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**FISHING AID: MAPPING AND SYNTHESISING EVIDENCE
IN SUPPORT OF SDG 14 FISHERIES TARGETS**

Gonçalo Carneiro, Raphaëlle Bisiaux, Mary Frances Davidson, Tumi Tómasson and Jonas Björnstedt

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Abbreviations

FAO	Food and Agriculture Organisation of the United Nations
GEF	Global Environment Facility
IFAD	International Fund for Agriculture Development
IIED	International Institute for Environment and Development
IUCN	International Union for the Conservation of Nature
IUU	Illegal, unreported and unregulated
MSY	Maximum sustainable yield
OECD-DAC	Development Assistance Committee of the Organisation for Economic Cooperation and Development
ODA	Official development assistance
SDG	Sustainable Development Goal
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WTO	World Trade Organisation

Foreword by the EBA

One of the four planetary boundaries assessed to already have been surpassed concerns genetic diversity and the loss of species. Together with climate change this boundary is as well described as a ‘core boundary’, beyond which the earth system moves into a new stage.¹ Surpassing these two boundaries have serious repercussions for the world’s oceans. Part of the extinction of species clearly occurs below the surface of the seas as a result of overfishing.

During decades, aid to fishing activities in Africa, Asia and Latin America used to largely focus on improving local communities’ fishing capacities. However, from the 1990s onwards interventions increasingly came to focus on the management of such activities, with sustainable fishing as a primary intervention goal, and capacity development as main component in nearly half of the projects and programs. This shift came about against the backdrop of increasing illegal, unreported and unregulated fishing, which in turn was a major factor behind overfishing.

The conditions of the world’s oceans have come under increased scrutiny and debate in recent years, partly because of the process leading up to the agreement on the 17 sustainable development goals, and partly because of specific initiatives where Sweden has played a key role. In 2017 the first UN Oceans Conference was held in New York and the second conference is planned to be held in Lisbon in the beginning of June 2020.

Despite a long history of aid to fishery, surprisingly little knowledge and learning is gathered about its effects. This has to change, as increasing focus is given to SDG 14 (‘Life under Water’), and as fishing is likely to become a more prominent part of food systems aiming at reducing hunger (SDG 1). There is a need to know more about how international aid interventions best can contribute to sustainable fishing.

¹ Steffen, Will, et al. "Planetary boundaries: Guiding human development on a changing planet." *Science* 347.6223 (2015): 1259855.

This report summarizes knowledge from evaluations in a way that is representative for various geographic locations and various aid agents. The picture that emerges is one where more aid to the sector is needed, but also increased monitoring, surveillance and improved management of fishing activities. Reduced post-harvest losses and increased processing may increase profitability for fishing populations, whereas alternative income sources have to be developed if overfishing is to be reduced. Subsidies to fishing is an area seldom dealt with by aid interventions, however a key hindrance to reduced illegal, unreported and unregulated activities in this realm.

Serious issues emerge from this knowledge review. It is my hope that the report may contribute to a deeper understanding of complex issues.

The report has been written with support from a reference group led by the EBA member Mr. Torgny Holmgren. Responsibility for the content and the recommendations rests fully with the authors.

A handwritten signature in blue ink, appearing to read 'Helena Lindholm', with a stylized flourish at the end.

Helena Lindholm

Sammanfattning

De globala målen för hållbar utveckling utgör det första globala ramverket för att ta itu med frågor som berör havets användning och hälsa. Hållbarhetsmål 14 innehåller flera delmål om såväl miljömässig motståndskraft som socioekonomisk motståndskraft hos fiskeriberöende befolkningsgrupper. Under de senaste åren har Sverige tagit en ledande roll för globala insatser i relation till mål 14.

Trots flera decenniers bistånd till fiskerisektorn, med många utvärderingar genomförda, finns det mycket få kända försök att analysera och dokumentera lärdomar från dessa insatser. Denna studie är en systematisk kartläggning och en tematisk syntes av kunskaper och erfarenheter från utvärderingsrapporter om bistånd till fiskesektorn. Syftet är att ta fram nytt underlag till stöd för framtida insatser relaterade till mål 14 och de delmål som gäller fiskeri.

Antalet utvärderingar av bistånd till fiske ökade markant i slutet av 2000-talet och har legat på en relativt stabil nivå sedan dess. I den litteratur som analyserats för denna studie är Afrika är den kontinent som är mest representerad, följd av Asien. Biståndet till fiskerisektorn flyttade under 1990-talet fokus från produktions- till förvaltningssorienterade insatser, och mer än hälften av de granskade studierna har delmål 14.4 (hållbart fiske) som sitt primära fokus. Vidare är kapacitetsutveckling den dominerande typen av insats i nära 40 procent av studierna. Multilaterala organisationer har beställt nära hälften av studierna i urvalet. Där ingår även fyra studier beställda av Sverige och ytterligare åtta där Sverige är medfinansiär. Över två tredjedelar av utvärderingarna genomfördes före insatsernas slut, medan endast 20 procent är ex-post utvärderingar. Det senare begränsar möjligheten att dra slutsatser om biståndsinsatsernas långsiktiga effekter.

Att reglera fångsten, minska olagligt, orapporterat och oreglerat fiske och överfiske, samt att genomföra vetenskapligt baserad fiskeriförvaltning kräver arbete på institutionell nivå. Lagstiftnings- och övervaknings-kapacitet behöver byggas upp, jämte stärkt förmåga att kontrollera efterlevnad. Ett stort antal studier pekar på behovet av insamling och analys av data om bestånd och ekosystem

som en grundpelare för en robust fiskeriförvaltning. Det läggs stort fokus på data om och för det industriella fisket, medan svårigheterna med att övervaka och kontrollera det småskaliga fisket knappast diskuteras. Bedömningar av vad som är ett hållbart uttag, särskilt inom tropiskt småskaligt fiskeri, berörs knappt.

Betydande investeringar i infrastruktur och utrustning för övervakning, uppföljning och kontroll är nödvändiga i många utvecklingsländer om de ska ha tillräcklig verkställighetskapacitet till sjöss. Åtgärder för att främja frivillig efterlevnad är ett viktigt komplement till strängare tillsyn och kontroll, men misslyckas ofta på grund av otillräckligt förståelse från berörda intressenter, särskilt de som riskerar att förlora inkomster. Samtidigt antyder studien att otillräcklig uppmärksamhet har ägnats åt att säkerställa bärkraftiga alternativa inkomstgenererande aktiviteter för de människor som drabbats av strängare reglering av fisket. Utan sådana alternativ är det tveksamt om en minskning av antalet fiskare eller en ökad reglering av fisketrycket till hållbara nivåer kan bli framgångsrikt. Exempelen på framgångsrika alternativa inkomstgenererande verksamhet är väldigt få.

Givare tenderar att verka inom det utrymme som partnerlandets politiska och administrativa strukturer tillåter. Biståndsinsatser tar därför sällan upp viktiga institutionella obalanser och ineffektiviteter som kan ligga till grund för ohållbart fiske. Det faktum att otillräcklig finansiering och givarstödens kortvarighet ofta betraktas som viktiga begränsande faktorer tyder på att de nuvarande biståndsanslagen till fiskesektorn är otillräckliga. Större ekonomiska åtaganden från det internationella samfundet är nödvändiga om delmål 14.4 ska uppnås.

Fiskerisubventioner har fått relativt liten uppmärksamhet från givarsamfundet, och den granskade litteraturen är antingen tyst eller okritisk kring riskerna för att subventioner kan bidra till överfiske, överkapacitet eller olagligt, orapporterat och oreglerat fiske. Det arbete som hittills genomförts inom Världshandelsorganisationens regi har inte burit frukt, och totalt sett har få framsteg hittills skett i arbetet med att uppnå delmål 14.6.

Insatser som syftar till att minska förluster efter uttaget och främja produkternas mervärde har störst potential att bidra till ökade

inkomster från fiske. Särskilt relevanta för framtiden är sådana insatser där förbättrad fiskeriförvaltning har lett till ökade fångster. Men om en ökad total lönsamhet uppkommer genom att kontrollen över vem som får tillgång till fiskenäringen blir hårdare riskerar både enskilda individer och grupper att påverkas negativt. Frågor om jämlikhet och fördelning måste biståndsgivare och deras partners hantera inom ramen för insatser som syftar förbättrade försörjningsmöjligheter i fiskeberoende samhällen. Stöd till industriellt och exportorienterat fiske har stått i fokus för ett stort antal biståndsinsatser, men studien finner få eller inga bevis för att sådant bistånd har givit några positiva effekter i form av fattigdomsminskning eller hållbarhet.

När det gäller utvärderingspraktik framhäver denna studie vikten av att utvärdera resultaten flera år efter att insatser har avslutats. Utan sådana undersökningar blir robusta bedömningar av insatsernas långsiktiga effekter och hållbarhet inte möjliga att göra. Syntesrapporten betonar även betydelsen av att genomföra inledande kartläggningar och göra regelbundna uppföljningar av insatser. Följeforskning skulle kunna användas för att förbättra kunskapen om de omgivande faktorer som påverkar genomförande och resultat. Utvärderingarna måste också skifta fokus från processer och administrativa aspekter till bedömningar av de system som insatser syftar till att påverka. Detta kommer troligtvis att kräva nytänkande om hur utvärderingar kan designas liksom mer djupgående bearbetningar av fiskerispecifik data.

Summary

The Sustainable Development Goals (SDG) constitute the first global framework for addressing the most pressing issues affecting the use and health of the oceans. Under SDG 14 a set of targets was set relating not only to the environmental resilience of the resources, but also the socio-economic resilience of fisheries-dependent communities and populations. In recent years Sweden has taken a leading position in global efforts related to SDG14.

Despite several decades of aid to the fisheries sector and numerous evaluations, there are very few known efforts to analyse and document lessons learned across those interventions. This study is a systematic map and a thematic synthesis of the knowledge and experiences contained in evaluation reports of fisheries aid interventions. Its purpose is to inform the design and implementation of future interventions related to SDG14 in general and its fisheries targets in particular.

Evaluation of fisheries aid increased markedly in the late 2000s, and has remained relative stable since then. Africa is the continent most represented in the literature sample, followed by Asia. Donor support shifted focus from production-oriented to management-oriented interventions during the 1990s, and more than half of the studies have SDG 14.4 (sustainable harvesting) as their primary focus. Multilateral organisations commissioned close to half of the studies reviewed. Capacity development is the dominant type of intervention in close to 40 percent of the studies. The sample includes four studies commissioned by Sweden, and a further eight where Sweden is one of the co-funders. Over two thirds of the evaluations were conducted before the end of the intervention, whereas only 20 percent are ex-post evaluations. This constrains the ability to draw conclusions about the longer-term effects of fisheries aid interventions.

Regulating harvesting, reducing illegal, unreported and unregulated fishing and overfishing, and implementing science-based fisheries management all require working with institutional mechanisms to build monitoring, regulatory and enforcement capacity. A considerable number of studies deal with the collection

and analysis of data on stocks and ecosystems as the basis of robust fisheries management. There is considerable focus on data on and for industrial fisheries, whereas the difficulties inherent to monitoring small-scale fisheries are hardly addressed. The assessment of sustainable harvest and sustainable yield, in particular in the context of tropical small-scale fisheries, are barely touched upon.

Considerable investments in infrastructure and equipment for monitoring, control and surveillance remain necessary in many developing countries if they are to have sufficient enforcement capabilities at sea. Measures to promote voluntary compliance are an important complement to stricter enforcement, but often fail due to insufficient buy-in from affected stakeholders, in particular those facing losses in income. At the same time, the review suggests that insufficient attention has been paid to securing viable alternative income generating activities for the people affected by stricter regulations. Without such alternatives it is unlikely that a reduction in the number of fishermen or the regulation of fishing pressure to sustainable levels will be successful. Evidence of the success of support to alternative income generating activities is weak, though.

Donors tend to operate within the space allowed by the political and administrative structures of the partner country, and rarely address important institutional imbalances and inefficiencies that might perpetuate unsustainable fishing practices. The fact that insufficient funding and the short duration of the donor support are often regarded as important limiting factors suggest that current aid allocations to fisheries are insufficient. Attaining target 14.4 might only be possible with greater financial commitments from the international community.

The topic of fisheries subsidies has received comparatively little attention from the donor community, and the literature reviewed is either silent or uncritical as to the potential of certain types of subsidies contributing to overfishing, overcapacity or illegal, unreported and unregulated fishing. The work so far conducted under the auspices of the World Trade Organisation has not borne fruits, hence overall there is little progress towards achieving target 14.6.

Interventions targeting the reduction of post-harvest losses and different types of value addition hold the greatest potential for increasing the economic benefits from fishing. Of particular relevance for informing future practice are the results of interventions where higher catches were the result of improved fisheries management. Increasing overall profitability through greater control of access and fishing effort is likely to be detrimental for those individuals and groups who lose access to the resource. Equality and distributional effects need to be addressed by donor and partners in such circumstances, and form a dilemma faced by any part committed to improving the livelihoods of fisheries-dependent communities. Support to industrial and export-oriented fisheries has been the focus of a considerable number of aid interventions, but there is little if any evidence in this sample of positive effects for poverty reduction or resource sustainability.

With respect to evaluation practice, the review highlights the importance of evaluating intervention results several years after the end of interventions, without which robust assessments of intervention impacts and sustainability are not possible. Greater emphasis is also necessary on conducting baseline studies and carrying out regular monitoring. Continuous evaluation could be considered to enable better understanding of contextual factors affecting implementation and results. There is also a need for evaluations to shift focus from assessing procedural and administrative aspects of aid interventions, to assessing changes in the systems that interventions aim to influence. This is likely to require the rethinking of evaluation design and a closer engagement with fisheries-specific data.

1. Background and rationale

The adoption in 2015 of the Sustainable Development Goals (SDGs) established for the first time a global framework for addressing the most pressing issues affecting the use and health of the oceans. Under SDG 14 a new set of targets have been set relating specifically to fishing and the fisheries sector (Box 1). With these targets in place the global community has pledged greater commitment to ensuring not only the environmental resilience of the resources, but also the socio-economic resilience of fisheries-dependent communities and populations. Sweden has taken a leading position in these developments, with the co-hosting of the 2017 UN Ocean Conference and subsequent events and is expanding its support to global efforts related to SDG 14.

Box 1: The four SDG 14 fisheries targets

Target 14.4 - By 2020, effectively regulate harvesting, and end overfishing, illegal, unreported and unregulated (IUU) fishing and destructive fishing practices and implement science-based management plans, to restore fish stocks in the shortest time feasible at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

Target 14.6 - By 2020, prohibit certain forms of fisheries subsidies, which contribute to overcapacity and overfishing, and eliminate subsidies that contribute to IUU fishing, and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the WTO fisheries subsidies negotiation.

Target 14.7 - By 2030, increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

Target 14.b - Provide access of small-scale artisanal fishers to marine resources and markets.

In the light of these developments it is useful to look back at the knowledge and experience from earlier programmes to guide the design and implementation of future interventions related to SDG 14 in general and its fisheries targets in particular. Despite a history of several decades of development cooperation in the fisheries sector and numerous evaluations of interventions in this field, there are very few known efforts to analyse and document lessons learned across those interventions, and none that takes a comprehensive and systematic look at the SDG 14 fisheries targets. This study addresses this gap by compiling, mapping and assessing the evidence relative to the results of development cooperation interventions in the field of fisheries to support implementation of the SDG 14 fisheries targets.²

Few studies exist in the literature with that character and purpose, and none focusing specifically on SDG 14 targets. Review methods also vary among the existing studies, resulting in differences in the scope, replicability and robustness of the different analyses. Scoping studies in related fields have been conducted about the linkages between aquaculture and human health (252), and between fisheries and aquaculture and food security and poverty reduction (247). Drawing primarily from peer-reviewed literature in English, the first of those two studies revealed that, despite important contextual variations, the literature highlighted, on the one hand, the potential of aquaculture to improve livelihoods and reduce poverty, and on the other, its negative effects on conflict over and damage to shared resources. The authors of the second study draw similar conclusions about the positive effects on poverty alleviation. Their study also shows that there are important methodological differences between the primary studies that affect the validity, rigour and reliability of the evidence, and concludes that

² Contrary to the Millennium Development Goals, which applied only to developing countries, the SDGs are universal and apply to developing and developed countries alike. This study is concerned with SDG 14 in the context of development cooperation, hence focuses only on achievements in developing countries. The progress of developed countries in terms of SDG 14 is not dealt with in this study.

fisheries policy narratives are seldom supported by convincing evidence.

An earlier meta-analysis of co-management interventions in developing countries concluded that despite overall positive effects on management processes (e.g. participation in management decisions, compliance with rules), the evidence of effects on environmental or socio-economic well-being varied and therefore generally inconclusive (260). Focusing on 20 years of Norwegian aid to the fisheries sector, a Norad-commissioned study concluded that efficiency and effectiveness varied with the type of intervention and with government policies (277). Overall, the Norwegian support had had a positive impact on institutional strengthening, but less so on policy development in partner countries.

Systematic reviews are generally considered the gold standard of meta-studies for evidence-based policy (265; 266; 287), yet they are seldom used in fisheries science and policy (256). The methodological requirements typically restrict their application to studies with narrow research questions and where the primary literature is based on a restricted set of methods. Systematic reviews are therefore difficult to apply in synthesis studies of development cooperation interventions, which typically involve complex and seldom clearly defined processes, and are evaluated using qualitative methods that are not replicable across interventions.

Like the earlier studies, this study addresses the need for better evidence to underpin decision-making in fisheries management in developing countries. In terms of scope however, two key aspects distinguish this study from the previous ones. Firstly, it focuses exclusively on the aid sector, to elicit aspects of success or failure specific to aid programmes; secondly, it deals only with aspects of fisheries management relevant to the implementation of SDG 14, thereby responding to the call for action endorsed by the global community at the June 2017 UN Ocean Conference (291). In terms of methodology, the proposed study responds to calls for more robust and replicable approaches to generating evidence in support of environmental management and development cooperation policies (253; 256; 263; 280).

Outline of the report

After this introductory section, the report proceeds with a brief description of the approach and method, which is described in full in Appendix 1. This is followed by the presentation of the evidence map, which is one of the main outcomes of this study. The synthesis of the evidence relative to each of the four SDG 14 fisheries targets is the second main outcome of the study and is presented in the following section. The concluding section synthesises the implications of the study findings for policy and practice, and identifies possible future research needs to complement the results of this study. Appendix 2 includes the results of the study quality appraisal.

2. Approach and method

The study is a thematic synthesis of the evidence contained in evaluations of development cooperation interventions in fisheries. Given the nature of the topic, the primary literature available, the study's exploratory nature and the timeframe and budget available, a methodological approach was developed that combines elements of the scoping review and systematic mapping methodologies. The combined methodology incorporates the sequence of steps in the systematic mapping methodology described in the study by James and co-authors (271) and the scoping review framework introduced by Arksey and O'Malley (246) and later revised (258; 276), complemented with a needs assessment with knowledge users (272) and an assessment of the quality of the primary literature (267; 279; Figure 1).

The study was conducted between June 2018 and April 2019 by a core team of three researchers (G. Carneiro, R. Bisiaux, MF. Davidson), supported by a quality assurance advisor (T. Tómasson) and a research assistant (J. Björnstedt).

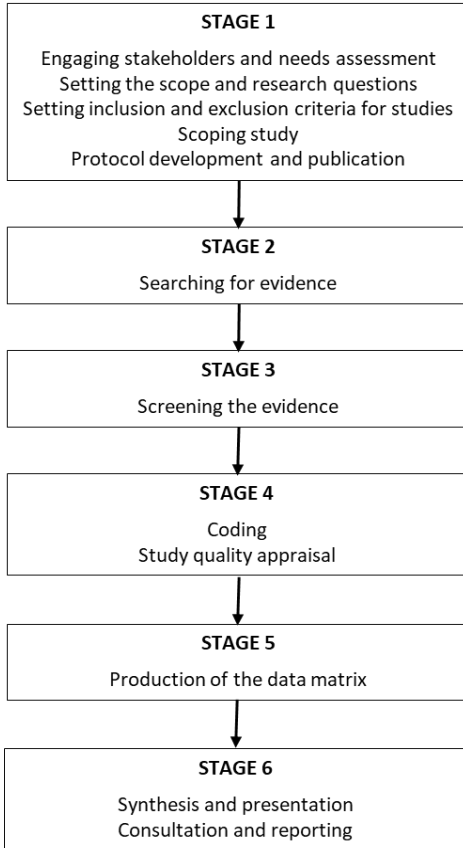
The main research question guiding the study is:

What are the results of development cooperation interventions in terms of the four SDG 14 fisheries targets in developing countries?

The study is further guided by the following secondary questions:

1. Mapping the evidence: *What is the current state and distribution of the evidence base on the results of development cooperation interventions related to the SDG 14 fisheries targets?*
2. Synthesising the outcomes: *What type of results from development cooperation interventions have been measured, and how much evidence is there for each of the four SDG 14 fisheries targets?*
3. Theories of change: *What impact pathways underlie the development cooperation interventions targeting the domains covered by the SDG 14 fisheries targets?*
4. Advising future development assistance: *How does the evidence base relate to the investment priorities of the main development cooperation agencies?*

Figure 1: Outline of the study methodology



Population, intervention, comparator and outcome components were elaborated based on the research questions and used to define search terms and inclusion criteria for searching the literature. The primary literature includes published studies of scientific quality, i.e. studies based on the application of scientific methods for data collection, analysis and interpretation. Literature searches were performed in the following databases.

Scientific databases: A search by keywords using wildcards, priority and Boolean was conducted on the ISI Web of Science

(<http://apps.who.int/knowledge>) using a specific search string (see Appendix 1).

Non-scientific databases: Evaluation reports were searched separately in the websites of the following organisations:

- all 30 members of the Development Assistance Committee of the Organisation for Economic Cooperation and Development (OECD-DAC);
- the five major development banks, namely the World Bank, African Development Bank, Asian Development Bank, Inter-American Development Bank and the Islamic Development Bank;
- multilateral development organisations, namely the Food and Agriculture Organisation of the United Nations (FAO), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), Global Environment Facility, International Fund for Agriculture Development, World Fish Centre and Secretariat of the Pacific Community;
- International non-governmental conservation organisations, namely the Worldwide Fund for Nature, International Union for the Conservation of Nature, Fauna and Flora International, Conservation International and The Nature Conservancy;
- Moore Foundation, Rockefeller Foundation and Total Foundation; and
- International Initiative for Impact Evaluation and the International Institute for Environment and Development.

Only references for which the full text was available at the time of the search were considered for full-text review. In those few cases where this functionality existed full-text documents not readily available online were requested from the commissioning organisation by e-mail or by submitting an online form.

Records of the searches were kept including search strategy and terms, search date and grounds for exclusion (see Supplementary material). Bibliographic references of studies included for full-text review were recorded in a Microsoft Excel data matrix using predetermined categories. Digital copies were kept in a project

workspace and later uploaded onto Atlas.ti™ software for manual coding.

A coding protocol was developed by one of the researchers and tested during a coding workshop in December 2018. Evidence related to the SDG 14 fisheries targets and to contextual factors was coded in a sample of 123 of the 244 studies selected for full-text review. The sampling involved the following steps to ensure representativeness across time, regions and donor organisation:

1. Based on an estimate of the time necessary for each full-text review relative to the time resources available for this step of the study, it was decided to limit the first sample to 120 studies;
2. A proportion of 120/270 of studies were selected from each year of publication, where 270 is the number of studies retained after the first screening at title & abstract level (see chapter 3);
3. Within each decade, studies were sampled from the different regions according to the same proportion (i.e. sampling 120/270 of studies in a given decade and region);³
4. Within each decade and region, at least one study was randomly sampled from each organisation. Additional studies were sampled according to the 120/270 proportion. If two or more studies were sampled from the same organisation, care was taken to select studies from different countries, in a random manner.

Of the resulting sample of 120 studies, 106 were retained after full-text review. The remaining 14 were removed for not fulfilling the inclusion criteria. After completing the review of the first sample of 120 studies, the same tiered procedure was applied to the selection

³ Aggregation at the decade level was necessary to ensure that sufficient studies from the earlier decades were included (1970s, 1980s and 1990s). Had the sampling been based on the number of studies per year (i.e. no aggregation per decade), studies from the earlier years would have been underrepresented in the sample.

of an additional 18 studies, of which 17 were retained. One study was removed for not fulfilling the inclusion criteria.

Bibliographic data entered into the data matrix was used to generate the systematic map presented in the next section. The coded quotations were organised by SDG 14 target and type of contextual factor in Atlas.ti, and analysed by the three researchers to produce the syntheses presented in section *Synthesis of evidence by SDG 14 target*.

A full description of the methodology is given in Appendix 1.

Limitations

This study faced three main limitations, namely the scope of the literature reviewed, the time and resources available to conduct the study, and the type and quality of the evidence.

