Equity in Fisheries Development:
A Critical Analysis of the Global Environment Facility

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Abstract

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Fisheries are a vital source of food and income for billions of people globally. Climate change and unsustainable fishing practices are threatening global fish stocks, ecosystems, and the food and income security of the fishers who depend on marine natural resources. In low- and middle-income countries (LMICs), the capacity to adapt to these changes is limited, and outside aid is often required. This aid, however, can sometimes take inequitable forms, which exacerbate marginalization, exclude vulnerable stakeholders, and/or damage the ecosystems they aim to protect. This thesis analyzed fisheries development projects approved and funded by the Global Environment Facility (GEF), a funding arm of the United Nations (UN), in an effort to catalogue the types of interventions used and uncover any inequitable attributes which may reduce project effectiveness or produce negative outcomes for already marginalized fishers in LMICs. Based on this analysis and the context provided by GEF documents and a UN audit of GEF activities, I contend GEF's project design and implementation frameworks contain systemic inequitable attributes and employs interventions with limited ability to increase adaptive capacity. Predicting and accounting for inequitable attributes is crucial to ensuring more equitable outcomes in the expanding Blue Economy. As GEF receives its mandate from the UN and other multilateral environmental agreements such as the Paris Agreement, this analysis can help inform policy decisions at the highest levels and improve development activities at global, regional, and local scales.

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1. Introduction

a. Fisheries: Status and Challenges

Small scale fisheries (SSFs) represent half of all global fishery landings and 90% of that catch is sold, bought, and consumed by the local population (FAO, 2021). Despite their outsized importance, SSF communities are historically under-represented in fisheries management problem solving with the focus normally on industrialized commercial fleets (Kelleher et al, 2012). These management failures, combined with global coastal population growth, have resulted in food security demands which exceed sustainable yields of fish stocks (Bell et al, 2018). Climate change impacts will only serve to widen these gaps, especially because communities with the most vulnerable fisheries are also the poorest (Allison et al, 2009). Coastal SSF communities are adapting to changes in abundance, species, spatial and temporal distribution. This adaptation involves changes in fishing methods, markets, income sources, and governance. Because SSFs are located in places most vulnerable to climate change (Allison et al, 2009) and are poorly monitored and understood (Sadovy, 2005), there is a significant need for data generation, monitoring, and management. However, SSFs themselves have provided input into the discussion of adaptation best practices: a WWF-led survey of small-scale fishers concluded "reducing poverty and providing a population with basic living conditions guarantee an improved ability to adapt" (Monnier et al, 2020).

In an attempt to protect biodiversity globally and improve climate adaptation in SSF communities, governments as well as intergovernmental agencies such as the United Nations (UN) and non-governmental organizations (NGOs) have turned their attention to addressing management and adaptation problems. Because over 90% of all SSF fishers live in developing

countries, community adaptive capacity is limited, and financing efforts usually involve external support (FAO, 2021). Attempts to improve management of SSFs have traditionally focused on increasing economic efficiency while simultaneously protecting stocks from overfishing, without considering social and cultural impacts, leading to failures of frequently used limited-access based management schemes (Allison et al, 2001). Ecosystem based fisheries management (EBFM), an increasingly popular tool for holistically addressing fishery challenges, historically uses few reliable human indicators, relying on ecological markers which ignore outcomes for the human population (Hornborg et al, 2019) which are an integral aspect of EBFM.

Furthermore, many well-intentioned efforts to improve fisheries sustainability have negative impacts on SSFs. Ecolabeling, for example, benefits industrial fleets with capacity to adapt to, and provide data for, certification requirements, but data-poor SSFs struggle to become certified and are excluded from value gains (Jacquet & Pauly, 2008). In addition, large-scale fishery management solutions often exacerbate the struggles facing SSFs: global alarm over illegal, unreported, and unregulated (IUU) fishing often leads to 'top-down' enforcement programs which only serve to increase pressure on SSF communities without alleviating food or income security concerns (Song et al, 2020). Conflict also occurs in the interaction between industrial commercial fishing fleets, often from distant waters, and local SSFs which lack the capacity to monitor or enforce restrictions. This conflict puts pressure on ecosystems and SSF food and income security, and management improvements which do not address this conflict are unlikely to be sustainable: "more secure, less vulnerable fishers make more effective and motivated fishery managers" (Allison et al, 2012).

With these challenges in mind, the attention given to SSFs has risen, with a correlating rise in academic publications (Smith & Basurto 2019). The Food and Agriculture Organization of the United Nations (FAO) has directed significant focus to increasing awareness of the "Hidden Harvest" of SSFs and the major human impact resulting from SSF degradation (WorldFish, 2018). Similarly, the United Nations Framework Convention on Climate Change (UNFCCC) recognized the importance of SSFs in the Intergovernmental Panel on Climate Change 5th Assessment Report (Seggel & De Young, 2016). This has corresponded with increased financial investment in SSFs and SSF communities from NGOs, governments, and intergovernmental organizations (WWF, 2022). This thesis will analyze the funding to fisheries from one multilateral institution: the Global Environment Facility.

b. Global Environment Facility

The Global Environment Facility (GEF) was created in 1992 by a partnership of the World Bank, United Nations Development Program, and the United Nations Environment Program. Since its inception, GEF has been replenished every four years to the tune of $24.8 billion in total (GEF, 2022a). GEF administers and accounts for multiple funds. These funds are supported by donor countries:

-**Least Developed Countries Fund**: created by United Nations Framework Convention on Climate Change (UNFCCC) to address needs of Least Developed Countries' vulnerabilities to climate change.

-**Special Climate Change Fund**: created by UNFCCC to support long- and short-term climate change adaptation activities.

-**GEF Trust Fund**: GEF's general fund, for which the World Bank is the trustee and administrator.

The intent of these funds is to provide capital, technical assistance, and policy support for nations and communities that lack the resources to address climate change and biodiversity loss themselves. In their own words, "GEF's mission is to safeguard the global environment by supporting developing countries in meeting their commitments to multiple environmental conventions and by creating and enhancing partnerships at national, regional, and global scales" (GEF PD, 2018, p.2). Upon approval of a project by GEF's board (made up of members from donor and recipient countries) these grant funds (in coordination with co-financing provided by public and private partners, including beneficiary governments) are distributed to various entities including government agencies, civil society organizations, NGOs, and the private sector in support of project objectives which align with GEF's programming goals. Beyond required alignment with GEF's environmental and governance goals, projects under consideration must disaggregate expect outputs by gender and projects are required to engage with Indigenous communities where applicable, though the minimum breadth and depth of this engagement is not specified. GEF's programming directions – and thus project structure and goals – are mandated by the conventions of the UN, which most recently has been dominated by the Paris Agreement.

GEF was selected as the target of this research primarily because of the prevalence and accessibility of project data. An initial search for fisheries-focused development projects revealed GEF to be a significant contributor in this sector, though overall, information on fisheries-specific development projects was limited. Furthermore, as a funding arm of the UN

with mandate from multilateral environmental agreements, GEF serves as a useful proxy for indicating the fishery development priorities of the wealthy Global North.

c. Research Questions and Purpose

There is ongoing debate regarding the best practices of climate adaptation, biodiversity protection, and fisheries management. This analysis will not seek to resolve that science, but rather capture the conclusions made in this arena by GEF, and by proxy, the UN. The priorities and preferences of these institutions can be revealed by cataloguing and analyzing the interventions employed by GEF in fisheries development projects. Simply, when GEF considers fisheries, what types of activities do they fund to combat climate change and biodiversity loss? This analysis then asks the following questions of GEF's interventions in fisheries development:

1. To what extent can we consider GEF's fisheries development projects equitable?
2. If inequitable attributes exist in projects, are they systemic or stochastic?

In this analysis, "equity" refers to distributional equity. This analysis seeks to determine: what is the distribution and method of interventions? Are marginalized SSF groups bearing disproportionate costs? Are the values and benefits of projects equitably distributed or do they increase or exacerbate marginalization? By answering these questions, this research can be used to inform GEF project design and implementation, increasing the efficiency of fund usage and reducing harmful effects on marginalized populations.

In order to accomplish this analysis, all applicable GEF project documents were collected and development interventions for each project objective were categorized. These categories were derived from Biagini et al (2014), who comprehensively reviewed GEF's adaptation efforts across all sectors. Projects were then flagged for any inequitable attributes, or red-flags. These attributes reduce can project effectiveness and further marginalize vulnerable fishery populations. The four inequitable attributes are *exclusion*, *enclosure*, *entrenchment*, and *encroachment*. This framework was first established by Sovacool et al (2017) in a review of GEF's adaptation projects. Explanation of the analysis framework and its application is found in the Methodology section below.

