

HIGHLIGHT

People in the fisheries sector have limited access to social protection, despite experiencing increasing risks linked to climate change and overfishing. While social protection and labor programs can enable and incentivize households to engage in more sustainable practices and more resilient livelihoods, they rarely respond to the specific needs of fishers and fish workers. This policy note outlines how social protection and labor policies and programs might be extended to better assist fisheries actors, and how these policies and programs could be better leveraged to support acceptance of and compliance with rules and regulations and, ultimately, to better achieve fisheries management objectives. While there are numerous challenges, there are also clear opportunities to adapt social protection and labor instruments to the fisheries sector in order to reduce overall vulnerability—of people, and of the ecosystems that support them—for a more sustainable future.

Connecting Social Protection and Fisheries Management for Sustainability: A Conceptual Framework

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1. Introduction

The fisheries sector¹ is a critical component of the Blue Economy,² providing employment, food, and cultural value for billions of people globally. Fisheries and aquaculture support the livelihoods—directly or indirectly—of around 10 percent of the world’s population (FAO 2020).³ The vast majority (approximately 97 percent) of people employed in capture fisheries and related activities live in lower- and middle-income countries (LMICs) and, of them, more than 90 percent are in the **small-scale fisheries (SSF)** sector⁴ (World Bank 2012a; FAO 2020).⁵ Fish is also an important source of nutrition, providing more than 3.3 billion people with almost 20 percent of their average animal protein intake, and up to 50 percent or more in some LMICs (FAO 2020). SSF have been estimated to produce around half of the global fish catch destined for human consumption (World

Bank 2012a; FAO 2020). While marine and coastal resources tend to overshadow inland resources in national and international policy arenas, inland fisheries—which are mostly small-scale—provide critical nutrition in rural areas and employ even more people (particularly women) globally than marine fisheries do⁶ (World Bank 2012a; Funge-Smith & Bennett 2019).

Despite the importance of the sector, fishers, fish workers, and their communities in LMICs experience increasingly high levels of risk, and rarely have access to effective risk-management mechanisms. Not only are they greatly exposed to climate-related hazards, but they also tend to be vulnerable to a range of other shocks and stresses—particularly in the SSF sector. This vulnerability is a function of high sensitivity to the impacts of shocks and stresses (for example, due to high nutritional or economic dependence

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- 1 The fisheries sector encompasses all actors and activities undertaken throughout the capture fisheries value chain, including fishing and fishing-related activities such as processing, trading, marketing, netmaking, and boat building.
 - 2 While definitions vary, the term “Blue Economy” describes the sustainable use of ocean resources for economic growth, improved livelihoods, and job creation while preserving the health of ocean ecosystems (World Bank 2021a).
 - 3 This estimate includes fishers, pre- and post-harvest fish workers, and their dependents.
 - 4 For the purposes of this note, the fisheries sector is divided into two broad subsectors: **small-scale fisheries (SSF)**, including artisanal and subsistence fisheries, and **large-scale fisheries (LSF)**, including industrial and semi-industrial fisheries. The SSF sector is usually understood to be comprised of relatively small production units (that is, individuals, household units, or microenterprises) with low input and output, and low levels of technology or capital investment (World Bank 2012a; FAO 2015). However, the distinction between SSF and LSF is not always well defined. The SSF sector is extremely diverse, and what is considered a small-scale operation in one country may be considered large-scale in another (Smith & Basurto 2019; Short et al. 2021). Some countries also use other categories based on location of fishing (for example, inshore and offshore).
 - 5 The Illuminating Hidden Harvests initiative has been generating new evidence on the benefits, interactions, and impacts of small-scale fisheries; a forthcoming report will provide an update on estimates last made in 2012 (FAO, Duke University and WorldFish 2021).
 - 6 While it is not uncommon for fishers and fish workers across the sector to engage in multiple livelihood activities, inland fishery activities are typically conducted on a part-time or seasonal basis together with agricultural activities—in part, due to seasonal variations in river levels and floodplains (Funge-Smith and Bennett 2019). The resulting gaps in data on the sector perpetuate its low profile.

on aquatic resources) and low adaptive capacity due to constraints such as limited access to basic services, or inequitable governance.

Social protection and labor (SPL)⁷ programs can help to buffer these risks. However, the current provision is inadequate, with less than half of the global population being effectively covered by at least one social protection (SP) benefit. This coverage gap tends to be associated with informality (ILO 2021a; 2021b). Informal workers usually lack access to the contributory social insurance schemes that are typically provided with formal-sector employment; and they also tend to be ineligible for social assistance (which is usually poverty-targeted), because they own assets or are otherwise considered “not poor enough” to qualify (ILO 2021b). Some informal workers prefer to stay this way in order to avoid tax obligations and other regulations, especially when the costs of these exceed (or are perceived to exceed) the benefits.

Informality—and therefore low SP coverage—is typical in the SSF sector and particularly prevalent in the context of weak governance (Pomeroy et al.

2020; Short et al. 2021; Gozzer-Wuest et al. 2022). While large-scale fishery (LSF) enterprises are typically formal, there is also widespread informal employment within their fisheries and associated value chains, meaning that an unknown number of LSF workers (particularly migrant workers) also lack access to SP (Jones et al. 2019; Vandergeest 2019). In particular, women—who make up nearly half of the total workforce in the fisheries sector—tend to hold the lowest-paid, lowest-status, and least-protected jobs, mostly in post-harvest activities such as processing and trading, as well as gleaning and other forms of harvesting on the shoreline (World Bank 2012a; FAO 2020). This heightens their vulnerability.

In parallel, **the aquatic biodiversity and ecosystems that support the fisheries sector are in decline** due to direct exploitation (and particularly overexploitation) of fish, changes in land- and sea-use, and pollution—which is further undermining climate resilience. The main driver of change in marine and coastal ecosystems is fishing, and **marine fish stocks are declining** around the world (IPBES 2019).⁸ Around a third of

7 Social protection and labor policies, systems, and programs “help individuals and societies manage risk and volatility and protect them from poverty and destitution—through instruments that improve resilience, equity, and opportunity” (World Bank 2012b). Social protection encompasses social assistance (such as cash transfers and food assistance) and social insurance (such as pensions and unemployment insurance); active labor market policies and programs aim to help unemployed or vulnerable individuals find employment through, for example, training, wage subsidies, or job intermediation.

8 Inland fisheries in rivers, lakes, and floodplains—which have even more severe data limitations than do marine fisheries—also suffer the effects of overexploitation and destructive fishing practices. These in turn interact with the complex set of additional threats arising from human activities on land (IPBES 2019).

marine fish stocks with assessments⁹ are fished at levels that exceed long-term maximum biological production (that is, they are “overfished”), and another 60 percent are fished at the maximum “maximally sustainably fished” (FAO 2020). But at least 75 percent of global fish catch by volume comes from stocks without reliable scientific assessments, which are thus even more likely to be overexploited (Costello et al. 2012; Hilborn et al. 2020).