Scope of the literature

This study is limited in scope to the development cooperation interventions in the field of fisheries that have been subject to an evaluation and for which evaluation reports or other publications of scientific standard are available. It is therefore not representative of the entire development cooperation in the field of fisheries, nor of all assessments of fisheries management and development in developing countries, as many of these might not have been documented, or evaluation reports might not be available.

This is an inherent limitation of the study design that could only be mitigated by adopting an alternative approach. As elaborated further in section *Future research needs*, this could involve studying subsets of the portfolio of development cooperation in fisheries through a combination of methods that do not rely exclusively on documented sources.

Time and resources

The resources and time available to conduct this study constrained the breadth and the depth of the analyses that were carried out. Breadth was limited in terms of the number of document databases

that could be included. Although the study covers all major bilateral and multilateral donor organisations, it does not claim to be exhaustive. It cannot be excluded that relevant sources have been overlooked.

In terms of depth, there are limitations in terms of the number of studies that could be included for full-text review. In meta-analyses involving effect size estimations such a limitation is a major barrier to computing the combined effect size of a given intervention. In a thematic synthesis such as this one, the likely consequence is that it fails to capture relevant themes and experiences that only appear in the studies that were not included for full-text review. The tiered sampling procedure used was designed to ensure the representativeness of the studies sampled for full-text review in terms of date of publication, region and donor organisation. Bias of the findings with respect to any of these three parameters is therefore unlikely. However, it is not possible to estimate whether or not the findings of this study exclude any relevant themes or experiences only reported in the studies that were not sampled for full-text review. Such limitation could only be addressed by performing a full-text review of these studies (see chapter 6, *Expanding the knowledge base*).

This limitation may justify complementing this study in the future with a second one concentrating exclusively on the literature that was not included for full-text review.

Type and quality of the evidence

Although all studies surveyed included some evidence of achievements in terms of SDG 14 fisheries targets, in many cases the evidence is weak and insufficiently specific. With respect to the robustness of the evidence, very few evaluations contain data about the long-term effects of aid interventions on the fisheries or fishery resources. The analysis in this study suggests two main reasons for this fact. The first is the absence of adequate data collection and analysis before and during implementation of the interventions reported in the literature. The quality appraisal performed as part of this study corroborate that finding, showing that a majority of the reports surveyed underperform in terms of the presentation and

discussion of data analysis methods and limitations (see chapter 3 and appendix 2).

The second reason has to do with the fact that most evaluations were carried out during implementation or immediately after the end of the intervention. An important consequence of the latter is that longer-term outcomes and impacts in terms of the SDG 14 fisheries targets could not be observed. This is of great importance for the ability of the study to synthesise experiences of what does and does not work in development cooperation in fisheries. Because this aspect is inherent to the nature of the primary literature, it could not be avoided. It forms the basis for some of the recommendations on evaluation practice included in the concluding chapter.

3. Systematic map of the evidence

This section presents the map of the literature compiled in this study by means of descriptive statistics. The literature is described according to the following parameters:

- Geographical distribution
- SDG 14 fisheries target addressed by the intervention
- Type of intervention
- Timing of the evaluation
- Commissioning organisation, with a particular focus on Swedish-funded interventions

Figure 2 depicts the number of documents surveyed and retained after each screening and analysis step. Of the 244 studies retained, the full text of a sample of 123 studies was coded and used for the synthesis presented in chapter 4. The synthesis map presented in this chapter is based on information from the 244 studies retained after the second screening. Of these, 12 studies are fully or partly funded by Sweden.

Figure 2: Number of documents retained at each step

Database searches: **4,781**

→ *1st screening: Title & abstract*

Retained after 1st screening: **270**

→ *2nd screening: Full text*

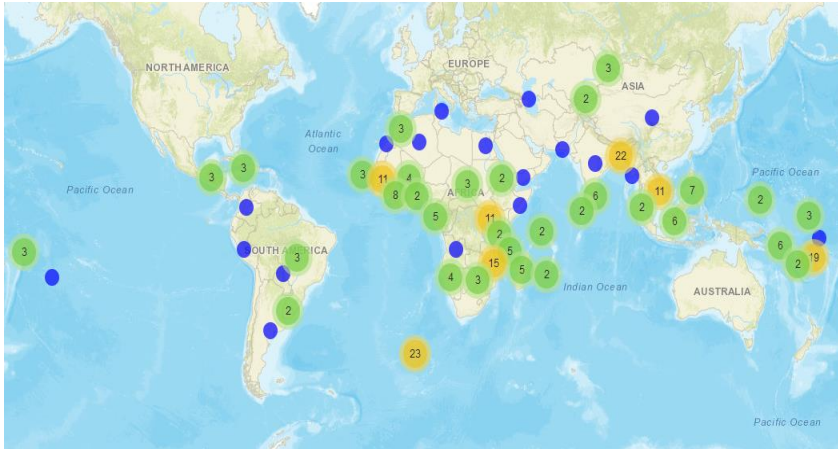
Retained for full-text review and mapping: **244**

→ *Full text coding and analysis*

Full-text review completed: **123**

→ *Selected but not reviewed: 121*

Figure 3: Geographical distribution of the 244 studies included in this review



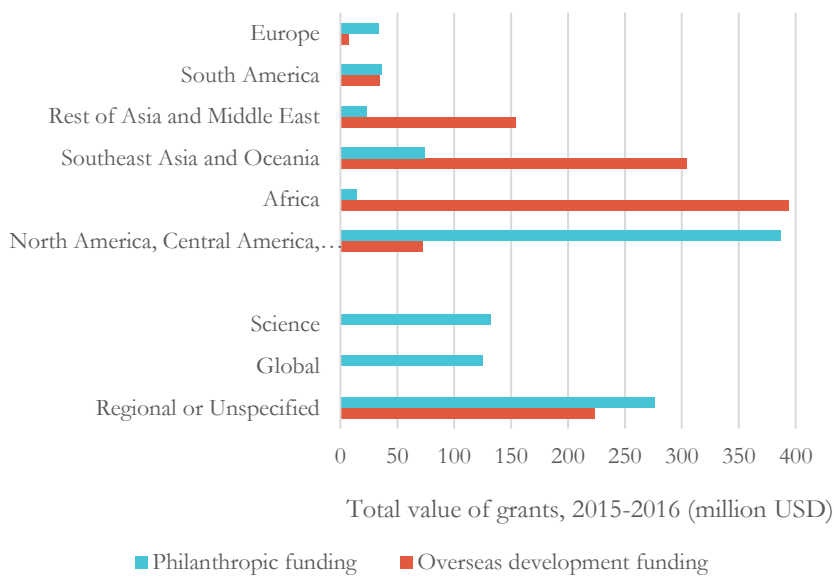
Yellow circles indicate studies of a regional or global scope. The blue dots indicate single studies in the countries on the map. Source: EviAtlas, <https://estech.shinyapps.io/eviatlas/>

Eastern Africa stands out as the region with the largest number of studies (46), followed by Western Africa, Southern Asia and South-eastern Asia, at between 28 and 30 studies each. There are 23 studies of global interventions, and 19 of regional interventions in the Pacific region (Figure 3). The greater focus on Africa and parts of Asia is consistent with the fact that this content receives the largest share of official development assistance (ODA) to the fisheries sector (245; 248; 249; 297).⁴ The breakdown of marine-related grant-funding in 2015-2016 by region and type of donor organisation is given in Figure 4.⁵

⁴ Marine-related philanthropic funding, originating primarily from foundations in the United States (297), has on the other hand targeted primarily North and Central America and the Caribbean, as well as large global and regional programmes, and science-oriented programmes (248; see also 297).

⁵ The evolution of ODA to the fisheries sector in four large regions (Oceania, Asia, Latin America & Caribbean, and Africa) between 1973 and 2004 was reviewed by Alder and co-authors (245). The analysis shows a steady decline in the total volume of ODA to fisheries since the early 1980s. In the early 2000s Africa received approximately half of all ODA disbursements to the fisheries sector.

Figure 4: Distribution of marine-related grant funding by region and type of donor organisation, in 2015-2016 (Based on 248).

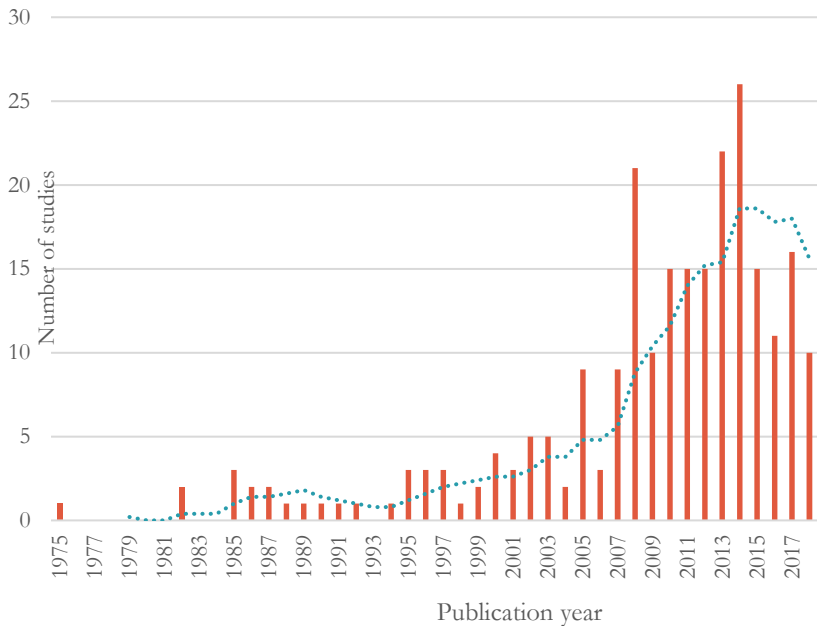


There is a clear increase in the number of studies in the mid 2000s, with a stabilisation in the number of published studies after 2011 (Figure 5).⁶ The pattern is likely the result of more widespread evaluation practices, and not a representation of increasing volumes of aid to the fisheries sector, as the volume of ODA to fisheries had a steady decline between the 1980s and the early 2000s, and has been relatively constant since (see 245; 248).⁷

⁶ The downward trend toward the end of the period is, at least in part, due to a partial underrepresentation of studies published in the last quarter of 2018, the period in which the database searches for this review were conducted.

⁷ The upswing in aid to fisheries of the last two to three years is not yet visible in the sample that this study is based on. The funding decisions for the interventions represented in the sample were taken before 2015, and hence predate the upswing. Data on ODA to fisheries is available from the OECD International Development Statistics Database, or the FAO AIDmonitor online service.

Figure 5: Distribution of studies over time. The dotted trendline is a five-year moving average.

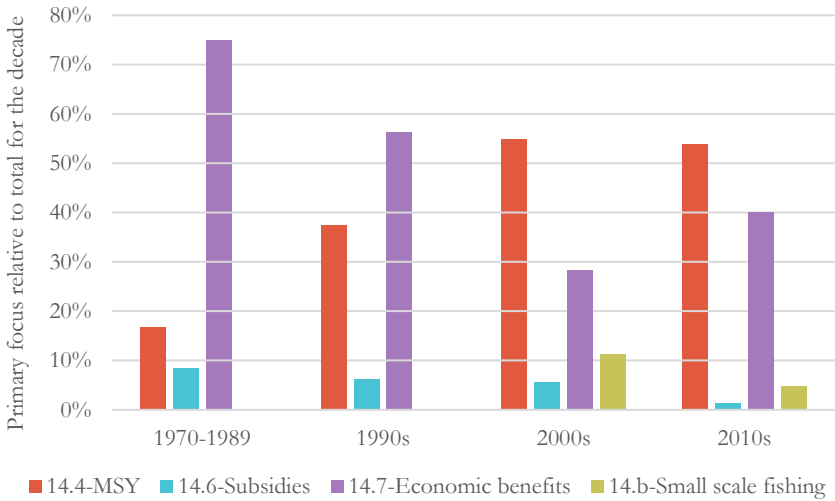


Approximately half of the studies focus on more than one SDG 14 target, which is captured in the ‘secondary focus’ column in Table 1. Approximately half the studies address issues relating to the regulation of harvesting and conservation of fishery resources, hence target 14.4. Interventions with the primary focus on the economic benefits from fishing (target 14.7) make up approximately 40 percent of the studies, with this target constituting the secondary focus of a further 18 percent of the studies.

Table 1: Distribution of the SDG 14 fisheries targets in the literature

SDG 14 target	Number of studies	
	Primary focus	Secondary focus
14.4 – MSY	125	46
14.6 – Subsidies	8	11
14.7 – Economic benefits	96	44
14.b – Small-scale fishing	15	21

Figure 6: Distribution of the SDG 14 fisheries targets in the literature, per decade



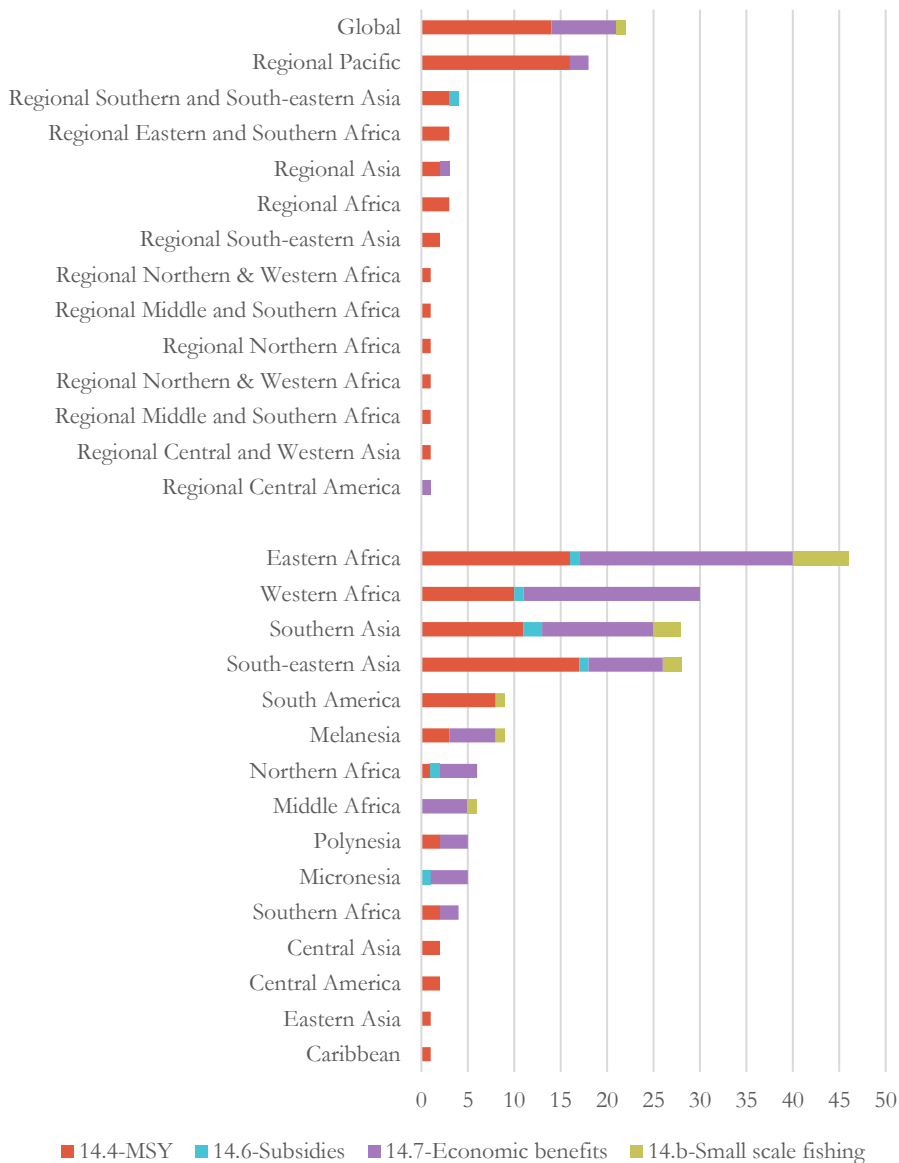
The frequency of interventions targeting mainly the economic benefits of fishing (target 14.7) has been decreasing over the last few decades (Figure 6). At the same time there has been a growing emphasis on conservation and resource management, illustrated by

the growing percentage of studies focusing on target 14.4.⁸ This transition is clearest during the 1990s, and is consistent with other analyses of this subject (245).

The focus on target 14.4 is greater among global and regional interventions than among national-level interventions (Figure 7). Among the latter, there is greater emphasis on themes related to economic benefits (target 14.7) and small-scale fishing (14.b). This might suggest a divide between more resource management-oriented interventions at the supranational level, and more production- and income generation-oriented interventions at the national and sub-national levels.

⁸ This is based on the date of study publication, which is the majority of cases coincides with the timing of the study. Only in a small number of cases were studies published several years after the end of the intervention, as described later in this section. There is only one study from the 1970s in the sample, which is why it is grouped with the studies from the 1980s.

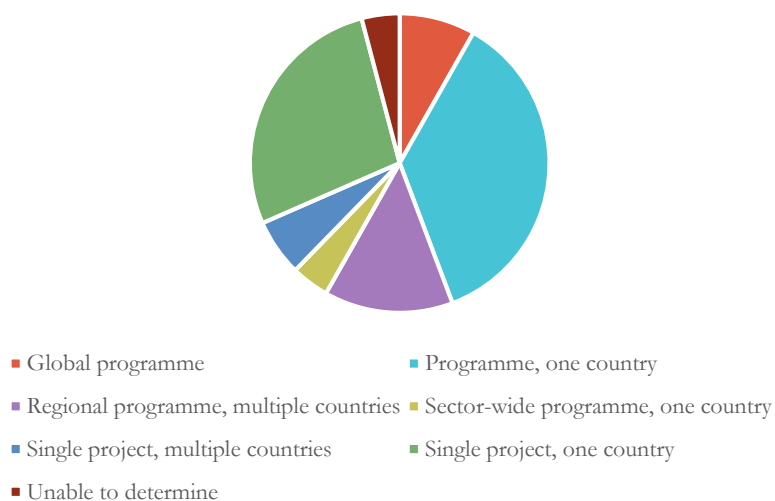
Figure 7: Geographical distribution of the SDG 14 fisheries targets in the literature.



Upper half: global and regional-level interventions; lower half: national-level interventions

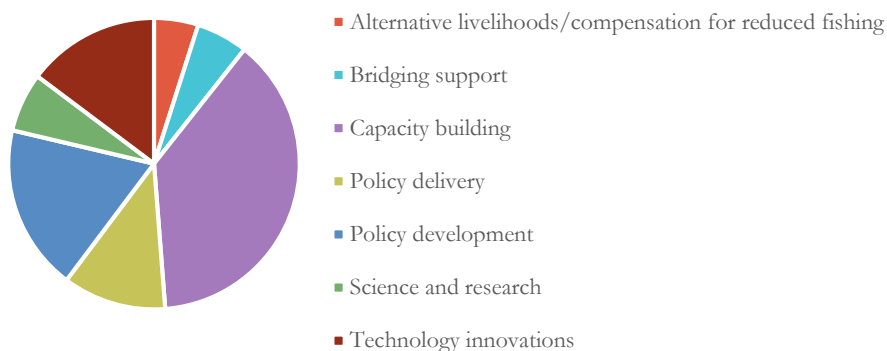
In terms of scope, over one third of the interventions are single-country programmes, followed by single-country projects making up approximately 27 percent of the total (Figure 8). Single-country intervention constitute two thirds of the interventions reported in the literature included in this study, with global and other multi-national interventions making up 8 and 20 percent, respectively.

Figure 8: Scope of the interventions reported in the literature



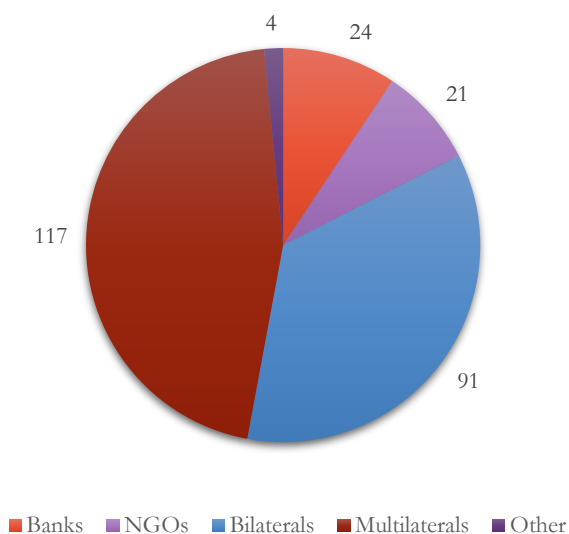
In terms of the nature of the intervention, capacity development is the most frequent one, accounting for close to 40 percent of the total (Figure 9). Interventions targeting primarily policy development, the introduction of improved technologies and the delivery of fisheries-related policy make up 18, 15 and 11 percent of the total, respectively. The specificity in determining the nature of interventions is low, however, as most interventions target several of those categories. This is most common in larger, more complex programmes consisting of different strands of work.

Figure 9: Nature of the interventions reported in the literature



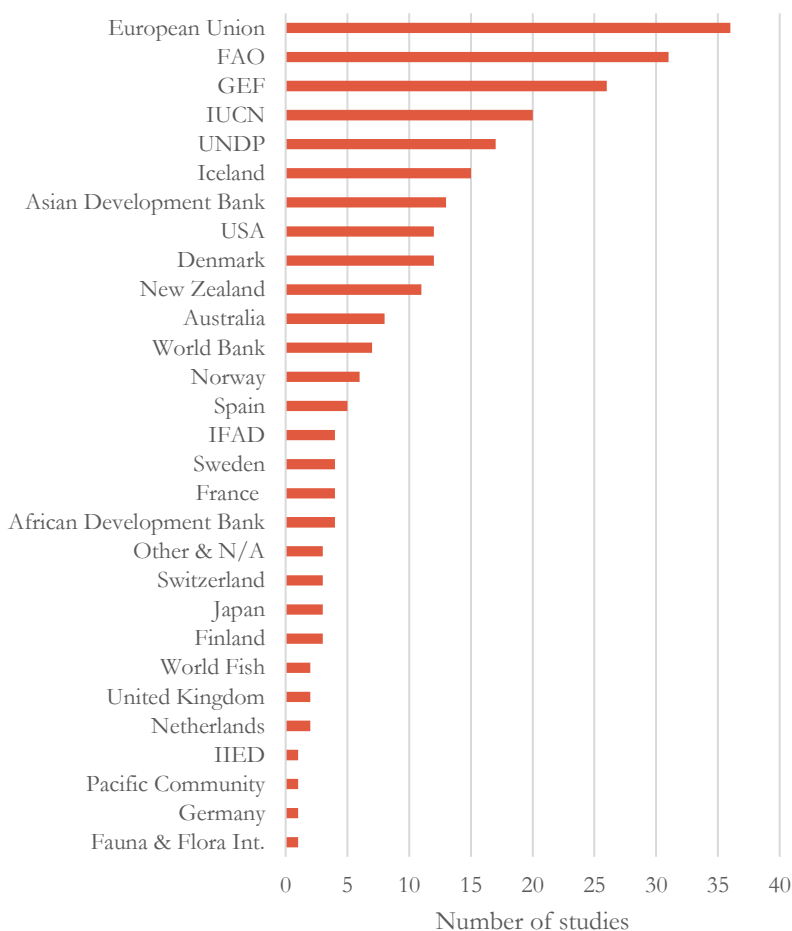
Multi-lateral organisations, including the European Union, commissioned almost half of the studies included in this review. Bilateral donors account for 37 percent of the studies, whereas development banks and international non-governmental organisations each make up approximately 10 percent of the total (Figure 10).

Figure 10: Type of organisation commissioning the studies



The European Union commissioned the largest amount of studies included in this sample (Figure 11). European Union-funded studies are all from the last decade, attesting not only to the large volumes of aid relevant to the fisheries sector provided by the European Union, but also to a well-established evaluation practice, at least during that period. Other large donor organisations, such as the development banks do not have nearly as many studies in the sample, for reasons having to do with their fisheries portfolio and evaluation practices in that sector.

Figure 11: Number of studies per commissioning organisation



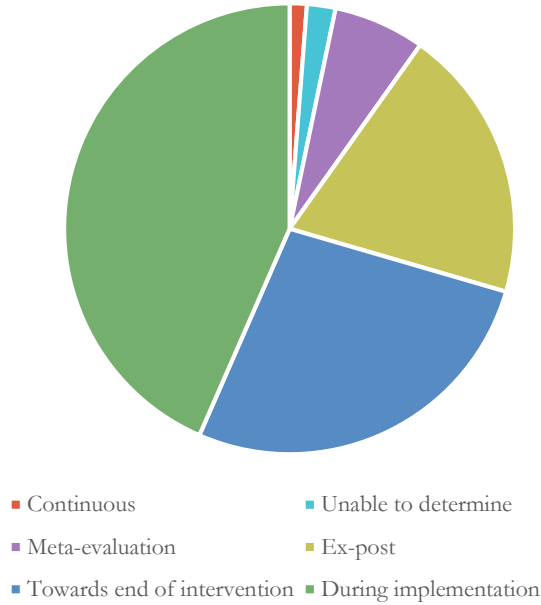
Among the bilateral donors, Iceland is remarkable for the number of evaluation studies given the very small size of its budget aid compared to most other organisations in the list. That Iceland occupies such a prominent position is a consequence of the fact that its development cooperation focused almost exclusively on the fisheries sector until relatively recently. On the other end of the spectrum, donor countries such as France, Norway and Spain, with sizeable portfolios related to fisheries have a much lower number of studies represented in the sample, which may indicate less well-developed evaluation practices in the respective aid sectors.

