feel insufficiently supported to put the 'ecosystem approach to fisheries' into practice.

SWOT survey weakness comments included: 'Too much focus on the surveys at sea, and lack of people and time to follow up mentoring people from the countries'; 'insufficient focus on supporting countries in putting into practice fisheries management'; and '(need to) follow up on the outcome of the usefulness of the survey to the participating countries.

The degree to which the training had been helpful to the trainees varied with LME, with 75% identifying this help in ASCLME, over 70% in BCLME, over 60% of respondents from GCLME, CCLME and one third in BOBLME. This is a good result in terms of the perception of respondents regarding the effectiveness of implementing an ecosystems approach. By comparison, only 44% of respondents agreed that training helped them work towards the reduction of poverty in their country. The most likely explanation for respondents seeing fewer links between their training and working towards poverty reduction is that EAF-Nansen targets and works with fisheries colleagues on fisheries management, and as mentioned elsewhere in the report, the causal pathways between improved fisheries management and poverty reduction are somewhat tenuous.

FINDING 12

The development of institutions, including the promotion of gender equality, in the partner countries is perceived by national stakeholders to be hindered by a lack of strategic thinking and plans for capacity development.

According to the mean preference ranking by 21 key respondents to the FFA, nearly three quarters of whom were drawn from institutional partners in the partner countries and regions, the lack of strategic thinking and plans for capacity development in partner institutions was the highest ranked hindrance to capacity development at institutional and human resources levels, including the promotion of gender equality. As national institutions tend to remain after projects and programmes conclude, the legacy of donor interventions can be well served by building relevant capacity within partner institutions. This can be most effective if the process for this to happen is supported and nurtured, rather than individual standalone training courses or events operated by the donor programme. This is a finding which relates to a part of the ToC for this programme that would benefit from being more

richly developed. Long-term engagement of staff from national institutions is also a way of raising institutional capacity at the same time as enhancing competence in individuals.

EAF-Nansen has supported institutional capacity building in several ways. Support has been provided to INRH in Casablanca to develop into a centre of excellence in plankton. There has been a studentship programme for national scientists and a mentorship programme has also been developed.

As noted in the Efficiency Section, there is an effort to make EAF-Nansen Programme activities gender-sensitive, both in the recruitment of participants and in the themes addressed. Notable achievements in this regard include the inclusion of gender aspects in the small projects, the availability of a gender training course and support to setting up a gender desk at the Ministry of Livestock and Fisheries, Tanzania.

FINDING 13
Local participation and cooperation with academic institutions is perceived as weak by stakeholders in partner countries, whereas involvement of scientists from stakeholder institutions is most valued - along with training, better knowledge of resources, strengthened scientific networks, publishing and collaborative learning.

'Exclusion of local views' was the most mentioned weakness in the SWOT analysis, it was mentioned by 14 respondents. Comments included "weak cooperation with national universities to disseminate EAF principles". As this represents the pipeline of graduates entering the field and improving graduates understanding of EAF would be likely to improve the future prospects for sustainable fisheries management, this represents an important finding with implications for future programme design. Top-down approaches and the risk of creating a mismatch between support provided and actual needs in countries was also mentioned in interviews, including with Norwegian stakeholders. There are some encouraging signs in this context, including the substantial amount of regional and international workshops, meetings and forums organised by EAF-Nansen, that was mentioned in stakeholder interviews as an important opportunity to meet and build networks with colleagues in other countries with similar interests and develop capacity within their own institutions. The recent uptick in joint publications is also a positive related finding in this context.

FINDING 14
Building capacity and expertise is perceived being a programme strength by survey and interview respondents in partner countries, and awareness and knowledge of the ecosystem approach among survey respondents is increasing.

According to the mean preference ranking by 21 key respondents to the Force Field Analysis, involvement of scientists from stakeholder institutions in surveys, analysis and publishing was the highest ranked factor for strengthening capacity development at institutional and human resources levels, including the promotion of gender equality.

In the SWOT analysis, the most frequently mentioned opportunities of the programme were 'training' (19), 'better knowledge of resources' (14), 'strengthened scientific networks' (11), and 'collaborative learning' (8), the number of respondents for each opportunity provided in brackets.

According to the mean preference ranking by 21 key respondents to the FFA, increased knowledge and aware ness among managers and decision makers through training programmes, workshops and seminars was the most highly ranked factor in support of fisheries policy and management in line with EAF.

FINDING 15

Awareness and knowledge of the ecosystem approach to fisheries among survey respondents is increasing. Future planning of EAF-Nansen needs to consider that policy and management recommendations have not yet been effectively realised. Key informants from partner countries indicate that issues with poor governance and commitment and will to improve policy and management is still a limitation to implementation.

The most frequently mentioned strength of the programme in the SWOT survey was 'capacity building' and the second most was 'expertise'. 'Capacity building' was highlighted by 17 respondents and 'Expertise' by 14. This is something for EAF-Nansen to build on. In future planning it will be important to take on board the long running indications that the ecosystems approach is not yet breaking through at the implementation level, something that earlier evaluations have repeatedly picked up. For example, both the MTR of the EAF-Nansen Project in 2009 and the MTR of the EAF-Nansen Programme in 2021, indicated that the integration of EAF at the country level was slow and missing targets. According to the mean preference ranking by 21 key respondents to the FFA in the current evaluation, improved fisheries policy and management in line with EAF was perceived to be most hindered by poor governance and transparency, and lack of political will and commitment to strengthen the fisheries sector in partner countries.

The FFA respondents, both national and regional representatives and staff of FAO/IMR, ranked poor governance and transparency, and lack of political will and commitment to strengthening the fisheries sector in partner countries as the most import factors hindering improved fisheries policy and management in line with EAF.

There are examples of countries having provided funding to small projects at national level, which can be expected to increase with a possible expansion and consolidation of the small-projects component.