Effective management based on stock assessment can rebuild depleted fisheries;

this has been demonstrated in some data-rich countries. However, government spending tends to prioritize short-term production over long-term sustainability. Nearly two thirds of global marine fisheries subsidies¹⁰ (in particular, fuel subsidies) are allocated to promote overexploitation by keeping unprofitable fleets at sea (Sumaila et al. 2019). Furthermore, most LMICs have limited capacity to implement these approaches (Anderson et al. 2018; Hilborn et al. 2020). The SSF sector’s high

degree of informality poses a particular challenge for management; since small-scale enterprises are rarely registered as formal businesses, SSF catch is chronically underreported¹¹ (World Bank 2012a; Pomeroy et al. 2020; Short et al. 2021). Additionally, management measures that restrict the numbers of fishers or their behavior can have usually short-term yet substantial negative economic and/or social impacts on fishers and fish workers (particularly the poorest and most vulnerable); this can undermine acceptance of and compliance with rules and regulations (Wallace et al. 2015; Oyanedel, Gelcich & Milner-Gulland 2020).

SPL programs can compensate for such costs and incentivize behavior change for sustainable outcomes.

Various SPL instruments have demonstrated the potential to enable and incentivize vulnerable households and communities to engage in more sustainable use of resources and more resilient livelihoods, and better manage risks, including in a fisheries context (FAO 2017; Béné, Devereux, and Edwards 2015; Porras, Steele

9 The FAO uses a wide spectrum of data and methods to extend its assessment to the fish stocks that account for the majority (80 percent) of the global catch. While scientific stock assessments combine structural population models with data to estimate a species’ population size and trajectories under various harvest scenarios, less formal analysis and local knowledge can also indicate biological status.

10 Fisheries subsidies are direct or indirect financial transfers from public entities to the fisheries sector that enable fishing (and related) enterprises to make a greater profit than they would otherwise. Subsidies for fisheries management, research and development, and marine protected areas support sustainability, while other subsidy types—fuel subsidies, tax exemptions, investments in marketing infrastructure, vessel modernization, and port development, which constitute the majority of global spending on fisheries—undermine sustainability when access is not controlled. There are also some subsidy types (fisher assistance, vessel buyback, and community development) that have the potential for either positive or negative impacts on fish stocks (Schuhbauer et al. 2020). This is the category that social protection and labor would fall into.

11 For example, global inland fish catches, which are mostly small-scale, are underreported by an estimated 70 percent (World Bank 2012a), and the total catch of Pacific island small-scale fisheries in 2010 was estimated to be 1.7 times that reported (Zeller et al. 2014).

and Mohammed 2016; Barr, Bruner and Edwards 2019; Costella et al. 2021). **As momentum builds to make SP more universal¹² and adaptive,¹³ there is an opportunity to design SPL policies and programs in such a way that they reduce vulnerability and poverty, build climate resilience, and support a shift in focus toward long-term sustainability of fisheries.** This would help countries to develop more sustainable and equitable blue economies that represent the interests and rights of all fishers and fish workers.

However, fisheries management and SPL are typically led by different ministries with very different mandates. Ministries of fisheries and agriculture tend to focus on production and related environmental issues, and have only a limited understanding of the potential benefits of SPL, while ministries of social affairs and labor tend to prioritize the poor over the vulnerable (including fishers and fish workers) and do not consider environmental sustainability as part of their main agenda. Traditionally, these ministries also have limited interaction with each other, restricting the potential for information sharing and policy coherence.

In this context, **this note aims to guide policymakers and practitioners working within or with governments on SPL and/or fisheries policies and programs toward a more meaningful and more integrated approach to SPL and fisheries management.** First it describes the social-ecological risks faced by the fisheries sector; summarizes the current provision of SPL; and outlines the main potential pathways to better align SPL with fisheries management. It then provides key recommendations for expanding and leveraging SPL to enable and incentivize sustainability in the fisheries sector.

2. Risks in the Fisheries Sector

Human activities are driving changes in natural systems that are reshaping and increasing risks in the fisheries sector.

Following the approach of the Intergovernmental Panel on Climate Change (IPCC), risk can be viewed as the interaction of hazard, exposure, and vulnerability (Oppenheimer et al 2014). These core components of risk are underpinned by various interlinked drivers of risk—some of which directly increase hazards, and some of which influence risk via their effects on vulnerability and exposure.

12 The Universal Social Protection 2030 initiative is a global partnership to promote universal social protection, by supporting countries to “implement nationally appropriate social protection systems and measures for all [...] and by 2030 achieve substantial coverage of the poor and the vulnerable,” in line with the Sustainable Development Goals (SDG 1.3) (ILO 2017).

13 Some countries have embarked on efforts to develop adaptive social protection systems that build the resilience of poor and vulnerable households by investing in their capacity to prepare for, cope with, and adapt to shocks, ensuring that they do not fall (deeper) into poverty (Bowen et al. 2020).

Fisheries, which are **social-ecological systems**,¹⁴ face a range of different drivers of risk arising from both natural and human sources.¹⁵ **Ecological risk** measures the potential impact of a change on ecosystems and species, determined by their vulnerability and exposure to that hazard. In turn, this risk or its impact can present an ecological hazard to socioeconomic dimensions of the fisheries sector. **Social-ecological risk** measures the overall potential impact of such a change on the socioeconomic (human) system, determined by the vulnerability and exposure of people and their fisheries activities to those impacts (see Box 1). **This note focuses on social-ecological risk** as opposed to ecological risk, because this risk can be directly addressed through SPL. It also concentrates on the types of social-ecological risk that have the greatest potential to be addressed through an integrated approach to SPL and fisheries management.

Figure 1 conceptualizes the social-ecological risk framework for the fisheries sector and illustrates how SPL and fisheries policies and programs can play a greater role in reducing social-ecological risks and actual impacts.

ECOLOGICAL DRIVERS OF RISK

Changes in the natural system (which are heavily influenced by the socioeconomic system) drive a range of hazards in the fisheries sector (see Fig. 1, Arrow ①). Anthropogenic **climate change** is altering and exacerbating natural climate variability which is increasing the frequency, intensity, and duration of hazards. These include acute shocks to aquatic ecosystems, such as extreme weather events, as well as more gradual trends (stresses) such as habitat degradation, ocean acidification, biodiversity loss, and—critically—declines in and destabilization of fish populations. At the same time, socioeconomic processes are driving **unsustainable practices such as overexploitation, pollution, and changes in land- and sea-use** (Fig. 1, Arrow ②). These practices interact with and exacerbate the ecological impacts of climate change to produce more uncertain and more severe hazards. These ecological hazards have potential socioeconomic impacts on the fisheries sector, such as damage to fishing gear, loss of income, and injury or death at sea, but the ultimate size of the impacts depends on the vulnerability of fishers, fish workers, and their communities, as well as their degree of exposure to hazards.

14 Social-ecological systems are complex interlinked human (socioeconomic) and natural systems (ecosystems).

15 Examples include technological hazards such as oil spills, natural and climate-related hazards such as earthquakes and storms, and ecological hazards such as overexploitation and ecosystem degradation; and social and political stresses such as marginalization, conflict, and exploitative working conditions.

BOX 1. DEFINITIONS OF SOCIAL-ECOLOGICAL RISK AND ITS CORE COMPONENTS, ADAPTED FOR THE FISHERIES SECTOR



RISK

The potential socioeconomic impact of a climate-related or other ecological hazard on the fisheries sector, determined by its exposure and vulnerability. Whereas risk describes potential impact, impact refers to the observed effects when a risk is realized.



