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Encouraging policy change for sustainable and resilient fisheries

This report looks into how fisheries policy makers can be more successful in bringing about the policy changes needed to achieve greater economic, social and environmental sustainability and resilience. It combines lessons from the available literature, discussions with experts and stakeholders, as well as information about policy changes that happened over the last decade, obtained with a questionnaire.

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Acronyms and abbreviations

CBM	community-based management
COFI	Fisheries Committee
EBM	Ecosystem-based management
EEZ	Exclusive economic zone
FAO	Food and Agriculture Organization of the United Nations
FSE	Fisheries Support Estimate
GDP	Gross domestic product
ICES	International Council for the Exploration of the Sea
IEQ	Individual effort quota
ITQ	Individual transferrable quota
IUU	Illegal, unreported and unregulated
MPA	marine protected area
NGO	Non-governmental organisation
RFMO	Regional fisheries management organisation
SDG	Sustainable Development Goal
SIDS	Small island developing states
TAC	Total allowable catch
UN	United Nations
WTO	World Trade Organization

Executive summary

The fisheries sector has seen important policy change over the past decade. In particular, an increased focus on resource and ecosystem sustainability has led to the wider use of stock management policies. Transfers of public money to the sector have been shifted from direct aid to fishers towards support for general services designed to improve the sustainability and competitiveness of the sector. Policies and practices aimed at preventing IUU fishing have also largely been revised in line with internationally recognised best policies and practices.

Governments and civil society are, however, increasingly aware of the need for further improvement of management frameworks to achieve greater economic, social and environmental sustainability and resilience, notably in the face of the lost opportunities due to mismanagement, the overexploitation of ocean ecosystem, and the anticipated effects of climate change.

This research looks into how fisheries policy makers can be more successful in bringing such policy change about. It combines lessons from the available literature, discussions with experts and stakeholders, as well as evidence of fisheries policy change, obtained with a questionnaire that asked respondents about key policies and the main features of fisheries governance in 2005 and 2016. It also asked them to comment about one self-selected episode of policy change that occurred over the studied decade to address the context in which the change took place, and the characteristics of that particular process of policy change (21 economies replied, of which 19 are OECD members).

The analysis finds that in the last decade, fisheries policy change has largely been triggered by the performance of the sector, and how it is perceived, particularly with respect to resource management and, to a lesser extent, with respect to socio-economic outcomes. Two other important factors stood out as having driven over half of surveyed episodes of policy change: initiatives by people in charge and legal commitments to policy change (such as those deriving from obligations to periodically evaluate and revise legislation or from the adoption of international treaties).

Concerns over the distributional impact of policy change, and the debates among sector stakeholders, and associated lobbying efforts, they trigger, also appeared as key determinants of policy change, due to the importance of fisheries culturally and for employment at regional or local level. In contrast, macroeconomic and macro-political factors appeared to have had relatively less impact on fisheries policy change than in other policy domains.

Surprisingly, compensation and transition measures, which could mitigate the distributional impacts of policy change, and impact estimations, which could clarify their possible extent, hence reducing uncertainty for stakeholders, were less frequently used and seen as less important. Lack of disaggregated socio-economic data can impede the design of targeted compensation and transition measures and undermine the relevance of impact assessments, when they focus only on average or overall effects. This reveals scope for making better use of such tools in processes of policy change. Use of transition and compensation measures can also be hampered by the difficulty of getting branches of the administration responsible for local economic development and social policies to work jointly with those in charge of fisheries management.