Reviews of development institutions are not novel. This work, however, is the first to specifically examine GEF's work in fisheries, which are unique in their adaptation needs and development response. Rapidly growing interest in the Blue Economy by public and private sectors is focused primarily on energy and shipping with SSFs receiving relatively little attention, leaving them under significant political and economic pressure (Cohen et al, 2019). GEF itself describes the SSF sector as "undercapitalized" and "undervalued" (GEF, 2018). Climate change increases food and income security stresses for populations which rely on marine resources, and as competition for Blue Economy access introduces further strain on ecosystems and their dependent populations, equity must be centered in order to avoid further marginalization of vulnerable SSF communities (Bennett et al, 2019). This analysis adds to a growing body of literature on the importance of equity in fisheries management.

2. Methodology

There are two primary aspects of the analysis framework: intervention typology and inequitable attributes. This framework was derived from previous analyses of GEF. The classification of interventions – the means by which project objectives are achieved – is derived from Biagini et al (2014). The authors of that paper created a typology framework to classify climate adaptation actions financed by GEF's Least Developed Countries Fund (LDCF). Their analysis settled on 10 adaptation categories. Because their work included all GEF projects and not just fisheries, I condensed and re-arranged those 10 into 8 "interventions" which more closely align with fisheries related solutions. These interventions were then further categorized as either "soft" or "hard" methods. Hard versus soft intervention terminology is used in the Biagini et al review of GEF and is maintained here for consistency. Hard interventions are those which involve provision or development of physical things such as infrastructure (gray or green), technology (such as improved fishing gear), or fisherfolk safety and hydrometeorology equipment. Soft interventions include policy development, establishment of MPAs, training and education, etc. This typology evolved over the course of the project as project coding occurred in ATLAS.ti and the final iteration can be found in Table 1. Biagini et al concluded that the majority of interventions employed by GEF via the LDCF were soft, "inexpensive" solutions limited in their ability to increase adaptative capacity. By cataloguing and analyzing the types of interventions used by GEF and it's implementing agencies, the preferences and priorities of the respective agencies can be revealed, along with any potential inequities in the distribution of interventions.

The equity analysis framework is also derived from a prior review of GEF. Sovacool et al (2017) conducted field research at various levels of project implementation in order to document project

attributes which may reduce project efficiency and/or marginalize already vulnerable populations. They deemed these "inequitable attributes" *enclosure*, *exclusion*, *entrenchment*, and *encroachment*, otherwise known in this analysis as "the 4 E's" and "red flags." The purpose of this framework is to highlight activities, actions, methods, or the absence of such, which compromise the equity of a project and/or reduce project efficiency at meeting stated goals. It is important to stress that because equity impacts are difficult to measure (and are certainly not measured by GEF's project evaluation framework), these attributes – or 'red flags' – serve only as warnings to project runners and beneficiaries that inequitable impacts *are likely to* occur if employed in the manner stated. For the sake of continuity, the names of the attributes remain the same as in Sovacool et al, but their definitions have been adjusted to account for the fishery focus of this analysis. Definitions of these flags can be found in Table 2. With this framework in place, each intervention employed for each objective of each project was categorized and flagged as appropriate. Details on project selection and the coding process are discussed below.

Intervention	Description	Examples from GEF Fishery Projects
Capacity Building (soft)	Increasing an entity's ability to proactively adapt to climate change and biodiversity loss	Training and education of ministerial staff; community level workshops;
Policy, Planning, and Best Practices (PPP) (soft)	Implementation of fishery management schemes, national and local fishery policies, and fishery management best practices	Creation and expansion of marine protected areas (MPAs); national fishery climate adaptation plan development; ecosystem-based fishery management implementation; fishery gear restrictions, catch limits, limited access schemes; Fishery improvement project (FIP) development for ecolabeling/certification
Finance Tools (soft)	Establishment of economic strategies to mitigate fishers' financial losses caused by climate change or biodiversity loss	Creation of fishery community savings accounts; establishment of insurance schemes
Monitoring and Evaluation (M & E) (soft)	Tracking of indicators and outcomes to monitor fishery project progress	Midterm and terminal reports; sharing of information and project results; project intervention demonstrations in neighboring communities
Green Infrastructure (hard)	Utilization of natural solutions to protect or enhance fisheries ecosystems	Mangrove replanting; invasive species removal; afforestation and reforestation
Gray Infrastructure (hard)	Development of physical fisheries infrastructures	Fishery landing site improvement (new docks); seawall construction; freshwater provision infrastructure; construction of access roads for value chain improvements
Safety/Early Warning Systems (EWS) (hard)	Acquisition of safety-at-sea technologies and hydrometeorological warning systems	Distribution of GPS systems, first-aid kits, and life jackets; community-based storm warning systems; EWS hydromet. station installation; ship design improvements for safety
Technology Improvements (hard)	Development of technologies which improve fisheries value chains or increase fisheries' climate adaptation	Aquaculture pilot projects; solar fish driers; fish aggregating devices (FADs); fishery monitoring, control, and surveillance technology; freezers

Table 1. Project intervention typology. This typology closely aligns with that of Biagini et al, 2014, who thoroughly catalogued GEF's interventions. The categories evolved during the project coding process to more closely align with the fisheries specific actions used by GEF in the 35 projects reviewed for this analysis.

Inequitable Attribute	Description	Examples from GEF Fishery Projects (project ID #)
Exclusion	Limits fisherfolk access to project design, decision making, and implementation	Fishers engaged only via follow-up assessment (10181); fishers not included in project site or intervention selection (6955)
Enclosure	Transforms public spaces (marine or terrestrial) into private spaces; transfers fishery access and/or management roles to private entities	Implementation of fishery resource management plan by private company (10738); fisher access to previously public fishery granted by new private controller (9563)
Entrenchment	Exacerbates marginalization of vulnerable fisher populations; increases inequality in fisheries	Explicit de-prioritization of small-scale fishers in favor of commercial fleets (5113); use of GEF funds to establish foreign-owned commercial fish buying ventures in SSF fisheries (9370)
Encroachment	Damages the ecosystem	Establishment of ecotourism resort in the mangrove forest (9201)

Table 2. Inequitable attributes, also referred to as red flags. This framework was first put forth by Sovacool et al, 2017, in their analysis of the political economy of GEF's projects funded by the Least Developed Countries Fund. These project attributes have the potential to cause harm to vulnerable populations and limit project success. The project ID number refers to the identification number for the project in GEF's database.

a. Project Eligibility

To be considered eligible for analysis, projects needed to i) contain appropriate 'fish' terminology in the title of the project, indicating fisheries were at least one of the primary targets; ii) contain project planning and implementation details in the form of GEF's official "Project Information Form" (PIF); and iii) be funded as part of GEF replenishment periods since 2010.

To ascertain eligibility, the GEF database (GEF, 2022b) containing all projects of record (n=5724) were scoured to identify those whose title contained any portion of the following words: fish, fisher(s), fishery(ies), and/or fishing. This search was done manually and repeated at various times throughout the project to verify that no new projects had been added to the GEF database. A total of n=52 projects met this first criterion. Fishery project data (location of

project, fund source, fund period, implementing agency, etc.) were then catalogued in Microsoft Excel. Project documents, when available, were downloaded in PDF form and catalogued in ATLAS.ti for coding of interventions and inequitable attributes.

Projects without documentation could not be appropriately analyzed in the framework of this thesis, but their information was still recorded in the Excel database to provide basic information (amount spent, location of project, etc.) which was useful in broader inquiries surrounding GEF's funding of fisheries. Projects from fund periods prior to 2010 lacked consistent documentation which could be compared to more recent projects. Because changes in GEF's funding behavior over time was important to this analysis, all fishery projects from before 2010 and projects without documentation were removed (n=17). The total number of projects fitting all criteria was n=35.

Many projects exist in the GEF database which obviously impact fishing communities but do not explicitly target fisheries as the primary objective. I define these projects as "tangential projects" in this analysis. It is reasonable to assume, for example, that a project focusing on infrastructure development in the coastal zone of Kiribati would benefit local fishers who live there. Tangential projects, however, were not included in this analysis. The reasons for this are twofold: first, the purpose of this analysis is to determine the implicit and explicit decisions and priorities indicated by GEF funding for *fisheries* projects. The intent is to capture the interventions used by GEF when specifically addressing climate change and biodiversity problems when fisheries are the object in focus. Second, making comparisons between fisheries-focused projects and tangential projects becomes problematic in its execution. For example, if a coastal-zone rehabilitation

project (tangential) has 6 primary outcomes, all with multiple sub-objectives, and only 1 of those sub-objectives mentions fisheries, there is little to be learned about the implicit and explicit fishery-specific decisions made by GEF in those projects and little which can be accurately compared to fisheries-focused projects, as such a large proportion of the funding decisions are influenced by the non-fisheries objectives.