Findings on Efficiency:

EQ #6 How well has the cooperation been governed and managed, especially with respect to the procedures, expected roles and responsibilities, M&E and internal control in the program management infrastructure and what is the operational efficiency?

FINDING 16

Survey data collected by DFN are relevant to partner countries, but their availability to fisheries managers has been inconsistent. Survey reports were often delayed or missing, but as of 2021 all survey reports including previously pending ones, have been finalized, except for some that are pending for final formatting.

Adherence to FMC is seen as an important step for implementation of EAF in partner countries. Annual analysis and evaluation of data on fish stocks and fisheries is used to understand trends and to implement appropriate management measures. The MTR of the EAF-Nansen Project identified the delay of the production of survey reports to be a major problem during the project phase. This problem continued to be a problem in the EAF-Nansen Programme. Several reports on cruises from the early years of the programme were not forthcoming after the DFN surveys were postponed due to COVID-19. These included three reports from 2017, seven reports from 2018 and six reports from 2019. Results for stock assessments, however, have been made immediately available at post-survey meetings and for regional working groups. According to the progress report for 2021, all survey reports including previously pending ones, have now been finalized, except for reports on mesopelagic surveys, which are pending for final formatting.

FINDING 17

There have been survey planning problems related to inadequate process for participant selection for cruises, which has been exacerbated by short notice in identification of who will participate in surveys. This has been partially addressed through pre-survey meetings. The survey operations in general have been efficient.

Researchers and other professional staff from partner countries take part in all DFN cruises. This is viewed as an important part of their training, but their participation is also expected to contribute to facilitate the effective implementation of the surveys and there is an expectation that this experience will also contribute to better use of the data collected. There are examples of scientists from partner countries who have been cruise leaders. Increased support for MSc and PhD research using survey data should accelerate this development. During the EAF-Nansen Project there were on average 10 participants from partner countries on board at any one time. During the EAF-Nansen Programme this number rose to an average of 18, as the new vessel could accommodate more people and engage in more diverse research at the same time. This is a good thing, and increases the rate of training, as well as the breadth of training possibilities.

Attention to the governance and management of procedures especially around selection protocols for training placements may reap benefits. Issues with the selection of participants were voiced during some key stakeholder interviews. There have been cases where course participants neither appeared to have the knowledge, nor the required level of responsibility within their organisations, that would be desirable for their participation to benefit either them or increase the capacity of their institutions, and participants from European countries are sometimes selected, thus reducing the participation for African partner countries. This weakness was identified also by the MTR of the EAF-Nansen programme. It is not uncommon for

selection processes to suffer such procedural issues and there will be learning around this issue from a range of other development efforts where similar recruitment to trainings occur.

This finding is supported by the results of the FFA, where respondents were split in two groups. The group consisting of national and regional respondents (focal points and staff of RFOs) ranked low relevance of some courses, and inadequate process for participant selection, as the most important factor that hinders strengthening the knowledge base for sustainable management of fisheries. For most years, the number of survey days range from 250-300 days, which is high by any standard and a testimony to efficient management of vessel operations, especially as the vessel has not been operating in the most stable of environments.

FINDING 18

During the Covid 19 pandemic, programme operations were suspended and the Nansen vessel was chartered at no cost to the programme and in a way that would not affect the programme implementation. Formal minuted meetings assessed the context and the options for chartering the vessel and concluded an agreement.

After 50 days operation during Jan-Mar 2000, FAO, Norad and IMR formally agreed to suspend the programme surveys, firstly until September 2020, and then until June 2021. This was because restrictions still in place in many countries, coupled with the uncertainty of the situation did not allow for a progressive resumption of the surveys due to the Covid outbreak (FIFTH ANNUAL MEETING 16-17 March 2021; SEMI-ANNUAL MEETING 28 October 2020). In a formal minuted meeting (FIFTH ANNUAL MEETING 16-17 March 2021) FAO, Norad and IMR agreed to release the vessel from her obligations under the Nansen Programme and allow the vessel to be chartered for research in the EEZ of Norway. The charter cost was calculated taking account of: (1) the calculated average daily cost of the programme activities in Africa and Asia of the vessel; (2) that the cost in Bergen dock due to fixed costs and personnel costs was almost the same as its cost for programme use (Norwegian parliament exchanges between Bergen City Council and the Minister in November, 2020); (3) the constrained options for use as a result of the pandemic, i.e. research purposes in Norwegian waters; (4) the skewed market as a result of many vessels lying dormant at this time in Bergen due to the pandemic, so the charter 'market' was poor; (5) the pool of interest, namely a private company, IMR, Norwegian Petroleum Directorate, and University of Oslo (plus one survey request received for mineral prospecting which was disregarded); (6) the relative risk related to crewing and operating the vessel of the potential charters; and (7) identifying a mechanism where the charter fee could be managed by Norad - the organisation not being able to receive income directly. Norad Senior Advisers, a Head of Department, the DG of NORAD met to discuss the charter arrangement (in the context of 1-7 above) and agreed to charter the vessel to IMR at a cost that was 47.75% of calculated average daily cost of the programme activities in Africa and Asia.

FINDING 19

The organisational structure, regulated through tripartite agreements between Norad, FAO and IMR, has been considered efficient, although there remains a potential for further improvements.

The expenses for operating DFN is paid directly from Norad to IMR. The actual invoices for the vessel operation are sent from IMR to FAO for verification and from there to Norad. This way of organising transfer and control over payments, appears to serve to achieve transparency, coherence in the programme and efficient oversight of activities carried out.

With regard to funds allocated to administration, the management costs charged by FAO does not seem to be unusually high. There is a Project Servicing Cost at 9.1%, which is 4.9% lower than for other "trust fund projects" at FAO. There is also a budget line for General Operating Expenses, which covers direct costs for field work for FAO staff. A substantial part of the budget is for IMR services, where the staff charge is at cost minus a discount of 25% compared to charges for regular research projects. Travel charges for IMR staff are in accordance with government regulations.[31]

As mentioned, progress reporting has been focussed on activities and outputs, while progress related to issues around environment, poverty, gender, and small-scale or artisanal fisheries has been scant or missing.