Key recommendations

1. Invest in socio-economic and biological data and improve the governance of data collection and scientific evidence production and use to better motivate, prioritise and design policy change.
    - Gather disaggregated socio-economic data on fisheries to help identify, within countries, and across sectors, the segments of the population that are most vulnerable and exposed to both risks of the status quo and of the proposed policy change as well as the elements of policy change that could yield the greatest benefits.
    - Set up inclusive mechanisms for producing scientific evidence, involving respected research institutions, stakeholders and policy makers from different policy and scientific domains, right from the stage of formulating the research questions, and with transparent methods and financing.
    - Share relevant socio-economic and biological data and scientific evidence with stakeholders and the general public in a timely manner to enable all actors to engage meaningfully.
    - Invest in reinforcing the human and technological capacity of the public entities in charge of fisheries management to help them process the information required to deal with increasingly multifaceted problems and engage with stakeholders that have increasingly diverse interests.
2. Make greater use of commitment mechanisms – such as adaptive policies, which build in rationale and mechanisms for automatic policy change in the face of possible evolutions – to initiate and adopt policy change. They may prove particularly helpful, in contexts of uncertainty, such as data-poor fisheries or fisheries deemed to be most affected by climate change. Such approaches to policy change can also provide incentives for the fishing sector to invest in data collection, with the prospect of increased harvest possibilities if resources are shown to have the capacity to sustainably support higher catch levels.
3. Make policy change more legitimate and acceptable by adopting a whole-of-government approach to address the socio-economic issues affecting fishing and coastal communities with policies undertaken by other branches of the administration when these can be the most effective at doing so.
4. Enable inclusive, open and transparent dialogues with stakeholders and across branches of the administration throughout processes of policy change to inform these processes, and increase their legitimacy and acceptability among stakeholders, while avoiding opening the door to undue influence, unfair competition and policy capture.
    - Create inclusive and representative advisory groups, in which stakeholders, non-governmental organisations (NGOs), and scientific institutions can directly intervene in decision-making through a process that is defined transparently in advance.
    - Follow the OECD's key principles on transparency and integrity in lobbying, notably to ensure that a fair and representative balance of influence is achieved and natural inclinations to consult some stakeholders do not lead to the exclusion of others.
    - Create inter-governmental co-operation groups in which different levels of the administration (local, regional and national) and entities in charge of different policy domains come together.
    - Frame policy-change proposals in ways that acknowledge the importance of various norms and cultures in their assessment by different stakeholders.

1. Navigating policies towards more sustainable and resilient fisheries

1.1. A growing consensus on the benefits of greater sustainability and resilience

Fisheries make a vital contribution to the food security of hundreds of millions of people, especially in remote coastal communities in developing regions (Béné et al., 2016[1]). Activities along the value chain, from harvesting to processing, transport and distribution, bring economic opportunities to coastal areas and provide a livelihood for a significant share of the world's population, many of them women (FAO, 2018[2]). The sector also generates substantial government revenue and foreign currency, as seafood is among the most highly traded food commodities (OECD/FAO, 2018[3]).

However, overfishing, as well as destructive fishing techniques, have contributed to the deterioration of a large number of economically important fish stocks. Recent evaluations suggest that about one-third of global marine stocks are biologically overfished, up from about 10% in the mid-1970s (FAO, 2018[2]). This creates fewer opportunities for fishers and threatens the functioning of marine ecosystems.

The latest estimates by the World Bank (2017[4]) suggest that global fisheries could generate an additional USD 80 billion in value annually if they were optimally managed. A significant share of these foregone profits is believed to be due to illegal, unreported and unregulated (IUU) fishing, which reduces the resources available to legal fishers, undermines governments' capacity to manage fish stocks sustainably and reduces public revenue through lost opportunities to collect fees and other tax liabilities. According to Agnew et al. (2009[5]), the value of global fisheries could be 13-31% higher in the absence of illegal and unregulated fishing alone, which represents a loss of between USD 10 and 23.5 billion annually.

Additional losses to society as a whole are associated with other effects of fishing on the ocean ecosystem and its biodiversity. These include mortality of accidentally caught species such as seabirds, marine mammals or sea turtles (Lewison et al., 2004[6]; Wallace et al., 2010[7]), and the destruction of habitats, including seabeds, mangroves and coral reefs (Hiddink et al., 2006[8]; Coleman and Williams, 2002[9]; Thrush and Dayton, 2002[10]), which deliver important ecosystem services (OECD, 2016[11]; OECD, 2017[12]).

What is more, the ocean ecosystem is affected by activities in competing sectors, like oil and gas exploration, marine shipping, and land-based industries and agriculture, which generate runoffs through pollution, habitat loss and declining biodiversity, especially in territorial waters and exclusive economic zones (EEZs), where most human activity takes place (OECD, 2016[11]; OECD, 2017[12]). Exploitation of ocean resources is expected to intensify in the coming decades driven by global economic and population growth, increasing the demand for food, energy, and other goods and services produced by the ocean economy. This will further affect the availability of resources for fisheries and means that fisheries' impacts on resources need to be considered among the wider impacts when designing policies for the sustainable use of oceans (OECD, 2016[11]).