Similarly, global-scale fisheries projects were not included in the equity analysis. Here, the term "Global fisheries projects" is used to describe only those projects which are categorized by GEF as 'global.' These projects (n=5) are almost entirely focused on developing policy and building global institutional capacity, but they garner an outsized amount of financial attention (Table 3). Global projects command nearly twice as much funding as local/regional projects. Despite this significant monetary commitment, the execution and implementation details of global projects provide little insight because equity concerns are more difficult to identify when the target location and populations are undefined. Global projects, however, do give insight into theories of change employed by GEF, which will be covered in the Discussion section below.

	# of Projects	**GEF Financing**	**Co-financing**	**Total**	**Average Cost**
Non-Global	35	$193.5M	$1096M	$1290M	**$36.8M** per project
Global	5	$49.9M	$277M	$327M	**$65.4M** per project

Table 3. Breakdown of relative funding for global and non-global GEF fishery development projects. The average cost of global projects is nearly double that of non-global projects. 'Non-global' refers to projects which focus on a single nation or region. All monetary values expressed in USD.

b. Project Analysis

Once the final database of projects was determined, ATLAS.ti was used to code each project objective and outcome based on intervention type (derived from Biagini et al, 2014). Details of this typology can be found in Table 1. The implementation details of each intervention were then

analyzed for "processes that can lower their efficacy" (Sovacool et al, 2017) also referred to in this research as inequitable attributes or "red flags" (Table 2). This process is admittedly subjective. In order maintain consistency, projects were reviewed in random order (i.e. they were not organized by time, location, or fund source) and used a logic described below. For transparency, the coding scheme and ATLAS.ti files are all available upon request. In the Excel database, a binary marker (1 for presence, 0 for absence) was given to each project for each of the 8 possible intervention types and for each of the 4 possible red flags. Based on the number of red flags noted during project review, an "E score" was generated (4 being the maximum, indicating all inequitable attributes were present, and 0 being the minimum). The label "E score" was used simply because each red flag begins with the letter 'E' and so the E-score represents the number of 'Es' present in a project.

In order to consistently assign typologies, a basic logic was established. First and foremost, the decision was made to take GEF "at their word." For example, if GEF states that the implementing agency "engaged stakeholders at the beginning of the project", this analysis operates under the assumption that the engagement occurred as stated. On the contrary, the same sentence says nothing about iterative stakeholder engagement, nor stakeholder engagement at other phases of the project, nor the method or quality of engagement. GEF systematically gives significant priority to all details regarding the number of stakeholder meetings and who was present at those meetings (down to the number of persons involved, often disaggregated by sex). Therefore, it is reasonable to assume that if engagement was not documented by GEF, it did not occur. Similarly, the details of project design and execution are reviewed by many layers of project administration – from co-financers (such as national Governments), to implementing

agencies (such as the World Bank), and ultimately GEF itself. Because of the stringent level of detail included for each project objective in the approval phase, taking these projects "at their word" provides a consistent and accurate framework for evaluation. Each applied coding can be observed in the ATLAS.ti files available on request. RStudio was used to further analyze the data and generate figures.

3. Results

a. Intervention Summary

Nearly every project involved both capacity building (97%) and PPP (97%) interventions, and every project allotted funds for monitoring and evaluation (100%). Only 18 projects (51%) involved any hard interventions, and of those, 9 contained just 1 such intervention. In total, 113 soft interventions were employed, compared to 35 hard interventions – a ratio of >3 soft interventions for every hard one. Importantly, these results confirm the results of the Biagini et al analysis and expand it by including other funds beyond the Least Developed Countries Fund.

Soft Interventions	Count (% of projects with intervention)
Capacity Building	34 (97%)
Policy, Planning…(PPP)	34 (97%)
Finance Tools	10 (29%)
M & E	35 (100%)
Total	113 soft interventions

Hard Interventions	Count (% of projects with intervention)
Green Infrastructure	4 (11%)
Gray Infrastructure	7 (20%)
Safety/EWS	8 (23%)
Technology	16 (46%)
Total	35 hard interventions

Table 4. Intervention distribution statistics. Some projects contained multiple instances of an intervention type (i.e. 2 gray infrastructure solutions), however this analysis used only a binary indicator of the presence or absence of intervention types. An in-depth analysis of spending on each intervention type in GEF fisheries projects would be worthwhile research beyond the scope of this project.

Hard interventions were realized primarily through technology improvements (46%), followed by fisher safety/EWS (23%). Technology improvements most often consisted of value-adding equipment during fish processing, aquaculture pilot projects, and IUU enforcement equipment. Figures 1 displays the ratio of intervention types used in GEF' fisheries projects. The soft interventions (blue) are the vast majority, with only 4 projects having 50% or more hard intervention presence and 17 projects entirely made up of soft interventions.

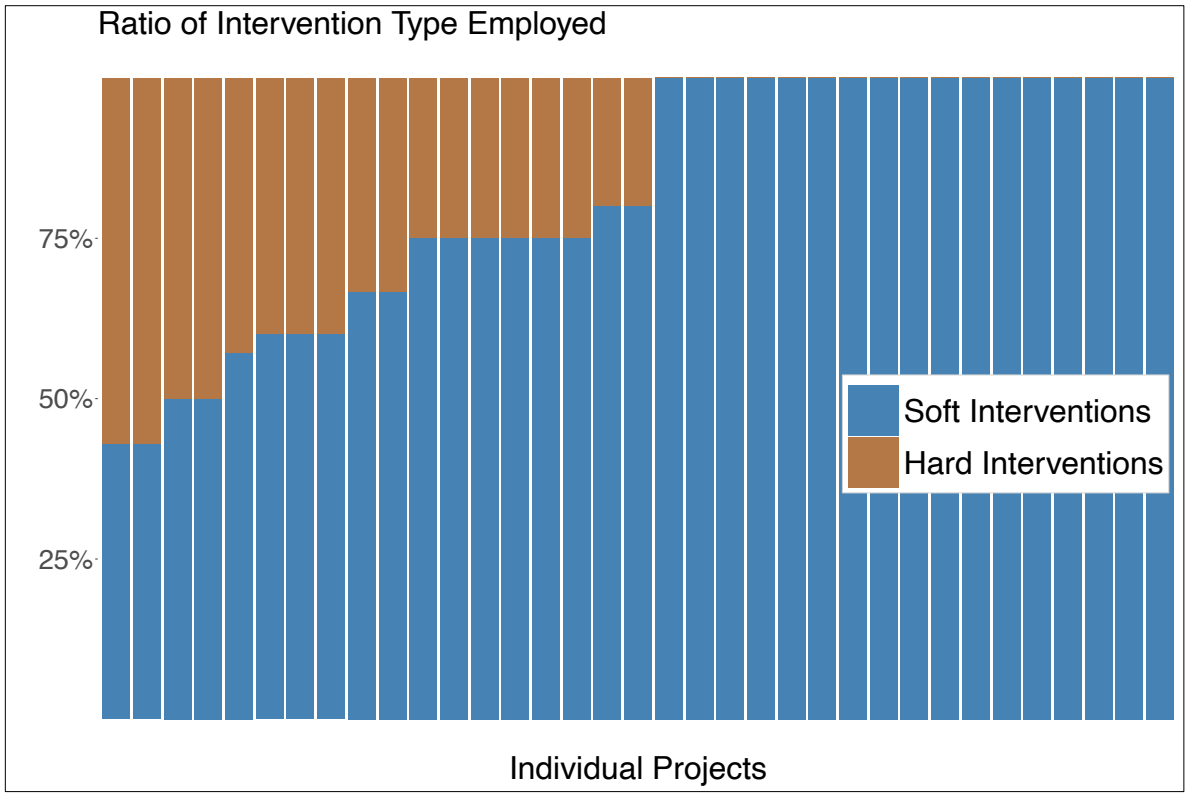


Figure 1. Distribution of intervention types by project. Each bar represents one project (35 total bars). The projects on the left show higher proportions of hard interventions, and the projects on the right show lower proportions, with 17 projects entirely made up of soft interventions.