There have been disagreements among implementing partners relating to how decisions on the number of persons from each category of stakeholders that should participate in the cruises were taken. Only a certain number can be onboard so if some external individuals are allowed on board, it automatically leads to the exclusion of others. It would be important to apply transparent and agreed mechanisms for how this should be managed.

The budget for scientific services is specified in USD, while the funds come from Norad in NOK into an FAO bank account in USD. Then, based on the financial statement from IMR, FAO transfer funds to IMR in NOK. The exchange rate changes frequently, which creates uncertainty. So far, the experience has been that money lost in one transfer is regained in another and overall, the exchange rate risk has been balanced. However, this aspect should be looked into in more detail.

There is an agreement with the Norwegian Directorate of Fisheries for provision of technical services on fisheries management. According to stakeholder interviews, this support, which could potentially be useful in strengthening the fisheries management components of the EAF-Nansen Programme has so far been under-utilised. This was also the finding of the MTR of the EAF-Nansen Programme.

Additional efficiency challenges communicated in interviews with staff of the three parties include, amongst others:

— Unusual roles among the parties, e.g. Norad being the financing partner but also a supplier of the services of DFN to the other partners.

— Complaints concerning planning delays on the part of FAO, including for printing of survey reports.

— Slow process of management plan implementation

In spite of the above specified weaknesses and challenges, EAF-Nansen has been able to produce a large amount of outputs, and to some extent outcomes, as shown in the above section on programme effectiveness.

FINDING 20
The programme is characterised by timely disbursement of funds for planned activities.

Delays in fund disbursements within the programme are rare. In most cases they result from lack of, or untimely, reporting from recipient parties.

31 Norad, 2018: Mal for Beslutningsdokument (Format for decision document)

Findings on Coherence:

EQ #7 Has there been coherence with other Norwegian or international development assistance programs in the partner countries; where it is considered as a decisive factor in determining programme outcomes and impacts?

FINDING 21

Potential coherence with the outcomes and impacts of other Norwegian or international development assistance programmes in the partner countries is largely unreported in progress reports, but has taken place at bilateral level in several countries, reportedly with some successful results. Limited cooperation with other programmes and between countries is perceived by stakeholders to hinder the knowledge base for the sustainable management of fisheries.

Coherence with other Norwegian or international development assistance programmes in partner countries e.g., programmes under “Oceans for Development” or other initiatives under “Fish for Development”, of which the EAF-Nansen programme is a major component, are sometimes mentioned but not reported on at any detail in the progress reports. The Word/Phrase counts related to the use of these phrases carried out by the evaluation team are blank.

The Oceans for Development Programme has the following three objectives: promoting the establishment of a framework for sustainable and integrated ocean management in cooperating countries; authorities having competence and capacity to ensuring compliance with the framework for sustainable and integrated ocean management in the execution of their mandate; and strong institutions, robust and predictable framework conditions combined with enforcement fostering sustainable private sector development and job creation. The provision of science, and capacity building for scientists and fisheries managers and their institutions through EAF-Nansen is highly relevant to these objectives. Oceans for Development also aims at raising awareness about rights of coastal communities and their involvement and participation in decision-making processes, which has relevance in relation to the current efforts of EAF-Nansen to develop small projects in coastal communities.

Opportunities for achieving synergies with other relevant Norwegian-funded interventions have existed and have been exploited by the programme. For instance, according to stakeholder interviews and other communication, there were successful collaborations with Norwegian-funded interventions in Namibia and Mozambique, and effective cooperation with bilateral projects in Sri Lanka and Myanmar based on Nansen surveys, research and knowledge, a cooperation that has benefitted both EAF-Nansen and the bilateral projects. In the case of Myanmar, the cooperation led to the national authorities establishing fisheries resource conservation measures. There is currently a Norwegian-financed ”Fish for Development” programme for cooperation between fisheries institutions in Ghana and Norway, including IMR. The importance of having access to scientific EAF-Nansen data as a basis for management advice in the sector in general as well as for this programme has been confirmed by stakeholder staff in Ghana. However, the programme document mentions that even if the data produced by DFN is useful, the irregularity of the surveys creates a need for finding alternative means of low-cost and sustainable data collection. The participation of Ghana in consolidating achievements, including through the implementation of a Beach Seine Fisheries Management Plan in which the EAF-Nansen Programme has been involved, has also been mentioned.

An important coherence aspect is that EAF-Nansen has cooperated regularly and extensively with regional fisheries bodies, as reported in progress reports and confirmed in stakeholder interviews. During the EAF-Nansen Project, there was extensive work done with LME projects, and this was carried over to some extent into the EAF-Nansen Programme.

Notwithstanding, limited cooperation with other programmes and between countries is the second-most highly ranked hinderance according to the Force Field Analysis mean preference rankings made by 21 key informants. There is significant learning around the issues of development coherence originating from the Paris Declaration on Aid Effectiveness with respect to harmonisation, such that donor countries coordinate, simplify procedures and share information to avoid duplication. This was further elaborated in the Accra Agenda for Action in 2008.

Findings on Sustainability:

EQ #8 Are programme net benefits likely to continue after the completion of the assistance provided by the programme?

FINDING 22

Joint transboundary planning of surveys and information sharing among countries are lowly ranked by key informants as a factor for improving fisheries policy and management in line with EAF.

According to the mean preference ranking by 21 key respondents to the FFA, joint transboundary planning of surveys and information sharing among countries for improved fisheries policy and management in line with EAF are the third least highly ranked support functions for improved fisheries policy and management in line with EAF. This may be said to be a surprising finding given that the data collection by the large DFN vessel is focussed on transboundary stocks. However, the group of respondents include 15 focal points of different categories: national, project, regional and technical focal points. The low ranking provided for this factor is thus interpreted as being significant in indicating a limitation to sustainability.