EXPOSURE

The presence of people and exploited aquatic resources that could be adversely affected.



HAZARD

The impact of a change (climate-related or otherwise) on aquatic ecosystems.



VULNERABILITY

A function of sensitivity minus adaptive capacity.

- **SENSITIVITY:** The intrinsic degree to which people and economies depend on fisheries.
- **ADAPTIVE CAPACITY:** The ability of people and socioeconomic systems to anticipate, respond to, and adjust to the impacts of a change (hazard), and to minimize, cope with, and recover from the consequences.

Source: Oppenheimer et al. (2014) and World Bank (2019a)

SOCIOECONOMIC DRIVERS OF RISK

Vulnerability and exposure are largely determined by socioeconomic processes, including policies, governance, norms, and practices, many of which interact with ecological change (Fig. 1, Arrow ③). Fisheries and their communities are particularly exposed to

climate-related hazards due to their living and working at sea, on coastlines and in floodplains. SSF communities also tend to experience a high level of structural constraints and inequities that heighten their sensitivity and restrict their adaptive capacity, thus increasing their vulnerability and, in some cases, their exposure (Fig. 1, Arrow ④) to a variety of ecological hazards and other shocks and

stresses (for example, market disruption, illness, and unemployment). This often leads to a vicious cycle of poverty and unsustainable fishing in order to meet daily needs, enabled by weak governance, a short-term focus on economic gain, and ineffective management (Fig. 1, Arrow ②). The latter is usually related to a lack of mechanisms to mitigate negative impacts or incentivize behavior change. Subsequent declines in biodiversity and productivity are likely to exacerbate the impacts of climate change on aquatic ecosystems, and ultimately on the people, who often have little choice but to ignore regulations and intensify their fishing effort in response to the situation.

POLICY SOLUTIONS

Policies and programs that are designed to enhance the sustainability of fisheries (including fisheries management,¹⁶ fisheries-subsidy reform, and habitat conservation and restoration) can reduce the social-ecological risk, particularly if combined with

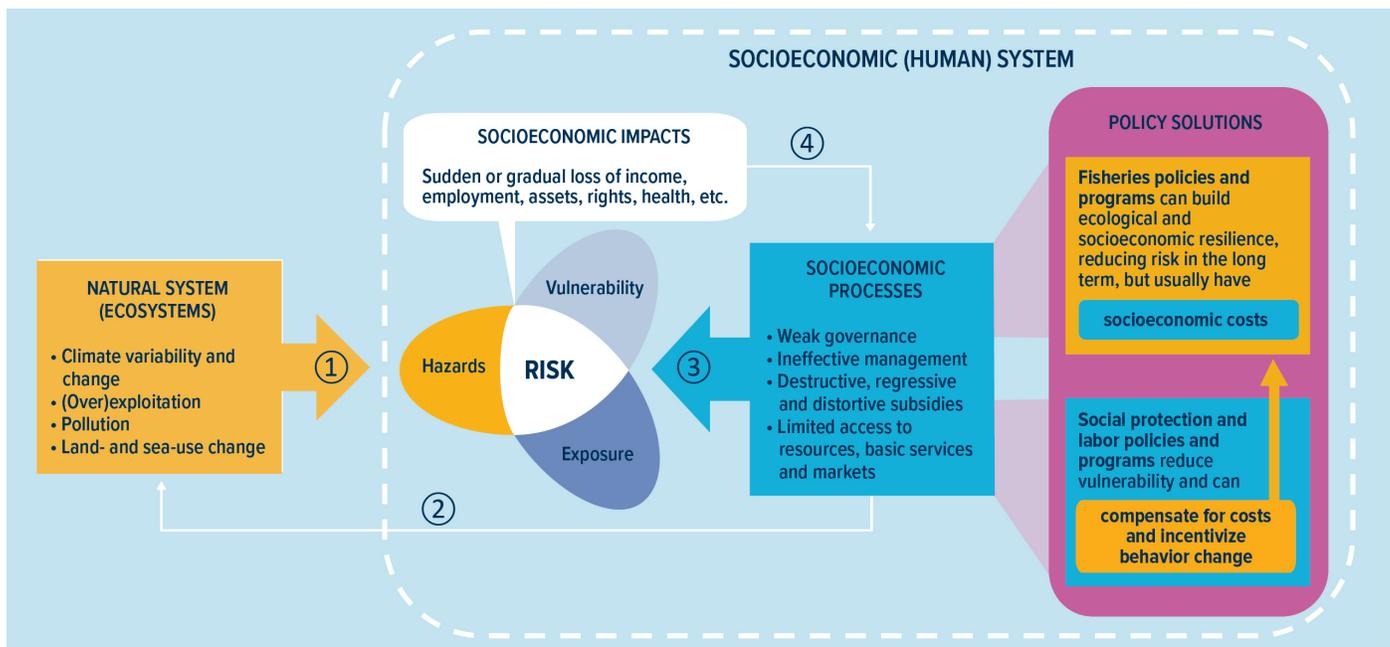
mechanisms to mitigate negative impacts and incentivize behavioral change. Despite the long-term environmental, social, and economic benefits, these measures carry usually short- to medium-term social and/or economic costs for fishers and fish workers. For example, the loss of income or employment that can result from fishing regulations can be insurmountable for the most vulnerable, and in any case unacceptable for any group, and can often undermine the impact of the regulations.

SPL programs can mitigate or compensate for the costs imposed by these measures on affected actors, thereby strengthening their potential to achieve their objectives, and ultimately reduce social-ecological risk.

At the same time, SPL can directly help to reduce the vulnerability of people in the fisheries sector by investing in their capacity to better prepare for, cope with, and adapt to shocks, ensuring that they will not fall (deeper) into poverty.

16 Fisheries management measures can be divided into three broad sets of approaches: 1) **limiting catch** through regulating who can fish and how much they can catch (e.g., catch quotas); 2) **limiting effort** through harvest guidelines, and restricting technical input controls (e.g., size of vessels, type and amount of fishing gear, or seasonal closures); and 3) **limiting spatial access** through regulated-take or closed no-take areas (Anderson et al. 2018).

FIGURE 1. SOCIAL-ECOLOGICAL RISK AND POLICY SOLUTIONS IN THE FISHERIES SECTOR



Changes in the natural system ① and in the socioeconomic system ③ are central drivers of the three core components that constitute social-ecological risk in the fisheries sector—vulnerability, exposure, and hazards. Unsustainable practices, underpinned by socioeconomic processes—including governance, policies, and norms—drive changes in the natural system ②. When social-ecological risks are realized, the socioeconomic impacts feed back onto socioeconomic processes ④. This increases vulnerability and, potentially, exposure ③ and perpetuates unsustainable practices ②, which ultimately exacerbates the ecological hazards (extreme weather events and gradual fish stock decline/destabilization) ①. Regulations (and other measures taken to enhance the sustainability of fisheries) can reduce these risks in the longer term, but they usually have short- to medium-term socioeconomic costs. Social protection and labor policies and programs directly reduce vulnerability, and can also compensate for these costs, enabling and incentivizing sustainability.

Source: Adapted from Oppenheimer et al (2014); World Bank (2019a); and Costella et al (2021).