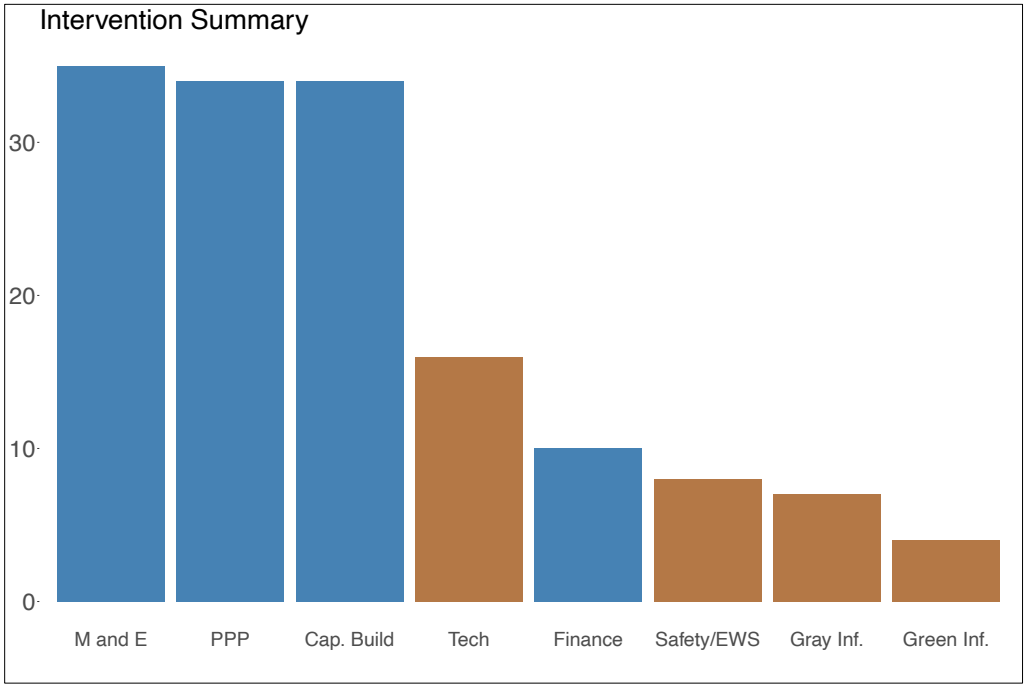


Figure 2. Distribution of all interventions used. Each bar is a count of the number of projects containing that intervention. The monitoring and evaluation (M & E) intervention is present in all 35 projects, whereas green infrastructure interventions, at right, were present in only 4 projects.

b. Inequitable Attributes Summary

In the 35 projects analyzed, 60 total red flags were recorded out of a possible 140. 17 (49%) projects have an e_score of at least 2, indicating nearly half of all GEF fisheries projects show multiple signs of inequitable attributes. The most common red flag was *exclusion*, which was present in 24 of 35 projects (68%). Only 7 projects (20%) had an e_score of 0.

Inequitable Attribute	Count (% of projects with attribute)
Exclusion	24 (69%)
Enclosure	14 (40%)
Entrenchment	14 (40%)
Encroachment	8 (23%)
Total	60 red flags

Table 5. Inequitable attribute (or 'red flag') distribution statistics. With 4 possible red flags per project and 35 projects, the maximum possible red flags is 140. In practice, it's possible for one project to have multiple instances of each inequitable attribute, however this analysis only uses a binary indicator for the presence or absence of a red flag, indicating at least one instance of the inequitable attribute.

c. Project Demographics

Of the 35 projects, the largest portion were in Africa (13), followed by SE Asia (11). The remaining 11 were implemented in the Americas (6), Oceania and Pacific Islands (3), and Europe (2).

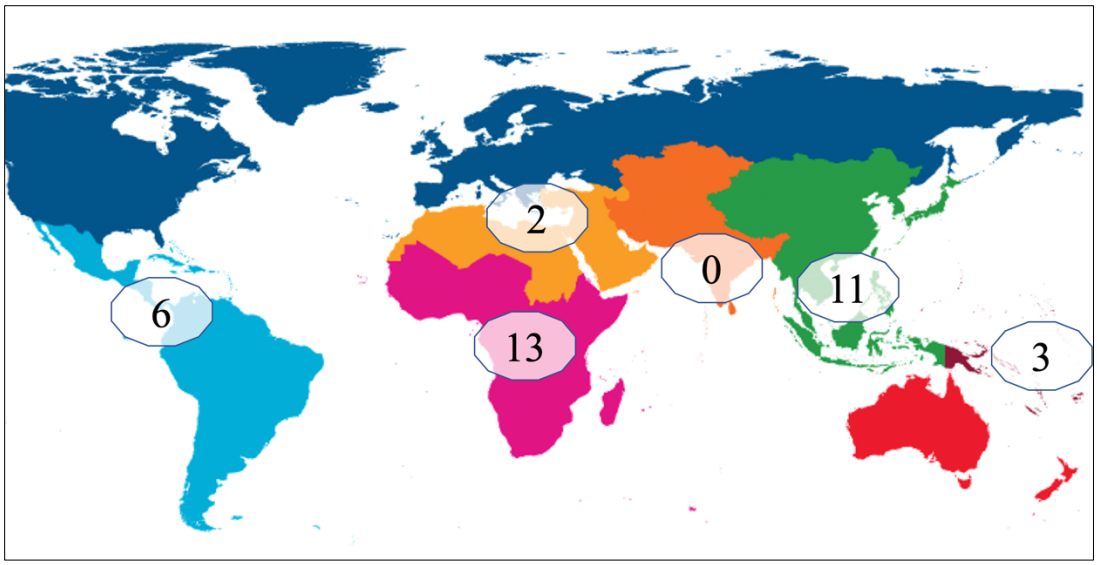


Figure 3. Global distribution of GEF fisheries projects. Some multinational projects crossed UN-defined regional borders, notably in the Mediterranean and Black Seas, where project recipients included nations from North Africa and West Asia (yellow) as well as Europe (blue). Background global map from United Nations SDG Report (UN, 2019).

Projects were primarily implemented by the Food and Agriculture Organization of the UN (FAO) (16). Other implementing agencies included World Bank (6), UN divisions such as the UN Development Program (UNDP) and UN Environment Program (UNEP) (5), Non-Governmental Organizations such as the World Wildlife Fund (WWF) and Conservation International (CI) (4), and miscellaneous others (4). In general, though a leading implementing agency is named for every project, projects are in practice executed through a multitude of layers of organizations. GEF identifies an implementing agency which then partners with other executing agencies, often NGOs and always national governments. Project decision making remains jointly in the hands of the implementing agency and GEF, but "on the ground" efforts are almost always executed by partner and/or subcontracted entities or governmental bodies. In-

depth analysis of project execution structures and their effects on equity is crucial research which is unfortunately beyond the scope of this thesis.

d. Geographic Scale

The geographic scale did not have a significant impact on the number or type of interventions used, nor did the scale effect the amount or type of inequitable attributes. Of the 35 total projects, 18 were single-nation, and 17 were multinational (5 global scale projects were not included). The average number of inequitable attributes in multinational projects was actually lower at 1.4, compared to 2.0 flags in projects implemented in a single nation. In addition, the *exclusion* inequitable attribute was present in 13 national projects and 11 multinational ones, indicating that the restriction of access to project decision making was still prevalent even when projects focused only on one country.

	Single Nation	**Multinational**
Count	18	17
Average # of Red Flags	2.0	1.4
***Exclusion* Prevalence**	13 (72%)	11 (65%)

Table 6. Breakdown of the geographic scope of GEF fishery projects. Global scale projects are not included in this analysis, but their summary data can be found in Table 3.

e. Changes Over Time

The number of fisheries focused projects has declined every GEF funding period since 2010. The 2010-2014 period saw 14 fisheries projects, followed by 11 in 2014-2018, and 10 in 2018-2022. GEF funding commitments have decreased in-kind, though average total project cost has not, due to significant co-financing contributions. Detailed changes in GEF funding for fish projects over time can be seen in Table 7.

Fund Period	# of Fishery Projects	Total GEF Contribution	Average GEF Contribution
2010-2014 (GEF-5)	14	$88.4M	$6.32M
2014-2018 (GEF-6)	11	$57.5M	$5.22M
2018-2022 (GEF-7)	10	$45.8M	$4.58M

Table 7. Breakdown of GEF's contributions to fisheries-focused projects since the 2010 funding period. The total number of projects, the absolute GEF contribution, and the share of GEF's total budget spent on fishery projects have all declined.

The declining contributions to fishery development from GEF over time accurately reflect decisions put forth in the GEF-7 Programming Directions (PD), which sets goals and targets for project funding and execution. In the programming document, GEF explicitly states that it is seeking to increase the usage of "non-grant instruments" (NGI) in projects as well as significantly increase the amount of private co-financing, explaining at least in-part the reduction in GEF grants awarded (GEF PD, 2018). GEF defines NGIs as "a mechanism to provide financing for activities that have a potential to generate financial reflows for the financer." This interest in "crowding-in" the private sector is also borne out in project data and details: fishery projects such as "The Meloy Fund" (ID 9370) and "Third South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish3)" (ID 9563) are foundationally structured around NGI financing and private investments (GEF PD, 2018).