Four studies in the sample have been funded exclusively by Sweden, including a 1986 study of programme for fishing boat construction in Somalia, a 1996 study of the two-decade support to the fisheries sector in Guinea-Bissau, and two studies from the late 1990s on the Sida/SAREC Marine Science Programme in East Africa. Another eight studies, commissioned by the FAO, the International Union for the Conservation of Nature (IUCN) and the Global Environment Facility (GEF) were found where Sweden is one of the co-funders. These studies were conducted between 2007 and 2014. In spite of the very small sample size, this illustrates the progressive shift in Swedish aid towards working with and through multi-lateral organisations in matters pertaining to marine environmental management. The sub-sample of Swedish-funded interventions is similar to the rest of the sample with respect to all other parameters discussed above.

Over two thirds of the studies were performed before the end of the intervention, that is during or towards the end of the implementation period (Figure 12). Only 20 percent of the studies were conducted ex-post, that is after the end of the intervention. Among these, the average number of years between the end of the intervention as stated in the evaluation report, and the date of publication of the report is 2.8 years (Figure 13). The relatively small number of ex-post evaluations, coupled to the short-term perspective of those few ex-post evaluations is likely to be one of the main reasons behind the generalised absence of evidence of longer-term outcomes and impacts in the literature. Similar observations have been made in other evaluation syntheses (259;

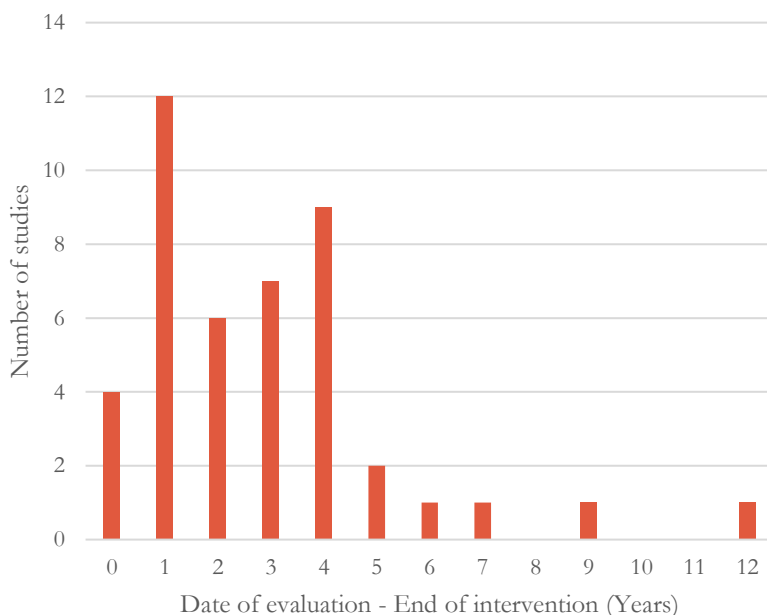
255; 264), and point at a more generalised shortcoming of current evaluation practice, not at a characteristic specific of this sample.⁹

Figure 12: Timing of the evaluation in the studies included in the review



⁹ Of the 48 ex-post evaluations in the sample, 21 are impact evaluations, that assess the long-term changes in society and/or the environment as a result of the intervention. Of those 21, 11 include an estimation of effect sizes for some of the changes observed. Only five ex-post impact evaluations make use of control groups to determine causality. There are 15 meta-evaluations in the sample, of which only four assess impact. Only one meta-evaluation includes effect size estimations, using time-series data to model environmental conditions in the absence of the intervention.

Figure 13: Distribution of studies according to the time difference between study publication and intervention end



Outcomes of the study quality appraisal

The quality of the 123 studies sampled for full-text review was assessed using a framework based on a number of evaluation reporting quality criteria (see appendix 2). The main outcomes of the study quality appraisal include:

- There is no correlation between quality appraisal scores and commissioning organisation, author, country or region. Slightly higher quality scores were found for the newer studies, suggesting greater adherence to common evaluation and reporting standards over time.
- The presentation of data collection and analysis methods, and the discussion of study limitations are the criteria with the lowest average scores, suggesting an insufficient treatment of methodological issues in development evaluations.

- There is room for improvements in the ability of evaluations to draw conclusions about longer-term outcomes and impact. As reviewed above, part of the explanation might lie in the fact that most evaluations reviewed were conducted during or shortly after the end of the intervention.

4. Synthesis of evidence by SDG 14 target

This chapter presents syntheses of the evidence in the literature relative to each of the SDG 14 fisheries targets. The syntheses focus, on one hand, on observed positive and negative effects, and on the other, on neutral effects and inconclusive results.¹⁰ The chapter closes with an analysis of findings relative to selected focus areas of Swedish development cooperation, namely poverty reduction, human rights, gender and support to small-scale fisheries.

SDG 14 target 4: Regulating harvesting

Definition

By 2020, effectively regulate harvesting, and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, to restore fish stocks in the shortest time feasible at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.

For the purpose of this study, it was necessary to separate target 14.4 into its different elements. The following definitions were used:

Achieving maximum sustainable yield (MSY): Achieving or progressing towards the maximum catch that can be extracted from a stock in the long term.

Regulating harvesting to sustainable levels: Regulating the rate or level of fishing to the level deemed sustainable for a given species, stock

¹⁰ In the context of this study, *neutral effects* is used to describe situations in which the evaluation could demonstrate that the planned effects of an intervention did not materialise. Equivalent terms are ‘zero effects’ or ‘null effects’. The term ‘*inconclusive results*’ refers to situations where the evaluation was unable to conclude about a planned effect, often due to insufficient evidence.

or ecosystem, as defined locally. MSY was used when such a level was not provided.

Reducing overfishing: Reducing the rate or level of fishing to the level deemed sustainable for a given species, stock or ecosystem, as defined locally. If no such definition exists, the maximum sustainable yield for the specific stock was taken as the sustainable level of capture, provided it was given.

Reducing IUU fishing: Reducing any illegal, unreported and unregulated (IUU) fishing activities conducted by a fishing fleet in the waters of another coastal state. Also applied to measures targeting the legality, traceability and reporting of activities by the fishing fleet of the coastal state.

Reducing destructive fishing: Reducing any fishing practices known to have disproportionate negative effect on essential elements of the marine ecosystem, in particular habitat features, as determined by locally-applicable standards.

Implementing science-based management: Developing and applying a fisheries management plan that utilises the best available scientific knowledge relative to the resource and, if available the performance of the management regime to establish the management measures.

Little distinction was found in terms of how the elements *achieving maximums sustainable yield*, *regulating harvesting to sustainable levels* and *reducing overfishing* are reported in the literature surveyed. The same observation applies to *reducing IUU fishing* and *reducing destructive fishing*. For this reason, this section is organised in three components, the first one encompassing the first three elements, the second one elements 4 and 5, and the third one the element *implementing science-based management*.

Component 1: ‘Achieving maximum sustainable yield’, ‘Regulating harvesting to sustainable levels’ and ‘Reducing overfishing’

The vast majority of the studies reviewed does not present evidence derived from assessments of stocks, fishing effort or capture volumes. Most studies only provide an account of intervention outputs without presenting evidence of outcomes or impacts at the level of fishing activities or fisheries resources. The evidence given is generally based on the perceptions of intervention stakeholders or on observations by the evaluators. It focuses almost exclusively on the type and direction of effects, and not on their magnitude. The evidence reported in the literature surveyed is therefore of limited usefulness for understanding the effects of aid interventions in terms of more sustainable exploitation of marine resources. It is important to bear in mind, though, that assessing sustainable yields and sustainable harvesting is often very difficult, in particular in tropical marine systems, where fisheries target a diversity of species and knowledge about ecosystem functioning is limited.

Observed positive and negative effects

Positive effects in terms of progress towards more sustainable forms of fisheries resource exploitation are reported to result from three main types of interventions:

Government-led regulations affecting access and harvesting of marine resources

The role of the donor-supported interventions in this context has typically been to assist government in the design of regulations, for example by means of expert advice or institutional capacity development. Occasionally it also involved engaging with the groups targeted by the regulation to improve acceptance of the regulation. Interventions that were considered by the evaluations to have positive results involved the introduction of regulations to control the allocation of fishing rights, fishing quotas, fishing gear and fishing zones, for example through the establishment of trawl-free areas (22; 40; 169). A few other studies conclude about the benefits of the adoption of a wider set of fisheries management

measures, involving the adoption of responsible fisheries charters or management plans (121; 149; 235).

Only one study makes explicit reference to maximum sustainable yield and presents a numerical index-based assessment of stock status and overfishing (235). Using secondary data on Fishery Performance Indicators designed to capture environmental, social and economic dimensions of Liberian fisheries, the author concludes that measures to regulate inputs were largely successful in reversing the decline of fisheries – including the elimination of overfishing – while at the same time improving socio-economic condition of fishing communities. In one intervention in Algeria, the evaluators highlight the fact that the new charter was developed jointly by government and industry, and praise its potential contribution to sustainable and responsible fisheries and aquaculture (101). Data on actual changes in fishing practices are not provided, though. A few other interventions targeted fisheries management at the regional level and conclude about the benefits of new regulations, monitoring, control and surveillance, or technologies for more sustainable resource exploitation (91; 101; 210; 222; 223). The conclusions in the studies are based on assessments of the performance of management processes – for example the adoption of new regulations, or the establishment of new processes. Data on exploitation levels are not given in any of the studies in this sample.

Community level marine resource management

A small number of donor-supported interventions contributed to the creation of local level resource management plans and regulations, for example village by-laws concerning access to fishing grounds and marine resources (120). In one of the rare studies presenting biological data, the evaluation of the Community-based Fisheries Management Project in Bangladesh found that closed seasons and gear bans led to higher fish abundance (102). The study recommends that in future programmes greater attention be given to monitoring fish abundance, including comparisons with control sites. A few other studies refer to benefits for resource sustainability from the establishment of community-based organisations with responsibility for monitoring, control and surveillance of fishing

activities, or the negative consequences of inadequate follow-up (30; 40; 83). Several of these relate to the creation or improvement of marine conservation areas (51; 122; 159; 231). The interventions often also supported community-based organisations in capacity development and awareness raising efforts among the groups affected by the fishing restrictions, which is generally regarded as facilitating compliance and enforcement. One study from Kyrgyzstan concludes for example that despite “limited availability [of] precise and reliable data [...] for establishing which outcomes were met” (88, p.33), support to the diversification of rural livelihoods had directly contributed to a reduction in fishing effort in Lake Issyk-Kul. Whether or not fishing effort was lowered to sustainable levels as a result of the project is unclear, though.

Adoption of fishery certification schemes

The evaluation of the post-tsunami rehabilitation efforts in the Maldives ranks the granting of Marine Stewardship Council certification to the tuna pole and line fisheries as a major achievement marking heightened attention to long-term sustainability (39). The evaluation does not report the actual outcomes in terms of sustainability improvements, though.

Negative outcomes in the form of increased catch volumes and even overfishing resulting from the intervention are reported in a small number of studies. The introduction of mobile communication technologies for emergency prevention across South and Southeast Asia led to fishermen sharing information about good fishing grounds, which resulted in more intense fishing in certain areas, something the authors see as a threat to sustainability (67). In the review of a fisheries development project in Mauritania, the authors criticise the creation of a fisheries development centre motivated by political interests and without adequate studies of the ecological carrying capacity in the region (189). The authors refer to early signs of excessive capture of valuable fish species, which they relate to industrial vessels starting to exploit nearshore fisheries resources previously reserved for artisanal fisheries. Some of the evaluations of European Union fisheries agreements also mention the possibility of unsustainable fishing by European vessels in some areas, often because of

inadequate information about the status of the species caught or the actual catches by vessels operating under the agreements (see for example 210; 213).

Neutral effects and inconclusive results

A considerable number of studies reports neutral effects of interventions targeting the sustainability of fisheries resources. Not unlike the reporting of neutral effects in relation to the other SDG 14 targets, the reasons put forward by the authors of the studies in this sample include:

Inability of the intervention to reverse the declining status of fisheries resources or overexploitation. This is due to other factors affecting resource exploitation being much stronger than the intervention, or to the intervention not addressing resource management issues adequately (20; 131; 138; 140; 168).

Inadequate design of the intervention, namely in terms of failure to address the causes underlying resource depletion, including secondary factors (13; 37). In one example, the introduction of new technologies for more sustainable fishing practices failed due to the intervention not addressing aspects beyond the technologies themselves, such as access to other inputs and financial services, market opportunities for new seafood products, and techniques for processing and storage (37).

Insufficient uptake by the target group of the changes introduced by the intervention. This can take different forms depending on the type of intervention and context, including refusal of the target groups to change behaviour and adopt new management practices in the context of weak enforcement (41); inability of authorities to pass and enforce new resource conservation measures (41); inability of communities to organise themselves in order to carry out resource management activities (120); or explicit opposition by government to the objectives of the intervention (169; 215).

In two cases, the evaluators express concerns about the sustainability of improvements, mostly because of uncertainties about the capacity of the target population to support new

technology and infrastructure after the end of the intervention (40; 41).

A number of interventions are unable to conclude about the direction and magnitude of effects. In a larger number of cases this is due to the evaluation taking place during or immediately after the end of the intervention, such that outcomes are not yet visible (21; 37; 106; 163; 185; 208; 231). In a few other studies, the authors observed changes in behaviour of the target population, but could not conclude about any changes in resource exploitation patterns (40; 78). Yet in other cases the authors did observe some changes, but could not conclude about progress relative to the goals of the intervention, due to uncertainties about attributing those changes to the activities carried out in the intervention (58; 81).

A small number of evaluations highlight the inadequacy of the results monitoring system or uncertainties in effect estimation as the main cause behind the inability to conclude about results (31; 102; 180). In two other studies, the authors maintain that estimating the effects of the intervention in terms of resource sustainability or exploitation patterns is too complex an issue for the scope of the evaluation (131; 177).

Component 2: ‘Reducing illegal, unregulated and unreported fishing’ and ‘Reducing destructive fishing’

The studies reviewed cover a wide range of interventions, with very diverse aims and approaches. For instance, some interventions targeted fishing communities specifically, while others took a national or regional approach, often working towards the creation of new laws or governance mechanisms. There was also a range in the type of fishing addressed by the interventions, with some aiming exclusively at small-scale artisanal fishing, and others targeting semi-industrial fleets. Others still aimed to address the entirety of the fishing sector. Capacity building is a common theme in many of the interventions described, specifically in terms of small-scale fisheries, and particularly when related to community-based management interventions.

Observed positive and negative effects

Demarcation of fishing grounds

An essential step to control fishing pressure or fishing practice is to have a clearly defined and common understanding of where fishing is to take place, who has the right to fish there, and what type of fishing is allowed. Interventions in this category are often mentioned when related to locally managed marine areas, as the focus appears to be on empowering communities to make decisions and act to secure their own local marine resources (190). As in many other areas, awareness and ownership are themes that appears often here. The implication is that if communities are aware of the importance of the threats to their resources, they will be motivated to act in ways to sustainably exploit them.

Efforts to create and implement monitoring, control, and surveillance systems

Effective systems for monitoring, control and surveillance systems are a cornerstone of many attempts to reduce IUU fishing. Without the ability to collect information about what is going on (monitor), stop unwanted activity (control), or keep up-to-date information about what activities are occurring (surveillance) reduction of IUU or destructive fishing practices would not be possible. It is perhaps unsurprising that many interventions under review related to promotion of monitoring, control and surveillance frameworks in some capacity (15; 32; 41; 94; 91; 119; 190; 208; 235). These interventions occurred at a variety of levels and employed a variety of approaches when addressing the implementation of monitoring, control and surveillance systems. One intervention aiming specifically at implementing monitoring, control and surveillance systems to meet international marine park management standards reported success in the form of decreasing number of arrests and increasing enforcement activities by community members (94). While some interventions in this area related to building capacity of communities or enforcement agencies (119), others aimed to establish systems, which could help managers to monitor fisheries inputs, such as a boat licensing scheme (190).

One study mentions specifically the importance of tailoring monitoring, control and surveillance interventions to the specific

needs and conditions of particular communities implying that systems that work in some areas may not work in others, depending on the capacity of the community to make use of the new technologies (15). The same study also implies that maximizing self-reliance and financial viability of monitoring, control and surveillance models are a critical element of their success. While there is little measurable evidence relating to the success of implementation of monitoring, control and surveillance systems, there is some anecdotal evidence of success, or mention that conditions created through the interventions should lead to better monitoring, control and surveillance practices (32; 41; 91). Particularly in small-scale fisheries, local co-management structures are mentioned as important to building successful systems.

Technological development, Vessel Monitoring Systems

Related to monitoring, control and surveillance, but likely to be employed at more of an industrial as opposed to small-scale level is the establishment of vessel monitoring systems. Data generated through such systems can be useful for monitoring, control and surveillance purposes. Several interventions reviewed in this study aimed to establish vessel monitoring systems (39; 91; 208). There were other projects, which aimed to introduce other technological innovations such as gear with higher selectivity to reduce incidents of bycatch (119) or systems to register vessels for better monitoring purposes (91). One of the clearest examples of direct investment in vessel monitoring technology for monitoring, control and surveillance purposes was in the case of European Union funding provided to Mauritius, in which “support to air and sea patrols, the prosecution of infringements and participation in the Indian Ocean Commission regional action plan of surveillance” has contributed to the country deterring illegal fishing in its exclusive economic zone (208, p.85). As with many other areas of fisheries development reviewed in this research, direct evidence for the effectiveness of such interventions is weak, as the intent appears to be to create appropriate conditions for management of fisheries and there is little if any follow up of impacts on fishing practices.

Removal or restrictions on gear

Several interventions related to reduction of IUU fishing and destructive fishing practices focused on removal of or restrictions on fishing gear (15; 34; 40; 83; 159; 223). These tended to target small-scale fisheries. Data relating to usage of gear is relatively simple to capture, and there were some measurable observed effects relating to gear use. One intervention aimed to introduce alternative fishing methods that would be less destructive in the reef ecosystem (15). To measure the outcomes, the evaluation correlated the fishermen's level of exposure to the project with their preferred fishing methods. The results indicate that fishermen who had a higher exposure to the project reported higher usage of reef-friendly fishing methods and lower levels of more destructive fishing methods, while the inverse was true for those fishermen with lower exposure to the project. This signals the importance of community involvement when implementing programmes to modify use of fishing gear. Other studies echo the importance of community level management, stating "Members of these communities realizing the need to begin managing their fisheries have agreed to stop using various kinds of illegal fishing gears and to use appropriate nets" (83, p.20; see also 40).

Conservation of habitats and establishment of marine protected areas

There is often an overlap between SDG 14 targets 4 and 5, the latter related to marine protected areas. Development interventions aiming to conserve natural marine areas often do so in part to reduce harmful fishing practices as a means to protect and preserve the environment and resources. There are therefore several instances in which interventions whose aim is to establish environmental conservation areas, match with the ultimate goal of reduction of IUU and destructive fishing.

Several studies evaluated interventions related to conservation of marine areas (31; 34; 134; 230). There is, however, very weak evidence that the establishment of these conservation areas have led to a reduction in IUU or destructive fishing, though it is often mentioned as a justification for the creation of the conservation areas. As one evaluation of a project, which established a network of marine protected areas states, "In general, the communities have

experienced improvements in their resources thanks to the [areas], even if these improvements have not always been proven scientifically” (122, p.45). Other studies stress the importance of bottom-up approaches and community involvement when establishing protected areas, including fishermen-led patrols to enforce “no-take” zones (34).

Legal and governance interventions

Several interventions related directly to changes in legal frameworks and policy related to reduction in IUU or destructive fishing practices (34; 37; 40; 41). Some of these interventions provided advice on legal mechanisms, but it is not clear that this advice was ultimately implemented. Other had a more direct outcome. For instance, one intervention specifically resulted in a change of law increasing legal allowable mesh size (37). Another intervention supported a legal challenge that resulted in new restrictions on licencing of shrimp trawlers, namely new requirements to provide data on catch, damage to the benthic environment caused by trawling activities, and socio-economic data on effects of the industrial fleet’s impact on smaller fleets (34). In other cases, destructive fishing was reduced through the development of new policy frameworks, for instance “a normative framework of policy and legislation in favour of artisanal fishing” (40:13). This included the establishment of a three-mile exclusion zone, differentiated closing dates for fishing seasons between the artisanal and industrial sectors, and minimum mesh sizes. The study does not mention the magnitude of the effect, though. Legal and governance issues are also mentioned in relation to small-scale fisheries. As one study indicates, “the decentralization of authority over municipal waters allowed [local] co-management units to enact municipal ordinances and enforce fisheries laws within their own jurisdictions. This led to a reduced incidence of illegal fishing activities” (41, p.11). Though clearly positive, no effect size was measured.

Neutral effects and inconclusive results

There are several neutral or inconclusive outcomes relating to reduction of IUU and destructive fishing practices (102; 119; 120;

138; 121; 229; 236). These outcomes suggest the importance that interventions of this nature are financially viable, effectively use technology, build trust and ownership within the community, and aim for project buy-in at multiple levels.

Importance of financial viability of solutions

If less destructive fishing practices are seen by users as less financially viable than the destructive alternatives, it is difficult to motivate behaviour change towards more sustainable practices. One study describes how buy-in from users and economic feasibility are critical to end destructive fishing, “As soon as the participants perceived low gains from the new activities, the projects were abandoned in favour of their previous resource use practices, some of which are a threat to marine resources and environment” (236, p.25).

Difficulty making efficient use of vessel monitoring systems

Two studies mentioned specific issues with the implementation of vessel monitoring systems (119; 138), noting that it is a costly intervention. In one case, the technology used was insufficiently accurate to identify possible IUU fishing, which suggests poor planning on the part of the donor (119). Another intervention established a vessel monitoring system primarily for monitoring marine traffic, and indicated that if the vessel monitoring data were to be used to monitor fishing activities, the staff using it would require more specific and detailed training (138). Thus, the system is established, but appears to not be used for monitoring of fishing activities.

Importance of community trust when implementing restrictions

One intervention aiming to reduce use of destructive gear had a significant negative impact, ultimately breaking community trust (20). The project aimed to remove destructive fishing gear, and had promised users to deliver an alternative, but did not deliver any alternative gear, which seriously harmed the project’s trust within the community. Yet another intervention aimed to reduce the number of bottom gillnets, but its evaluation indicates that fishers started using them again as soon as intervention stopped (159). This

signals low levels of community buy-in and the importance of community engagement. Another study indicates that successful implementation of monitoring, control and surveillance at a village level is heavily dependent on the level of organisation, attributing lack of intervention effects to poor organisational capacity of the community (120). As echoed in other barriers and enabling factors related to SDG 14, this indicates that close community involvement is a key to successful outcomes. However, it appears that engagement with communities is necessary, but not enough alone to achieve positive outcomes.

Multi-level involvement required

Some studies identifying difficulties in reduction of IUU and destructive fishing mentioned the importance of support at multiple levels of implementation (199; 229). One evaluation mentioned specifically the difficulties of establishing fisheries monitoring, control and surveillance, including the reliance on proper training of fisheries inspectors, technological constraints, lack of funding, and lack of buy-in from local institutions (199). This emphasis on multi-level support, and the sense that the problems of IUU and destructive fishing practices cannot be addressed through a single entry point, but require commitment that is both top-down and bottom-up is also brought up in another evaluation (229).

Trade-offs

Another intervention, which was considered to have a negative impact, distributed motors to fishermen to go farther ashore, leading to a problem of overcapacity in the fisheries and an increase in destructive fishing practices (41). As is often the case, this is an indication of the trade-offs inherent in fisheries development, when development in one area of the sector may have harmful impacts in others.

Component 3: ‘Implementing science-based management’

The types of fisheries development interventions relating to implementation of science-based management included a variety of

activities, such as the establishment of data collection, storage, and analysis frameworks, the generation of basic fisheries and ecosystem science, promotion of scientific networks and co-management structures, and policy reform.

Several of the interventions reported in the sample included a capacity building component of some kind (88; 119; 121; 177; 190). This is likely because human and institutional capacity to collect, analyse, and interpret data is key to conduct scientific analysis of fish stocks over the long term. Moreover, such interventions rely on the capacity of local institutions and expertise for the sustainability of project outcomes. The theory of change inherent in these capacity building interventions is that training scientific staff will lead institutions to create more robust science that can then be used to inform policy decisions. While outputs related to capacity building are measurable, for example, a certain number of people attended a training workshop, the outcomes of those trainings, and the question of whether the experts who attended the trainings will actually use or apply what they learned is not typically addressed in the evaluations.