FINDING 23

There are perceived weaknesses according to national stakeholders, of the EAF-Nansen approach around sharing data, and supporting partners to act on it, in ways that can support fisheries management.

The most frequently identified weaknesses by SWOT respondents include ‘poor data access’, ‘poor dissemination’, ‘lack of follow-up’ and ‘poor monitoring of results’. These weaknesses do not predict good ecological sustainability. Comments have included “insufficient focus on supporting countries in putting fisheries management into practice”, which strengthens this finding. A lack of follow up, and poor use of data generated through cruises was also highlighted since many years in the mid-term evaluation of the EAF-Nansen Project in 2009. The indication of weakness of poor data access may seem like a contradiction to Finding 2, but it should be noted that the group of respondents include a large number of individuals who have not cooperated with EAF-Nansen.

FINDING 24

The value that key informants attach to engaging with EAF-Nansen surveys, as well as its training programmes, workshops and seminars, predict good absorption and retention capacity of the expertise.

According to the mean preference ranking by 21 key respondents to the FFA, improved data and knowledge through EAF-Nansen surveys was the highest ranked factor strengthening sustainable management of fisheries, which were most hindered by the limited capacity and engagement of institutions and countries.

FINDING 25

The use and storage of data, and capacity to analyse and interpret data, does not indicate that programme benefits can easily continue after assistance concludes.

According to the mean preference ranking by 21 key respondents to the FFA, increased knowledge and awareness among managers and decision makers through training programmes, workshops and seminars was most highly ranked for supporting fisheries policy and management in line with EAF. According to the questionnaire survey, only 29% of the respondents reported having personally worked with EAF-Nansen data. This percentage varies with LME with most working with EAF-Nansen data in CCLME and BCLME and least in BOBLME. The survey shows that 38% of the respondents report being unaware of where to find EAF-Nansen data if they need to access it. This varies with LME, with 100% data access for BCLME and 75% for ASCLME but 55% for BOBLME, 45% for CCLME and 42% for GCLME. The survey also shows that 36% of the respondents report that EAF-Nansen data are not stored in a form that they know how to use. This varies with LME, with 100% data access for BCLME and 72% for ASCLME, but 50% for BOBLME, 36% for CCLME and 39% for GCLME.

5

Conclusions

CONCLUSION 1

(Based mainly on findings 1, 5 with sub-findings on gender, 10, 12 and 19). The lack of a full-fledged Theory of Change is an obstacle to the effective implementation of the programme, making any attempt to unravelling causal pathways to the goal of poverty reduction impossible. A Theory of Change is a vital planning tool to effect change in complex contexts. The EAF-Nansen Project document implied a change theory, and the EAF-Nansen Programme documentation has a rudimentary diagram depicting change towards impact. However, there are many steps on the change paths that link the EAF-Nansen Pro-gramme activities and working towards improved management of fisheries, and indeed a policy goal of re-ducing poverty. Furthermore, the transition from one level of results to another relies on assumptions that are critical to understanding the extent to which different results are likely to be achieved or not. The lack of reporting on progress related to poverty reduction is to some extent due to a lack of clear identification of the multi-dimensional nature of poverty and, importantly, the non-existence of a monitoring system that could identify changes along the result pathways. Weaknesses in the organisational set-up of the pro-gramme, brought up by representatives of implementing partners, also need to be addressed.

CONCLUSION 2

(Based mainly on findings 2, 3, 6, 7, 8, 11 and 23). At an operational level, the efficient and successful implementation of the EAF-Nansen Programme Science Plan will be compromised if the perceived weaknesses of the EAF-Nansen approach - around sharing data, and supporting partners to act on it, in ways that can support an effective ecosystem approach to fisheries management - are not addressed.

CONCLUSION 3

(Based mainly on findings 3, 6, 9, 10, 11, 14, 15, 20 and 21). EAF-Nansen's capacity building, through training programmes, workshops and seminars is well regarded among stakeholders in partner countries, regions and LMEs, and is increasing awareness and knowledge of the ecosystem approach. However, it has been repeatedly recognised over many years that the translation of awareness and knowledge among managers and decision makers into an effective ecosystems approach to fisheries management is progressing slowly, missing targets, and hindered by issues beyond awareness and knowledge. This is a strong message for planners and architects of future ToCs to think creatively about. There are examples from the current phase of more direct influence on national and regional initiatives, and opportunities for funding commitment and involvement, including in the development and implementation of small projects.

CONCLUSION 4

(Findings 3, 14 and 22). Regional cooperation, for conservation and sustainable use of marine resources and environment is essential, and valued by programme stakeholders. There is also unanimity among stakeholders across all LMEs associated with the programme that EAF-Nansen is an important avenue for expanding regional cooperation further.

CONCLUSION 5

(Findings 1, 5 - with sub-findings a, b, c and d on gender - and 21). Reporting of progress related to issues around environment, poverty, gender, and small-scale or artisanal fisheries, is scant or missing among much of progress reporting over the past 14 years. As these are all elements of Norway's, as well as the UN's strategic development goals, it is concluded that this is major shortcoming. With regard to links to other development projects, the programme has cooperated substantially with regional fisheries bodies and with other interventions in partner countries, sometimes with good results.

CONCLUSION 6

(Findings and 5 - with sub-findings a, b, c and d on gender). A relatively small percentage of trainees and cruise participants have been women, and inclusion of gender equality in progress reporting has been low. However, there has been an increase of attention to this theme during the later years.