3. Social Protection and Labor Programs in the Fisheries Sector

Provision of SPL to the fisheries sector is limited, particularly in LMICs. While mainstream SPL policies and programs (as summarized in Fig. 2) are sometimes open to fishers and fish workers as

part of a national or other broad approach, they rarely have the specific features required for these groups to participate in or benefit from them, particularly in the SSF sector (FAO 2019a; FAO 2019b). Despite their vulnerability, SSF workers and informal workers in LSF are rarely eligible for noncontributory social assistance programs

because they tend not to be classified as “poor enough” by national standards¹⁷ (ILO 2021b). Yet they also tend to not have access to contributory social insurance because this is traditionally based on formal employment.

Even when fishery actors are eligible for some form of SPL, coverage gaps usually remain, particularly for women and informal workers involved in post-harvest activities. Program registration and eligibility are often linked to, or conditional upon, registration of fishing assets (for example, vessel registration), or payment of a fisheries tax or license fee,¹⁸ which can exclude some workers.¹⁹ The seasonality and irregularity of income flow from fishing and related activities can also make it difficult to meet regular social insurance contributions. Likewise, physical locations may restrict contributions to and the collection of benefits from any scheme; many SSF actors live and

work in remote areas with poor infrastructure, and fishers (particularly crew informally employed in LSF) can spend long periods at sea in distant waters and be left unprotected when they disembark.

More fundamentally, socioeconomic and demographic data on SSF and informal workers in LSF are scarce and patchy (Teh et al. 2020).²⁰ This makes it challenging to design any type of appropriate support, including SPL. Instead, these actors typically rely on informal mechanisms²¹ such as remittances, cooperative labor-sharing, mutual assistance, and rotating savings and credit associations (see FAO 2017; FAO 2019a for examples).

Nevertheless, some countries have made progress in deliberately extending mainstream SPL policies and programs to the SSF sector, which in some cases have been coordinated and aligned with

17 Fishers and fish workers are often below the poverty line, but they are not always the poorest in society in economic terms; for example, in all regions except North America, marine fishing delivers higher returns, on average, than agricultural work (Teh et al. 2020). This income (although it can be variable and unpredictable), as well as assets such as fishing vessels, can prevent them from accessing social assistance. Similarly, households involved in the fisheries sector are unlikely to be included in social registries, which tend to focus on the most commonly used categories of vulnerability, such as widows, the elderly, children in female-headed households, people with disabilities, and so on.

18 These processes, in turn, usually require registration in foundational ID systems such as civil registers, and national ID and population registers, which are created to provide identification to the general population for a wide variety of transactions.

19 Informal activities persist in the fisheries sector for a variety of reasons, including lack of awareness of how to formalize; lack of understanding of the benefits, or uncertainty over the implications of formalizing; avoidance of taxation, fishing regulations, or other costs associated with formalization; and lack of trust in government.

20 Socioeconomic and demographic data (e.g., livelihood, income, expenditure) are collected through various surveys (official labor force surveys, household income and expenditure surveys, population and housing censuses, etc.) and are used to inform public policies. However, these surveys rarely have an adequate or accurate representation of fisheries actors. They often aggregate fisheries with agriculture and other rural livelihoods, and rarely accurately reflect the multiple livelihood strategies that many poor rural households employ.

21 Formal social protection and labor programs are usually implemented by government (either alone or in conjunction with other parties such as NGOs), or sometimes by the private sector with legal backing; whereas informal social protection involves arrangements and actions taken by an individual or group to minimize risks or enable coping during difficult times, and is not guided by formal legal regulations (Stavropoulou, Holmes, and Jones 2017).

fisheries policies and programs to maximize synergies. There are also some ad hoc examples of SPL policies and programs that have been deliberately adapted or conceived for specific fisheries, subsectors, or communities, often as part of fisheries management, conservation, or development interventions that combine SPL-type instruments with other objectives. Examples include social assistance for compliance with fisheries management measures—for example, compensation for closed fishing seasons in Bangladesh (see Appendix, Example 2); social-insurance schemes with flexible and/or reduced contribution requirements (FAO 2017); parametric fisheries insurance for bad weather events, like the Caribbean’s COAST product (World Bank 2019b); livelihood diversification and re-skilling support for exiting the fisheries sector²² (Avila-Forcada et al. 2019); and Payments for Ecosystem Services (PES), which are not a conventional SP instrument, but natural resource management mechanisms that use conditional transfers (Bladon et al. 2014).²³

Based on stocktaking activities, we have identified three main approaches that can be taken to deliberately align SPL with fisheries management objectives. Each facilitates and incentivizes a specific type of “action” that enhances environmental sustainability, while reducing vulnerability and, thus, improving livelihoods (Fig. 2).

Action 1, the first step, is the **registration of actors** in some form of information system(s) that can provide essential data for fisheries management and a basis for SPL provision. Fisheries management requires information on the actors (individual fishers and fish workers, businesses, cooperatives, and collectives), as well as their assets (vessels, gear, etc.) and their activities (production, species composition, sale prices, etc.) This information is typically collected by ministries of fisheries or environment through, for example, vessel registries, crew lists, trade and processor registries, and organizations such as cooperatives and associations. To benefit from SPL programs, fishers and fish workers also need to be registered in the databases that are typically managed by the ministries of social affairs or labor (for example, social registries for social assistance and/or social insurance databases). While informal workers are often not represented in these information systems, the right institutional structures and incentives can encourage them to register their assets and activities, which can in turn link them to SPL programs, leading to a mutually reinforcing cycle of benefits for the sustainability of fisheries and for fisheries actors, and potentially encouraging formalization (see Appendix for an example of extending SP to small-scale fishers in Morocco).

22 See the Appendix for a description of Peru’s compensation fund for fisheries management.

23 While PES schemes do not typically target poor and vulnerable groups, they can in some circumstances benefit them.

This registration also provides information that can be used to design, adapt, and implement programs that enable and incentivize fishers and fish workers to change their behavior and/or partially or completely leave the sector (**Actions 2 and 3**, respectively). **Both social assistance and social insurance have been used to enable and incentivize behavior change** within a specific fishery, area, or fishery-related activity (Action 2), by compensating for short- to medium-term socioeconomic costs.²⁴ This can help to legitimize and enhance the impact of fisheries management or other measures taken to enhance sustainability. The behavior change usually involves compliance with new fishing regulations, but it can also be a voluntary change (for example, switching gear types, or engaging in a parallel habitat conservation or restoration activity, such as mangrove reforestation).

Longer term strategies can also be designed to permanently reduce the total numbers of fishers and fish workers in a specific fishery, area, or subsector (Action 3). In particular, **active labor market programs**, as well as broader livelihood/productive economic-inclusion programs that combine training and re-skilling support with conditional transfers and financial services,²⁵ **can support a fishery exit** by reallocating labor to other parts of the fisheries sector²⁶ and/or other sectors, or by providing additional income activities (typically aquaculture, tourism, or agriculture²⁷) that divert pressure from overexploited resources.²⁸ Pensions can also provide the financial means to exit the fisheries sector through early retirement programs.

24 In theory, this type of SP should only be required for as long as it takes to achieve management objectives, but in reality some continuation of support (e.g., labor market programs) may be required in order to discourage future overexploitation.