In general, there is not a great deal of evidence of measurable impact related to this component of target 14.4 in the studies reviewed. This may be in part because the vast majority of interventions related to implementing science-based fisheries management essentially aimed to establish enabling conditions, including data systems and human capacity so that science could be used to inform policy and management in the future. Some focused more on creating solid science, while others had more of an emphasis on implementing policies, but very few actually report on the establishment of all elements of science-based fisheries management and the impacts this has had on fishing practices.

Observed positive and negative effects

Improving the transparency of fisheries data

One intervention included in this review established systems with the aim to make fisheries data more easily available and accessible

(1). The underlying theory of change appears to be that if fisheries data is more transparent and accessible to scientists, policy makers, and the general public, management decisions relating to fisheries will be more grounded in scientific data. It was also implied that increased transparency may lead industry operatives to make decisions in the interest of the public, assuming greater pressure to manage resources sustainably and fairly. The evaluation does not present evidence relative to whether the intervention led to the intended effects, though.

Stock assessment and basic science

Several interventions included the development of stock assessments, or generation of basic scientific data with the intention that this information would inform management of fish stocks in the future (90; 91; 93; 119; 127; 158). There was a wide range of types of intervention included in these areas. Some related specifically to generation of science with the anticipation that the science would be used for future management, while fewer reported that science or recommendations were being used to create or implement policy.

In terms of stock assessment and generation of basic science, once again the work reviewed in this study relates more to creating enabling conditions for the use of science in management decisions to be taken later. An example of these enabling conditions is an intervention, which facilitated development of a joint ecosystem monitoring program, with the evaluation acknowledging it to be “an important first step in providing a mechanism for monitoring and evaluation of long-term changes in the ecosystem” (90, p.9). Another intervention, a large tuna tagging study, reports on the actual use of the data “as input to further develop and improve stock assessment models for southern albacore” (119, p.23). That data was subsequently used to validate tuna biology and ecology models, and complete stock assessments for the main tuna species in the Pacific. Similar results are reported in the evaluation of an intervention to improve stock assessment methodologies for deep water snapper, although with less evidence of actual improvements to fishery management practices (127). In these and other instances (see also 158), interventions to create stock assessment or basic scientific data

are seen as steps on the way toward the goal of using enhanced scientific capacity to better manage marine resources.

In terms of evidence that science generated through projects was being used to inform fishing practices, there is comparatively little evidence. One evaluation related to the development of a special ecosystem and population dynamics model is illustrative of the situation encountered by most other evaluators: “Conservation and management measures are being adopted by national plans, policies and strategies” (91, p.46). Beyond that, there is no measured evidence that generation of scientific data for stock assessment was having an actual effect on the day-to-day management of fisheries, let alone how the fishing was being conducted.

Establishment of co-management structures

Several projects, as part of wider intervention, aimed to establish structures of co-management (15; 124; 159). This is related to stakeholder participation and buy-in and is connected specifically to the FAO Small-Scale Fisheries Guidelines. It is assumed that if communities are involved in collection of information of their marine resources, that data will be more reliable, and the community will develop a vested interest in maintaining and sustainably using the resource. In one instance for example, greater awareness by administrative officers and fishermen of resource management issues is viewed as a key step toward creating systems of data collection as a basis for management, as well as local understanding of the importance of the resource (159). Another intervention established management zones and formed community groups to manage those zones, as part of an effort to establish a marine conservation area (15). While the intervention established these community management groups, no evidence is provided as to whether the data collected by the groups is used for management purposes. However, at one site an 85 percent reduction in the number local fishermen involved in illegal fishing was recorded, suggesting that greater involvement in and awareness of resource management might affect propensity to conserve the resource.

Data collection, management and analysis

Poor quality fisheries data is one of the largest impediments to sustainable management of fisheries, so it is perhaps not surprising that several interventions relate to the collection, management, and analysis of data (37; 91; 119; 121; 122; 160). One of the interventions contributed to building a database for storage of information, though no outcomes were observed, rather enabling conditions created (121). Others related to experimentation with various methods of data collection or collected basic data on ecosystems and taxonomy (91; 122; 160). A combination of achieved and expected results is reported in several studies, as captured in the conclusion of the evaluation of the Nampula Artisanal Fisheries Project: “This project has helped...establish a successful monitoring system for the collection of data from the many artisanal fisheries centres in the area. The studies carried out and those to be undertaken will play an important role in guiding the future long-term judicious use of marine resources and optimising sustainable benefits for the artisanal sub-sector” (37, p.19-20).

Promotion of scientific networks

Some interventions aimed to implement science-based management through the promotion of scientific networks (39; 92; 177; 230; 233). This relates specifically to the nature of science and the importance of peer-review in creating quality scientific information. These interventions included a range of activities to promote networking among scientists and experts, including at national, regional, or international levels. National-level interventions involved for example support to the development of national policies through networking of government fisheries agencies, fisheries organisations, and the private sector (233). At the international level, one intervention assisted with entrance to the Indian Ocean Tuna Commission, the evaluation highlighting the importance of membership in the Commission and the experience gained by national officers through participation in international negotiations for improving fisheries management at the national level (39; see also 92).

Development of management advice and policy reform

While some studies report positive results in terms of generation of science and data collection to implement science-based policy in fisheries, others discuss results in terms of policy generation (121; 149; 158; 223; 230; 231). In some interventions, collaborative management plans were developed (230) or existing policy was reviewed, and changes were recommended (231). One evaluation succinctly states: “The scientific advice prepared by the National Marine Information and Research Centre is based on well-founded survey methodologies, data sampling and established time-series. These methods have been built into the process of setting total allowable catches and any resource preservation decisions. It was confirmed that methodologies developed with help of [donors] are effective in obtaining scientific data” (158, p.40). This theme hints at a large challenge and limitation in wider work to create development interventions in fisheries. While it may be possible to generate data, set up scientific systems for monitoring stocks, or assist with creation of scientific understanding in other ways, it is not possible for a development intervention alone to ensure that advice generated through this type of work will be taken up by managers.

Neutral effects and inconclusive results

Several studies reported neutral or inconclusive effects of interventions aiming to promote science-based fisheries management, including:

Lack of stakeholder involvement and buy-in

One of the most often mentioned reasons for science-based management fisheries projects not delivering the outcomes expected relates to a lack of engagement or consultation with stakeholders. The types of failure relating to this issue vary from capacity building activities targeting the wrong group (93), inadequate consultation with project stakeholders to use information generated through the intervention (90; 158) and simply neglecting stakeholders altogether (26).

Specifically mentioned was efforts to develop a policy, but an unwillingness or inability on the part of local managers to implement the policy. This is relevant to answering the question of how to best implement science-based fisheries management, because it highlights the importance of mutual agreement between donor and partner organisation. One evaluation concluded, “With regard to fisheries, FAO’s initiatives had modest impacts. For example, FAO helped develop a fisheries strategy in 2006, but it had relatively little uptake by the government of Sri Lanka” (78, p.33). The evaluation further mentions the failure of the competent ministry to adopt any or provide a response to the work of the donor.

Insufficient capacity of partner organisation, especially in the long term

Insufficient institutional and human capacity to make use of data collected or modelling systems put in place with donor support, was a reason often mentioned for the lack of anticipated outcomes. For instance, one project introduced ecosystem-based modelling management tools, but experienced project delays and a barrier of poor-quality data. Due in part to time and budgetary constraints, the work was limited to a demonstration of ecosystem-based management modelling tools. Because of late implementation and the lack of an exit strategy for the interventions, the evaluators concluded that the prospects that activities would continue after the project closure were very limited (90). In another review, co-management units were established to collect fisheries data, but the majority of these units ceased to function when project funding ended (47). This outcome may also highlight the need for interventions to invest longer-term support to sustain any benefits these type of projects create.

Insufficient project design or concept

Over-reliance on few individuals to achieve project outcomes, as well as projects poorly fit to deliver on the needs of the recipients were mentioned in some instances. High staff turnover is a particular problem highlighted in at least one case (158). There is a sense that such an issue could have potentially been avoided through measures on the part of the organisation to better train more people to use the technology provided. In another instance, the project delivered results that were not correctly fit to the needs of the

recipients, with the evaluation stating “The results of this four year project are not answering to the expectations...it was oriented towards mainly pure science and not science for management. For the management of seamounts, no management plan has been designed as expected” (93, p.60). It is implied that better understanding of the context, and more background research would have changed the focus of the project and may have ultimately made the intervention more successful.

Evaluation design

Several of studies raise issues related to the challenges of evaluating intervention impacts. Many of these related to evaluation timing, indicating that the evaluation took place too early to determine project impacts or sustainability (127; 92; 93). Another concern raised in the evaluations related to attribution. Some evaluations mentioned that several ongoing projects working in the same geographic area, on the same topics, and at the same time, make attribution of specific interventions of the project under review impossible to determine (119; 121). Measurement of effect size is often unclear, as one study mentioned: “As a result of the [...] project, fish catches have increased, but there is no data to show how much of an increase has been achieved” (146, p.23).

Implications for policy and practice

A review conducted by Alder and co-authors (245) illustrates the steady decline of ODA to fisheries, with a reduction of approximately 50 percent between the early 1980s and the early 2000s. More recent analyses paint a slightly different, although not entirely consistent picture. Based on official data reported to the OECD, Berger and co-authors found that ODA commitments to fisheries remained relatively constant between 2003 and 2015 (248).¹¹ The authors highlight, on the other hand, that ODA to

¹¹ An analysis of OECD data conducted by EBA within the scope of this study corroborates these findings. There are gaps in the data reported by donors to

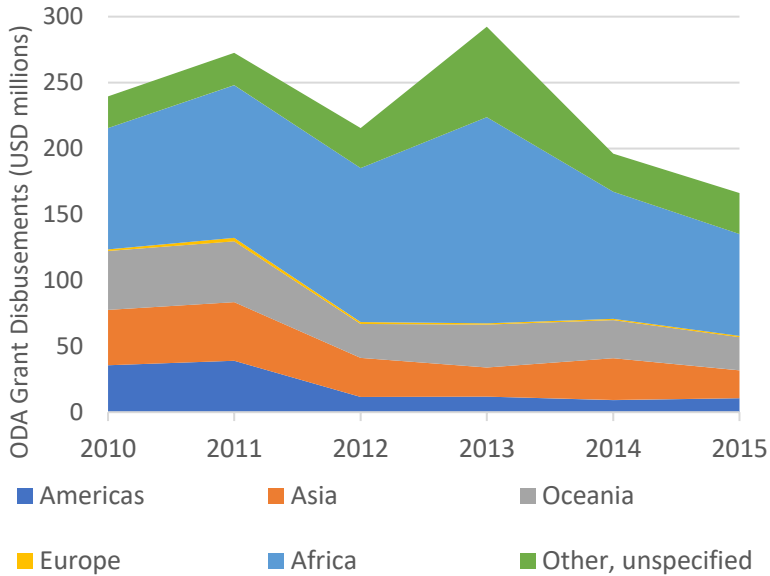
fisheries relative to total ODA declined steadily over that period. Focusing only on the period 2010-2015, Blasiak and Wabnitz report a 30 percent reduction of ODA to fisheries over that period, in stark contrast to a 13.3 percent increase in the total volume of assistance grants over the same period (249; see Figure 14). Interestingly, an upward inflection in ODA commitments to fisheries seems to have occurred in 2015, which might be attributable to the specific focus on ocean-related matters and fisheries after the adoption of SDG 14.¹² The effects of that upswing are not yet visible in the sample used in this study, as it only includes interventions whose funding was committed before 2015.

In their study of foreign assistance to ocean-related issues, Berger and co-authors found that, in 2015, commitments by philanthropies surpassed that of ODA (248; see also 291). Other than private philanthropies, also new donors – notably China – are playing an increasingly important role in aid flows, including to oceans and fisheries. One aspect that distinguishes these newer donor organisations from the more established ones is the greater opacity relative to funding volumes, the type of interventions supported and the results of those interventions.

the OECD International Development Statistics database, especially in the period before 2005. The figures in the database might therefore not be representative of actual ODA commitments until the early 2000s. Researchers analyzing ODA commitments before that have generally relied on other data sources. Reporting to the OECD database has improved considerably since.

¹² The start of the upward inflection is depicted in Berger et al (2019), and is also visible in the FAO AIDmonitor online service, available at www.fao.org/aid-monitor/en/.

Figure 14: Changes in the volume of ODA to fisheries, by recipient region, 2010-2015 (249; courtesy of the authors, used with permission).



How aid funds to fisheries are applied is of paramount importance given the declining status of fisheries worldwide, where an estimate 90 percent of stocks are either fully fished or overfished, and total production from capture fisheries has remained stagnant since the mid-1980s (261). The opacity of certain donors as to the purpose and results of their support to fisheries is therefore of concern, and the risk that their support might exacerbate the problem of overfishing cannot be excluded.

Alder and co-authors (245) suggest that fisheries aid until the 1980s was successful in increasing the production capacity of aid recipient countries, including through the creation of industrial fishing sectors in some countries. They conclude that fisheries aid was therefore one of the contributing factors to the current overfished status of many stocks. One of the implications of the decline in fisheries aid observed since the 1990s is that there has been insufficient support to management measures to help reverse the trend of overfishing and the declining status of stocks. In spite

of the progressive shift of donor attention from fisheries production to fisheries management – suggested, for example, by the analysis in chapter *Systematic map of the evidence* (see Figure 6) – funding to the latter has so far been insufficient to counter the mounting pressures on the resources. If the upswing in ODA to fisheries observed in recent years is maintained, and if those additional funds are committed to improving fisheries management, signs of ODA contributing to reducing overfishing might indeed become visible in the medium term.

Mangin and co-authors recently estimated that public expenditures in the top-25 fishing nations (representing approximately 72% of global catches) in support of fisheries management, are seven to eight times greater than all official and philanthropic development assistance combined (298), based on the estimates by Berger and co-authors (248). The percentage of those disbursements that goes into sustainable fishing practices is not known, though. The same authors highlight that public expenditure by tonne caught varies by one order of magnitude between the countries, but did not find any correlation between the size of the fisheries, the status of stocks and the level of expenditure. This could suggest that, although financial resources could be an important constraint to good fisheries management in many countries – in particular the poorer ones - it is not a determining factor for sustainable fisheries management.

The analysis in this section suggests that interventions to regulate harvesting, reduce and eliminate IUU fishing and overfishing, or implement science-based fisheries management involve working with institutional mechanisms to build monitoring, regulatory and enforcement capacity. The collection and analysis of data on stocks and ecosystems constitutes the basis of any robust fisheries management system, and many parts of the developing world still lag behind on this front, in particular with respect to small-scale fisheries. A larger proportion of interventions reviewed focused on data on and for industrial fisheries, whereas the difficulties inherent to monitoring small-scale fisheries were hardly addressed, in particular the issue of the financial sustainability of management measures to monitor and control fisheries with low profitability. The assessment of sustainable harvest and sustainable yield – and the

challenges inherent to that assessment - are barely touched upon, indicating a lack of concern for these measures on the part of the organisations commissioning the evaluations.

Regulatory and especially enforcement capacity on the part of competent authorities involves not only training individuals, but also putting in place systems and procedures that enable organisations to fulfill their mandate. Large investments in infrastructure and equipment – eventually similar to the ones donors made in productive activities in the 1970s and 1980s – might be necessary in many developing countries if they are to have any enforcement capabilities at sea. Notwithstanding the benefits of awareness raising and capacity development in terms of fostering greater compliance on the part of resource users, the review suggests that enforcement of some kind is necessary to force compliance of those who do not voluntarily do so. The relatively large number of interventions concerned with the development of monitoring, control and surveillance systems suggests that the donor community is aware of that necessity. A sign of some progress in the same direction is the growing adherence of states to instruments to combat IUU fishing, notably the FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (299; 300). The implementation of the agreement is an area where states with less well-resourced fisheries administrations are likely to require assistance.

At the same time, although acknowledged in a few studies, the review suggests that insufficient attention has been paid to securing viable alternative income generating activities for the people affected by fisheries restrictions. Without such alternatives it is unlikely that a reduction in the number of fisherment and regulation of fishing pressure to sustainable levels will be successful (see for example 278). The fact that insufficient buy-in on the part of fisheries stakeholders constitutes one of the main reasons behind the failure of donor-supported interventions attests to that observation. This issue is discussed further in relation to target 14.7 below, where it is observed that the evidence about the success of support to alternative income generating activities is relatively weak.

It is perhaps unsurprising that there are very few examples of donor-supported interventions leading to institutional system change. Donors tend to operate within the space allowed by the political and administrative structures of the partner country, more so in the case of interventions of a predominantly technical nature, such as the ones in fisheries. Hence important system imbalances – including corruption, legislative and administrative inefficiencies, not to mention budgetary constraints – are frequently left unaddressed, despite the critical importance they might have for the development and management of fisheries (see for example 283; 293).

The type of interventions that, according to this synthesis, are most likely to be successful all involve institutional capacity building of some kind. This is generally recognised by the donors represented in this study, hence the issue does not seem to be the lack of strategic focus of the interventions. But several evaluations highlight the challenges of insufficient funding and the short duration of the support as factors limiting the reach and impact of interventions. This might suggest that funding levels are indeed insufficient and that attaining target 14.4 will only be possible with greater financial commitments to fisheries management from the international community. The upswing in ODA to fisheries of the past couple of years may signify a recognition of this fact by the international community. Mangin and co-authors suggest in this regard that considerable investments might be necessary initially for the transition to more efficient fisheries management, but that such expenditures are likely to reduce the cost per volume of catch in the longer run (298). Sustained investments by donors in capacity building for transitioning to more efficient management forms might therefore be justified.¹³

¹³ The latest SDG Report shows that sub-Saharan Africa and Southern Asia still face very large challenges in terms of adult education (300). Although the higher literacy and education rates among the youth relative to adults are a positive sign, a large proportion of the youth in developing countries were not engaged in either education, employment or training, the situation being particularly

SDG 14 target 6: Fisheries subsidies

There are very few evaluations addressing the effect of fisheries subsidies in the literature included in this study, compared to the other SDG14 fisheries targets. This could indicate that this issues has not received as much attention from develop-ment cooperation donors as other issues affecting the fisheries sector in developing countries. As elaborated further in the closing paragraphs of this section, this might be related to the fact that subsidies issues are dealt with within the framework of World Trade Organisation negotiations.

Definition

By 2020, prohibit certain forms of fisheries subsidies, which contribute to overcapacity and overfishing, and eliminate subsidies that contribute to IUU fishing, and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the WTO fisheries subsidies negotiation.

For the purpose of this study, the definition of target 14.6 was broadened to include measures to eliminate or prevent from introducing any economic or technical subsidies (including inputs to production) given to the fisheries sector, aimed at improving its operational or commercial conditions. This definition therefore encompasses any type of fishing subsidies, and not only those that unequivocally contribute to overcapacity, overfishing or IUU fishing. This is in line with literature on the subject of fishing subsidies (285; 286).

acute in Central and Southern Asia, and for young women in general. Could this justify increased attention by donors to the youth in capacity development measures related to fisheries?

Observed positive and negative effects

In the literature surveyed, there is one single reference to what might be interpreted as elimination of state subsidies to fisheries. It relates to a World Bank-supported assessment of the dependence on state subsidies of the Seychelles' largest tuna processing company (1). The evaluation is unclear about whether or not the assessment led to the suppression of the subsidies, though, mentioning only that it enabled government to negotiate better terms for its agreement with the company.

All other references are about the introduction or maintenance of different types of fisheries subsidies. This is a recurrent theme in the UNEP assessment of trade policies in Senegal (84). Despite not being an evaluation of a specific donor programme, it highlights at one point that donors were supportive of export subsidies introduced by the Senegalese government, because such subsidies were believed to support the dual objectives of ensuring domestic food security and increasing export earnings. In part because the introduction of those subsidies coincided with additional measures to promote exports, they contributed to an excessive shift of Senegalese fisheries to more profitable export species, resulting in decreased supply to the domestic market in favour of export markets. The concomitant increase in fishing pressure also led to a progressive depletion of fish stocks. The export subsidy was eventually terminated in 1994. The Senegalese government did retain a number of other input subsidies, which the report concludes were in part necessary to maintain the prices of small-scale fisheries catches at levels compatible with the population's purchasing capacity, and thereby essential for the financial sustainability of the domestic-market oriented fishing fleet. However, fuel subsidies in the 1990s enabled small-scale boat owners to modernise their equipment, operate at greater distance from the coast and for longer periods. They became increasingly export-oriented, which had a negative impact on seafood supply to the domestic market, a phenomenon also reported in other studies (see 290).

The evaluation of the International Fund for Agricultural Development-supported artisanal fisheries project in the province of Nampula, Mozambique is less critical of the potential negative

impacts of input subsidies (37). In response to pressure from the project, government reduced import duties on fishing gear, which the evaluation argues contributed to guaranteeing the supply of fishing inputs and equipment. The increase in supply was not matched by an increase in the purchasing power of fishermen, though. Due to lack of access to credit, fishermen continued producing their own gear or using mosquito nets, leading the evaluators to conclude that further tariff reductions and the creation of a credit-granting mechanism would be necessary to make the improved supply market effective. Whether that strategy was pursued by the project, and what results this might have had are not analysed in the evaluation. Nor are any environmental risks associated with facilitated access to and lower cost of inputs.

The European Union fisheries agreements can be regarded as subsidies benefitting mostly European operators, and in fewer instances port and processing services in third countries used by those operators. In the literature, payments for fishing access are generally classified as capacity-enhancing subsidies (285; 286), as they involve a public entity covering part of the costs that private operators would need to incur to access certain fishing areas. Some of the evaluations of European Union fisheries agreements included in this study conclude that the largest share of the value-added generated by the agreement accrues to European vessel owners (192; 193). In all cases, the European Union contribution tops up the price per tonne of fish caught paid by vessel owners and bears a larger share of the agreement costs than the vessel owners (see for example 192; 193; 199; 208). The agreements therefore provide an economic advantage to European vessel owners compared to if no agreement had been in place.

In some of the literature on fisheries subsidies, it is argued that ODA should generally be regarded as a subsidy, as it involves payments from public entities in donor countries to the fishing sector to help it improve its profitability (245; see also 284). If adopting such a definition, much of the literature included in this study portrays cases of fisheries subsidies. If concentrating only on cases of donor support contributing to increased exploitation of marine resources (as opposed, for example, to support to improving resource management, or increasing the value-added of seafood

products post harvest), there are much fewer accounts in the literature surveyed. A relatively small number of studies linking greater catch volumes to economic benefits are reviewed in the section on SDG target 14.7. Those studies refer to the role played by improved infrastructure, capacity development, the introduction of fishing technology, but also improved resource management in increasing landing volumes. Interestingly, the interventions targeting access to fisheries resources all involve mechanisms to control access and resource extraction, and cannot therefore be seen as resulting in greater levels of exploitation (see section on SDG target 14.b).

Implications for policy and practice

The very limited coverage of the issue of fisheries subsidies in the literature surveyed suggests that ODA has not specifically targeted this issue, and that there is little that can be learned from past experiences. Most of the international work addressing subsidies to the fishing industry is being carried out at the WTO, whose mandate to deal with fisheries subsidies was established at the Doha Rounds in 2001. The issue has since received varying levels of attention, often in synchrony with other global commitments for ocean health. The 2030 Agenda and especially the inclusion of a specific target on subsidies seems to have created some momentum in recent years, but the latest ministerial meeting in 2017 failed to produce the desired agreement to regulate certain forms of subsidies. The UN Secretary General's Special Envoy for the Ocean, Peter Thomson underscored recently the importance of the international community making progress on this matter, given the very short time to the 2020 deadline inscribed in the target (288).

The latest WTO negotiations have focused mainly on regulating subsidies based on their effects, rather than on the type of inputs to production that are targeted by subsidies. This is in line with the text of target 14.6. Recent proposals to the WTO have prioritised subsidies contributing to IUU fishing, overcapacity and overfishing. The reviewed literature is for the most part silent or neutral on these matters. The continuation of European Union support to the European distant water fishing fleet could be considered contrary

to the objective of eliminating those types of subsidies, in particular to a European Union proposal to prohibit subsidies when a stock's status is unknown or scientific information is insufficient (282). Some of the evaluations of European Union fisheries agreements suggest that this might be the case when European vessels capture species whose stocks lack assessment, or when control of European vessel operations is insufficient. On the other hand, the 'payment for fishing access' component of the agreements cannot be regarded as development cooperation, but rather as a commercial agreement, and is therefore not illustrative of how fisheries subsidies are dealt with in fisheries aid.