GEF's total available funds for this period provide necessary context to this decline. In the period in which GEF committed the most funds to fisheries (2010-2014), GEF contributed $88.4 million. In that same period, GEF's available funds totaled $4.34 *billion* (GEF, 2022a), meaning GEF dedicated only 2% to fisheries. That share has also declined over time, to 1.3% in 2014-2018, and ultimately to 1.1% in the current 2018-2022 period.

As GEF contributions has gone down, red flags have gone up. Figure 4 shows each the count of a project's red flags in each funding period indicating that, despite the total number of projects

decreasing, the total and average number of red flags has actually increased. This increase in average e_score is driven primarily by absolute increases in instances of *enclosure* and *encroachment*, evidenced in Figure 4 which shows the total number of each red flag per fund period.

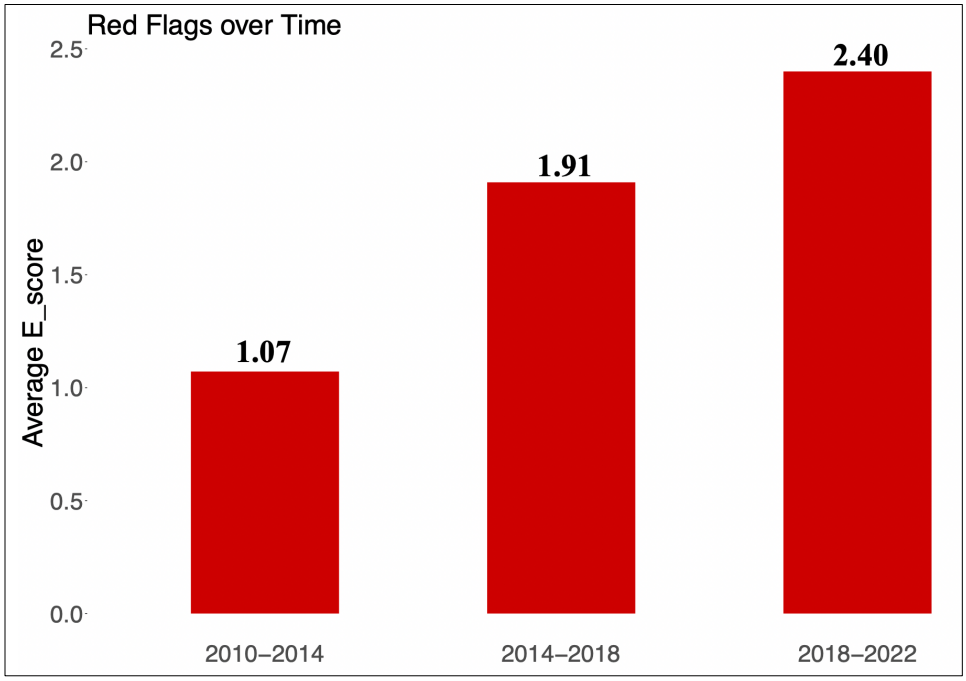


Figure 4. Distribution of average e_score, or the average number of inequitable attributes present per project, over time. Each column represents a GEF fund period. The average number of inequitable attributes per project has more than doubled since the 2010 period, from 1.07 to 2.40 inequitable attributes per project.

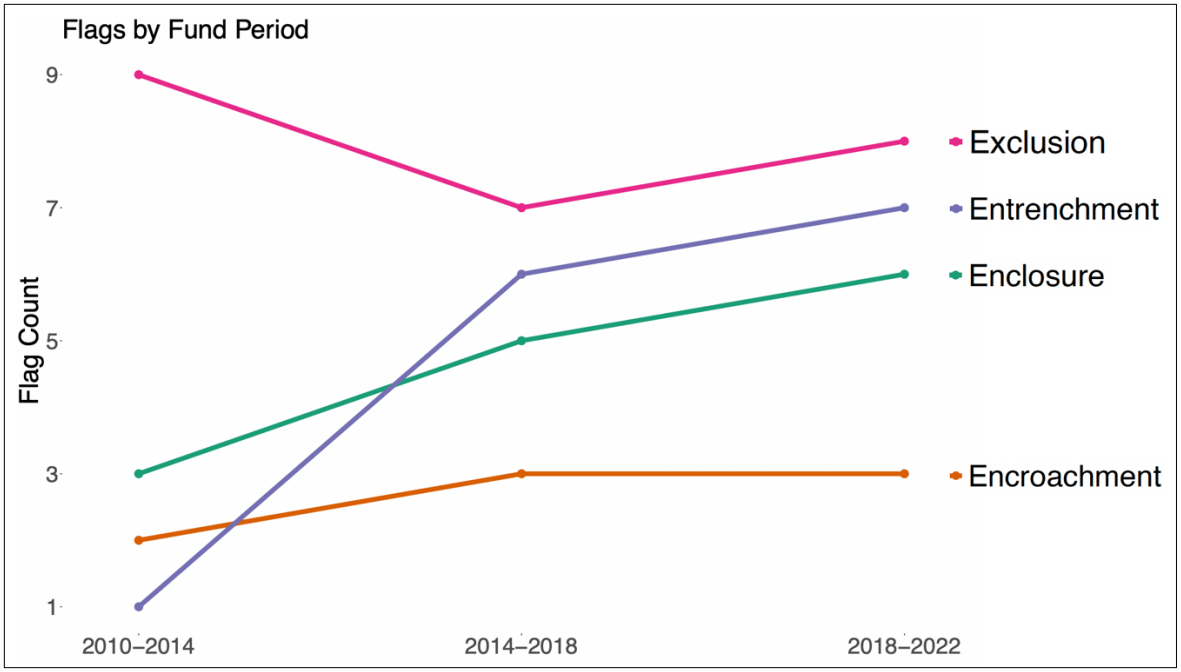


Figure 5. Count of each inequitable attribute by GEF fund period. The enclosure and entrenchment flags – the green and orange lines, respectively – have increased significantly since the 2010 fund period.

In addition, though the average e_score for all biodiversity projects is less than that of climate change adaptation projects, Figure 6 shows that the average number of inequitable attributes for both biodiversity and climate change focused projects is increasing each fund period. Notably, the two focus areas are supported by different funds under the GEF umbrella (GET for biodiversity, LDCF and SCCF for climate change adaptation), each with their own mandate and structure. Because both focus areas show this increase, it can be inferred that the presence of inequitable attributes is likely to be driven by overarching GEF-wide programming directions rather than any particular fund mandate – this is supported by the data, which show no relationship between fund source and inequitable attributes.

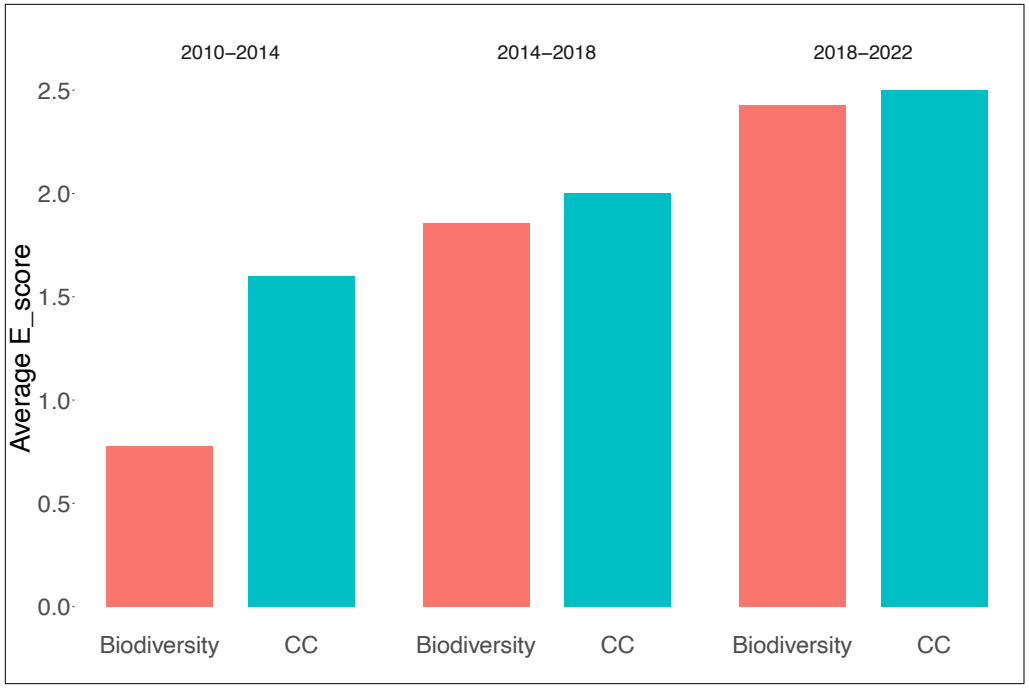


Figure 6. The average number of inequitable attributes per project, broken down by project focus area and ordered into a time series. The red are biodiversity projects, and the blue are climate change adaptation projects. Both focus areas show increasing rates of inequitable attributes, with biodiversity showing the most rapid increase.

f. Important Conclusions

There are 3 significant takeaways from these results:

1. When considering fisheries, GEF and its partnering agencies have declared a clear preference for soft, limited impact interventions over hard ones.