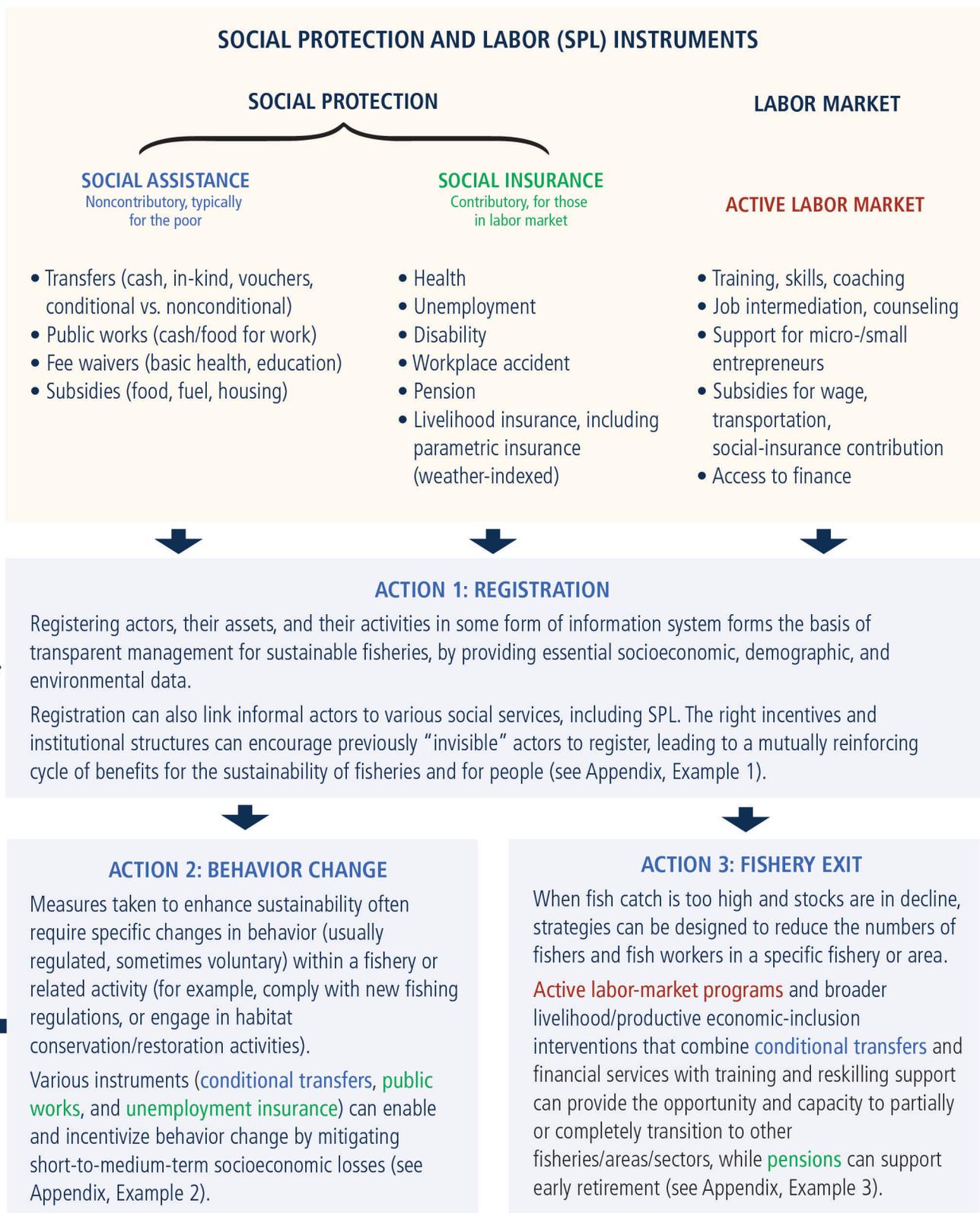
25 Financial services include savings, credit, insurance, and investment services. While these are not SPL instruments, they are important complementary tools, particularly to ensure the long-term success of labor programs.

26 Strategies that aim to reallocate labor from one part of the fisheries sector to another must avoid redistributing fishing effort to other areas that may not be able to support it.

27 For maximum uptake and lasting change, opportunities should ideally be aligned with workers' existing skills, needs, and desires, and should contribute to longer-term social, ecological, and economic resilience. Target sectors must also have the potential to absorb additional labor.

28 Equipping workers with an alternative means of producing food or income does not always reduce the need or desire to exploit fisheries resources; therefore, these programs tend to be most effective in combination with fishery access controls.

FIGURE 2. **POTENTIAL PATHWAYS FOR SPL INSTRUMENTS TO FACILITATE AND INCENTIVIZE SUSTAINABILITY**



Source: Authors' compilation

4. Recommendations and Opportunities

The following recommendations highlight key opportunities for policymakers and practitioners who are looking to translate the potential pathways described in Figure 2 from concept to reality—expanding and leveraging SPL to reduce social-ecological risk in fisheries by enabling and incentivizing sustainability, while improving livelihoods and reducing the vulnerability of people. The recommendations are divided into two categories: (i) institutional and policy factors that create an enabling environment for aligning SPL with fisheries management; and (ii) program-level considerations related to key design and delivery features in the context of the fisheries sector.

4.1 Governance and Policy

The vision and process of extending SPL coverage to the fisheries sector, and better aligning that SPL with fisheries management requires: (i) improvements in institutional coordination; (ii) more effective and equitable fisheries management and governance; and (iii) adequate and sustainable financing.

4.1.1 Institutional Arrangements

Governments can increase fisheries and SPL policy coherence and impact by:

- **Enhancing intra- and interministerial coordination**, particularly between the ministries that are responsible for fisheries management and social affairs, and related agencies, at the national and subnational levels. This may involve removing restrictions or barriers to cross-sector collaboration, and incentivizing interministerial synergies, for example via common monitoring and evaluation frameworks, or through performance-based budgets.
- Enhancing coordination and cooperation with and between **NGOs, private companies (for example, insurance companies), fisheries organizations (cooperatives, collectives, etc.), and community-based organizations**. These institutions can be particularly valuable where government capacity and resources are limited, although many of them will require some support in order to strengthen their own capacity.²⁹ For example, they can share data and use their influence to encourage registration of fishers and fish workers. (See Appendix for the role they have played in Morocco).

²⁹ Where fisheries or community-based organizations already provide an informal SPL function in SSF, they can offer a starting point or complementary mechanism for governments that are trying to expand formal SPL. It is critical that formal policies and programs do not crowd these out or damage important social networks (Stavropoulou, Holmes, and Jones 2017).