CONCLUSION 7

(Findings 6, 7, 8, 9 and 16). A significant number of partner countries depend on EAF-Nansen survey data. In this regard, the effectiveness of the programme and its potential to contribute to sustainable management of marine resources and environment is compromised in several important regards, including irregularity of coverage, poor data access and poor dissemination. Data collected in areas beyond national jurisdiction can be regarded as ”global public goods” and when the data policy is revised, data on ocean climate ocean acidification, marine pollution, biodiversity and even mesopelagic resources should be treated the same way whether they have been collected inside or outside partner countries’ EEZ. The operation of a state-of-the-art vessel in LMEs around the African continent and parts of Asia, is a key innovation of EAF-Nansen. This provides many opportunities for raising awareness, building capacity and supporting regional cooperation, to name but a few. However, a primary opportunity, given the paucity of state-of-the-art vessels operating in this region, has been collecting and making available survey data. Whilst some countries, such as Morocco and Angola, have new vessels, the 20+research vessels found around Africa are characterised by IMR and FAO as “on the water” and “more or less operational”. Many suffer specific functional and technical problems, and have crews, often with only basic skills and some experience.

CONCLUSION 8

(Findings 12, 13, 17, 22, 23, 24 and 25). A significant effort focussed on improving programme links and dialogue with national fisheries stakeholders could benefit planning for engagement and capacity building, including addressing the perceived weak cooperation with national universities to disseminate EAF principles, the widely held view among national and regional stakeholders that local views are excluded, and for maximising the benefit of training, as well as data collection in relation to local needs. It is concluded that this will also improve prospects for the sustainability of benefits beyond programme assis.

6 Recommendations

RECOMMENDATION 1

It is recommended that a detailed ToC is developed for the programme, that encompasses a more comprehensive understanding and articulation of the components of change that are required, how they link to contribute to outcomes and impact, and what the challenges, limitations and assumptions are. This would be a valuable resource, not only to support activity planning, but it would be a pre-cursor to conducting a full contribution analysis of the programme to elucidate what is effective and what EAF-Nansen's contribution to higher-level objectives and goals has been, including in relation to poverty reduction. Coupled to this, it is recommended to develop a MEAL system, based on the ToC, that could track changes at different result levels, test the validity of assumptions and provide learning within the programme. The current organisational arrangement with a tri-partite agreement between Norad, FAO and IMR should be revisited.

RECOMMENDATION 2

It is recommended that the Fisheries Management Cycle is supported to function better as a training network by making data rapidly and readily available, and planning and providing further skills upgrading to those managing fisheries in how to use EAF-Nansen or other survey data. This will likely require changes to operational protocols to increase efficiency, e.g. around timely reporting, as well as greater commitment to effective data sharing, and addressing barriers to use.

RECOMMENDATION 3

Whilst continuing with training, it is recommended also to facilitate the implementation of the ecosystem approach to fisheries management through a broader contribution, to address issues of governance, and of commitment and will - to improve policy and management, and to understand and address the perceived mismatch between data needs and data collection. This may involve greater engagement with artisanal fisheries and their management, for instance through an expanded small-projects component, and where the EAF-Nansen vessel is not best placed to do this, the programme might implement more coastal projects and training relevant to inshore artisanal fisheries to a range of stakeholders, including involving and engaging the private sector and government at different levels. Building capacity might be well complemented by a programme phase that also encourages institutional change, to a larger extent than previous phases.

RECOMMENDATION 4

It is recommended that the EAF-Nansen Programme, with its UN connection, continue to leverage further the confidence that stakeholders have in FAOs capacity to effectively support regional cooperation in management of fisheries and addressing challenges to the marine environment by identifying locations and regional issues that it might positively influence through bespoke programme activities. This may help to address some of the existing issues around effective implementation of the ecosystem approach to fisheries management.

RECOMMENDATION 5

It is recommended that programme reporting is overhauled, so that reporting of progress is against specified strategic as well as operational elements. This is likely to require prescribed reporting formats and associated incentive structures.

RECOMMENDATION 6

It is recommended that a special effort be made to systematically monitor the implementation of the gender strategy and that the progress reports highlight the activities carried out and the results achieved in gender mainstreaming at management, project activities and communication levels.

RECOMMENDATION 7

It is recommended that the planning of the collection and communication of survey data is overhauled. Data is the currency of fisheries management, and with all stock assessment models the more spatially and temporally comparable data that there is - the more useful it becomes. The programme should aim to maximise the usefulness of the data it can collect, within any operational constraints, and to ensure it is communicated and stored in ways that also maximise its utility. In addition, it is not best practice for the vessel of a development programme to 'crowd out' the research vessels from the countries it aims to support. It is recommended that ways be sought to facilitate training for the crews of the African research vessel fleet. Once that were done, there may be ways for survey planning and execution to be done in coordination and conjunction with African research vessels.

RECOMMENDATION 8

It is recommended that engagement and communication strategies are revised with the objectives to further expand contact and increase the voice of national counterparts in decision making, in order to address issues of mismatch between data required by users and data actually provided by EAF-Nansen, weaknesses in participant selection, some instances of late minute planning around selection of trainees and improved follow-up.

Appendix

Appendix 1:

Terms of Reference

EVALUATION OF NORWEGIAN SUPPORT UNDER THE NANSEN COOPERATION IN THE FISHERIES SECTOR

List of Acronyms

EAF	Ecosystem Approach to Fisheries management
Eval	Evaluation Department at Norad
FAO	Food and Agriculture Organization of the UN
FfD	Fish for Development program
IMR	Institute of Marine Research
MFA	Ministry of Foreign Affairs
NDF	Norwegian Directorate of Fisheries
Norad	Norwegian Agency for Development Cooperation
OcfD	Ocean for Development program
LMEs	Large Marine Ecosystems

Background

Fish accounts for about 17 percent of the global population's intake of animal protein, and 6 percent of all proteins consumed. Fishing and related activities provide employment and livelihoods for 60 million people, 90 percent of these in developing countries. In addition to fish, marine ecosystems also provide a wide range of goods and services including being vital for the very existence of life on earth[1]. Norway has a long tradition of supporting development cooperation in fisheries sector. Fisheries support is embedded in Norwegian development policy and its objectives of reducing poverty and achieving sustainable development.