Climate change will further challenge the fisheries sector. Gaines and colleagues (2018[13]) note, "*climate change will force global fisheries to an important crossroads over the coming decades*" where "*the choice of management path will have profound*

consequences".[1] While not yet fully understood, the anticipated impact of climate change on sea-level rise, ocean temperatures, acidification, declining biodiversity and marine ecosystem degradation will certainly worsen resource depletion for some fisheries through impacts on stock productivity and by forcing changes to fish migration patterns (Garcia Molinos et al., 2016[14]; Lam et al., 2016[15]; Gaines et al., 2018[13]; Alison et al., 2009[16]).[2] In addition, climate change may further affect resources by creating incentives for overfishing if climate change is perceived or expected to cause fish stocks to migrate out of a country's EEZ or a community's fishing grounds (Gaines et al., 2018[13]).

A recent publication of the Food and Agriculture Organization of the United Nations (FAO) estimated that the total maximum catch potential of EEZs worldwide could fall by between about 3% and over 12% by 2050, relative to 2000, depending on the climate change scenario considered, and potentially by over 25% by 2095. The biggest decreases are expected in the EEZs of the South Pacific, and the tropics more generally; but the temperate EEZs of the North Atlantic are also expected to be negatively affected (Barange and Cochrane, 2018[17]).[3] According to Gaines and colleagues (2018[13]), the value generated by the global harvest could still be higher than in it is today by 2100, despite climate change, but only if optimal climate change adaptation is undertaken. Even in this best-case scenario, about half of individual global fisheries are expected to be worse off. Adapting to anticipated but uncertain impacts therefore requires an urgent change in paradigm from the pursuit of sustainability to that of sustainability and resilience, in which long-term trends and risks are increasingly considered.[4]

Governments and civil society are increasingly aware of the need to improve management frameworks to achieve greater economic, social and environmental sustainability and resilience, notably in the face of lost opportunities due to mismanagement, the overexploitation of the ocean ecosystem resulting from human uses of its resources and the anticipated effects of climate change. A growing number of countries have, for example, adopted sustainability-based management targets (OECD (2017[18]); Section 2.1) and sustainability-certified products have gained significant market shares over the last decade.[5]

[1] The increasing evidence that limiting climate change as much as possible will require mitigation strategies from all sectors of the economy (IPCC, 2018[105]) also suggests that fuel efficiency in fishing should become an additional objective of fisheries management (He et al., 2018[104]). The latter report finds that "globally, fishing vessels (including inland vessels) consumed 53.9 million tonnes of fuel in 2012, emitting 172.3 million tonnes of CO2. This is about 0.5 percent of total global CO2 emissions that year." These emissions grew by 28% between 1990 and 2011, with little coinciding increase in production.

[2] Climate change is also expected to increase incidences of coral bleaching and outbreaks of harmful algal blooms, with serious implications on the affected ecosystems and the services they deliver (Barange and Cochrane, 2018[17]).

[3] Socio-economic implications are likely to be most severe in those developing regions where the capacity to absorb climate shocks is the most limited due to the greatest dependency on fisheries coupled with poor conditions of stocks (Ye and Gutierrez, 2017[98]).

[4] Barange and Cochrane (2018[17]) also point out how, "in addressing climate change, it is essential to recognize that, almost invariably, [climate change] is not the only threat or stressor on a fisheries system but an additional, possibly unidirectional one, adding to what is typically a range of stressors and uncertainties from anthropogenic and natural causes" such that "adaptation to climate change must […] be undertaken within that multifaceted context and any additional measures or actions taken in response to climate change should complement and strengthen overall governance and sustainable use."

[5] Certified sustainable seafood production is reported to have increased 35% per annum between 2003 and 2015, ten times faster than global seafood over the same period (Potts et al., 2016[112]).

1.2. The complexities of fisheries policy change

Despite increasing awareness of the potential benefits of policy change, fisheries policy makers still confront significant barriers to policy change that prevent a more rapid transition towards sustainable and resilient fisheries. This is due to a number of factors. First, fisheries policies are typically expected to meet multiple objectives beyond the sustainable management of marine ecosystems and resources. These include producing more food, creating jobs and securing incomes in coastal areas, but also achieving strategic objectives with respect to territorial sovereignty (OECD, 2017[19]) and transboundary conflicts (OECD, 2016[11]), that often have little compatibility with improving or maintaining the sustainability of resources in the short term. Indeed, because of the considerable time it can take to rebuild fish stocks, create new job opportunities, or the prospect of higher incomes and greater food production, these outcomes frequently only materialises in the medium to long term (OECD, 2010[20]) (see #8 in Box 1.1).