2. Despite the fact that climate change driven pressures and biodiversity losses are increasing over time, especially for vulnerable fisher populations, GEF has contributed less total money and a smaller share of its total budget to fishery adaptation and biodiversity protection projects, relying instead on increased private sector investments and non-grant instruments.

3. The rate of inequitable attribute presence in fisheries projects has significantly increased over time, particularly in biodiversity-focused projects, indicating greater chances for inequitable project design and implementation, decreased project efficiency, and increased environmental damage.

4. Discussion

Despite the limited number of projects to draw on relative to GEF's larger body of work, these 35 projects reveal much about GEF (and by proxy, the UN) and its' partners implicit and explicit priorities with respect to fisheries, climate change adaptation, biodiversity, and the role of equity in sustainable development. This discussion will present important context to the above results and then explore its relation to the data from this analysis. GEF's programming directions – the guiding document for what projects get funded and how – as well as an audit performed by the United Nations Development Program (UNDP) serve these crucial contextual roles. Last, this section will review a sampling of midterm and terminal project reports, published by GEF, to provide insight on how GEF evaluates its own work in fisheries development. Because inequitable project attributes may lead not only to further marginalization but also project inefficiencies, these reports can offer insight to the magnitude and scope of negative impacts.

a. Inequitable Attribute Relevance

The presence of inequitable attributes is particularly important in SSFs, where social capital and fisher buy-in are crucial to management success (Allison et al, 2001). Development projects which do not account for spatial variability in the outcomes of their interventions can exacerbate local inequalities (Mandle et al, 2015). Development agencies which fail to understand institutional linkages and existing socio-ecological dynamics may pursue fisheries management strategies which "fail to achieve their objectives" (Degnbol & McCay, 2007).

With *exclusion*, fishers are not adequately involved in projects and thus lack agency in the process. These fishers also are operating with limited flexibility and assets as an initial condition

warranting the aid in the first place. Agency, flexibility, and assets are three of the six factors which provide reliance in socio-ecological systems, according to Cinner and Barnes (2019), meaning it is unlikely for *exclusionary* projects to result in sustainable outcomes. *Enclosure* and *entrenchment* both center on the role of the private sector in fisheries governance and ecosystems. As will be discussed below, GEF's increased reliance on private sector investments may result in increased capture of public roles by private actors, thus further limiting the assets and flexibility necessary for community resilience. *Encroachment* is the least prevalent of the inequitable attributes. Despite its rarity, it is particularly alarming because it represents an outcome which is antithesis to the stated goal of the project, namely ecosystem protection.

b. GEF Programming Directions

Each fund period, GEF publishes its guiding document to direct the use of its funds. These documents are informed by GEF's mandate from multilateral environmental agreements (MEAs) such as the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change (UNFCCC) (GEF PD, 2018).

The GEF-7 period (2018-2022) programming directions (PD) were published in April 2018. The PD details specific objectives for each of its "focal areas" such as biodiversity, climate change, land degradation, and international waters. These objectives include information not only on the methods to be utilized, but also the underlying framework and theory of change employed by GEF. By comparing GEF's plans in the PD to the data in my analysis, we can discern whether inequities in GEF projects are systemic – explicitly clear in the PD methods – or a coincidental result of the execution of the theory of change put forth by GEF on an ad hoc basis.

i. Soft Interventions and Biodiversity

The data on intervention types showed GEF heavily favored soft methods, specifically capacity building and PPP ("policy, planning, and best practices"). This was also a conclusion made by Biagini et al. The reasoning behind this is explained at least in part by the PD. In its discussion of sustainable fisheries under the International Waters focal area, GEF lists three "entry points" for combating biodiversity loss in the fisheries sector, two of which constitute PPP-style interventions: improving management and coverage of the global protected area estate, and expanded use of Marine Protected Areas (MPAs) (GEF PD, p.27). The third, managing invasive species, would likely also fall into the PPP category, yet was not readily apparent as an objective in the 35 projects considered for this analysis. In providing details for how GEF aims to achieve these three goals, GEF states that "the establishment and management of protected area systems…has arguably been one of GEF's greatest achievements during the last 25 years" (GEF PD, p.29). In the fisheries project data, MPA establishment and expansion, MPA management schemes, and MPA best practices constitute the bulk of PPP interventions used by GEF. Importantly, GEF recognizes that "many [MPAs] are chronically underfunded and understaffed" and that serious "system-wide funding gaps remain at the national level in many GEF-eligible countries." In order to overcome this gap, GEF "will encourage national policy reform and incentives to engage the private sector (concessions, private reserves, etc.)" (GEF PD, p.30). This declared intent may help explain the rise in the two inequitable attributes associated with private sector engagement: *encroachment* and *enclosure* seen in Figure 5.

Development literature offers insight into GEF's intervention decision making. Historically, hard interventions were preferred as a means of directly transferring capital to marginalized groups, yet they have since fallen out of favor in lieu of activities which build self-reliance and temporally and financially sustainable outcomes (Lancaster, 2009). Ongoing maintenance, operation, and repair of hard interventions is expensive and marginalized groups often do not have the resources and/or capacity to keep up with requirements, eventually turning the desired hard intervention into a burden. GEF is explicit in some project documents about pursuing interventions which avoid such ongoing dependence on external aid: "Necessary key equipment may also be provided, but with adequate consideration…to ensure that the project does not create a culture of dependency on external support" (GEF, 2020. Proj. ID 10703). Despite this history, it is still unclear whether soft interventions alone can adequately lead to long-term outcomes for marginalized groups lacking basic services (Monnier et al, 2020), especially in small-scale fishery communities without the capacity to endure additional short-term damages to their food and income securities (Allison et al, 2009).

ii. Private Sector Engagement

Because of the limited financial and governmental capacity at the national level noted above, as well as many barriers – soft and hard – faced by LMICs in their efforts to combat climate change and biodiversity loss, GEF seeks to leverage co-financing from various sources to supplement grant funds and national co-financing. Throughout the document, GEF states its desire to "crowd-in private sector funding" and develop "investable conservation projects" with the explicit goal to "accelerate the use of non-grant instruments for blended finance" in the GEF-7 period (GEF PD p. 7, p. 133). GEF defines NGIs as "a mechanism to provide financing for

activities that have a potential to generate financial reflows for the financer" (GEF, 2014). GEF began piloting NGI funded projects in GEF-6 (2014-2018) which is also the period in which the data show a steep rise in the *enclosure* and *encroachment* inequitable attributes (Figure 5).

Though private sector involvement does not necessitate negative outcomes for people or ecosystems, the replacement of public services or spaces by private ones – as proposed by GEF above – has the potential for inequitable consequences for already marginalized peoples and places when precautions are not taken. In the case of GEF, that potential has been realized: a 2020 audit by the UNDP found systemic issues with GEF project design and execution, including "insufficient documentation for the selection of private sector companies" and "ineffective management and monitoring" (UNDP, 2020, p.iii). Given GEF's stated intent to significantly increase private sector involvement in GEF projects, this finding by UNDP is troubling, especially in the context of the project data indicating noteworthy increases in inequitable attributes over time (Figure 4).

GEF's second pillar of private sector engagement involves the private sector as "an agent for market transformation" (GEF PD, p.132). GEF's plan to accomplish this transformation focuses on supply chain investments, in particular the creation of trust funds which finance ventures which source from sustainable fisheries. A summary of a sample GEF-led fisheries market transformation is as follows:

> GEF helps create or expand an enterprise which purchases its goods exclusively from fisheries which are deemed "sustainable" and their subsidization enables them to pay a higher price than what fishers would otherwise receive in the status quo "unsustainable" market. This creates an incentive which induces behavior change in fisherfolk, resulting in a shift from unsustainable fishing to a more lucrative and sustainable fishing

> method. The fishers receive more money per unit of fishing effort, reducing overall pressure on the fishery and enabling fish stock and ecosystem recovery. With respect to the focus areas of the project, biodiversity is protected and climate adaptation is enhanced.