Currently, the assistance to the sector is primarily coordinated through Norway's Fish for Development (FfD) program established in 2017. FfD is an effort to exploit the comparative advantage that lies in Norway's stock of knowledge and experience from management of its own marine and maritime sector and its engagement in development of fisheries sector of its development partners. Key priority areas for FfD include the fight against fisheries crime and illegal, unreported and unregulated (IUU) fishing, efforts to strengthen civil society and private sector development. The single most significant component in FfD is the current phase of the long standing Nansen cooperation – the EAF-Nansen Programme entitled "Supporting the Application of the Ecosystem Approach to Fisheries management considering climate and pollution impacts". EAF-Nansen Programme builds on the foundations created by the previous EAF-Nansen Project "Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries" that started in 2007 and ended in May 2017. Both the current phase and its predecessor are the continuation of the initial Nansen cooperation that started in 1975 with exploratory surveys to identify potential stock in developing countries. Both projects have their respective log-frames for evaluation. Results framework for the current phase and its predecessor are documented in the respective project documents[2].

Rationale

The previous evaluation of Norwegian fisheries assistance was conducted by the Evaluation Department[3] Eval in 2008. Since then, Norway has disbursed over a billion Norwegian Kroners of assistance for development of fisheries and aquaculture in several countries and regional organizations in Asia, Africa and Central America. Major portion of the assistance has been disbursed post 2015 through FfD[4]. Disbursements under FfD have increased gradually reaching NOK 280 million in 2018. Many

activities under FfD are still in infancy stage and not mature for a meaningful evaluation. This however does not hold for EAF-Nansen Programme considering that it is essentially a new phase in a series of several earlier phases of Nansen cooperation since 1975.[5]

The importance of the different phases of Nansen cooperation goes beyond the FfD. The activities under the different phases have links to Norad-funded Oil-for Development Programme and are relevant for Norway's emerging "Ocean for Development strategy"[6] (OcfD) to support achievement of the UN Sustainable Development Goals (SDG). Of relevance is SDG 14 that aims to "Conserve and use the oceans, seas and marine resources for sustainable development". Other relevant SDGs include SDG 1 "to end poverty in all its forms everywhere" and SDG 2 aiming to "end hunger, achieve food security, and improved nutrition and promote sustainable agriculture.

Evaluation of the Nansen cooperation by Eval is long due, considering that, Eval's previous evaluation of Norwegian fisheries assistance conducted in 2008 did not cover the activities under Nansen cooperation. However, following studies / reviews of the activities under the different phases of the Nansen cooperation have been undertaken at the project level since 2002.

— Barnes, Degnbol and Hersoug (2002). A study of visions and options for the future work of the

— Nansen Programme (2004-2007).

— Des Clers, Ngoile, Breuil (2013). Final Evaluation of the EAF-Nansen project Phase I: Strengthening the knowledge base for and implementing an ecosystem approach to Marine Fisheries in developing countries (GCP/INT/003/NOR). N Collected Reviews 11/2013.

— NFDS, 2016. Appraisal of the programme document for a new phase of the EAF-Nansen Programme. Norad, FAO.FAO 2009. Cost-benefit analysis of options for the future of the EAFNansen project, in particulalr the replacement of the RV Dr. Fridtjof Nansen.

— FAO 2021. EAF-Nansen Programme: "Supporting the Application of the Ecosystem Approach to Fisheries management considering climate and pollution impacts" (GCP/GLO/690/NOR), Midterm review, forthcoming (expected 2nd quarter 2021).

Scope

The scope of this evaluation covers the two phases of the Nansen cooperation -the current EAFNansen Programme and the previous phase -EAF-Nansen Project "Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries" that started in 2007 and ended in May 2017. For the period 2017-2021, the evaluation will draw on the forthcoming mid-term review report commissioned by FAO and update the same for any missing or new information as needed.

Purpose

The main purpose of this evaluation is to acquire information about the performance of the Nansen cooperation and any associated fisheries management assistance at the regional and national level and draw lessons for future implementation of EAF Nansen Program.

Objective

The main objective of this evaluation is to assess the long and medium-term outcomes - direct or indirect, positive or negative, intended or unintended, of the Norwegian assistance under the Nansen cooperation and its associated activities.

The evaluation shall:

— Analyse and provide information about the performance of the Nansen cooperation and any associated fisheries management assistance at the regional and national level.

— Outline relevant lessons for future implementation of EAF Nansen Program –the current phase of Nansen cooperation.

— Identify potential synergies to ensure that the combined results of future implementation of EAFNansen Programme and the newly formulated "Oceans for Development Strategy" will be greater than the sum of the separate individual programmes.

The main users of the evaluation will be Ministry of Foreign Affairs (MFA), other stakeholders who have direct or indirect interest in the fisheries interventions and beneficiaries in the partner countries. MFA refers to the political leadership and the officials in Oslo, the Norwegian Embassies and the Norwegian Agency for Development Cooperation Norad. Other primary stakeholders include FAO, IMR and Norwegian Fisheries Directorate. Final beneficiaries include the regional/national/local governmental twining partners of the primary stakeholders, educational/research institutions, and communities, households and individuals benefitting directly or indirectly from the evaluated interventions.

Evaluation Criteria

More specifically, the evaluation will assess the Nansen cooperation in terms of its:

Relevance in relation to:

— Partner countries:

- *Fisheries policy goals including food security and poverty alleviation.*
- *Implementation of ecosystem-based management of the fisheries resources*
- *Regional cooperation for conservation and sustainable use of marine resources and environment*

— Achievement of Norwegian development policy objectives of:

- *Reducing poverty and achieving sustainable development.*
- *Strategic goals motivating Norwegian multilateral partnerships.*
- *Cross cutting issues related to mainstreaming gender, and social accountability*[7] *in management of the fisheries resources.*

— Contribution to "global public goods" for sustainable management of marine resources and environment.