The magnitude of global fisheries subsidies – estimated during the last decade at US 35 billion, about one third of global fisheries production (285; 295) – and the failure so far of WTO negotiations to regulate them has prompted other global actors to call for action in support of target 14.6, among which UCTAD, FAO and UNEP through a joint statement issued in 2016 (289; see also 296). It remains unclear, though, how the international community will mobilise to resolve the issue by the 2020 deadline. In the absence of any subsidies-specific instrument, the indicator for target 14.6, *Progress by countries in the degree of implementation of international instruments aiming to combat IUU fishing* is likely to capture progress in other international processes to regulate fishing, and not specifically in the regulation of subsidies.

SDG 14 target 7: Economic benefits

This section provides a synthesis of the evidence of effects related to economic benefits from fishing or subsidiary activities supported by the interventions reported in the literature.

Definition

By 2030, increase the economic benefits to Small Island Developing States and Least Developed States from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.

For the purpose of this study the definition of SDG target 14.7 was slightly enlarged to include evidence of economic profit accruing from fishing and subsidiary activities, such as the processing and sale of fishery products. The geographical scope was also expanded to include all countries in the OECD-DAC list of ODA recipients.

Observed positive and negative effects

The reporting of positive economic effects is much more common than that of negative ones in the literature included in this study. A similar pattern was found with respect to the reporting of effects related to the other SDG 14 targets. Relatively few studies include data on the magnitude of the effects. In most cases conclusions are drawn based on the views of intervention stakeholders and without contrasting data from the intervention with an adequate counterfactual. Seven main types of effects related to economic benefits were identified, described below in descending order of frequency.

Higher incomes from the sale of fishery products

This is reported in studies of interventions to improve fish processing and conservation, reduce post-harvest losses and waste, and ultimately increase the market value of fishery products (32; 40; 41; 131; 142; 154; 184; 230). Interventions vary significantly in type, from the mere provision of ice boxes (184), to programmes combining infrastructure development, institutional capacity building and development of processing and marketing skills (154). In some instances, improvements to fish product quality have been such as to enable access to high value international export markets (39; 84, but note negative effects for domestic supply). Higher incomes have also been reported to result from diversification into new fisheries products following the support provided by the intervention (40), and in a number of studies from improvements to transport, landing and market infrastructure. This has for example facilitated the physical access of sellers and buyers to markets (40; 128), contributed to improvements in hygiene of fish

handling and fish product quality (154) and enabled buyers to come closer to landing sites (142; 230).

Other studies report economic benefits from interventions that established linkages between fishermen and fish mongers and the financial sector (40), or from other agents in seafood value chains (131). Such efforts enabled new investments in fishing and marketing activities, and diversification of markets. A particularly interesting case is the establishment of commercial partnerships between Danish and Vietnamese companies facilitated by the Danish Vietnam programme, which enabled Vietnamese firms to start processing seafood products caught by European Union vessels for re-export to Europe, resulting in more jobs and higher income in Vietnam (131). The negative environmental impacts associated with transporting large volumes of fish between Europe and Southeast Asia raise doubts about the sustainability of the achievements, something that the evaluators briefly mention.

In one of the few academic studies included in the sample, Jensen (2007) reports a significant reduction in the mean spread of market prices, the elimination of waste, higher fishermen profits and lower consumer prices from the introduction of mobile technologies in the Indian state of Kerala. Table 2 summarises a subset of the economic benefits for which there is an estimation of the magnitude of the effect.

Table 2: Magnitude of selected effects related to economic benefits from fishing and subsidiary activities

Intervention	Effect	Comment	Ref.
Deployment of advisors in support of national fisheries management policies, including support to engagement in regional negotiations on shared fisheries resources. <i>Country:</i> Solomon Islands	In the period 2010-2013: 33 percent increase in number of nationals employed in fishing industry 62 percent increase in government income for access and administrative fees 115 percent increase in value of seafood exports	Contribution of the intervention unclear. Improvements reported result of multiple processes, which the evaluation does not analyse in detail.	169

<p>Enhancement of fish stocks in floodplains through the release of farm-produced seed fish, to compensate for the failure of natural recruitment. The intervention involved the development of appropriate institutional arrangements for managing the stocking and harvesting.</p>	<p>In the period 1991-1996: 5 and 8 percent income increases for non-/professional fishermen (expectations: 14 and 75 percent); Increase in catches from the deepest components of the floodplain from 1.8 to 11.4 tonnes/year; Increase in proportion of catches by landless fishermen 26 to 52 percent of total.</p>	<p>In the absence of harvesting management, stocking did not result in higher standing stocks. Higher catch/unit effort observed in areas where access restrictions were implemented. Professional fishermen's income below expectations due to higher costs (see text)</p>	<p>187</p>
<p>Combination of approaches to improve the quality of seafood processing in Vietnam, including capacity building, introduction of new technology, and facilitation of trade channels.</p>	<p>In the period 2006-2013: >10 percent increase in annual exports of seafood products; 9 percent increase in annual incomes of small-scale seafood producers in two provinces.</p>	<p>Results build on achievements from previous programme phase (2000-2005). Report does not analyse the contribution of other factors.</p>	<p>131</p>
<p>Skills development at community level for fish handling, quality assurance and marketing; infrastructure development, in particular water supply and sanitation facilities; and institutional development for fish product inspection and quality certification.</p>	<p>In the period 2009-2016: Reduction in the number of households with small saving, and increase in the number of households with large savings; Increased diversification of livelihood activities, with lower dependency on fisheries, despite larger proportion of fisheries-dependent households.</p>	<p>Household savings used as proxy for household income. No data provided on actual income gains. The evaluation compares project households with control households, before and after the intervention, but does not discuss other possible contributing factors.</p>	<p>154</p>

Support to the environmental protection and fisheries management plans, combined with the development of community-state partnerships for alternative income generating activities and fishing technology improvements.	In the period 2013-2015: Improved quality of life for approx. 25 percent of focus group participants; >50 percent increase in net fishing profit in two communities, despite higher expenditures.	Results based on perceptions from focus group discussions. No data is provided on actual income gains. Perceived quality of life included non-monetary aspects.	231
Introduction of mobile telephone technology in coastal areas, enabling fishermen to have access to real-time information about market conditions and negotiate with potential buyers	After ~ 10 weeks following the introduction of mobile phones: ~ 90 percent higher profits from fishing for users (treatm.) relative to non-users (control); Elimination of waste (unsold fish), from 5-8 percent, and increase in quantity sold by 23 kg/day; Reduction in coefficient of variation of market prices from 62-69 to 14 percent or less.	Robust before-after and treatment-control group comparison based on time series data. Not a donor-supported intervention, instead a business-driven development.	35

Employment opportunities

New employment opportunities resulted from activities, skills and capacity developed by some interventions. This includes for example Namibian nationals progressively taking over the role of teachers and instructors at the Namibian Marine Fisheries Institute from Icelandic instructors (154); jobs in the design and construction of fishing boats at the Goa Shipyard as the result of one of the earlier Norwegian interventions in the fisheries sector in India (176); and numerous cases of employment created in seafood handling and processing, and port services linked to the landing and transshipment of seafood products as a result of fisheries agreements with the European Union (193; 208; 210; 213). Such agreements have, in some instances, also created jobs on board fishing vessels operating

under the agreement (193; 199; 210; 213). Because the agreements draw from a pool of seamen from the African, Caribbean and Pacific group of countries, the employment benefits often accrue to other countries than the one having the agreement with the European Union.

Iceland- and New Zealand-supported interventions to upgrade maritime training facilities in Namibia and Kiribati are also reported to have contributed to nationals of these two countries securing more and better employment on board fishing vessels (158; 170). In the latter case, this has contributed to higher remittance flows for inhabitants, the 'I-Kiribati' families. The training provided by some of the intervention has created job opportunities for nationals in Namibia, the Pacific Island Countries and Uganda as fisheries observers, port samplers and debriefers (119; 154; 158). Despite the multiple accounts of improved employment opportunities, none of the studies analyse the actual economic benefits in terms of income gains for the individuals affected, or any other conditions of the employment made possible by the intervention. While it is understandable that an analysis of this latter issue would fall outside the scope of most evaluations, there is ample evidence of inadequate working conditions on board fishing vessels to justify a more inquisitive view on the benefits of such employment (269).

Higher incomes from increased catch volumes

A number of interventions supported measures to increase catches and landings as a means of generating income and improving the livelihoods of fishing communities. In some cases, this was attributed to improvements in the physical infrastructure and shore-based equipment, enabling greater safety and efficiency of handling and marketing operations (8; 177; 226). In others the ability to catch more fish was seen as the result of training provided to fishermen (8), expansion of fishing areas following a change in regulations (40) or of measures to increase fishing effort, for example by employing more efficient technology or practices (168; 190; 235).

In a smaller number of cases, higher catch volumes were seen to result from donor support to the management of the resource. In an Asian Development Bank-supported intervention for coral reef conservation in Indonesia, the evaluation attributes higher landings

to improved management, control and surveillance measures introduced by the intervention (47). A British-supported floodplain enhancement programme in Bangladesh and an American programme for fisheries resource management in the Philippines report economic benefits for some population groups as the result of higher catch volumes, in the former case as much as 8 percent for professional fishermen (187; 231). In one of the few accounts of negative economic impacts, a programme for water body regulation in Bangladesh was found to result in reduced income for floodplain fishermen who had not been able to convert to fish culture (50). As expected from the outset of the project, this was the result of reduced natural fish migration during the breeding season due to a decrease in flooded areas and flood depth in many areas.

Improved income and living conditions from community development interventions

Such benefits result in most cases from environmental protection projects. A community conservation project in Panama for example succeeded in generating approximately USD 10,000 for the community from the sale of turtle eggs between 1995 and 1997, after training provided by the project (11). Similar interventions under the same programme did not report any measurable results at the time of the evaluation, though. Other reports of economic gains for communities from conservation practices are found in 26, 106, 130 and 154. Strengthening community bargaining power, namely through supporting fishermen federations, was seen to help fishing communities secure better economic terms when negotiating sale prices with middlemen and business (128). The magnitude of the gains for the community or individuals was not assessed, though.

Income for the state from the sale of access rights to fisheries resources

Income for the state from the sale of access rights was observed only in evaluations of European Union fisheries agreements (192; 193; 197; 198; 199; 208; 210; 213). In some instances, the European Union contribution constitutes an important fraction of the budget for the fisheries sector, such as in the Seychelles and Cabo Verde, at approximately 12 percent (2010) and 24 percent (2010), respectively (192; 199). In most of the studies reviewed, the largest share of the value-added generated by the partnership agreement accrues to the

European Union and its operators. The case of Madagascar retaining 44 percent of the value-added according to the latest evaluation (2018) is an exception rather than the norm (210). Countries that are able to employ their own nationals on European vessels and provide a range of port, transshipment and processing services seem to be in a better position to capture a larger share of the value-added resulting from the agreements.

Reduction of costs

The mid-term evaluation of the South-East Asia Regional Fisheries Livelihoods Programme of the FAO concludes that boat engine repair training had benefitted fishermen by cutting costs on repairs and reducing the number of lost fishing days (67). The magnitude of the gains is not presented, though. The same study draws attention to the opposite problem, namely that of the high costs of technology or processes introduced by interventions that the country or community is unable to cover once the intervention ends. This is reported in other studies with respect to operational costs transferred to local partners that either cannot afford them and therefore abandon the technology (106), or result in economic losses that are borne by private operators or the state (189; 241).

Indirect positive effects

A number of evaluations report achievements assumed by the intervention or the evaluation to have indirect economic effects. A few studies maintain that measures to improve fisheries policies, including greater transparency in fisheries management and engagement in regional policy processes have generated economic benefits from fishing for the country (1; 39; 168; 169). Donor-initiated measures for disengaging the state from commercial operations in the fisheries sector coupled to investment, market and labour policy review were seen to create a more favourable environment for private sector development in Mauritania around the turn of the millennium (8). The actual gains for the fisheries sector are not given in the report, nor is there an analysis of other contributing factors or references to where such an analysis could be found. Finally, two interventions supported by France and Finland in Senegal and the Pacific Island Countries, respectively report improvements in the safety of fishing operations resulting

from better equipment and improved weather forecasting, which indirectly contribute to better planning and more efficient operations, as well as reduced losses at sea (138, 142).

Neutral effects and inconclusive results

A number of similarities were observed in the causes underlying neutral and inconclusive effects synthesised below. Those causes are grouped into three broader categories: concept and design of the intervention; design of the evaluation; and contextual factors affecting implementation. Many of them relate closely to the general barriers analysed in chapter *Contextual barriers and enabling factors*.

Concept and design of the intervention

Issues related to inadequate concept and design of the intervention affecting the economic benefits of the interventions reported in the literature include:

Inadequate tailoring of the intervention to local conditions. This has for example affected the results of new economic activities to provide alternatives to environmentally destructive practices (15; 236). In Mozambique, it was shown that a bycatch management system prescribed by central government did not produce the desired results in terms of facilitating the commercial use of bycatch because it ignored the system for bycatch collection in use by small-scale fishermen (243).

Inadequate targeting of intervention beneficiaries, often involving not targeting the individuals or groups in greatest need of support and thereby failing to generate any economic benefits for them (39; 78; 239). In two of these cases, the intervention was considered beneficial for other groups in society (39; 78).

Failure to provide the necessary technologies, usually in the form of inputs to production (40; 176; 233), or breakdown of infrastructure and equipment supported by the intervention (159).

Insufficient or inadequate support provided to beneficiaries, for example in the form of training in post-capture handling and processing (39). In one example from Mozambique, it was found that economic

benefits expected of the establishment of credit saving schemes for fishermen were not realised in part due to failures in linking savings groups to formal financial institutions and promoting market linkages, which could have helped strengthen post-harvest activities and diversify fisheries livelihoods (40).

Design of the evaluation

The way in which many of the evaluations included in this study were designed and conducted constrained the ability to draw conclusions about the economic benefits of the interventions. The limitations observed in this subset of the literature are common to the ones observed in the other subsets, and are of the following main types:

Insufficient data about the economic benefits of interest. In many cases, data are insufficient because they were not systematically produced or collected. Data gaps relevant for target 14.7 include data on income of beneficiaries (7; 39; 170), labour productivity (40) and poverty situation more broadly (176). Issues of terminology, for example in the collection and interpretation of perception data are also relevant in this context (231).

Timing of the evaluation. Evaluations taking place during implementation or immediately after the end of the intervention seldom have data on economic benefits. As discussed in chapter *Systematic map of the evidence*, most of the evaluations included in this study were conducted during or immediately after implementation, and in a number of cases the authors are unable to conclude about whether or not the outputs produced by the intervention will generate any economic benefits for the intended beneficiaries (9; 77; 146; 148; 149; 189). In some cases, this is compounded by the fact that the type of intervention does not directly target the economic situation of fishing communities, but rather fisheries-related policies and institutions (1; 119) or individual capacity (8). The limited time horizon of many evaluations was also seen to limit the ability to draw conclusions about the sustainability of outputs and of their ability to give rise to economic benefits (9; 189).

Inability to establish causal linkages between the intervention and the economic benefits of interest. Although this inability might result from

inadequate intervention design, in this subset of the literature it relates mainly to evaluators not being able to distinguish the effects of the intervention in terms of catch landings, export volumes or income from tourism activities from the effects of other contributing factors (15; 47; 154; 223).

Contextual factors affecting implementation

The contextual factors identified in the subset of the literature related to target 14.7 relate mostly to neutral effects. They were extracted from the evaluators' explanations for why interventions failed to generate the desired economic benefits, and can be synthesised in three broad groups:

Factors that nullify the results achieved by the intervention. In Ghana, for example it was found that a culture of lawlessness and impunity undermined efforts at regulating fisheries and ensuring greater safety of navigation, which were regarded as conditions for improving livelihoods in the fishing industry (138). In other cases, it was observed that beneficiaries lacked the technical or financial capacity to sustain the changes introduced by the intervention, in some cases due to their high costs (183; 243). The economic benefits generated by the intervention were not sufficient to support the higher costs of operation once external funding ended. In one floodplain enhancement intervention in Bangladesh it was found that the benefits from stocking activities for a group of professional fishermen were reduced because of increased conflicts with authorities, confiscation of gear, arrest and declining income during the closed period (187).

Limited uptake of intervention results by beneficiaries was attributed to limited usefulness of training for post-harvest processing (221), little or no response from the target population to the intervention (84; 159), or issues with the design or technical suitability of technologies introduced by the intervention (233; 239).

In the specific case of European Union fisheries agreements, several of the evaluations conclude that the agreement has not had any economic benefits for the third country other than the access fee paid to the state treasury (192; 193; 198; 208; 212). In these cases the agreement was not seen to generate any employment for third

country nationals, nor any economic benefits from transshipment, post-harvest processing of fish caught under the agreement, or the establishment of joint ventures with European operators. This was due to insufficiently skilled seamen and observers, lack of port and processing facilities, and insufficient investment capacity in the third country. According to the evaluations, European operators preferred to employ seamen from other nations and use facilities in other third countries or in Europe (192; 198).

Implications for policy and practice

The majority of interventions reporting positive economic gains for the target population did not rely on increasing fishing effort and landing volumes. This is illustrative of the shift that occurred in aid to the fisheries sector over the last three decades. Whereas until the late 1980s most donor support was aimed at increasing fish catches and establishing an industrial fishing sector, the realisation of the declining state of many fisheries (245; see also 249), coupled to the decline of aid funding for fisheries led donors to shift their support from costly production-enhancing infrastructures to measures for increasing profitability without catching more fish. In this context, it is significant – and encouraging – that interventions targeting the reduction of post-harvest losses and different types of value addition are the ones most frequently generating economic benefits for the target populations. This suggests that there is room for additional profitability gains from further improvements to the post-harvest value chain, such that livelihood improvements could be possible without further depletion of stocks.

Relatively few studies assess the economic gains from higher catches as positive, without considering potential negative environmental effects of greater fishing pressure. Of greater relevance for informing future practice are interventions where higher catches were the result of improved management, and not only the provision of better infrastructure and technology. Stock enhancement might be a viable option in certain contexts, and better surveillance and control also seems to play a role in improving profitability. However, increasing overall profitability through greater control of fishing is likely to be detrimental for individuals

and groups losing access to the resource, as shown in one of the studies and suggested in studies at the macro level (295). Distributional effects and issues of equality would need to be addressed by donor and partners in such circumstances.

Payments to national treasury for access rights is a much welcome source of income for several states that have signed fisheries agreements with distant water fishing nations. They constitute a sizeable share of the fisheries sector budget in some countries, and would be difficult to replace in the short to medium term with income from domestic fisheries, especially in countries lacking capacity to invest in the fisheries sector. However there are recurrent concerns with the negative consequences of selling access to fishery resources, namely with respect to the transfer of overcapacity from developed to developing countries, prevalence of IUU fishing and overfishing by foreign vessels in areas with poor enforcement capabilities, and overall disinvestment in the domestic fisheries sector (249; 275; 281). European Union fisheries agreements have tried to address this last concern with the introduction of a financial counterpart that countries are obliged to apply to the development of sustainable fisheries policies. In some countries this has been instrumental in improving the conditions necessary for export to high-value markets, which has benefitted the country's economy. However, the vast majority of the evaluations reviewed in this study could not draw any conclusions about how those funds were being used, and much less about the impact they were having in terms of developing domestic fisheries and fisheries management capacity. There is therefore no robust evidence in the literature surveyed that fisheries agreements are generally having a positive development impact for the recipient country.

Employment-promoting interventions have generally had positive results, but it appears that certain conditions need to be met. The first is that there is a market for the new jobs and that the new entrants have a way of entering that market. While this might seem all too obvious, the review shows that donor-supported interventions have occasionally failed to address these issues and therefore not generated the desired employment benefits. The second condition is that the jobs and the activities supporting them are sustainable after the end of donor funding. Most evaluations are

either silent or speculative with respect to the sustainability of effects, and very few had anything to say about the intervention's exit strategy (see 259). Hence the issue of post-intervention sustainability remains unsolved in the majority of cases, and with it that of the long-term employment benefits of interventions that succeeded in creating some jobs. A related issue is that of employment conditions in the jobs created with donor support. While this issue has received greater attention since its inclusion in SDG 8, it largely remains unaccounted for in the literature review for this study. Informal employment, and with it insecure earnings and social protection, and lower health and safety standards, remain pervasive throughout the developing world in general, and the fisheries sector in particular. Informal employment is associated with higher poverty rates (300), which might justify greater attention by donors to employment forms and labour conditions in the fisheries sector as part of efforts to reduce poverty in fishing communities.

Still on the topic of employment creation, the review suggests, rather unsurprisingly, that 'expensive' jobs requiring large financial input from the target community or country are more likely to disappear once donor funding ends. As with the introduction of new technology, the review suggests that it is necessary that donor and partners ensure that future financial commitments can be met by the target population.

SDG 14 target b: Access for artisanal fishermen to resources and markets

The first part of this section provides a synthesis of the evidence of effects related to strengthening the rights to fish or to access fishing areas or fishery resources by the interventions reported in the literature. The second part synthesises evidence from the evaluation of interventions related to access to markets for fishery products.

Definition

By 2030, provide access of small-scale artisanal fishers to marine resources and markets.

For the purpose of this study the definition of SDG target 14.b pertaining to access to marine resources was refined to include evidence of strengthening the rights to fish, or to access fishing areas or fishery resources. The definition pertaining to access to markets was broadened to include evidence of increased participation in marketing or sale of fishery products, including to foreign markets. It refers also to access to market information and conditions for accessing foreign markets (for example conditions regarding fish product hygiene, traceability, packaging or storage). It does not refer to access to markets for the purchase of inputs to production or credit markets.

Access to marine resources

Observed positive and negative effects

Two main types of effects related to strengthening rights to fish or improving access to fishing areas or fishery resources were identified in the literature included in this study, described below in descending order of frequency.

Increased access and management of fishing areas

This involves the establishment of an exclusion zone within which only small-scale fishers may fish, and the introduction of differentiated fishing seasons between the artisanal and industrial sectors. This was achieved in Mozambique through support to the establishment of a normative framework of policy and legislation in favour of artisanal fishing, leading to a slightly higher fish production for the beneficiary group (40). Another example is the introduction of a four-month oyster harvesting season in the mouth of the Gambia river and the establishment of sole and oyster co-management plans, which allocate property rights over fisheries resources (190).

Regulation and control of fishing resources through the issuance of fishing licenses, boat registrations and fish seller cards

In the case of Senegal, a project supported the establishment of management rules requiring that fishermen obtain boat registrations and fishing permits from the government. Significant increases in the number of fishing licenses, boat registrations and fish seller cards resulted from the project, thereby increasing control over access to fishing resources with the intent of improving the sustainable management of marine resources (230). A similar project in Liberia led to a higher proportion of fishermen acquiring fishing licenses and to a decrease in illegal fishing (235).

Table 3 summarises the effects related to access to fishing areas or fishery resources for which there is an estimation of the magnitude of the effect.

Table 3: Magnitude of selected effects related to access to fishing areas or fishery resources

Intervention	Effect	Comment	Ref.
Introduction of laws related to protecting areas for artisanal fishing and improving artisanal fishers' access to marine resources in Mozambique.	Introduction of a three-mile exclusion zone, within which only small-scale fishers may fish; differentiated closed fishing seasons between the artisanal and industrial sector; and introduction of minimal mesh sizes. Interventions led to a slightly higher fish production (catch) for the beneficiary group.	No firm data are available on outcome level indicators at district level before and after the project.	40
Establishment of management rules requiring that fishermen obtain boat registrations and fishing permits from the government in Senegal.	Significant increases in the number of fishing licenses, boat registrations and fish seller cards. Fishing licenses increased from about 600 in 2008 to 4,250 in 2014.		230
Revision of the fisheries regulations and drafting of a new	A higher proportion of fishermen (70-95 percent) acquiring fishing licenses	Authors use aggregate indicators:	235

Fisheries and Aquaculture Act, which has been endorsed by cabinet and submitted to parliament for enactment in Liberia.	and a decrease in illegal fishing (not quantified).	Fisheries Performance Indicators.
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Neutral effects and inconclusive results

A number of similarities were observed in the causes underlying neutral and inconclusive effects, all relating to the concept and design of the intervention.

Inadequate support to regulation enforcement, which in the case of an intervention in Malaysia led to small-scale fishing violations to occur within the newly prohibited fishing zone (94). Without strict protection within the marine parks, fishermen have continued to fish in certain parts of the protected zone, thereby preventing the fish stock from replenishing, and hindering better management and control of access to fishing resources for small-scale fishermen.

Poor design of newly-introduced technologies. The new fishing gears introduced in Malawi in order to target unexploited species in the deeper waters could not be used with the existing fishing vessels in the region (146). The project then supported the design of a new fishing boat tailored to the new fishing gears, but it proved too expensive for an average fishing community to acquire, especially for individual fishermen.

Insufficient understanding of beneficiaries' needs. A project aiming to improve safety related to accidents at sea provided training and equipment to participating communities, namely life vests and communication equipment (67). However, these have not been used because the fishermen tend to fish in shallow water, close to shore.