4.1.2 Fisheries Management: Assessment, Regulation, Monitoring, and Enforcement

Fisheries management can complement SPL (and vice versa) when these practices and principles are followed:

- Collect and analyze data on the environmental, economic, social, and demographic aspects of fisheries**, including basic information on fishers and fish workers (gender-disaggregated), and fishing and marketing patterns. This requires the registration of these actors (including informal workers, businesses, and cooperatives), as well as their assets and activities. This should form the basis of a broader fisheries information system holding data on catch, effort, market prices, etc. It can also draw on social information systems (for example, social registries) for socioeconomic and demographic data. **Traditional knowledge** is a valuable source of information, particularly where financial resources and scientific data are limited.
- Use this information to develop evidence-based and enforceable regulations** supported by mechanisms to enable and incentivize behavior change, leveraging SPL where appropriate. Monitoring and enforcement of compliance with regulations is particularly important when conditions are attached to SPL (Bladon et al. 2014).
- For social equity, fisheries management (and related SPL programming) should be transparent and participatory**; should acknowledge and respect key stakeholders and their rights (including traditional knowledge systems and management practices); and should fairly distribute costs and benefits (FAO 2015). Community-based or co-management institutions can facilitate this.
- Where government capacity for monitoring and enforcement is limited** (as in many LMICs), **strong community-based and fisheries organizations** (including informal ones) **and co-management institutions can play a critical role in filling this gap** (Nguyen, Momtaz, and Pham 2018)³⁰. SPL has in some instances been designed to directly support these activities (Méndez-Medina et al. 2020).

³⁰ Management of SSF has generally been most effective when governance structures enable the participation of resource users in management, as seen in co-management regimes and fishery cooperatives—particularly when combined with no-take areas and group fishing rights, or territorial user rights for fisheries (TURFs), which can create incentives for sustainable use and conservation instead of overexploitation (Gelcich et al. 2019).

4.1.3 Adequate and Sustainable Financing

Although financing is one of the main challenges in expanding SPL programs to the fisheries sector and improving fisheries management in LMICs, adapting existing infrastructures can minimize costs, and joint programming can optimize the use of scarce resources. There are also opportunities for governments to mobilize domestic resources for this purpose through fiscal reform (Porrás 2019). Options include:

- **Removing socially regressive, distortive, and environmentally destructive fisheries subsidies.** Instead of subsidizing mostly large-scale fleets that overexploit resources, reallocate this fiscal space toward measures that have positive socioeconomic and ecological impacts, including better fisheries management integrated with effective SPL. To put this potential into context, nearly two thirds of global marine fisheries subsidies promote overfishing, with developing countries³¹ alone spending \$16 billion on these types of subsidies in 2018 (Sumaila et al. 2019). Furthermore, more than 80 percent of fisheries subsidies are currently allocated to LSF), despite the much larger numbers of people employed in SSF (Schuhbauer et al. 2020).

- **Reforming and strengthening the collection of taxes and fees from the fisheries sector.** This will usually require i) **upgrading existing taxes and fees** to generate new forms of revenue (for example, improving the way licenses are priced and allocated so that they better target actors who remain in the value chain and capture the most profit, such as LSF businesses); and ii) **improving the efficiency of revenue collection** by properly enforcing (and incentivizing compliance with) regulations to eliminate illicit activities such as tax evasion. (See Bladon et al. 2020, and a description of Peru's Compensation Fund for Fisheries Management in the Appendix).

Debt instruments linked to climate and nature outcomes also offer opportunities to mobilize funds for investment in SPL and fisheries management (Steele & Patel 2020).

Furthermore, there are **innovative financing mechanisms** that can attract private capital and potentially offer a longer-term source of finance than can be guaranteed through national budget allocations. For example:

- **Payments for Ecosystem Services (PES)** is a mechanism that can channel both public and private financing to fishing communities by connecting them to the beneficiaries

³¹ As classified by the United Nations.

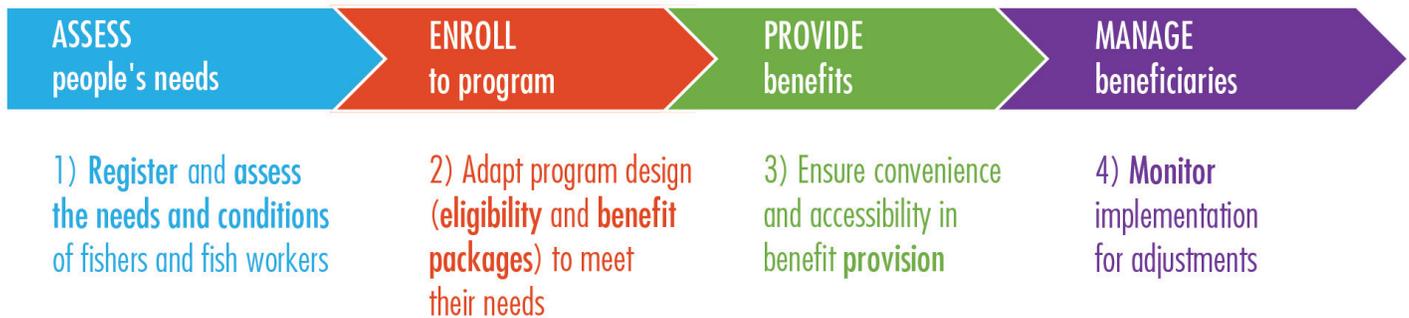
of effective fisheries management and biodiversity conservation (Bladon et al. 2014).

- **Blue carbon credits** can be generated by the actions of fishing communities and sold to organizations or individuals seeking to offset emissions (Wylie et al. 2016).
- **Conservation Trust Funds** can be a long-term source of diverse financing for effective fisheries management and related SPL programs, reducing financial burdens on governments (Bladon, Mohammed, and Milner-Gulland 2014).³²

4.2 Program-Level Considerations for Social Protection and Labor in the Fisheries Sector

To extend SPL to the fisheries sector and optimize synergies with fisheries management, systems and processes at each phase of the SPL delivery chain require consideration, as shown in Fig. 3. These include the registration and assessment of needs; the design and provision of benefits and contributions; and monitoring and evaluation.

FIGURE 3. **SPL DELIVERY SYSTEMS AND PROCESSES TO BE CONSIDERED IN A FISHERIES CONTEXT**



Source: Adapted from Lindert et al. (2020).

³² As legally independent grant-making institutions, they can offer a level of transparency and accountability that is attractive to donors, and provide an appropriate institutional framework for the administration of mechanisms like PES.

4.2.1 ASSESS: Intake and Registration, and Assessment of Needs and Conditions

As a first step, more **fishers and fish workers must be included in some form of social registry**, ideally linked to a fisheries information system. The right incentives, institutional structures, and outreach can encourage registration, even for informal workers. (See Fig. 2, Action 1 and Appendix, Example 1).

- **Social registries** are information systems that support inclusion in social programs (Leite et al. 2017). While they often start by focusing on the poor, countries are increasingly adopting broader, more dynamic, and more integrated systems that cover more of the population and provide a gateway to multiple programs, including SPL programs and beyond. Many countries are also moving toward social registries with georeferenced information that can be used to target interventions in specific areas and develop hazard maps. Inclusion of fishers and fish workers in these registries would improve the assessment of needs and conditions in the sector.
- **Fisheries information systems** include vessel registries, crew lists, trade and processing registries, and information held

by fisheries organizations and community-based organizations, as well as databases held by ministries of fisheries or environment on fishing and marketing patterns. These can strengthen the information base for assessing the needs and conditions of fishers and fish workers and defining the target populations and eligibility criteria for complementary SPL and fisheries programs.³³ They should have mechanisms to include all fishers and fish workers, including women and pre- and post-harvest workers.

- Linking these complementary information systems requires a good foundational identification system (for example, national ID or civil registry IDs) to uniquely match individuals across registries/databases.