Redistributing access to resources, which is a common result of fisheries policy change, almost inevitably has consequences that may adversely affect some individuals and communities, at least in the short term.[6] Combined with the socio-economic and cultural importance of fisheries in some communities, this means that the political economy dynamics can have a significant effect on the processes of fisheries policy change. The difficulty and the cost of gathering information on the state of marine resources and ecosystems, and of observing and controlling activities at sea, further complicates the task of policy makers (see #2, #3 and #9 in Box 1.1).

In addition, the great diversity of fisheries within countries, and the interactions between mobile resources fish stocks and ecosystems affected by many different activities means that fisheries management has to address multiple levels: involving local, national, regional and global institutions, as well as authorities in charge of different policy portfolios (see #1, #4, #5 #6 in Box 1.1). As a result of these complexities, policy change in the fisheries sector is often a long and iterative process (OECD, 2017[21]), and the intensity of political and public debates around fishing sometimes seem disproportionate to its contribution to the national economy (OECD, 2007[22]).

Box 1.1. What makes the ocean economy different from a land-based economy?

Reproduced from *The Ocean Economy in 2030* (OECD, 2016[11])

Difference #1: The sea is much larger than land

Implication: Natural marine processes, ecosystems and species are not confined to maritime legal boundaries. Different legal regimes apply to a single activity depending on where it takes place, even within the jurisdiction of a single coastal country (territorial waters, contiguous zone, economic exclusion zone), and is further compounded by the interests of other countries in areas beyond national jurisdiction (international waters).

[6] Even a change in technical regulation, such as a change in the type of gear permitted in a particular fishery, is likely to mean changes in who can, in practice, access the resources of that fishery, particularly in the short term, if individuals and companies vary in their capacity to adapt to new regulations.

Difference #2: Water is less transparent than air

Implication: Remote sensing technology is not able to penetrate deep below the sea's surface. This makes it much harder and much more expensive to know what's going on in the water column and the seabed. Marine research and monitoring costs are extremely high, which helps explain why we know much less about what goes on in the ocean than about what happens on land.

Difference #3: The sea is more three-dimensional than land

Implication: Marine life occurs from the sea surface down to the deepest ocean trench, while on land only comparatively few species (i.e. those with the ability to fly) can sustain themselves above the land surface. The same also applies, to a certain extent, to human activities. This renders two-dimensional maps less useful, and increases the complexity of marine spatial planning and management. It also makes it more difficult to study the marine environment, how it works, how it is affected by human activities (see difference #2), and how the ocean benefits the economy and human well-being.

Difference #4: The sea is fluid and interconnected

Implication: What happens in one place may affect what happens elsewhere, as pollutants and alien species are carried by ocean currents and vessels to much greater distances than on land.

Difference #5: Marine species can potentially travel much longer distances than terrestrial ones

Implication: This makes the management of human activities that use marine resources particularly difficult, as they are accessible to almost anyone.

Difference #6: Aggregations or clusters of animals in the water column can shift rapidly from one location to another

Implication: The mapping of these species and their movements is more difficult, and measures to protect or manage them need also to shift in time and space accordingly.

Difference #7: Nutrients and pollutants can be retained for several decades until they are returned by ocean circulation

Implication: There can be significant time lags between the periods when certain human activities take place and the time when their impacts occur, potentially placing significant burdens on future generations.

Difference #8: Lack of ownership and responsibility in the ocean are even less favourable to sustainable development than on land

Implication: Private utilisation of the ocean and its resources is usually dependent on licenses or concessions from public authorities. National authorities have the power to allow private activities in areas under the jurisdiction of the coastal state; the International Seabed Authority can license activities in the area, but in international waters, private activities have much fewer controls. Common property regimes are even scarcer than on land given the mobile nature of many marine resources, which makes the exclusion of non-authorised users extremely difficult.

Difference #9: Humans do not live in the ocean

Because the sea is not our natural environment, our presence is dependent on the use and development of technology. Our sparse presence in the sea also makes it much more difficult, and costly, to exercise adequate law enforcement.

1.3. Creating pathways to policy change

This report considers practical ways fisheries policy makers and stakeholders can be more successful in bringing about the policy change needed to put fisheries on a sustainable and resilient footing. It does so by investigating the key determinants of past fisheries policy change. Focusing on those determinants that governments and stakeholders can influence in the short to medium term, it formulates practical recommendations to facilitate the initiation of policy change and increase the chances that it follows through to implementation. It does not evaluate the past policy changes, however.