Effectiveness measured as long and medium-term intended and unintended outcomes for overall marine resource management, human development, public and private sector development in the partner countries[8]. Of relevance are effects in terms of development of institutions in the South that are de-facto equipped to assist the partner countries the ecosystem approach to fisheries management of their fisheries resources. Included herein are issues such as technical competence, and quality of governance in implementation of regulation at these institutions.

Efficiency in governance and management of the Nansen cooperation for delivering the intended results –How well the cooperation has been governed and managed, especially with respect to the procedures, expected roles and responsibilities, M&E and internal control in the program management infrastructure and what is the operational efficiency?

Coherence with other Norwegian or international development assistance programs in the partner countries; where it is considered as a decisive factor in determination of the outcomes and impacts identified in this study.

Sustainability such that net benefits are likely to continue after the completion of the assistance. For example, sustainability of the ecological systems may be assessed in terms of levels of spawning biomass, and the level of resource stocks in relation to the developments in the fishing gear, vessel fleet and fishing effort. Sustainability of the institutions may be examined in terms of their absorption and retention capacity of the expertise developed under the programs.

Methodological comments

A mixed method (qualitative and quantitative) approach is envisaged for this evaluation. The evaluation will consider the political, social and institutional contexts in which the programs operated when assessing the performance of the stakeholders and their twining partners.

The evaluation team will make use of secondary and primary data that will be analysed using suitably defined qualitative and quantitative indicators. Primary data shall be collected using document reviews, interviews, focus groups and an on-line survey. The evaluation will use all information documented in the earlier reports and evaluations[9], together with data collected in this evaluation.

Discussion of the previous evaluations will be limited to a brief comparative overview of the main findings of the studies. This evaluation will complement the previous work by focussing on identifying medium and long-term outcomes of the intervention.

Program theory as specified in the log-frames for the respective phases of the Nansen cooperation shall form the starting point for the analysis. An important methodological decision is related to the type of inference to be drawn from empirical observations-How confident one needs to be that observed changes are in fact due to the evaluated program? In this context, one may distinguish between adequacy, plausibility or probability assessments. Adequacy assessment is mainly concerned with identification of an actual change in an indicator. The assessment can be made with reference to a predefined standard, or it may be cross-sectional or across time. The value of an adequacy assessment is that it reflects on whether the objectives are being realised. No attempt is made to establish a causal link between program activities to observed changes. To establish causal links, adequacy statements need to be combined with plausibility, or probability assessments, both of which require construction of counterfactual situations. Plausibility assessments may make use of historical or external control groups accompanied by an attempt to control for external influences, while probability assessments entail random assignment of “objects” as project beneficiaries or as a member of the control group.

This evaluation will at the minimum provide adequacy assessments of the outcomes and attempt to establish a data set that is suitable for making a plausible assessment with respect to poverty alleviation and ecological outcomes where possible.

Research Strategy

Desk review

The desk review will map evolution of the fisheries assistance since 2006 supplemented by a deep dive in the evolution of the Nansen cooperation. The review includes but is not necessarily limited to following tasks:

— Review of information in public domain- (print, media, internet, websites of Norad, IMR, DOF, FAO, other International regional/country government, trade and civil society organizations)

- *Programme information, publications, newsletter, academic and grey literature, relevant international, regional and/or national databases*

— Review of information in Norad archives

- *Programme's documents, technical reports, progress reports, minutes of the annual and semi-annual meetings, Letter of Agreement with program partners and other internal documents.*
- *Review of program documents for the Norway's emerging "Ocean for Development" initiative.*

— Review of relevant International regional and national databases relevant for identification and operationalization of prospective Key Performance Indicators for evaluation

The information collected shall be supplemented by stakeholder interviews as needed.

Spatial Analysis

The objective of the analysis is to use geographical project information combined with relevant remotely and locally collected data through interviews and survey data to gain useful insights into results of two phases of the Nansen cooperation -the current EAF-Nansen Program and the previous phase -EAF-Nansen Project.

A possible approach may include:

— Going through project documentation to identify geographic references of the activities under Nansen cooperation, in a process known as »geoparsing«.

Once a list of geographic locations has been identified, these may then be assigned a set of latitude-longitude coordinates, a process known as »geocoding«.

— Identification and review of relevant International regional and national databases with remotely or regionally / locally collected fisheries, marine environment, and socio-economic data.

— Identification and operationalization of Key Performance Indicators for evaluation.

— Interviews and survey

- *Identification of key informants in management and staff of program partners (Norad, FAO, IMR, DFO) and beneficiaries (government, sector, trade and civil society organizations in beneficiary regions and countries.)*
- *Virtual meetings with program partners and identified key informants.*
- *Questionnaire survey to supplement and triangulate data from secondary sources*

— Assessment of the results of the Nansen cooperation activities using the identified information.

Deliverables

Two intermediary deliverables

- Desk review
- Geocoding of program activities
- Final report
- Preparation of the draft final report
- Incorporation of Evaluation Departments comments
- Incorporation of stakeholder comments
- Submission of the final report
- Approval of the final report by the Evaluation Department
- Public dissemination of the final report.

Evaluation management

The evaluation will be managed by the Eval. A Reference group will to be constituted to provide guidance, review reports and assist in resolving challenges.

Appendix 1:

Prospective indicators[10] for measuring medium and long-term outcomes

Appendix 2:

List of contact persons (Tentative)

Appendix 3:

TOR Mid-term review in progress.