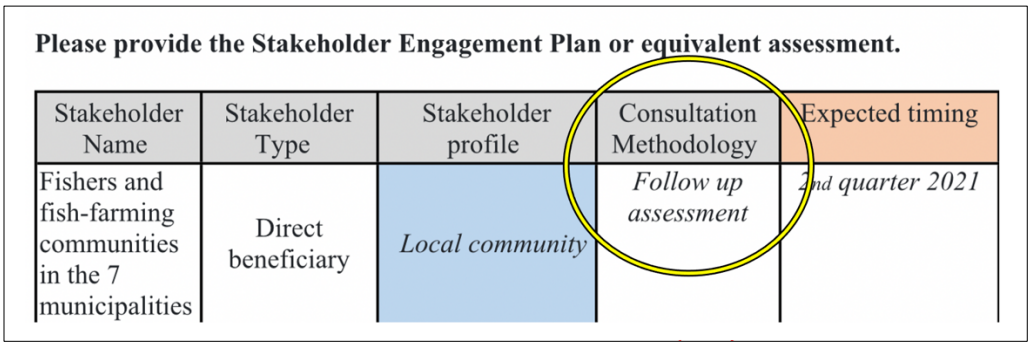
The literature on successful climate adaptation and improved fisheries management disagrees with this theory of change. First, there is the underlying assumption that receiving more money per unit of fishing effort will result in fishers fishing *less*. The fishers in question are often food and income insecure, and many rely on fishing as the primary means of subsistence and employment. It is unclear whether receiving more money for their catch through activities such as trade improvements will reduce fishers' effort (Bene et al, 2010), as SSF fishers generally receive the lowest proportion of value in the fishery value chain and have little bargaining power (Bjorndal et al, 2015). Second, equity concerns abound in the structure of this design. Here, marginalized fishery populations receive no direct aid from GEF, rather all the funds go to a third-party venture or trust fund, which will purportedly indirectly benefit fishers through value chain enhancements. Third, there is little evidence that ecolabeling and/or sustainable certifications, activities frequently sought by GEF and its partners, return benefits to small-scale fishers who bear the significant financial burden of acquiring certification in order to compete (Jacquet & Pauly, 2008). Industrial commercial fisheries have the capacity to adapt to certification requirements, whereas SSF participants generally lack the capacity to adopt new gear, access new areas, or withstand a reduction in fishing effort which may be required to attain the "sustainable" label (Wakamatsu & Wakamatsu, 2017). This structure is ultimately likely to return benefits to those who area already able to adapt to climate change and biodiversity pressures. In summary, projects falling under this "market transformation" design umbrella are likely to exacerbate inequalities for marginal populations and are unlikely to achieve lasting

impacts in fisher behavior and are subsequently unlikely to meet biodiversity and climate adaptation goals.

iii. Geographic Scale

GEF's preferences for spatial scale of projects is pertinent to this discussion. As seen in the results section, nearly half of the fisheries project were multinational. GEF is explicit that the problems it wishes to tackle, namely biodiversity loss and climate change, occur at these regional (multinational) and global scales, and solutions to these problems must occur at similar scales. GEF pursues projects which can realize "greater impact per unit of investment" and concludes that the "only feasible option to address environmental problems at these scales" is multi-stakeholder and multinational collaboration (GEF PD, p.5). In order to achieve these goals in fisheries projects, however, GEF often seeks behavior change at highly local, community levels. GEF projects often recognize weaknesses in institutions such as national ministries and fishery representation bodies, yet they continue to rely on those institutions to adequately engage with the local fishers who are expected to change behaviors through implementation of fishery projects. GEF actively prioritizes project interventions to improve these institutions (capacity building and PPP), but in the project design and implementation phases, GEF often relies on these same institutions to engage local fishers and other stakeholders rather than engage those entities themselves. An example fisherfolk engagement plan can be seen in Figure 8 below, showing engagement is limited to follow-up assessments, which is an inadequate level of engagement for the direct beneficiary whose behavior is expected to change. *Exclusion*, the limitation of access to project decision-making processes, was an inequitable attribute present in 24 of 35 projects (69%). In GEF fisheries work, *exclusion* occurred in 72% of single-nation

projects compared to 65% of multinational projects, indicating that the restriction of access to project decision making is a function of the systemic process of engaging with local stakeholders, rather than geographic scale.



Please provide the Stakeholder Engagement Plan or equivalent assessment.

Stakeholder Name	Stakeholder Type	Stakeholder profile	Consultation Methodology	Expected timing
Fishers and fish-farming communities in the 7 municipalities	Direct beneficiary	*Local community*	*Follow up assessment*	*2nd quarter 2021*

Figure 7. Sample stakeholder engagement plan from an approved GEF project information form. This serves an example of the types of detail provided by GEF with respect to their intent for engaging with project beneficiaries. Though there is some engagement planned, it is retroactive, with no plan for iterative or continuous engagement, increasing the likelihood of the exclusion inequitable attribute effecting the project and stakeholders.

c. UNDP Audit

In December 2020, the UNDP Office of Audit and Investigations released the results of a performance audit of UNDP's projects in partnership with GEF and of GEF management as a whole. The troubling report culminated in headlines of fraud in the Financial Times (White & Hook, 2020). Beyond the headlines which focused on singular events of misuse of funds was a scathing review of systemic failures at GEF. The overall audit rating summarized GEF's performance as "major improvement needed" and stated that "issues identified by the audit could significantly affect the achievement of the objectives" of GEF (UNDP, 2020, p. ii).

The audit was conducted as a sampling of 10 Country Offices and 22 GEF projects. The headline-grabbing conclusion was that fraudulent activities might have occurred concerning in two country offices, to the tune of $250,000. More pertinent to this analysis, however, were the systemic weaknesses in project management highlighted by UNDP: "poor project design and planning…unauthorized deviations from the approved project documents…ineffective

management and monitoring of annual work plans" and most importantly "insufficient documentation for the selection of private sector companies" (UNDP, 2020, p.iii).

In attempting to understand drivers behind this mismanagement, the audit notes that Regional Technical Advisors (RTAs) "were not providing adequate oversight due to the large number of projects under their portfolio: 6 RTAs overseeing more than 30 projects each, 21 RTAs supervised more than 21 projects each, and 1 RTA was supervising 65 projects." 14 of 18 RTAs stated the were "unable to adequately discharge their oversight roles…because of their workload" and the audit stated the structure of the role created conflicts of interest in project evaluations (UNDP, 2020, p.5).

These structural problems led to 35% of all GEF projects (271 out of 765 ongoing) requiring extended project durations, with 48 percent of those extended at least one year, and 11% requiring extensions for more than 18 months (UNDP, 2020, p. 8). Additionally, the audit found "no evidence of regular monitoring in at least 10 projects" out of the 22 sampled (UNDP, 2020, p. 8), Net Financial Misstatements totaling $3.07 million over last three years (UNDP, 2020, p. 10), and "no evidence of the actual transfer of funds" committed to co-financing for any of the 22 projects reviewed (UNDP, 2020, p.16). These startling flaws highlight the importance of identifying and correcting inequitable attributes in GEF fisheries projects as it's clear GEF lacks the ability to do so. With such little oversight over the basic execution of projects and admitted limited ability to engage with stakeholders, it should come as no surprise that *exclusion* was so prevalent in the 35 fisheries projects.

The UNDP audit also highlights failures in the interventions used by GEF in projects. In the audit section focused on "poor project design and planning," the UNDP notes that initially "one project design included 50 training sessions" but the total was increased to 338 training sessions. However, "an independent review concluded that the first 100 trainings were ineffective, so additional trainings were cancelled" (UNDP, 2020, p. 22). Given the reliance on capacity building interventions from the analysis above – recalling that capacity building success is usually measured in the number of meetings and workshops completed – this failure to provide quality training, or oversight over that training, implies that only limited success, if any, can be expected from the most frequently sought-after interventions in GEF's toolbox.