Access to markets for fishery products

Observed positive and negative effects

The reporting of improved access to markets is more common than that of decreased market access in the literature included in this study. Three main types of effects related to access to markets were identified, described below in descending order of frequency.

Improved physical infrastructure

Positive results are attributed in a number of studies to the building or renovation of physical infrastructure such as roads (37), 'first sale' markets (40; 221) or auction centres (128). This enabled fishing communities to connect to surrounding markets they did not have access to before, and improve the quality and handling of fishery products, reducing waste and risks of infection. Interventions vary in the type of infrastructure that they supported.

Access to international markets

Increasing access to international markets has resulted from various types of intervention. The provision of ice plants for instance enabled Maldivian fishermen and exporters to exploit the market for high-quality fish in Europe and Japan (39). Access to international markets has also been facilitated as a result of supporting Maldivian fishermen to gain Marine Stewardship Council certification (39). This certification gives access to major export markets and commands a premium price for fishery products. More generally, access to international markets has been reported to increase as the result of compliance with sanitary, trade and tax regulations. For instance, European Union Trade-Related Technical Assistance in the Philippines led to an increase in exports of fishery products and in the number of companies accredited for export of fishery products to the European Union (220).

Enhanced access to market information

One study assesses the effects of the introduction of mobile phones in Kerala state, India (35). Mobile phones increase the access to

market price information, leading fishermen to sell their catch at the market where they get the most advantageous price, rather than their regular local market, thereby reaching to buyers beyond their local catchment zone. Increased access to market information led to a reduction in price dispersion and an increase in fishermen's profits.

Table 4 summarises the effects related to accessing markets for which there is an estimation of the magnitude of the effect.

Table 4: Magnitude of selected effects related to access to markets for fishery products

Intervention	Effect	Comment	Ref.
Introduction of mobile telephone technology in coastal areas, enabling fishermen to have access to real-time information about market conditions and negotiate with potential buyers	After approx. 10 weeks following the introduction of mobile phones: Approx. 90 percent higher profits from fishing for users (treatment) relative to non-users (control) Elimination of waste (unsold fish), from incidence of 5-8 percent, and increase in quantity sold by 23 kg/day Reduction in coefficient of variation of market prices from 62-69 to 14 percent or less	Robust before-after and treatment-control group comparison based on time series data. Not a donor-supported intervention, but rather a business-driven development.	35
Combination of approaches to improve the quality of seafood processing in Vietnam, including capacity building, introduction of new technology, and facilitation of trade channels.	In the period 2006-2013: >10 percent increase in annual exports of seafood products 9 percent increase in annual incomes of small-scale seafood producers in two Vietnamese provinces.	Results build on achievements from previous programme phase (2000-2005). Report does not analyse the contribution of other factors.	131
European Union Trade-Related Technical Assistance in the Philippines	Exports of fishery products grew by 31.5 percent in between 2006 and 2007 Number of companies accredited for export of fishery products to the European Union increased by 18 percent in 2007	The authors note the lack of an explicit environmental focus of the donor-supported intervention.	220

Neutral effects and inconclusive results

The causes underlying neutral and inconclusive effects fall under the two broad categories of concept and design of the intervention, and design of the evaluation.

Concept and design of the intervention

Inadequate understanding of beneficiaries' needs, involving not responding to the needs of local groups or communities and thereby failing to improve market access for their fishery products. This occurs either because the local population has not been made aware that a new market has been built, or because the fish markets were built in areas where most of the fish processors use their private jetties for landing fish, therefore not using the newly-built fish markets (39).

Failure to operate the newly-introduced technologies, for instance by failing to update the prices on a regular basis for a newly-introduced market information system based on market conditions and fish prices (40).

Insufficient or inadequate support provided to beneficiaries, for example in the form of insufficient training in handling, processing and market chains. In the case of the FAO Regional Fisheries Livelihood Programme (39), poor training and failure to provide access to processing equipment or marketing support after the training has meant that the majority of training recipients have not continued with the techniques introduced.

Design of the evaluation

The main constraint to the ability of evaluations to draw conclusions about market access for fishery products was the timing of the evaluation. Evaluations taking place during implementation or immediately after the end of the intervention seldom have data on market access. In one case, the authors clearly state that they are unable to conclude about whether or not the outputs produced by the intervention will generate any increase in market access for the intended beneficiaries, and base their conclusions about achievements on the assumptions underlying the design of the intervention (215).

Implications for policy and practice

The very few interventions addressing the issue of access to fishery resources for small-scale artisanal fishermen did so by means of supporting the introduction of policy instruments to allocate marine space to different users. In this sense they are in line with the indicator for target 14.b, *Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework, which recognises and protects access rights for small-scale fisheries*.¹⁴ The interventions that according to the respective evaluation were found to be successful promoted not only greater access to resources for small-scale fishermen, but also the introduction of improved fisheries management. This involved for example excluding certain fishing practices and assigning exclusive rights to others, regulating gear, and generally exerting greater control over small-scale fishing by means of registration of fishermen. The results of aid interventions reported in the literature surveyed can therefore be regarded as facilitating and protecting *controlled* access to fishery resources. However, whereas some of the studies do quantify the benefits in terms of access, only one includes measures related to the sustainability of use (235). This suggests that the interventions targeting access to resources incorporated sustainability in their design – which is not surprising given that all of these interventions were implemented in the last decade – but that evaluations are not always geared to accurately assess sustainability gains.¹⁴ The combination of facilitated access and regulated use requires that authorities are capable of enforcing regulations. Unsurprisingly, where this was not the case or regulations were not tailored to local conditions, interventions tended to fail. This latter observation is in line with current thinking about the importance of strong local

¹⁴ It is important to note that two of the studies about access to resources are mid-term reviews (190; 230). The lack of data on the sustainability of use could be attributed to the fact that such data are not yet available at mid-term. However, none of the studies contains any reference to the collection of data that would enable a robust assessment of sustainability at the end of the intervention. This points to a weakness in evaluation design rather than just a consequence of the timing of the evaluation.

institutions for ensuring the sustainable management of small-scale fisheries (262; see also 273).

Whereas facilitating access to and sustainable use of fishery resources generally involves changes to the institutional framework, facilitating access to markets for fishery products has been pursued through a greater diversity of approaches. Investments in physical infrastructure and technologies for accessing domestic market information tend to have positive results. As with most other areas of intervention, such investments work best when they fit the needs and practices of the target population. When introducing new technologies, the review suggests that attention should be paid to building the capacity of the target population to use the technology. For supporting access to export markets donor support has been most successful when it addresses the conditions for fulfilling the quality requirements of the importing partner. Interventions are typically heavy in terms of investments in infrastructure for post-harvest handling, storage and processing, and often also require the reform of the regulatory framework and of most post-harvest procedures. The popularisation of global fisheries certification schemes in the last two decades has also caught the attention of the donor community, and there is at least one report of benefits from the introduction of one such scheme. Certification is not viable for all fisheries, and costs are usually high, such that the adequacy of this approach needs to be considered case-by-case.

Because the ultimate aim is to maximise export earnings, most donor-supported interventions have targeted high-value markets in Europe, North America and Japan. Shifting productive resources away from domestic seafood supply to export markets has been shown to have detrimental effects for food security in some regions (245; 274; 281), yet in the literature reviewed for this study, only one analyses this issue at any length (84). The silence of most evaluations about such risks is surprising in view of its relevance for poverty alleviation and the promotion of small-scale fisheries vis-à-vis industrial fisheries.

The evidence in this section relative to improved access to markets is corroborated by the findings relative to target 14.7,

Economic benefits', suggesting that approaches that succeed in improving market access generally also lead to income gains.

Swedish development cooperation priorities: poverty and human rights, gender and support to small-scale fishing

Poverty and human rights

Neither of these two subjects features very prominently in the literature included in this study. Because of this, and the fact that the issue of rights is closely linked to that of poverty in the few cases where it is addressed, the two subjects are discussed together in this section.

Only few studies address the impact of interventions on poverty in an explicit manner, and none discuss effects on human rights. The type of effects reported in the literature surveyed that more directly relate to poverty are gains in income, generic improvements in livelihoods, and engagement in decisions affecting the target populations' living condition. None of the studies includes primary data on poverty and how the intervention affected poverty status – for example the effects of the intervention on poverty thresholds or the number of people living in poverty. However, several of the interventions dealing with community development did use poverty-related measures – for example income level or livelihood assets – to identify the target population.

The following positive results relevant for poverty reduction are reported in the literature included in this review:

Sustainable harvesting generates higher incomes

Several studies draw this conclusion, even if in most cases data is not available on either actual income gains or the sustainability of harvest. Based mainly on stakeholder views, evaluations conclude that better regulation of fishing practices, involving controlling access to fishing areas and resources, and gear restrictions have led

to more and better catches, greater profitability for fishers and improved livelihoods for fishing communities. However, with very few exceptions, evaluations are silent about the fact that better fisheries management usually involves restricting access and/or effort for certain groups or individuals. Alongside the winners, there are likely to be losers, but most evaluations do not analyse distributional effects of more stringent fisheries management.

A few studies have found that potentially unsustainable fishing may also be economically beneficial in the short term, such as when fishers were seen to employ mobile communications meant for emergency prevention to share information about productive fishing grounds, leading to higher fishing effort (67). The sustainability of such benefits in the longer run is questionable, though.

As discussed under target 14.7, two other types of interventions not involving access or effort control were seen to generate income gains for fishers and communities, namely: i) measures to improve fish processing and conservation, reduce post-harvest loss and waste, and increase the market value of seafood products; and ii) interventions to reduce costs associated with fishing, namely with equipment acquisition and maintenance.

Controlling access rights benefits the more vulnerable

A few interventions involved establishing exclusive access rights to certain areas or certain fisheries for specific groups, often local fishing communities involved in small-scale fishing. A small number of these reported economic gains for the communities that retained access. Eventual losses for those losing access to the resources are not analysed, though. Although this type of intervention impinges on the right to access productive resources and thereby the right to work, none of the evaluations discusses the effects of the interventions from the perspective of human rights and the equality of their distribution.

Community-based initiatives as a means of empowerment

A number of interventions supported the establishment or strengthening of community-based organisations, whose mandate

was to regulate fishing activities for the benefit of the community and the environment. In addition to the economic benefits of some of these interventions (see above), in a small number of cases such organisations constituted a means for communities to influence decisions affecting their livelihoods. Such gains are directly relevant from a human rights perspective, but again the studies are silent on this dimension.

Many of the environment conservation-oriented interventions had a component dealing with the creation of alternative income generating activities. The aim of such activities consisted in improving community livelihoods through activities that do not rely on the exploitation of marine resources. Despite the number of such interventions in the sample studied, no evidence was found of the long-term benefits of such activities, in particular their economic viability after the end of the donor funding.

Fisheries subsidies may be important for poverty reduction

The review of the trade and fiscal policies in Senegal in the 1980s and 1990s mentions the importance that subsidies to the fleet supplying the domestic market had for making seafood prices accessible to large population groups with low purchasing power (84). While criticisable on the account of the threat to the longer-term sustainability of the resource, such measures were beneficial for the food security of people living in poverty. A similar concern permeates the current debate on the elimination of capacity-enhancing subsidies to the fisheries industry, with developing nations defending their right to develop their domestic fishing industry (268). On the other hand, there is evidence that the vast majority of subsidies benefit industrial fishing (281), hence there is little backing today for the view that subsidies are an effective way of reducing poverty.

IUU fishing is also a matter of human rights

The synthesis of results relative to target 14.4 showed that a considerable number of interventions address the issue of IUU fishing. However, the issue is addressed exclusively from a fisheries-technical perspective, often related to the monitoring of vessel operations and the enforcement capabilities of affected countries.

The fact that IUU fishing is also a matter of human crime - often involving international syndicates engaged in slavery and human trafficking (see for example 270; 292) – and therefore a matter of human rights is not discussed in any of the studies.

Gender

The analysis of gender effects is based on the search for the word ‘gender’ in all documents included in the sample. Approximately one third of the documents make up for most of the gender mentions. The rest of the documents have a few mentions of gender ‘in passing’, either because they refer to the ‘Ministry of Gender’, or an official policy with the word ‘gender’ in the title. The same is true relative to footnotes referring to a paper mentioning gender, or the terms of reference for the evaluation in the annex saying the team should be gender balanced. In the literature reviewed, gender was dealt with in the following ways:

Gender is an important contextual factor

Gender is explicitly acknowledged as an important contextual factor in approximately 15 studies. Overwhelmingly those studies recognise that there is a strong division of labour along gender lines in the fishing industry, with men engaging in fishing and women in post-capture activities. The degree to which women have control over the commercialisation of fishery products, and hence over income from fishing varies with the context. In most contexts, however it is recognised that women still have lower access to productive resources and investment opportunities than men.

Gender included in intervention design, sometimes with positive outcomes

About 20 studies report the inclusion of gender dimensions in the design of the intervention. Some studies only provide an account of activities or outputs related to gender, such as the introduction of gender guidelines in grant award mechanisms or project cycle management guides (24; 67), training specifically for women (26), conducting gender awareness events (56) or carrying out gender-focused policy and management reviews. The results of gender-focused activities are reported in a number of studies, including

among others the elaboration of gender-specific policy documents (40; 47), the production of gender disaggregated fisheries data (56), or increased participation of women in community-based organisations (128). As this latter study makes clear, though, actual results in terms of the improvement of women's condition were not always achieved.

Insufficient attention to gender issues

In about 20 studies, the authors conclude that the intervention has not given sufficient attention to gender. In all of those cases, this is regarded as a weakness of intervention design and implementation, and a limitation to the impact of the intervention. In several of these studies, the authors recommend the mainstreaming of gender in the design of future interventions, in view of bridging the divide between men and women in terms of benefits from, and the ability to influence decisions affecting fishing and associated activities. In a few cases, the recommendations concern the collection of data on gender dimensions of fisheries, or gender-disaggregated data about the results of the intervention.

Support to small-scale fisheries

For the analysis of the degree to which the literature included in this study addresses aspects relevant to the development of small-scale fisheries, the results for the four fisheries targets summarised in chapter 'Synthesis of evidence by SDG 14 target' were mapped against the framework for assessing progress in meeting the *Voluntary Guidelines on Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication* (SSF Guidelines; 262) recently developed by Courtney and co-authors (257). The volume of evidence relative to each of the 20 strategies of that framework is represented by means of a three-point scale, where (●●●) indicates considerable evidence from a variety of contexts; (●●) indicates some evidence with some contextual variation; (●) indicates little evidence from one or very few cases; and (-) indicates no evidence.

The analysis is merely qualitative and should be regarded as indicative. A more robust analysis would require new coding and

analysis of the sample with focus on small-scale fisheries-related themes. The results of this analysis are shown in Table 5.

Table 5: Evidence relative to the themes and strategies in the SSF assessment framework developed by Courtney et al (257)

Strategy	Evidence	Ref.
A. Responsible governance of tenure		
1. Recognise and protect legitimate tenure rights	-	
2. Grant preferential and equitable access and use	●	40; 190; 230; 235
3. Address competing and conflicting resource use	●	40; 190
B. Sustainable resource management		
4. Promote responsible fishing practices and policies to ensure sustainable resource use	●●●	15; 32; 34; 37; 40; 41; 47; 83; 88; 91; 94; 102; 120; 122; 159; 190; 231; 235
5. Strengthen the capacity of stakeholders to manage resources sustainably	●●●	NB: Most interventions address more than one strategy
6. Develop effective monitoring, control and surveillance systems	●●●	15; 124; 159; 230; 231
7. Develop effective co-management arrangements	●	NB: Limited evidence of results
C. Social development, employment and decent work		
8. Improve working conditions and safety for small-scale fisheries workers	●	138; 142
9. Develop human resource capacity of small-scale fishers and fishing communities	●●●	8; 11; 26; 40; 67; 128; 154; 231
10. Diversify livelihoods and income generating-activities	●●	11; 26; 106; 130; 154; 231 NB: No evidence of sustainable benefits
11. Ensure access of children and youth in fishing communities to education	-	
D. Value chains, post-harvest and trade		
12. Build capacity for small-scale fisheries to benefit from market opportunities	●●●	32; 40; 41; 131; 142; 154; 184; 230

13. Improve the value chain for fish and fishery products for domestic and export markets	●●	35; 39; 40; 84; 131
14. Reform national policies to minimise adverse impacts of domestic and international trade on small-scale fisheries	●	84
E. Gender equality		
15. Mainstream gender equality as an integral part of small-scale fisheries development	●●	7; 9; 21; 24; 26; 40; 47; 56; 67; 77; 128; 170; 222; 231 NB: Limited evidence of gender effects
F. Disaster risks and climate change		
16. Recognise and address the different impact of natural and human-induced disasters and climate change on small-scale fisheries and communities	-	
G. Policy coherence, institutional coordination, and collaboration		
17. Adopt national policies and laws that support an integrated, holistic, ecosystem-based approach to marine and coastal management	-	NB: Several interventions address fisheries policies and laws
18. Establish mechanisms for institutional coordination and collaboration at international, regional, national and subnational levels	●●●	1; 39; 91; 92; 101; 168; 169; 177; 210; 222; 223; 230; 233 NB: Includes creation of scientific networks. Evidence of results is limited.
H. Information, research, and communication		
19. Improve knowledge of social-ecological systems	-	
20. Improve access to information and data needed for decision making	●●	1; 90; 91; 93; 119; 127; 158 NB: Includes interventions dealing with data for industrial fishing

5. Contextual barriers and enabling factors

The success of any intervention is often determined by the manner in which partners address the context where the intervention takes place. Most evaluations included in this review discuss such contextual factors, and these are synthesised in this chapter. Because barriers and enabling factors frequently mirror each other, they are discussed under the contextual factor that they fall under.

Project design and management

Table 6 synthesises the barriers related to the design and management of interventions identified in the literature surveyed.

Table 6: Barriers related to intervention design and management

Barrier	References
Poor planning of the intervention, including inability to manage relations with partners	8; 9; 26; 39; 40; 52; 160; 236; 243
Lack of intervention focus and strategy	20; 40; 41; 233; 236
Intervention design based on mistaken assumptions, or ignoring essential preconditions for results to become possible	20; 55; 67; 78; 81; 90; 93; 180; 187; 215; 229; 236
Unrealistic timelines, with too short implementation time relative to level of ambition	8; 40; 47; 67; 91
Small size of implementation team and high staff turnover	20; 58; 93; 94; 148; 159; 160; 169; 190; 221
Lack of expertise of staff, including limited project management capacity	49; 72; 94; 120; 121; 139; 143; 169
Inadequate definition of roles among intervention partners and lack of involvement, competence and coordination of stakeholders	11; 58; 67; 77; 93; 121; 143; 145; 148
Lack of funds, and reduced or mismanaged budgets	34; 40; 56; 58; 77; 101; 159; 160; 221
Insufficient preparedness for unexpected events, such as conflicts, economic shocks and environmental emergencies	20; 40; 78; 88; 183; 184; 189; 215; 215

On the positive side, quality staff and leadership are often mentioned as enabling factors for successful projects (9; 50; 77; 83; 88; 94; 179; 226; 229). As one evaluation concludes, “The main factor which facilitated the achievements the project has produced to date is undoubtedly the quality and dedication of the project staff, both national and international” (77, p.31).

Evaluators often correlate the implementation team’s flexibility and adaptiveness and intervention success (21; 34; 88; 154; 179; 226). In some instances, typically when an evaluation was reviewing an intervention, following advice from mid-term evaluations is mentioned as an enabling factor (9; 88). Some evaluations also conclude that success resulted from interventions having a solid research basis, which lay the ground for efficient project design (20; 21; 158). This was particularly the case where the donor had a long experience working in the particular country or region (91; 177; 226; 231). Allocating sufficient time and adequately scheduling implementation are also regarded as enabling factors in a few instances (231; 233).

Finally, private sector involvement and self-sustaining financing is indicated as a factor in the success of interventions (35; 179; 233), in some instances also involving the generation of tangible benefits for the target population (35; 50).

Infrastructure and equipment

A key barrier in this category is the *lack of infrastructure and equipment* (9; 37; 40; 158; 159; 176; 221). For instance, the evaluation of the Livestock and Fisheries Development Project in Cameroon shows that while structures were put in place to ensure the monitoring of livestock and fish production, the Government did not guarantee the availability of material such as vehicles and financial resources necessary for monitoring operations- (9).

Similarly, several documents describe *insufficient capacity for maintenance of infrastructure and equipment* as a barrier to implementation and results (15; 37; 40; 47; 67; 160). An illustrative example is the

case of the Coral Reef Rehabilitation and Management Programme in Indonesia, which focused on providing expensive, high-speed boats for fishing regulation enforcement (15). Among other problems with the speedboats, the difficulty to operate, maintain and repair these was a major barrier to benefiting from the sophisticated equipment. Several studies also mention the *lack of human resources and training to operate new equipment* as an important barrier (7; 15; 127).

Institutional capacity

Weak government capacity or coordination and institutional inertia are frequently reported in the documentation reviewed (67; 81; 91; 92; 159; 168; 190). An illustrative case is the evaluation of the Oceanic Fisheries Management Project, which highlights that core institutional change (structure, management and administrative systems and skills, staffing, institutional culture and funding) and the political backing to achieve effective governance is still lagging behind to meet the commitments to the Western and Central Pacific Fisheries Commission (91).

On the issue of *institutional linkages*, some studies highlight the importance of aligning the intervention with policies in the partner country (81; 91; 95; 102; 208). Political and institutional support were seen to be key to the results of several interventions (20; 31; 60; 81; 83; 88; 94; 179; 221; 226; 229; 235). The active involvement of relevant and capable institutions is also mentioned as a reason for intervention success (83; 94). A smaller number of studies mention alignment with ongoing projects, including complimentary funding streams and multi-donor support for common aims as enabling factors (119; 226; 233).

Another key barrier relates to the *limited or absent enforcement of regulations* (15; 34; 41; 229). For instance, the evaluation of the Coral Reef Rehabilitation and Management Programme in Indonesia highlights that there remain some threats to competent enforcement that need to be addressed if communities are to maintain confidence that violators will be penalised (15). Similarly, the evaluation of the Fisheries Sector Programme in the Philippines states that illegal

fishing activities continue in places due to the limited capabilities for law enforcement (41). The lack of communication equipment was a major factor for weak law enforcement in some municipal waters. The lack of funds, human resources and equipment needed for enforcement is also mentioned in a few cases (41; 77; 229).

Finally, *inadequate legal support* is reported as a barrier in a number of documents (1; 15; 41; 81). An illustrative example is the evaluation of the Empowerment of Coastal Fishing Communities for Livelihood Security in Bangladesh, which explains how communities were not provided with a clear plan of operation related to gear restrictions, and were therefore unwilling to prevent their use in the absence of official support from the authorities (81).

Culture and traditions

An important cultural barrier relates to the *limited understanding of the local context* (39; 67; 77; 92; 94; 122; 143; 230), and in particular of the local fish trading practices (39; 239). For instance, in the evaluation of the Post-Tsunami Agricultural and Fisheries Rehabilitation Programme in the Maldives, the authors point out that the assumption that fishers would wish to use the new fish markets ignored the ways in which fish trading is organized in the Maldives (39). Most fish is sold at sea to collector vessels, with undersized fish or poor quality fish being landed in the islands for processing. But the actual sale of fish is done before vessels reach land, such that the new markets ended up not being used as planned.

Behavioural barriers and resistance to change (31; 37; 40; 51; 193; 236) come second as a barrier in this category, and relate mostly to the difficulties in changing practices and behaviours among the beneficiary population. For instance, in the case of the evaluation of an intervention aiming to improve alternative livelihood interventions in marine protected areas in Tanzania, the evaluators note that as soon as the participants perceived low gains from the new activities, these were abandoned in favour of their previous resource use practices, some of which were a threat to marine resources and environment (236).

Finally, in a few instances, *traditions and customary rights* are mentioned as a barrier to implementation and achieving results (20; 31; 229; 230). For example, the evaluation of the Community Based Sustainable Management of Tanguar Haor Project in Bangladesh states that the lack of a system for recognising customary rights of use has precluded the emergence of management schemes that could ensure that exploitation levels are sustainable (31).

Ownership and stakeholder engagement

The *lack of project ownership and/or support among community or stakeholders* is frequently quoted in the documents reviewed, as also discussed with respect to several SDG 14 targets in the previous chapter (16; 139; 145; 148; 158; 169; 193).

Closely related to the above, the *lack of engagement or dialogue* with the local community and stakeholders is also repeatedly mentioned (7; 26; 40; 81; 90; 93; 148; 236; 241). For instance, the evaluation of the Coastal Ecosystem Rehabilitation and Conservation in Tsunami Affected Countries of the Indian Ocean Project reports that a particular concern was that stakeholder involvement in developing investment options (ecosystem identification, problem analysis, planning, approval, implementation and monitoring) was limited (26).