This report refers to "policy change", rather than "reform", to avoid focusing only on the major episodes of policy change commonly labelled as reform. Reforms typically follow from the implementation of a number of new policies which have all been considered, designed and adopted together as a result of a specific political process. Instead, this report covers any "episode of change", incremental or structural, including those adopted in isolation rather than as a package. It uses the term "process of policy change" to refer to the succession of steps through which an episode of change occurs, from initiation to design, adoption and implementation, along with the associated inputs and efforts which happen during processes of policy change such as research, consultation and communication.[7] The report looks for "pathways to policy change", that is, ways to make processes of policy change easier and shorter, to accelerate the transition to sustainable and resilient fisheries.

This report focuses on the management of domestic fisheries by national administrations, while recognising the influence of both higher and lower levels of fisheries management. Fisheries policy is understood to include, among other things, regulatory measures, use or access rights, allocation systems, as well as economic instruments such as taxes and support programmes. It also considers governance as a potential determinant of policy change. "Governance" is understood to cover the rules defining how and by whom fisheries policy is designed, adopted and implemented, that is, decision-making processes and the institutional arrangements within which they are developed.[8]

Building on the long history of OECD studies of policy change in different domains (Tompson, 2009[23]; OECD, 2010[24]; OECD, 2010[25]; OECD, 2007[26]; OECD, 2017[27]; Gruère, Ashley and Cadilhon, 2018[28]), the analysis rests on a triangulation strategy (Rothbauer, 2008[29]) that combines:

[7] Evidence suggests that processes of policy change tend to overlap at different stages, so that the implementation phase of one episode may happen at the same time as the initiation phase of the next (OECD, 2017[21]; Peñas Lado, 2016[91]; Tompson, 2009[29]). It is also understood that processes of policy change do not follow linear paths, but that governments and stakeholders often go back and forth through several iterations of consultation, redesign and rejection before an episode of policy change is eventually implemented. Hence, what are described in this paper as sequences, following a more or less regular order, can in fact happen in a less sequential way.

[8] A change in policy instrument may thus take the form of the introduction of new restrictions on inputs such as limitations on days-at-sea, closed seasons or prohibitions to use certain gear; a switch from input control-based management to output control-based management; changes to the way access to the resource is granted; restrictions on fishing of certain species; the creation of marine protected areas; or the reallocation of public support to the sector from one type of support to another. Changes of management practices may include, for example, the creation of a new institutional body in charge of fisheries management, the introduction of rules on the role of scientific evidence in decision making, or modifications to co-decision mechanisms that involve different institutions and stakeholders.

- a review of the literature, which included the literature on policy change in different domains and helped shape the analytical framework for this report;
- the collection and analysis of comparable information on a decade of policy change in fisheries and evolution of governance, as well as the factors that affected the processes through which they occurred (through self-selected responses to questionnaire deigned by the OECD); and
- discussion of the early results of this analysis with experts and stakeholders.

This strategy was adopted to minimise the biases inherent in each of these methodological approaches by cross-checking different sources. The literature review covered the relevant theoretical and empirical literature on the political economy of policy change, as well as the role of institutions, policy-making mechanisms and norms in processes of policy change. The analytical framework presented in Section 3.1 brings together its key findings.[9] Despite the abundant literature on specific reforms in fisheries (and other types of natural resources), it is striking how rarely the issue of pathways to policy change is itself addressed. However, there are recent signs of an increasing interest in this area (OECD, 2017[30]; World Bank, 2010[31]; Gruère, Ashley and Cadilhon, 2018[28]; Deacon, 2010[32]; OECD, 2017[21]), most often through the analysis of case studies. This project seeks to add to this literature by using empirical information from a relatively large set of countries and focusing on how the specific context of fisheries shapes the way in which the key determinants identified in the literature affect policy change and the evolution of governance in the sector.

A questionnaire was sent to the 38 countries and economies which participate in the work of the OECD Fisheries Committee (COFI) to collect information on policy change and evolution of governance, hereafter referred to as "the questionnaire". The questionnaire asked governments about their key policies and the main features of governance in 2005 and 2016 (Table 1.1). The year 2005 was chosen as a baseline because similar information had been collected then (OECD, 2005[33]), thus simplifying the reporting of information by surveyed countries.