Another troubling finding centers around GEF's failure to adequately vet private sector companies with which they engage on projects. Because of GEF's stated desire to increase private sector involvement in project design, financing, and implementation, this audit finding is particularly salient. The audit does note that a "Risk Assessment Tool for engaging a private company" exists, yet found it was unused or ignored in cases (UNDP, 2020, p. 24). Lastly, the audit found outright falsification of project success in GEF project reports (UNDP, 2020, p. 25) which are produced by the overburdened RTAs also responsible for designing and winning new projects, thus highlighting the effects of their conflicts of interest.

d. GEF Project Reports

The midterm and terminal project reports supplied by GEF offer critical insight into the reality forewarned by the inequitable attributes of projects. Despite the UNDP's finding of misreporting

success in reports, GEF is unlikely to exaggerate negative results. When challenges and failures are reported, it provides strong insight into the effects of inequitable attributes on project success.

i. Inequitable Attributes

GEF reports also provide insight into the effects of inequitable attributes on project success and beneficiary responses. In a project in the Caribbean focused on incentivizing behavior change among trawl fishers, the report admits "in some countries, the "alternative livelihoods" approach has not been well received by fishers who believe it allows governments to reduce or suspend their primary fishery" (GEF, 2021a). Another report states the project "could create conflicts between communities" and yet another concludes "policy uptake slow because of…lack of financial capacity to follow policy advice" (World Bank 2019, GEF 2019). These are prime examples of *exclusion* as it manifests in project results. If the fishers and communities had been engaged prior to and during project development and implementation, it is likely these would not be surprises encountered after funds had been committed and spent. The concerns of fishers could have been addressed in a participatory manner and the project centered around the fears and wishes of the fishers whose behavior is expected to change. These reports also exemplify the problems with GEF's soft/hard intervention decision making. There's an expectation that behavior change can be incentivized through soft interventions (such as capacity building and PPP), yet there has been nothing done to address the fundamental food and income insecurity of the fishers in the short-term. This disparity is often recognized by GEF in the risk management section of project documents yet is never addressed through anything other than the soft interventions already planned.

Separate from limiting project success, inequitable attributes can also lead to direct harm to intended beneficiaries of projects – who are receiving aid because of their impoverished and marginalized status. A report from a coastal zone climate change adaptation project states "the projects can result in economic difficulties for target individuals, particularly in mangrove areas…Finally, delays could result in reputational problems for the implementation and executing agencies. Delays in implementation are already compromising the confidence of beneficiaries" (emphasis added) (Garcia, n.d., for UNEP). This report demonstrates that inequitable attributes can cause harm to marginalized populations as well as reduce project efficacy now and in the future: these communities less likely to be willing to engage with development agencies after this negative experience and reduction in stakeholder confidence admitted and documented by GEF. In some cases, the inequitable attributes need no interpreting and are identified by GEF themselves. A project report from Argentina (ID 5112) states "prioritization of gender goals is still a challenge because of the project staff and stakeholders' lack of expertise and interest" (GEF, 2013), and a global-scale project reported "gender concerns were inadequately addressed…during the design of the project" (World Bank, 2020).

ii. Project Design and Management

The UNDP found systemic problems in the design, implementation, and financial management of GEF projects. This is reiterated and confirmed in GEF's project reports, already hinted at in the reports above. As noted by UNDP, many projects experience delays, and their reports say something similar to this phrase found in a project report from Indonesia, which concludes "progress towards outputs and outcomes has been greatly delayed overall" (GEF, 2021b). This project cited challenges with recruiting "national consultants" and had a planned impact scale of

12385 households but concluded having reached only 750 households. Lastly, the terminal project report cited project design as causing "delays in achieving mutual understanding among relevant project stakeholders regarding project's objectives." It should be noted that this project contained only 1 inequitable attribute (*exclusion*), implying that the presence of even one red flag can have significant consequences for project success.

Furthermore, project reports sometimes contain valuable feedback from project partners. In a GEF project implemented through the World Bank, the World Bank had the following to say about the theory of change behind a proposed value chain improving venture funded by GEF: Incentivizing behavior change by increasing value of the fish stock "seems simplistic and may need more careful consideration." This criticism would also seem to apply to the fundamental framework behind many of GEF's market transformation projects.

e. Systemic Inequitable Attributes

Given the data gathered for this analysis, contextualized by the GEF programming directions, GEF project reports, and the UNDP audit, we can conclude that the inequitable attributes present in GEF fisheries projects are the result of its structural processes rather than unique project variables (location, implementing agency). The majority of inequitable attributes in project documents, and their subsequent negative outcomes uncovered in contextual documents, are predictable based on the guidance laid forth in the programming directions. Because of this, avoidance of inequitable attributes can only occur through systemic changes in GEF directives. For example, safeguards for private sector engagement are already in place, gender considerations are already systematic in reporting, and stakeholder engagement plans are

required for project approval, yet inequities remain and are becoming increasingly prevalent. Equity could also be a systematic consideration in project design and reporting, yet this would require an overhaul of GEF's funding directions.

This conclusion, that inequitable attributes are systemic, is supported by the steady presence of *exclusion* and consistent rise of *enclosure* and *entrenchment* attributes. As seen in the results section, there was no relationship between the geographic scale of the project and the *exclusion* attribute. This means that the drivers which lead to the most commonly found inequitable attribute, *exclusion*, are a result of GEF's project design framework and not a result of the vast geographic scope of some GEF projects which may inhibit meaningful engagement. There were also no significant relationships between project location or implementing agency and inequitable attributes, again indicating trends in inequitable attributes over time can be attributed to adjustments in GEF programming directions.

f. GEF as a Proxy for the UN

GEF's preferences and behaviors are representative of the UN as a whole, and GEF is often explicit about its mandate and the role it plays in GEF decision making. GEF states that the increase in blended finance and NGI's which may have given rise to a corresponding increase in inequitable attributes is a direct result of this arrangement: "the COP has encouraged the GEF to further expand the use of non-grant instruments." Because of this, any recommended adjustments to GEF's directives will have to come through changes at the UN level. Prioritization of equity in GEF projects can only be expected if mandated by the UN. How such an adjustment in policy can be achieved is beyond the scope of this project.

g. Recommendations to GEF

In order to more effectively utilize the in-demand funds at GEF's disposal, I would recommend the following 3 changes to GEF's program design and implementation. These recommendations also amplify those put forth in the UNDP audit.

Engagement overhaul: the status quo structure of engagement and project management at GEF severely handicaps in-country relationship building at any scale finer than the national level. Because of this, intended project implementations are often resisted by community members and progress toward overall project outcomes is reduced. As UNDP highlighted in their audit of GEF projects, regional staff are currently overwhelmed with projects. In-country staff must increase to ensure more effective use of funds and limitation of inequitable outcomes. This will allow for more proactive engagement with project beneficiaries, aiding in project design and buy-in at all stakeholder levels. Increasing engagement quantity and quality would increase administrative project costs but reduce waste through reduced inefficiencies and greater progress toward project outcomes. Engagement expectations could be created on a country-specific basis as a "code of conduct" agreed upon by beneficiary nations.

Follow-up assessments: currently, GEF project monitoring and evaluation ends at project termination date. There is not existing structure for project follow-up, which may provide crucial data about the sustainability and effectiveness of the applied interventions. In addition, it provides an opportunity to receive vital feedback from project beneficiaries, which can help inform future projects. Comprehensively returning to project sites can deliver a wealth of data

which can be systematized, verifying theories of change, increasing project efficiency, and more accurately targeting funds. This change could easily be incorporated into the monitoring and evaluation framework of project design with little additional cost.

Simplify and localize projects: the UNDP audit and GEF project reports often decry the complexity and scope of GEF project designs. By localizing projects, GEF and its partners can more appropriately engage beneficiaries, effecting greater and more lasting change, albeit at smaller geographic scales. Simplifying project design (fewer, more precise objectives informed by inputs from project beneficiaries) will aid in project management, reducing workload for staff and allowing more accurate reporting and evaluation.

5. Conclusion

Returning to the research questions posed in the introduction section, it is clear that significant equity issues are present in GEF fishery projects, and that these inequitable attributes are the result of systemic project decision making.

GEF is a powerful, well-financed multilateral institution with significant support from its mandator, the United Nations. GEF adequately recognizes the importance of fisheries on food and income security for some of the world's most marginalized populations. In addition, GEF identifies the serious threats – soft and hard – to these people and ecosystems in the face of biodiversity loss and global climate change. Despite this, GEF most often employs projects which contain inequitable attributes, projects which rely on limited impact (soft) solutions, and projects heavily engaged with private sector entities. GEF's fisheries projects generally ignore

the opinions and interests of the intended target of behavior change (fishers), leading to limited project success, mistrust by fisherfolk, and inequitable outcomes. Though this exclusion may not be malicious, the administrative structure of GEF's programming and execution is ill-suited to address the unique and variable needs of local, disparate, fisher communities. The inequitable attributes which are present in GEF fisheries projects are not the result of local execution variables or implementing agency preferences, but rather the systemic design and structure of GEF's programming. Prioritization of equity in GEF projects must occur to achieve better outcomes: for GEF in the efficient use of its funds and accomplishment of mandated biodiversity and climate adaptation goals, as well as for fishers and beneficiary nations. Currently, GEF may not be the most appropriate entity for affecting behavior change in fisheries in LMICs. The geographic scale at which GEF considers projects (national and multi-national) and the methods it employs (soft interventions, increasing private sector engagement) are likely to result in inequitable outcomes for fishers and limited gains in biodiversity protection and climate change adaptation.

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