The importance of community and stakeholder participation is demonstrated by the large number of studies that refer to this aspect as a key factor for the success of interventions (9; 11; 20; 21; 26; 32; 34; 77; 88; 94; 95; 106; 120; 179; 190; 229). More specifically, the issue of trust between donor and beneficiaries is explicitly mentioned in several instances (22; 34; 77; 226). Some evaluations also attributed part of the success of those projects to the fact that they were able to demonstrate respect for traditional knowledge (21; 122). Activities reported to contribute to buy-in and ownership within the project include capacity building, training and awareness-raising activities, and, perhaps more importantly, income-generating activities (20; 35; 50; 77; 190).

6. Conclusion

The landscape of fisheries aid evaluation

Evaluation of aid to the fisheries sector has remained relatively stable over the last decade, after a marked increase in the late 2000s. Important differences in the number of evaluations commissioned by the different development cooperation agencies, though, denoting distinct evaluation cultures and traditions.

The trajectory from fisheries production-oriented aid in the 1970s and 1980s to a more fisheries management-oriented aid after the 1990s is visible in the sample and confirms earlier studies. Africa remains the continent with the largest number of studies, consistent with the largest share of aid allocations for fisheries in this continent compared to all others.

Donors continue to prioritise investments in capacity development, in recognition of the fact that, despite decades of support, the capacity of organisations in partner countries is still insufficient for adequate fisheries management. Sweden is a relatively minor donor when it comes to oceans and fisheries, reflecting the country's greater focus on broader governance, gender and human rights issues. The Swedish support is partly masked under multilateral interventions, which the country increasingly supports.

Advancing towards SDG 14

The trajectory from production- to management-oriented fisheries aid is likely to require greater commitments by the donor community to improving monitoring, control and surveillance mechanisms in partner countries. This concerns industrial as well as small-scale fisheries, and the review shows that donors are engaged at both levels. The use of data on harvest levels and resource status is currently insufficient for assessing the degree to which that

engagement is bearing fruits in terms of the sustainable utilisation of fishery resources.

Efforts at promoting compliance by resource users are regarded as an important complement to stricter enforcement, but are not seen to be effective in isolation. Moreover, compliance with stricter fisheries management is less likely in cases where individuals and groups are faced with the prospect of losing their income. This review confirms the results of earlier studies that the reduction of fishing opportunities is only possible in the presence of alternative livelihoods for those affected. Evidence of the long-term results of donor-supported alternative livelihood activities is weak, though.

At the other end of the governance spectrum, the review suggests that there is a need to address issues at the political, administrative and even judicial level in order to improve fisheries management at a larger scale. Many donors engage in such processes, but often at a technical-administrative level, leaving important imbalances and inefficiencies unchecked that could perpetuate unsustainable fishing practices.

The issue of fisheries subsidies has received little attention from the international donor community. Most work has been conducted under the auspices of the WTO, with little progress so far. Fisheries subsidies may in some cases be justified for their poverty reduction and food security benefits, at least in the short term, the review suggests. Concerns with the long-term sustainability of the resources advise against their use, though. The dilemma between short-term economic gains and long-term sustainability lies at the heart of the stalemate in WTO negotiations.

Support to post-harvest value addition to fishery products seems to hold the greatest potential for increasing the economic benefits from fishing, according to the review. There is more to gain from increasing the value than the number of fish caught. The review highlights a few examples of interventions in this domain, but there is ample room for exploring further the mechanisms and the magnitude of effects, as well as the role of other factors in the success of that type of support. Donor support to improving access to export markets, although often justifiable on economic terms, carries risks related to resource overexploitation and reduced food

security for the domestic population. These issues are largely ignored in the evaluation reports surveyed. The issue is complex and the effects highly context dependent, justifying further investigation.

Selling access rights to foreign fleets is a poorly explored issue, which is usually regarded as constituting a form of capacity-enhancing subsidy. The analysis of the studies in this sample suggests that such type of payments are seldom positive for the development of the recipient country.

Reducing poverty through higher incomes from fishing constitutes a dilemma that donors and partner countries need to confront. Industrial fisheries, on the one hand, are usually more profitable, but often associated with unsustainable practices. Moreover, they are very seldom an alternative for people living in poverty, and frequently accused of coming into conflict with small-scale fisheries, which poor communities depend upon for their subsistence. On the other hand, the sustainability of small-scale fisheries is threatened in many locations by the sheer number of fishermen. The review corroborates earlier assessments that increasing the income from most small-scale fisheries is only possible with greater control of access and harvest. This is likely to have equality and distribution implications, as certain groups and individuals will need to be forced out of fishing. Current thinking emanating *inter alia* from the FAO Small-Scale Fisheries Guidelines is that management should be devolved to the local community, who should be given the mandate and tools for enforcing the necessary restrictions. In such a context, the role of donors could involve support to the establishment and operation of such local management bodies, and the development of compensatory measures for those excluded from fishing. Because of the immense diversity of small-scale fisheries, solutions need to be tailored to each specific situation.

Finally, the issue of gender does not feature prominently in this review, probably as a result of the sampling strategy employed, that did not include any gender-specific search terms. The results presented here need to be complemented by a separate study employing a different set of search terms and eventually other sources.

Rethinking evaluation practice

This review found little robust evidence in the literature surveyed about the longer-term effects of fisheries aid relative to each of the SDG 14 fisheries targets. This is mainly due to the three following causes, which are known to affect ODA to fisheries more broadly (see 250):

- The relatively small-number of ex-post evaluations, where only 20 percent of the evaluations in the sample were conducted after the end of the intervention;
- The relatively short time between intervention end and timing of the ex-post evaluations, on average of less than three years; and
- The generalised lack of data about the system that the intervention aims to change (environmental, social, economic or political), with the vast majority of studies relying on stakeholder perceptions and observations by the evaluators. The absence of such data preempts the estimation of the magnitude of effects.

The two former causes, related to the timing of the evaluation, affect mainly the ability of evaluations to conclude about the medium- and long-term outcomes, impacts and sustainability of interventions. The vast majority of studies contains no evidence of longer-term outcomes and impacts, and even fewer are able to draw conclusions about sustainability that have some factual basis.

With respect to the last cause, it is especially important when it comes to assessing progress in terms of the SDG 14 indicators, in particular 14.4.1 and 14.7.1 (Table 7). Assessing the contribution of any intervention to goals 14.4. and 14.7 with the help of those two indicators is not possible without data about the status of stocks (relative to a sustainability reference value, the estimation of which requires specific data and analyses) and the economy of target populations, respectively.

Table 7: SDG 14 progress indicators (Ref SDG knowledge web)

Indicator	Description
14.4.1	Proportion of fish stocks within biologically sustainable levels
14.6.1	Progress by countries in the degree of implementation of international instruments aiming to combat IUU fishing
14.7.1	Sustainable fisheries as a percentage of gross domestic product in small island developing states, least developed countries and all countries
14.b.1	Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework, which recognises and protects access rights for small-scale fisheries

For the type of results aspired by the interventions included in the sample, a much more diverse set of indicators and data would have been necessary for the evaluators to draw robust conclusions. It would equally have required the establishment of baselines for the outcomes of interest, as well as consistent data collection throughout the interventions. As discussed earlier, most evaluations were deficient with respect to both requirements.

Addressing these shortcomings requires some important changes to current evaluation practice.

- Without denying the potential usefulness of evaluations conducted before the end of interventions for informing the design of subsequent phases, it is necessary to commission more impact evaluations that are carried out several years after the end of interventions. This requires that resources be reserved for such ex-post studies, including for continued monitoring of relevant data between the end of the intervention and the evaluation. The selection of indicators needs to be such that those discriminate the effects of the intervention from those of other factors, bearing in mind that factors unrelated to the intervention become increasingly relevant with the passing of time.
- Resources need to be committed to establishing adequate baselines, defining a suitable monitoring system, and collecting relevant data throughout the interventions. The possibility of conducting continuous evaluation throughout the entire

duration of interventions to cater for data collection needs should be considered, allowing evaluators a better understanding of how contextual factors and the dynamics of implementation influence intervention results.

- Finally, while acknowledging the importance of evaluating procedural and administrative aspects of implementation, it is necessary to shift focus to the evaluation of changes in the system or phenomena that the intervention aims to influence. Due to the requirements in evaluation terms of reference and the paucity of data on system changes, most evaluations devote most of their attention to the process of implementation – for example the management of funds, relations between partners, alignment with policies, or the design of results measurement frameworks – and not to those systemic changes. Evaluating systemic changes in terms of fishing activities or marine resource status is beyond the capacity of typical project and programme evaluations, and is rather the domain of specialised fisheries agencies. It is nonetheless important that project and programme evaluations look into such issues, based on existing data and with the necessary expert support if so required.

Expanding the knowledge base

The findings of this study relative to the outcomes of strategies relevant for the SDG 14 fisheries targets could be complemented by the following approaches. Those are ordered by increasing order of complexity:

- Completing the coding and analysis of the 121 studies that are part of the sample, but were not included for full-text review. This would potentially enable the identification of additional themes that are not captured in the sample reviewed, and strengthen some of the findings reported here.
- In view of producing a robust map and synthesis of evidence relative to gender, poverty, human rights and small-scale fishing in relation to the SDG 14 fisheries targets, elaborating a new search strategy using terms and criteria specific to those themes,

and subsequently applying the data extraction and analysis methodology used in this or comparable syntheses. Such an approach would amount to repeating the most part of this study with a different thematic focus.

- Studying subsets of the portfolio of development cooperation in fisheries through a combination of methods not relying exclusively on published documents. This could involve focusing on a subset of donors – for example Nordic donors, or development banks – or themes – for example conservation-oriented interventions, or a specific SDG 14 fisheries target – and combining document analysis with interviews with staff involved in current and past aid to fisheries. Resources permitting, field studies could be conducted of specific interventions to investigate effects on the ground not captured by earlier evaluations. Such an approach would enable the identification of knowledge about aid effects available within donor organisations but not reported in published documents. It would also be useful for describing the portfolio and the results of aid to fisheries of donors that do not conduct or publish evaluation results regularly, including philanthropic organisations.
- Mapping and synthesising evidence from interventions unrelated to aid, which are relevant for the SDG 14 fisheries targets. A first step could consist in producing a systematic map of the evidence, eventually using elements of the search strategy employed in this study. The systematic map could then be used to determine the scope of an eventual full synthesis. This approach could generate evidence from interventions carried in the context of domestic public policies, private investments or research and development initiatives. It is likely that these types of interventions are much more numerous than aid-supported ones. On the other hand, the extent to which they have been studied and documented is not known.

With respect to new or updated systematic maps and thematic syntheses relevant to SDG 14 more broadly, the following themes are proposed. These syntheses could combine a diversity of sources, including documented and undocumented ones, as indicated above.

- A synthesis of the effects of trade in fishery products on poverty, food security and resource sustainability, building on earlier studies (for example 274)
- A synthesis of the livelihood and gender effects of interventions targeting post-harvest processing, distribution and marketing of fish, with specific emphasis on the estimation of effect sizes.
- A synthesis of the distributional effects of resource access regimes, with particular focus on issues of income, gender and human rights, the latter encompassing not only access and tenure rights, but also democratic participation rights.

References

Literature included in the review

Studies retained for full-text review and mapping after the second screening (n=244)

Full-review was completed on the studies indicated with an asterisk [*] (n=123)

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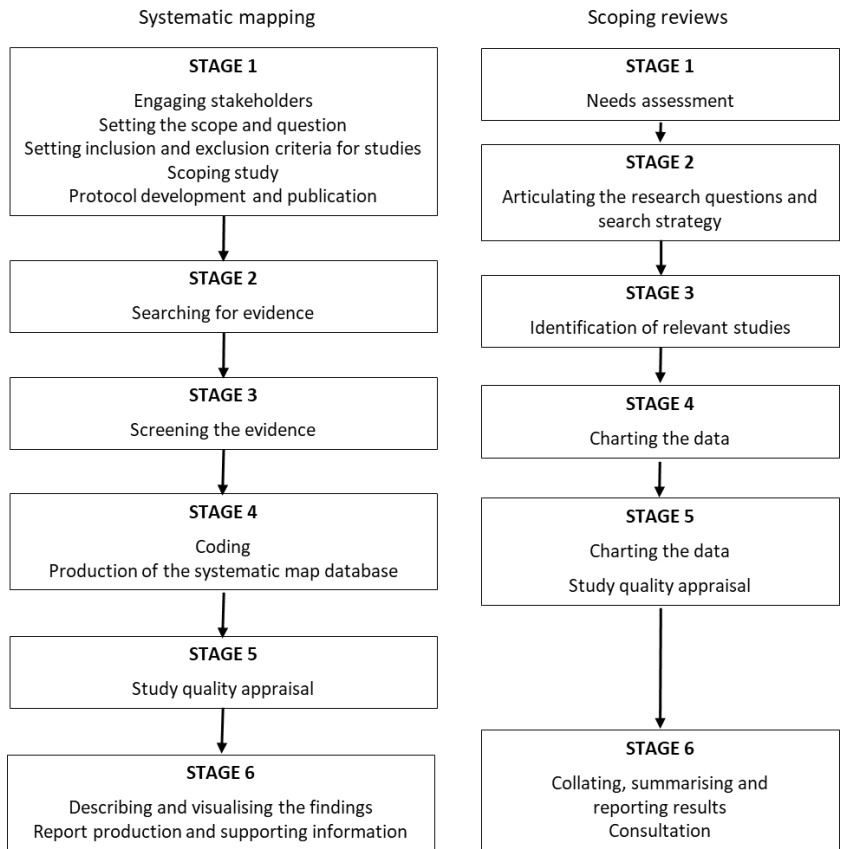
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Appendix 1. Detailed methodology

Structuring the approach

The initial methodological approach for this study presented in the proposal submitted by the study proponents to the Swedish Expert Group for Aid Studies (hereinafter EBA, www.eba.se) adopted the scoping review framework introduced by Arksey and O'Malley (246) and later revised (258; 276), complemented with a needs assessment with knowledge users (272) and an assessment of the quality of the primary literature (267; 279). According to Grimshaw (266), a scoping review is an “exploratory project that systematically maps the literature available on a topic, identifying the key concepts, theories, sources of evidence, and gaps in the research.” Scoping reviews have been used increasingly in the health sciences and more recently in other domains, including environmental management and development (258; 294). Scoping reviews are often undertaken when there are concerns about the feasibility of conducting a full synthesis (e.g. systematic reviews), namely when the primarily literature is vast and diverse (in method, theoretical orientation or discipline) or there is not enough primary literature.

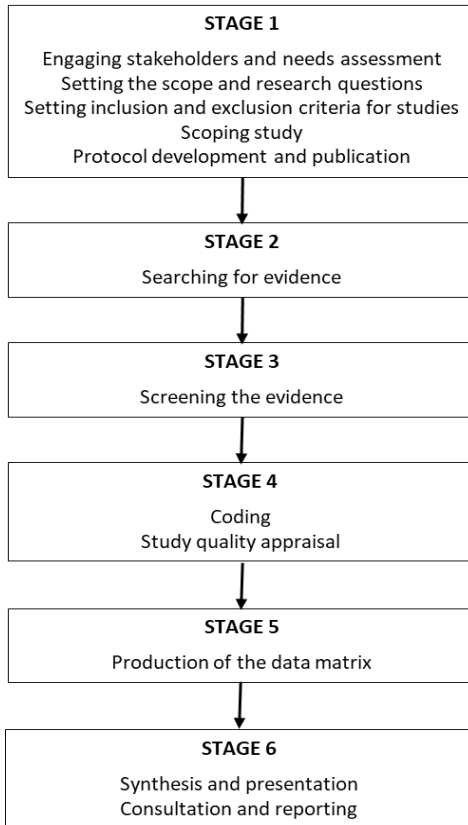
James and co-authors (271) present systematic mapping in similar terms, as an approach following “the same rigorous, objective and transparent processes as do systematic reviews”, yet able to “address open-framed or closed-framed questions on broad or narrow topics” (p.3). With respect to the scoping review method, systematic mapping is more stringent in the initial stages of the search for and screening of the evidence, motivated by a concern with robustness, replicability and risk for study selection bias. A side-by-side comparison of the two methodologies is given in Figure Ap1-1.



Given the nature of the topic of this study, the primary literature available, the study’s exploratory nature and the timeframe and budget available, a combination of the scoping review and systematic mapping methodologies was adopted. One important distinction between the two methodologies is that scoping reviews generally synthesise the type and magnitude of outcomes, which is seldom the case in systematic maps, which generally focus on characterising the evidence. Because synthesising outcomes is an essential element of this study, this component has been retained, as described below.

The revised methodology presented in this paper combines the sequence of steps in the systematic mapping methodology described in the study by James and co-authors (271) and an expanded scoping review framework as outlined above (cf. Figure Ap1-2) . It also incorporates elements of the mapping protocols presented in the studies by Bottrill and co-authors (251) and Cheng and co-authors (254). The publication of this paper aims to demonstrate the rationale for and advantages of combining those two methodologies to respond to a specific research question given a particular type of primary literature. It responds to the call by Arksey and O'Malley (246) for a debate about the merits of scoping reviews relative to other types of literature reviews and the development of the approach.

Figure Ap1-2. Outline of the combined methodology used in this study



Steps in the methodology

Engaging stakeholders

Representatives from the following organisations were contacted by the research team: Ministry of Enterprise and Innovation of Sweden; Ministry of Environment and Energy of Sweden; Swedish Society for Nature Conservation; Ministry of Foreign Affairs of Sweden; WWF Sweden; and Swedish Agency for Marine and Water Management. The first three organisations responded to the team's request for comments to the original research questions. Although

no specific comments to the questions were provided, those organisations drew attention to the following issues:

- the geographical scope of the evidence and the importance the geographical disaggregation of results;
- the integration of environmental and sustainability considerations in fisheries aid and fisheries policy as a key objective of Swedish government policy;
- the importance of small-scale (artisanal) fishing for civil society organisations, notably in terms of how vulnerable coastal communities are affected by decisions (or lack thereof) targeting semi-industrial and industrial fisheries;
- the linkages between development cooperation interventions from economic cooperation and economic objectives of the aid providers;
- the cultural and institutional context in which an aid intervention is implemented and its likely effect on results; and
- the evolution of fisheries aid over recent decades from relatively small projects with a narrower focus on fisheries issues, to larger programmes in which fisheries is one among several components.

These issues were taken into consideration by the research team when adjusting the project scope and research questions. Engagement with these organisations is planned to take place at least one more time towards the end of the study with the purpose of receiving feedback about the validity and relevance of preliminary study findings, and how these could be presented in order to facilitate uptake by each organisation.

As per EBA practice, an external reference group has been set up for this study, with the aim of advising and periodically reviewing the work conducted by the research team. Input from the reference group has provided the key impetus for the development and subsequent refinement of the combined scoping review – systematic mapping approach.

One suggestion by the reference group was to invite subject matter experts of global renown to suggest relevant literature for inclusion in the study. Because the first screening produced a large volume of literature for full-text review relative to the time and resources available, the research team decided not to request any additional material and instead work with the literature collected through the systematic process described below. The possibility of engaging globally renowned experts after the production of the first draft study report will be considered, in view of strengthening the review of the study results before publication.

Setting the scope and research questions

This study is limited in scope to the development cooperation programmes and projects in the field of fisheries that have been evaluated and for which evaluation reports or other publications of scientific standard are available. It does therefore not attempt to be representative of the entire development cooperation in the field of fisheries, nor of all assessments of fisheries management and development in developing countries, as many of these have not been documented or are not available.

The scope of the primary literature is limited to published studies of scientific quality, i.e. studies based on the application of scientific methods for data collection, analysis and interpretation. Unpublished literature might be considered on a case-by-case basis if deemed particularly relevant and if approved by the commissioning organisation. Newsletters, brochures, promotional material and literature of non-scientific quality are not included in the study.

The following research questions were originally presented in the proposal submitted to EBA.

1. What are the experience and results from aid interventions with respect to i) regulating harvesting; ii) ending overfishing; iii) ending illegal, unreported and unregulated fishing; iv) ending destructive fishing practices; and v) implementing science-based

management plans to restore stocks to maximum sustainable yield levels? (refers to SDG 14 target 14.4)

2. What are the experience and results from aid interventions with respect to i) prohibiting and refraining from introducing fisheries subsidies that lead to overcapacity, overfishing and IUU fishing; and ii) ensuring differential treatment for developing and least developed countries in World Trade Organization fisheries trade agreement negotiations? (refers to SDG 14 target 14.6)
3. What are the experience and results from aid interventions with respect to increasing the economic benefits from sustainable use of marine resources, including through livelihood diversification? (refers to SDG 14 target 14.7)
4. What are the experience and results from aid interventions with respect to strengthening the access of small-scale artisanal fishers to i) marine resources and ii) markets? (refers to SDG 14 target 14.b)

This formulation was adjusted slightly after approval of the study, and was further revised following feedback by the reference group. In particular it was deemed necessary to specify different question components to enable the elaboration of search terms to query literature databases. In line with the practice of both scoping reviews and systematic mapping, and in order to make the scope and purpose of the study easier to communicate, the research questions were reformulated as one question instead of the initial four. The new formulation is also more explicit about the purpose of the study to map the evidence, as opposed to the initial formulation that highlighted the synthesis of outcomes of aid interventions. This latter aspect is not abandoned, but is made explicit in the definition of the question components and the resulting search terms, inclusion and exclusion criteria, and the coding protocol.

The primary research question the study aims to address is:

What are the results of development cooperation interventions in terms of the four SDG14 fisheries targets in developing countries?

The study is further guided by the following secondary questions:

1. Mapping the evidence: *What is the current state and distribution of the evidence base on the results of development cooperation interventions related to the SDG14 fisheries targets?*
2. Synthesising the outcomes: *What type of results from development cooperation interventions have been measured, and how much evidence is there for each of the four SDG14 fisheries targets?*
3. Theories of change: *What impact pathways underlie the development cooperation interventions targeting the domains covered by the SDG14 fisheries targets?*
4. Advising future development assistance: *How does the evidence base relate to the investment priorities of the main development cooperation agencies?*

The primary research question has the following four key components:

Population: Discrete human populations, including individuals, households, communities and nation states, or ecosystems in countries included in the OECD-DAC list of overseas development assistant recipients.¹⁵

Intervention: Any development assistance project or programme by a national or international organisation aimed at introducing changes to the fisheries sector in the target country. This includes interventions that are counterparts to economic agreements in the fisheries or other sectors.

Comparator: Absence of the intervention, either between sites or groups, or over time.

Outcome: Positive, neutral or negative effects in terms of the SDG14 fisheries targets (cf. Table Ap1-1).

¹⁵ <http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/daclist.htm>

Table Ap1-1: Categories of SDG 14 fisheries outcomes.
Numbers in parentheses refer to the relevant SDG 14 target.

Category	Sub-category	Definition
Fishing activities (14.4)	Achieving maximum sustainable yield (MSY)	Achieving or progressing towards the maximum catch that can be extracted from a stock in the long term.
	Regulating harvesting to sustainable levels	Regulating the rate or level of fishing to the level deemed sustainable for a given species, stock or ecosystem, as defined locally. If such a level is not defined, MSY shall be used, provided it is known.
	Reducing overfishing	Reducing the rate or level of fishing to the level deemed sustainable for a given species, stock or ecosystem, as defined locally. If no such definition exists, the maximum sustainable yield for the specific stock shall be taken as the sustainable level of capture, provided it is known.
	Reducing fishing	IUU Reducing any IUU fishing activities conducted by a fishing fleet in the waters of another coastal state. Also applies to measures targeting the legality, traceability and reporting of activities by the fishing fleet of the coastal state.
	Reducing destructive fishing	Reducing any fishing practices known to have disproportionate negative effect on essential elements of the marine ecosystem, in particular habitat features, as determined by locally-applicable standards.
	Implementing science-based management	Developing and applying a fisheries management plan that utilises the best available scientific knowledge relative to the resource and, if available the performance of the management regime to establish the management measures.
Regulatory instruments (14.6)	Fisheries subsidies	Eliminating or preventing the introduction of any economic or technical benefit (including inputs to production) given to the fishing industry on the whole or its components

		separately aimed at improving its operational or commercial conditions.
	Access to fishery resources (14.b)	Strengthening of the rights to fish, or to access fishing areas or fishery resources.
Socio-economic well-being	Economic benefits from fishing (14.7)	Increased economic profit accrued from fishing or subsidiary activities (e.g. processing, sale).
	Access to markets for fisheries products (14.b)	Increased participation in marketing or sale of fishery products, including to foreign markets. Refers also to access to market information and conditions for accessing foreign markets (e.g. conditions regarding fish product hygiene, traceability, packaging, storage, etc). Does not refer to access to markets for the purchase of inputs to production or credit markets.

An initial set of search terms was compiled based on the research questions and components. This set and the associated search string were adjusted after a short scoping exercise involving searches in the databases selected for this study. Wildcards, priority and Boolean operators were adapted to the functionalities of each database.