4.2.2 ENROLL: Design or Adapt Program Features to Meet the Needs of Fisheries Actors

Programs should be designed or adapted based on objectives, context, and the needs of the target population. In particular, they should consider fisheries management objectives that might be achieved through behavior change and partial or complete exit from the fisheries sector (Actions 2 and 3 in Fig. 2). Key design features that require special consideration in the

³³ For example, linking a social registry to a fisheries database could provide data on other livelihoods and skills of fishers and fish workers; these could then be considered when assessing their eligibility for and the scope of initiatives that aim to diversify livelihoods or reallocate labor to other fisheries and sectors.

context of fisheries include, among other things, **eligibility criteria, type and level of benefits, and conditionality.**

- The socioeconomic profiles of fishers and fish workers are highly heterogeneous, even within communities. If SPL systems/programs are extended to the fisheries sector or leveraged to support fisheries management objectives, **eligibility criteria may need to be deliberately adapted to reach target**

groups within the fisheries sector—for example, by increasing the social-assistance eligibility threshold for those in the sector, or by adjusting social insurance schemes to accommodate informal fishers and fish workers who are willing to register. To achieve fisheries management objectives in a cost-effective way, a geographic, community-based, or sector-based approach may be preferable to targeting specific groups, including the poor (Box 2).

BOX 2. **POTENTIAL TRADE-OFFS AND CHALLENGES OF TARGETING SPL IN THE CONTEXT OF FISHERIES MANAGEMENT**

Targeting the poorest or most vulnerable households in a population, which is the norm for social assistance programs, does not always deliver the best environmental outcomes, since the poorest or most vulnerable fishers are not always the ones with the greatest impact on fish stocks and their habitats. Furthermore, programs that are designed to enable or incentivize compliance with fisheries management measures might be perceived as unfair if only some of those affected receive benefits; this can undermine the overall effectiveness of such programs (Bladon et al. 2018). Blanket coverage of affected communities or fisheries can be more appropriate and more cost-effective than individual targeting of the poor in such circumstances. On the other hand, SPL benefits targeted specifically to fishers can create perverse incentives for people to enter a fishery, if only on paper. For example, when unemployment insurance was extended to small-scale fishers in Brazil during closed fishing seasons, large numbers of non-fishers fraudulently registered to receive benefits (FAO 2017). Strong and interoperable systems for the identification of fishers and fish workers and reporting of their activities are therefore required to avoid these kinds of issues. Finally, interventions that aim to incentivize exit from the fisheries sector must be targeted at individuals who are willing to exit (even if they are not the poorest or most vulnerable), but not to those who were planning to exit anyway. Fisheries livelihoods are often closely tied to identity; some people want to stay in a specific fishery or at least in the sector even when there could be better income opportunities outside (Daw et al. 2012; Blythe 2014). This is most common among seniors; hence, targeting youth may be more appropriate and programmatic.

- **The types and levels of benefits** need to be adequate, appropriate, and coherent with any fisheries management objectives. In other words, they need to be acceptable, and attractive enough to the target population to encourage them to participate in the program, and to effectively compensate and incentivize behavior change, without creating perverse incentives. For example, the benefit amount could be linked to the cost of compliance with regulations; or it could be provided during periods of the year when fishers and fish workers experience specific forms of hardship (data that would be derived from fisheries information systems).
- **Conditionality can help achieve sustainability.** Conditional transfers are one option, but other modalities, such as social insurance and public works, can also be conditional on behaviors that support sustainable fisheries, including partial or complete exit from the sector. Similarly, active labor market programs and economic inclusion strategies can be supported by transfers and financial services that are conditional on the fulfillment of specific targets (for example, the completion of training, or exit from a fishery).
- Adjustment and alignment of **social insurance contribution amounts, frequency, and terms** with the fishery production cycle can reduce the exclusion of some actors—for example, by accepting

annual or seasonal contributions as opposed to stringently requiring continuous monthly contributions (FAO 2019a). Furthermore, cross-subsidies within the social insurance fund, and government subsidies can reduce exclusion by lowering or exempting contributions.

4.2.3 PROVIDE: Provision of Benefits

Benefits should be delivered, and contributions collected, in a way that is convenient and practical for fisheries actors. In particular, **monetary payment modes should be accessible and secure, and programs can be supported by efforts to promote financial inclusion.**

- In some contexts, mobile money/wallets can make it easier for fishers and fish workers to receive benefits (such as cash transfers), and to pay their contributions. By promoting exposure to formal financial services, it can also improve financial inclusion, which is currently a significant barrier to economic resilience in small-scale fishing communities and to accessing SPL (Pomeroy et al. 2020).
- Other important steps toward improving financial inclusion include financial and digital literacy initiatives, to help households start building a financial profile; and registration, which provides individuals with a formal identity and facilitates the collection of data on business transactions.

- Enabling access to formal financial products and services is also crucial in providing labor market programs for informal actors; acquiring new skills and opportunities is not enough to support a transition to other livelihood activities or sectors without financial means.

4.2.4 MANAGE: Monitoring and Evaluation

Rigorous monitoring and evaluation of programs (environmental, social, and economic aspects) is needed to:

- Learn from both successes and challenges (for example, targeting errors); support the flexibility needed to address challenges; and enable adaptation to change, including climate change.
- Assess and evaluate impact (determine whether intended actions or outcomes have been realized).
- Identify and demonstrate a causal link between the SPL and the intended sustainability actions or outcomes: this is particularly important when fisheries and SPL objectives are combined into a single program, such as PES.

In particular, the monitoring of beneficiary compliance with any program conditions (such as compliance with regulations) is critical in order

to avoid unintended consequences, including perverse incentives for exploitation. (See the example from Bangladesh in the Appendix). Given the limited state capacity for the monitoring and enforcement of fisheries in most LMICs, this will often require the involvement of community or fishery institutions (as discussed in Section 4.1.2). Similarly, there must be monitoring mechanisms in place to flag changes in eligibility status (i.e., recertification), and to move beneficiaries out of programs. If SPL benefits are linked to a specific fishery and its management objectives, then program exit decisions should be based not only on socioeconomic data, but also on the status of the fishery; once the management objectives have been achieved (for example, fish stocks have recovered) and/or regulations changed, the benefits can be adjusted, scaled down, or withdrawn, keeping in mind that some level of SPL may be required to discourage future overexploitation.

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Appendix. Examples of Social Protection and Labor Policies and Programs Aligned with Fisheries Management Objectives

This appendix presents three contrasting examples of countries that have specifically adapted SPL policies and programs for the fisheries sector. The first example is from Morocco, where national social protection was extended to SSF under a concerted effort across sectors and stakeholders. The second comes from Bangladesh, which adapted a national social assistance program to compensate vulnerable small-scale fishers for income foregone as a result of fisheries

regulations. The third is Peru's compensation fund for fisheries management, which provides labor market programs and financial compensation to LSF vessel crews affected by regulations designed to reduce the numbers of vessels, and therefore the amount of fishing. Each of these examples has flaws and challenges, but they are presented here to illustrate how the approaches recommended in this note can be applied in practice.

Example 1. **Morocco: Social Protection (SP) for Small-Scale Fishers.**

Holistic, coordinated efforts across institutions to extend the national social protection system to small-scale fishers.