EAF-Nansen programme: »Supporting the application of the ecosystem approach to fisheries management considering climate and pollution impacts.« (GCP/GLO/690/NOR) Food and Agriclutre Organisation of the United Nations

1 Source - Food and Agriculture Organization FAO.

2 See https://Norad.no/om-bistand/publikasjon/2018/an-ocean-of-opportunities-norways-fish-for-development-programme/

3 See https://Norad.no/en/front/evaluation/

4 During 2013-17, Norway disbursed NOK 993.1 million of which FfD accounts for NOK 701 million .

5 Preparations for the current five-year phase under FfD was led by FAO, following the decision by the Government of Norway in 2012 to build a new research vessel (R/V) to replace the ageing R/V Dr Fridtjof Nansen. The current phase has a budget of NOK 605 over the five-year period 2017-2022.

6 2020, Norad “Utkast til styringsdokument Hav for utvikling», Notat, 02.01.2020, Norad work-in progress, Internal Note.

7 Citizens (particularly vulnerable groups) access to information to engage with government, politicians and their agents to promote public interest in implementation of sector policies.

8 The issues that may be addressed here include impacts on income levels, food security, health and welfare of the workforce in the sector, development of human and social capital, fisheries-based private sector development and impacts on biodiversity and biomass of fisheries resources. For illustration purposes, appendix 1 outlines some indicators for measuring effectiveness of the intervention. Final choice of the indicators will depend on availability of data.

9 In the first phase (2006-2011) of the project two reviews were done – a mid-term review (MTR) commissioned by FAO in July 2009 and the ¨Independent External Evaluation (IEE) undertaken in July–August 2013. Both the MTR and the IEE were done by external consultants.

10 The final selection will include the indicators in the results/log frame for repective phases of Nansen initiative and depend on the availability of data.

Appendix 1: Prospective indicators[10] for measuring medium and long-term outcomes

Outcomes	Indicator
Sustainability	
	Proportion of stock with third part certification
	Proportion of fish stocks within biologically sustainable levels
	Ratio legal to illegal discards
Harvest	
	Average harvest during the last three years
	Vessel days required to catch MEY = AH*1,10
	Average price for permit / gross earnings
Wealth	
	Ratio of total revenues to Max revenues during
	Permit value to Max value

Outcomes	Indicator
Risk	
	Volatility of landings
	Volatiltiy of prices
	Volatility of revenues- Annual, intra, spatial
	Legal challenges, confrontations, protests
Earnings- Artisan fisheries	
Owner	Annual revenues to national average earnings
Crew	Education access for families
	Health care access
	Social status
	Crew turnover- Average years of experience
	Age structure of the owner and crew

Outcomes	Indicator
Post harvest	
	Ex vessel prices to past max ex. V prices
	Use - Ratio of catch for human consumption
	Ratio of exports to domestic consumption
	Per capita fish food supply
	Ratio of exports to EU and US
	Ratio of ex-vessel price to wholesale prices

Appendix 1: Prospective indicators[10] for measuring medium and long-term outcomes

Outcomes	Indicator
Processing	
	Ratio of actual landings to processed product
	Capacity utilization in processing (days open)
	Proportion going to certified/ branded processing
	Regional ancillary industry for fisheries
	Time to undertake major repairs
	Sources of capital
	Age of the facilities

Outcomes	Indicator
Macro Factors	
	Environmental status -
	Water quality, air pollution, etc.
	Natural / man-made disasters frequency
	Pollution Shocks / Accidents
	Level of Chronic pollution - Stock effect
	Level of Chronic pollution - Consumption effect
	Governance indicators Kaufman et. Al. 2008)
	Governance indicators
	Economic conditions
	Index of Economic freedom
	GDP per capita

Outcomes	Indicator
	Property Rights
	Ratio of harvest under limited access
	Marketability of quotas
	Security of rights
	Duration of property rights
	Ability of owners to be flexible
	Exclucivity Index

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FAO, 2009: Mid Term Review of EAF-Nansen ProjectN

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FAO, 2021: EAF-Nansen Focal Points – Updated Aug 2021

FAO, 2021: Management response to EAF-Nansen Mid-Term Review

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Appendix 3: Persons interviewed

EAF-Nansen, Persons interviewed

Name	Organisation/country
Kamara Ba	CRODT & FTP Fellow/ Senegal
Merete Tandstad	FAO
Kyriakos Kourkouliotis	FAO
Lars Engvall	FAO/Bay of Bengal Project (retired)
Roseline Blanche Akenze	Focal Point/Congo
Col. Alain Kodji Ahuatchy	Focal Point/Côte d'Ivoire
Eunice Ofoli Anum	Focal Point/Ghana
D. Wisseh Kay	Focal Point/Liberia
Josephus Mamie	Focal Point/Sierra Leone
Owen Kibona	Focal Point/Tanzania
Kossi Ahoedo	Focal Point/Togo
Benvindo Fonseca	IMar & FTP Fellow7/ Cabo Verde
Lene Buhl-Mortensen	IMR
Peter Haugan	IMR
Per W. Nieuwejaar	IMR
Erik Olsen	IMR
Gabriella Bianchi	IMR (retired)
Åsmund Bjordal	IMR (retired)
Sidi Ahmed	IMROP & FTP Fellow/ Mauritania
Ester Magano Nangolo	Namibia
Ellen Viken	Norad
Brit Fisknes	Norad (retired)
Kirsten Bjøru	Norad (retired)
Jonas Viðarsson	Project Coordinator (ex)/ FarFish
Elisa Socrate	National Focal Point/ Seychelles
Vincent Lucas	SFA & FTP Fellow / Seychelles
Matthieu Bernardon	Small Projects Consultant/West Africa
Yaw Ansah	Small Projects/BCC, FAO
Pedro Barros	SWIOFC/FAO

List of Appendixes

The appendixes can be found as a separate document together with this report at www.norad.no/evaluation

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Cover photo: Ken Opprann
ISBN: 978-82-8369-126-9
December 2022