Population terms: ¹⁶ Afghanistan OR "Democratic People's Republic of Korea" OR Armenia OR Albania OR Angola OR Zimbabwe OR Bolivia OR Algeria OR Bangladesh OR "Cabo Verde" OR "Cape Verde" OR "Antigua and Barbuda" OR Benin OR Cameroon OR Argentina OR Bhutan OR Congo OR Azerbaijan OR "Burkina Faso" OR "Côte d'Ivoire" OR Belarus OR Burundi OR Egypt OR Belize OR Cambodia OR "El Salvador" OR "Bosnia and Herzegovina" OR "Central African Republic" OR Georgia OR Botswana OR Chad OR Ghana OR Brazil OR Comoros OR Guatemala OR China OR "Democratic Republic of the Congo" OR "Democratic Republic of Congo" OR Honduras OR Colombia OR Djibouti OR India OR "Cook Islands" OR

¹⁶ The terms refer to the names of all countries included in the OECD-DAC List of ODA recipients.

Eritrea OR Indonesia OR "Costa Rica" OR Ethiopia OR Jordan OR Cuba OR Gambia OR Kenya OR Dominica OR Guinea OR Kosovo OR "Dominican Republic" OR "Guinea-Bissau" OR "Guinea Bissau" OR Kyrgyzstan OR Ecuador OR Haiti OR Micronesia OR "Equatorial Guinea" OR Kiribati OR Moldova OR Fiji OR Lao OR Mongolia OR Macedonia OR Lesotho OR Morocco Gabon OR Liberia OR Nicaragua OR Grenada OR Madagascar OR Nigeria OR Guyana OR Malawi OR Pakistan OR Iran OR Mali OR "Papua New Guinea" OR Iraq OR Mauritania OR Philippines OR Jamaica OR Mozambique OR "Sri Lanka" OR Kazakhstan OR Myanmar OR Swaziland OR Lebanon OR Nepal OR Syria OR "Syrian Arab Republic" OR Libya OR Niger OR Tajikistan OR Malaysia OR Rwanda OR Tokelau OR Maldives OR "Sao Tome and Principe" OR "São Tomé e Príncipe" OR Tunisia OR "Marshall Islands" OR Senegal OR Ukraine OR Mauritius OR "Sierra Leone" OR Uzbekistan OR Mexico OR "Solomon Islands" OR "Viet Nam" OR Vietnam OR Montenegro OR Somalia OR "West Bank and Gaza Strip" OR "West Bank" OR "Gaza Strip" OR Palestine OR Montserrat OR "South Sudan" OR Namibia OR Sudan OR Nauru OR Tanzania OR Niue OR "Timor-Leste" OR "Timor Leste" OR "East Timor" OR Palau OR Togo OR Panama OR Tuvalu OR Paraguay OR Uganda OR Peru OR Vanuatu OR "Saint Helena" OR Yemen OR "Saint Lucia" OR "St. Lucia" OR Zambia OR "Saint Vincent and the Grenadines" OR "St. Vincent and the Grenadines" OR Samoa OR Serbia OR "South Africa" OR Suriname OR Thailand OR Tonga OR Turkey OR Turkmenistan OR Venezuela OR "Wallis and Futuna"

Intervention terms: (evaluation OR assessment OR review) AND (aid OR development OR cooperation) AND (fisher* OR fishing) NOT "fisheries assessment"

Inclusion and exclusion criteria

Following the compilation of primary studies in a database and the removal of duplicates, a first screening was conducted based on the criteria specified below, applied to the study title or its title and abstract. A second screening was performed applying the same

criteria to the full text of the studies that passed the first screening in cases where screening at title and abstract level was inconclusive.

Population

- *Inclusion:* Studies focusing on specified human populations and ecosystems in countries included in the OECD-DAC list of ODA recipients.
- *Exclusion:* Studies without a specified human population or ecosystem.
- *Exclusion:* Studies focusing on countries not included in the OECD-DAC list of ODA recipients.

Intervention

- *Inclusion:* Studies involving programmes or projects wholly or partly funded by international development cooperation organisations affecting the fisheries sector or fishing communities, both marine and inland, in the recipient country.
- *Exclusion:* Studies involving nationally-funded programmes or projects.
- *Exclusion:* Studies focusing on aquaculture.

Comparator

- *Inclusion:* Studies involving a valid comparator that enables the measurement of changes over space, population or time between presence/absence of the intervention. A broad range of comparators will be considered for inclusion, and those will be classified as temporal, spatial or between groups.
- *Exclusion:* Studies not involving a valid comparator to establish changes between presence/absence of the intervention.

Outcome

- *Inclusion:* Studies reporting on any of the outcomes specified in Table Ap1-1

- *Exclusion:* Studies reporting on outcomes other than the ones included in Table Ap1-1.

Study type

- *Inclusion:* Independent evaluations, assessments or reviews published or formally accepted by the commissioning authority, or published in the peer-reviewed literature.¹⁷
- *Inclusion:* Secondary studies such as scoping studies, systematic maps, systematic reviews, or meta-analyses.
- *Inclusion:* Studies in any of the following languages: Danish; English; French; German; Icelandic; Norwegian; Portuguese, Spanish and Swedish.¹⁸
- *Exclusion:* Internal periodic progress evaluations, assessments or reviews, and audits.¹⁹
- *Exclusion:* Baseline studies, modelling studies, fisheries or stock assessment studies, and theoretical studies.

Searching the literature

The evidence that systematic maps and to a lesser extent scoping reviews are frequently based upon is mostly found in the peer-reviewed literature. Literature searches are therefore performed in scientific literature databases. Despite slight differences, scientific literature databases have cataloguing systems that are generally standardised and compatible among themselves. In contrast, the

¹⁷ *Independent* refers, in this context, to evaluations, assessments or reviews carried out by an entity different from the one implementing the intervention.

¹⁸ Where necessary, the search terms will be translated into any of these languages when performing searches in the websites of international development cooperation agencies. Only English search terms will be used to search scientific literature databases, but peer-reviewed studies in any of those nine languages will be considered.

¹⁹ *Internal* refers, in this context, to evaluations, assessments or reviews carried out by the same entity implementing the intervention.

evidence for this study is mostly available from evaluation reports that are made available on the websites by the organisations commissioning the evaluations. The cataloguing and search functionalities of those websites vary considerably. This distinction is of great importance for the search strategy adopted in this study, as it demands a large degree of flexibility in applying the search terms and inclusion criteria to a very diverse array of literature repositories.

Scientific database searches: A search by keywords using wildcards, priority and Boolean operators adjusted to the functionalities of the database was conducted in the ISI Web of Science (<http://apps.webofknowledge.com>) using the search terms specified above.

Non-scientific database searches: Evaluation reports were searched separately in the websites of the following organisations:

- i) all 30 OECD-DAC member organisations;
- ii) the five major development banks, namely the World Bank, African Development Bank, Asian Development Bank, Inter-American Development Bank and the Islamic Development Bank;
- iii) multilateral development organisations, namely the Food and Agriculture Organisation of the United Nations, United Nations Development Programme; United Nations Environment Programme, Global Environment Facility, International Fund for Agriculture Development and World Fish Centre;
- iv) international non-governmental conservation organisations, namely the Worldwide Fund for Nature, International Union for the Conservation of Nature, Fauna and Flora International, Conservation International and The Nature Conservancy;
- v) Moore Foundation, Rockefeller Foundation and Total Foundation; and

- vi) International Initiative for Impact Evaluation (3ie) and the International Institute for Environment and Development.

Only references for which the full text was available at the time of the search have been considered for full-text review. In those few cases where this functionality existed full-text documents not readily available online were requested from the commissioning organisation by e-mail or by submitting an online form. Only two organisations replied to such requests, in one of the cases by pointing the research team to the online repository where relevant literature could be searched.

Study screening

Using the inclusion and exclusion criteria described above, one element of the research team screened the title or in case of doubt the title and abstract, and in some cases the full text of candidate studies. The method and progress were discussed with the rest of the team throughout the process, and reviewed at the end. This joint review was used to clarify doubts about the inclusion of some studies.

After the review, the studies meeting the inclusion criteria after the first screening were kept for full text review and coding. A record was kept of the studies screened in the first screening, including the grounds for exclusion. The bibliographic references of the studies selected for full-text review were recorded in an Excel data matrix, using the fields indicated in Table Ap1-2. Digital copies of these studies were uploaded onto a project workspace accessible to the entire research team. A total of 270 studies have been kept for full text review after the first screening.

Table Ap1-2: Descriptive bibliographic data extracted during full text screening, including allowed values

Bibliographic element	Value(s)
Title (free text)	Document title
Date published	Year
Date of project end	

(fixed value)	
Authors (free text)	Name of individual authors or authorising organisation
Commissioned by (free text)	Name of commissioning organisation
Journal article	Bibliographic reference
Geographical scope (fixed value)	Region * Country **
SDG14 fisheries targets covered (check all that apply)	14.4 – MSY 14.6 – Subsidies 14.7 – Economic benefits 14.b – Small scale fisheries
Timing of the evaluation (choose only one)	During implementation Towards end of intervention Continuous Ex-post Unable to determine
Scope of the evaluation (choose only one)	Single project, one country Single project, multiple countries Programme, one country Sector-wide programme, one country Regional programme, multiple countries Global programme Unable to determine
Team member performing the screening	R. Bisiaux G. Carneiro MF. Davidson
Type of Intervention*** (cf. Table Ap1-3)	Science and research Capacity building Bridging support Policy development Policy delivery Alternative livelihoods / compensation for reduced fishing Technology innovations

* The list of geographic regions used by the United Nations Statistics Division will be employed (<https://unstats.un.org/unsd/methodology/m49/>)

** Includes the countries in the OECD-DAC list of ODA recipients, organised by region.

*** Based on Hamilton, J, 2018. Supporting small-scale fisheries: World Bank aid, objectives and interventions over time. 2018. Msc thesis, Duke University

Table Ap1-3: Description of intervention typologies

Intervention typology	Description
Science and research	Supporting the provision of biological, ecological, and/or social science information used for management
Capacity building	Increasing fishers’ ability to produce natural and/or social science information; improve leadership, organizational capacity and financial skills
Bridging support	Facilitating the sharing of information across geographies; i.e. locally-managed marine area networks
Policy development	Facilitating/promoting the creation of new governing/management frameworks, protection of critical fishing habitats, labour and well-being standards
Policy delivery	Supporting agents in the administration of governing/management frameworks, enforcement of frameworks
Alternative livelihoods/compensation for reduced fishing	Providing subsidies to encourage fishers to pursue non-fishing economic activities (including aquaculture)
Technology innovations	Providing fishing gear, fishing techniques, marketing techniques, improvement in the monitoring and enforcement of fishing rules

Data coding, sampling for full-text review and study quality appraisal

The studies selected for full text screening were imported into the Atlas.ti software for coding. The coding framework was initially developed by one of the team members and tested and adjusted

during a team coding workshop in late 2018. The testing involved three team members ('coders') jointly coding one document, followed by separate coding of two additional documents with subsequent joint review of the outcomes of the coding. During the coding any issues relative to the coding procedure were solved by e-mail and telephone meetings.

Coders only coded the text passages related to the evidence related to the SDG14 fisheries targets, not the full document. This could include, for example, a text passage in the findings or conclusion section of a document mentioning that intervention x had effect y on population z. Such a passage is coded with the type and the direction of the outcome, as per the 'code group' classification below. During the analysis phase this passage is retrieved and analysed against other similar ones. Coding focused primarily on the findings and conclusion sections. Neither the executive summary nor the methodology section were coded, and the context section was only coded in relation to enabling factors and barriers.

Code groups

Fisheries outcomes (cf. Table Ap1-1)

- Target 14.4
 - Achieving maximum sustainable yield (MSY)
 - Regulating harvesting to sustainable levels
 - Reducing overfishing
 - Reducing illegal, unregulated and unreported fishing
 - Reducing destructive fishing
 - Implementing science-based management
- Target 14.6
 - Fisheries subsidies
- Target 14.7
 - Economic benefits from fishing

- Target 14.b
 - Access to fishery resources
 - Access to markets for fisheries products

Type of outcome

- Positive outcome
- Neutral outcome (Evidence about the absence of outcomes from the intervention)
- Negative outcome
- Inconclusive (Insufficient evidence to conclude about effect)

Enabling factors (contributed to positive outcome)

- General enabling factor(s)

Barriers (hindered a positive outcome)

- General barrier(s)

In view of the time and resources available for this study and assuming that coding one document takes one hour, each of the coders was assigned 40 studies. A tiered sampling procedure was adopted to ensure representativeness across time, regions and donor organisation, applying the following principles:

- The same proportion of studies selected for coding (i.e. 120 out of the 270 studies retained after the first screening at title & abstract level, corresponding to approx. 44 percent) was applied to each year of publication, so as to have a representative sample across the entire time span of the candidate studies.
- Within each decade, the studies were sampled from the different regions according to the same proportion (i.e. sampling about 44 percent of all studies in a given decade and region).

- Within each decade and region, at least one study is sampled from each organisation, and additional studies are sampled according to the 120/270 proportion. If two or more studies were sampled from the same organisation, care was taken to select studies from different countries, in a random manner.

Of this first sample of 120 studies, 106 were retained after full-text review. The remaining 14 were removed for not fulfilling the inclusion criteria.

After completing the review of the first set of 120 studies, the same tiered procedure was applied to the selection of an additional 18 studies, of which 17 were retained. One study was removed for not fulfilling the inclusion criteria.

An appraisal of the quality of the evaluations selected for full-text screening was carried out jointly with the coding. Study quality appraisal is a relatively uncommon feature of systematic maps, but an essential element of systematic reviews and has been recommended for scoping studies (258; 271; 276). In the systematic mapping methodology proposed by James and co-authors (271), study quality appraisal is carried out after the production of the systematic map database. We consider that it is more efficient to conduct the appraisal as part of, and not after, the full-text screening process, in order to avoid having to perform a second reading of the literature.

A framework was developed based on the study by Hageboeck and co-authors (267) and NORAD (2015) consisting of nine criteria against which all studies selected for full-text screening are assessed (See Appendix 2, Table Ap2-1). Each criterion is assessed on a three-point scale (*No*: 0; *Yes, with limitations*: 1; *Yes*: 2), and a brief justification of the rating is provided when necessary.

Production of the data matrix

The data coded from the studies and the outcomes of the quality appraisal were introduced into a worksheet-based data matrix, each row representing a study and the columns each of the descriptive elements (cf. Table Ap1-2) and quality appraisal criteria. The data

matrix is the repository of data for producing the systematic map. Colour coding may be applied to help visualise and sort the data for subsequent analysis.

Synthesis and Presentation

This step involves the analysis and synthesis of the data, including producing the systematic map. The latter can be presented by means of descriptive statistics and graphical illustrations of the distribution and characteristics of the studies. Different visualisation alternatives may be considered to facilitate the interpretation of the data. A thematic synthesis based on the data matrix categories and the coding quotations is produced to describe and analyse the main findings relative to nature and quality of the evidence, type and direction of SDG14 outcomes, and implications for policy, practice and further research.

Consultation and reporting

This last step consists of the research team consulting with the knowledge users and selected subject matter experts about the preliminary outcomes of the study, in order to validate them ahead of publication. Consultation with knowledge users may also be used to develop a dissemination strategy within their organisations. The consultation involves circulating draft versions of the reports and requesting feedback in writing or verbally, depending on the reviewers' preferences and availability. The feedback is incorporated in the publishable material as deemed relevant by the research team.

In addition to a full written report accompanying the systematic map, it may be useful to produce a set of concise 'evidence summary reports' that succinctly cover all elements of analysis described above. One such 'evidence summary' can be produced for each of the research questions, adopting a simplified version of the template developed by Khangura and co-authors (272). With a length of five to ten pages, each evidence summary includes a cover page; a summary page with key study question, features and results, and describing the intended audience; the main body of the report

summarising included studies and salient points; a methods page; a reference list; and a closing page with acknowledgements and author information. The primary audience for these evidence summaries are people involved in the design and implementation of aid interventions related to SDG14.

In line with James and co-authors (271), the study report should include:

- The background and rationale for the study;
- A description of the methodology, with relevant additional information in annexes;
- A description of the volume and characteristics of the evidence;
- An assessment of the quality and reliability of the evidence;
- Recommendations for further primary research in relevant areas;
- Recommendations for further synthesis studies, in particular systematic reviews if supported by the evidence gathered; and
- An assessment of implications for policy and practice.

In the particular study reported in this paper, all publications and other material will be made available on the EBA website.

Appendix 2. Study quality appraisal

An assessment of the quality of the literature included in this study was performed using an appraisal framework based on the study by Hageboeck and co-authors (267) and NORAD (2015) consisting of nine criteria against which the 123 studies selected for full-text screening were assessed (Table Ap2-1). Each criterion was assessed on a three-point scale (*No*: 0; *Yes, with limitations*: 1; *Yes*: 2). Each study could therefore be given a maximum of 18 points, and a minimum of 0. A brief justification of the rating was provided when necessary.

Table Ap2-1: Quality appraisal criteria for each report element

Report element	Quality appraisal criterion
Executive summary	Is there an Executive Summary, which accurately reflects the most critical elements of the report?
Intervention background	Are the basic characteristics and “theory of change” of the intervention described (title, dates, funding organization, budget, implementing organization, location/map, target group)?
Methodology	Does the report (or methods annex) describe specific data collection methods and instruments the team used? Does the report (or methods annex) describe specific data analysis methods the team used?
Study limitations	Does the report include a description of study limitations (lack of baseline data; selection bias as to sites, interviewees, comparison groups; seasonal unavailability of key informants)?
Findings	Did the findings presented appear to be drawn from social science data collection and analysis methods the team described in its study methodology (including secondary data it assembled or reanalysed)? Are findings clearly distinguished from conclusions and recommendations in the report, at least by the use of language that signals transitions (“the evaluation found that.....”, “the team concluded that”)?
Recommendations	Are all the recommendations supported by the findings and conclusions presented? (Can a reader follow a clear

	path from findings to conclusions and recommendations?)
Terms of reference	Are the evaluation terms of reference included as an annex to the evaluation report?

The appraisal framework builds on the premise that evaluation reporting quality is a suitable proxy for evaluation practice quality. It is not possible to exclude possible discrepancies between reporting quality and evaluation quality in some cases, where for example a poor report does not match a good evaluation. In a few instances it was observed that report elements included in the framework were absent from the report because they were not required by the commissioning organisation. Such is the case, for example, of the evaluations of European Union fisheries agreements, where a discussion of study limitation and the evaluation terms of reference were not required. Despite these limitations, the approach was considered adequate given the time and resources that could be devoted to study quality appraisal vis-à-vis the main focus of the study. Although it does not provide a detailed assessment of the quality of each study, it allows a systematic and relatively straightforward appraisal of the main weaknesses of the evaluation reports that this study rests upon.

Figure Ap2-1 depicts the results of the study quality appraisal, where each staple represents the mean score relative to the maximum for each appraisal criterion and for the total score.²⁰ Figure Ap2-2 represents the distribution of quality appraisal scores among the 123 studies included for full-text review. The mean total score for the 126 studies appraised is 12.3, corresponding to approximately 68 percent of the maximum possible score of 18. No clear association was found between quality appraisal scores and commissioning organisation, author, country or region. A slight difference was observed in the year of publication between the top and bottom 13 studies (i.e. top and bottom deciles), with 2013 for the former and 2006 for the latter groupings. Although this

²⁰ The maximum value for each appraisal criterion and for the total score is 2 and 18, respectively.

difference is not large, it might suggest greater adherence to common evaluation and reporting standards over time. Recall in this regard that the the quality appraisal framework used in this study is based on internationally agreed evaluation standards.

Figure Ap2-1: Mean quality scores for the different report elements, as percentage of total (n=123)

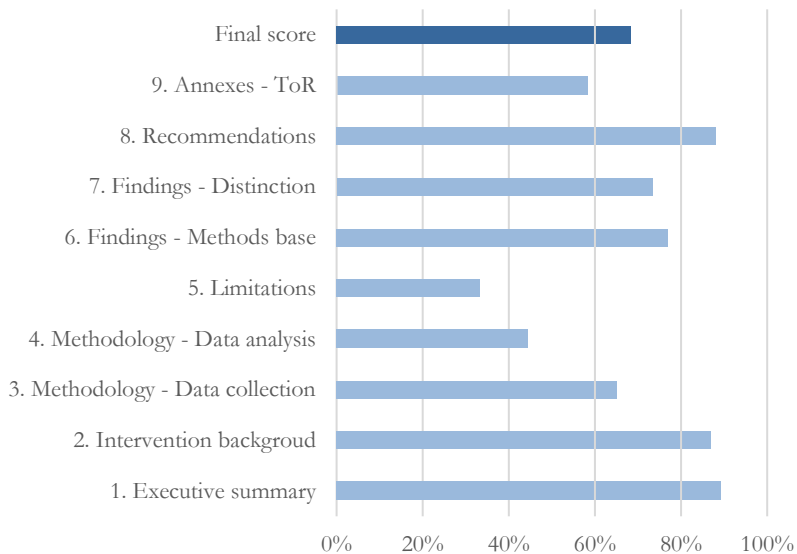
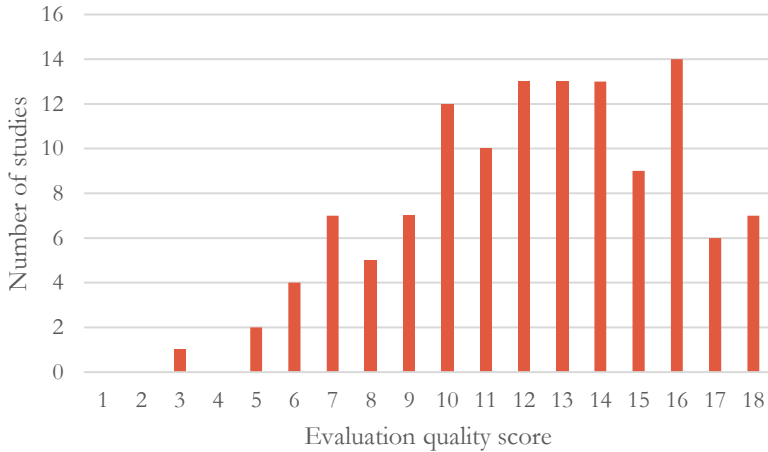


Figure Ap2-2: Distribution of the quality appraisal scores



The two appraisal criteria where most studies more clearly underperform are the presentation of methods for data analysis and the discussion of study limitations. Even the description of data collection methods ranks comparatively low, at approximately 1.3, corresponding to 65 percent of the maximum score of 2. These findings suggest an insufficient treatment of methodological issues in development evaluation, which should be regarded with concern given the importance of methodological robustness for the quality and credibility of evaluation results.

Appraisal criteria 6. *Findings – Methods base*, and 7. *Findings – Distinction* also give important indications about an essential aspect of evaluation practice, namely the degree to which findings, conclusions and recommendations are based on adequate data and deductive reasoning. The evaluations included in this study perform satisfactorily in both of these aspects, at approximately 75 percent of the maximum score. There is room for improvement though, in particular in what concerns conclusions about longer-term outcomes and impact. As discussed in the next section, there are several cases of conclusions about outcomes and impact being drawn without any robust data, where authors show a tendency to conclude on intervention achievements based on intended and not observed results. Part of the explanation for this fact might lie in the

fact that most evaluations included in this study were conducted during or shortly after the end of the intervention. Such fact reduces the ability to detect longer-term outcomes and impacts very significantly in most cases.

Previous EBA reports

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2019:06 *Joint Nordic Organisational Assessment of the Nordic Development Fund (NDF)*, Stephen Spratt, Eilís Lawlor, Kris Prasada Rao and Mira Berger

2019:05 *Impact of Civil Society Anti-Discrimination Initiatives: A Rapid Review*, Rachel Marcus, Dhruva Mathur and Andrew Shepherd

2019:August *Migration and Development: the Role for Development Aid*, Robert E.B. Lucas (joint with the Migration Studies Delegation, Delmi, published as Delmi Research overview 2019:5)

2019:04 *Building on a Foundation Stone: the Long-Term Impacts of a Local Infrastructure and Governance Program in Cambodia*, Ariel BenYishay, Brad Parks, Rachel Trichler, Christian Baehr, Daniel Aboagye and Punwath Prum

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Trots flera decenniers bistånd till fiskerisektorn, finns det få kända försök att analysera lärdomar från insatserna. Denna studie är en kartläggning och sammanställning av kunskaper från utvärderingar av detta bistånd, för att kunna tjäna som underlag till insatser relaterade till målen i SDG 14 och delmålen som gäller fiskeri.

Despite several decades of aid to the fisheries sector, there are few known efforts to analyse lessons learned from those interventions. This study is a systematic map and a thematic synthesis of the knowledge contained in evaluations of this aid, with the purpose to inform the design and implementation of interventions related to SDG 14 and its fisheries targets.