Formalization and relatively high registration for SP³⁴ in Morocco's small-scale fisheries sector was made possible through close cooperation between the Ministry of Employment and Social Affairs, the National Social Security Fund, the Department of Maritime Fisheries, and the National Office of Fisheries (FAO 2019). The Department of Maritime Fisheries created a formal fisheries infrastructure along the coast, including accessible facilities for improved storage, preservation, compliance with international sanitary standards, and marketing facilities, all of which enhanced the value of catch. They also provided market access for high-quality products that were caught using sustainable

fishing practices, and connected them to export and/or luxury markets. In addition to registering boats and workers and providing fishing permits, they also started providing small-scale fishers with access to water, ice, subsidized inputs, and basic health care. The National Office of Fisheries automatically deducts social insurance contributions at the point of sale in the in-port markets, which removes the practical barriers to contributing. The benefits that small-scale fishers receive are also cross subsidized by workers in other sectors, meaning that they should receive more from the social insurance fund than they contribute.

³⁴ Compared with surrounding countries.

Together, these benefits have incentivized some fishers to formalize their activities, and thereby have encouraged registration in and contribution to the SP system (FAO 2019). It has now been made a legal requirement to market catch through the government-run ports, enroll with the National Social Security Fund, and contribute to health insurance. In addition, fisher organizations (cooperatives and associations) are reported to have been instrumental in communicating the benefits of formal operation within port facilities to small-scale fishers, thereby supporting the process of formalization, valorization, and SP registration.

However, the impacts of the COVID-19 pandemic have highlighted persistent gaps in SP coverage within small-scale fisheries, and weaknesses in the institutional structures supporting its extension (World Bank 2021b). For example, fisher cooperatives and associations are still, in general, poorly organized and have little influence. Also, fishers are not entitled to receive unemployment benefits. Furthermore, the institutional mechanisms described support boat owners and fishers working on vessels to access SP, but not gleaners or the informal workers supporting pre- and post-harvest activities—the very groups who tend to be the most vulnerable workers in the sector. Workers in the processing sector, for example, were the most affected by COVID-19.

Example 2. **Bangladesh: Jatka Fisher Rehabilitation Scheme.**

Adaptation of a national social assistance program to compensate vulnerable small-scale fishers for the cost of fishery regulations.

The Bangladesh hilsa fishery is a small-scale coastal marine and freshwater fishery that supports the livelihoods of up to 500,000 people, many of whom are extremely vulnerable (Bladon et al. 2018). With hilsa production in decline since the 1970s, in 2003 the government began introducing various regulations for the protection of juvenile hilsa fish (locally known as jatka), including various seasonal fishing bans, and the designation of sanctuary areas (Dewhurst-Richman 2016).

In recognition of the socioeconomic hardship imposed by these regulations, the government also introduced a “rehabilitation” program for fishers living inside and around the sanctuary areas, largely based on in-kind transfers, with some alternative livelihood support and awareness-raising activities (Bladon et al. 2018). During the closure of the sanctuaries to fishing, the government distributes rice to around half of the affected households (nearly 250,000 across

15 districts). Each local council is invited to put forward a list of jatka fishers (who are now required to have identity cards), which is finalized through a complex process involving the Ministries of Fisheries and Livestock, Disaster Management and Rehabilitation, and others, after which rice is distributed by local council officials. The rice comes from a pre-existing national Vulnerable Group Feeding Program; so the scheme has the primary goal of reducing vulnerability and food insecurity. But by compensating for income foregone during fishing bans, it also aims to incentivize compliance with fishing regulations.

While there has been no rigorous impact evaluation, the scheme has had a direct socioeconomic impact on hilsa fishing communities, and is thought to have contributed to the increase in stocks that has been reported since it was introduced (Bladon et al. 2016). However, since there are no officially prescribed selection criteria, the process is very subjective and open to corruption (Bladon et al. 2018). Rice is lost or siphoned off at each level,

meaning that some households end up with less than their allocation (Dewhurst-Richman et al. 2016). There is evidence that disproportionate benefits have been accrued by landowners, rather than by the most vulnerable (landless fishing households with the lowest income levels); this has affected acceptance and support for the scheme (Bladon et al. 2018; Islam et al. 2016). There is also evidence of unintended consequences, including perverse incentives for jatka fishing, and negative impacts on local rice, microfinance, and labor markets (Dewhurst-Richman et al. 2016; Islam et al. 2016). Furthermore, the nature of the in-kind transfer may also be limiting its impact on compliance with regulations; since rice does not address the problem of malnutrition or help fishers continue to pay interest on their debts to moneylenders during fishing bans, many fishers are compelled to continue fishing during these bans (Bladon et al. 2016). Weak governance and limited capacity for monitoring and enforcement of regulations allows this fishing to continue.

Example 3. **Peru: The Compensation Fund for Fisheries Management (FONCOPES).**

Labor market programs and financial compensation to support exit of vessel crews from the industrial anchoveta fishery and reduce fishing effort.

In response to declining stocks, in 2008 the Peruvian government implemented an individual vessel quota (IVQ) system for its anchoveta fishery,

among other regulations (Garteizgogeoasca et al. 2020). This system aimed to reduce fishing effort and rebuild stocks. The government also

created the Compensation Fund for Fisheries Management (FONCOPES) to support the crews of vessels that would no longer participate in the fishery (ILO 2015). This is an independent entity that administers mandatory contributions from industrial companies in the fishery. Contributions are based on the amount of quota per vessel and the number of crew members. The government has also established programs aimed at formalizing workers in the sector.

FONCOPES runs three support programs (ILO 2015):

1. **Retraining Incentives:** This aims to facilitate workers' transition into other productive sectors through a compensation package for voluntary redundancy; technical courses; temporary economic subsidies during the training period; and specialized advice.
2. **Development and Promotion of Small and Medium Enterprises (SME):** This aims to support the creation of SMEs through a compensation package for voluntary redundancy; technical courses related to business management to assist in starting or developing a micro or small enterprise; temporary economic subsidies during the training period; and specialized advice on either setting up micro and small enterprises, or strengthening existing businesses.

3. **Early Retirement:** Aimed at workers ages 50-55, this allows workers who have contributed to the Fund up to age 55 to then receive a pension. They also receive a temporary financial subsidy from the date of entry into the program until they reach 55 years of age.

The IVQ system has successfully increased profitability and sustainability of the fishery by reducing effort. During its first three years, FONCOPES assisted in the voluntary retirement of 350 workers, and helped 400 transition out of the fishery. In 2014, the International Labour Organization reported that 2,283 workers had been contacted by the Fund that year: 1,347 workers participated in the Retraining Incentives program, and 315 workers took part in the Development and Promotion of SMEs program (ILO 2015). (The latter was mainly boat owners and captains, who had better salaries and higher compensation packages).

But FONCOPES only covers fishers, not workers in the fishmeal plants who also lost work due to fishery reform (ILO 2015). Furthermore, small-scale and artisanal fleets fish the same stock in the nearshore area, primarily for human consumption, but they operate outside of the IVQ system. Improved stock status encouraged small-scale and artisanal fishers to catch anchoveta for sale on the lucrative fishmeal black market—highlighting the importance of taking all subsectors of a fishery into account for management (Garteizgogeoasca et al. 2020).

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