Responses were received from 19 OECD member countries and 2 partner countries and economies, together referred to as the "respondents".[10] In 2015, these countries accounted for about 76% of the value of landings in the OECD member countries (OECD, 2017[18]), and included countries for which fisheries are relatively important at national scale, as well as countries for which they are relatively less important.[11]

[9] The review also covered previous work by the COFI on fisheries policy reform (OECD, 2011[64]), including reports on the human dimension of structural adjustment (OECD, 2007[22]) and subsidy reform (OECD, 2007[32]). The review also covered relevant work undertaken by the OECD in other policy domains, including a report on the political economy of reform in a comparative perspective (OECD, 2010[31]), and reports on water governance (OECD, 2011[96]; OECD, 2016[65]; OECD, 2015[95]) and the political economy of biodiversity policy reform (OECD, 2017[21]).

[10] The participating OECD member countries were: Australia, Belgium, Canada (with two episodes of policy change submitted), Estonia, France, Germany, Greece, Italy, Japan, Korea, Latvia, Lithuania, the Netherlands, Norway, New Zealand, Slovenia, Sweden, the United Kingdom and the United States; the non-OECD countries and economies were Colombia and Chinese Taipei. See 4.4.4.Annex B

[11] To calculate the share of the value of landings for OECD member countries, the value for countries with missing data was estimated on the basis of the production volume sourced from the FAO (FAO, 2017[103]) and a proxy price calculated as an average price for OECD member countries that reported data for 2015 (OECD, 2017[18]).

Building on the analytical framework derived from the literature review,[12] the questionnaire also asked respondents to comment about one episode of policy change: how the context in which it took place shaped the process for that particular episode, and the importance of those contextual factors. Similarly, they were asked about the characteristics of that particular process of policy change, particularly who engaged and how (see the questions included in the questionnaire in Annex A).

The episodes of policy change that respondents chose to report on ranged from major and comprehensive reforms, such as the adoption of a new Common Fisheries Policy for the European Union in 2014, to more discrete elements of policy change such as amendments to the rules for authorising vessels to operate in France that became effective in 2017, or fishery-specific reforms such as amendments to the regulation of the coral fisheries in Chinese Taipei which started to be implemented in 2014. All concerned national-level policies, except for the reform of the European Common Fisheries Policy (Annex B lists all the episodes of policy change that respondents chose to report on.). The fact that countries self-selected the episodes of policy change they reported on, rather than randomly selected them, implies that the findings of the report need to be seen cautiously, and in the context of the triangulation strategy adopted for the report. In particular, aborted processes of policy change, or those driven by crisis, may have been downplayed in the reporting.

Two other OECD policy datasets were used to complement the data collected with the questionnaire: the Fisheries Support Estimate (FSE) database[13], which measures fisheries support policies in a consistent and transparent way across all OECD member countries and important non-member fishing economies (OECD, 2018[34]), and a dataset on implementation of internationally recognised best policies and practices against IUU fishing.[14]

Early results of the analysis were presented and discussed at the conference *Making Reform Happen for Sustainable Fisheries* organised at the OECD on 2 May 2018, in the presence of OECD COFI Delegates, but also policy makers from national fisheries administrations and experts from the sector and civil society and research institutions. Bilateral discussions with additional experts were also organised in the aftermath of the conference (see the conference agenda in Annex C and the list of experts consulted in Annex D). All these experts' input is reflected throughout this document.

[12] The survey was also revised on the basis of comments and suggestions received from government officials and stakeholders from three OECD member countries (Chile, Denmark and Korea), who kindly agreed to test it.

[13] As no comparable data were available for 2004-06, the report investigates the evolution of support policies between 2009-11 and 2014-16 (both averaged).

[14] The dataset on implementation of internationally recognised best policies and practices against IUU fishing can be found in the OECD publication *Closing gaps in national regulations against IUU fishing* (Hutniczak, Delpeuch and Leroy, 2019, forthcoming[41]).

Table 1.1. Fisheries policies and governance elements covered by the questionnaire

Policies	Governance
Total allowable catch limits	Main entity in charge of fisheries management
Harvest control rules	Other responsibilities of the main entity responsible for fisheries
Individual quotas	Is TAC definition legally bound by scientific evidence?
Multi-annual management or recovery plans	How many stocks are subject to quantitative stock assessment?
Ecosystem-based management	Which stakeholders take part in participatory committees?
Fishing licences	Participatory committees: domains covered and type of intervention
Input restrictions	Appeal procedures for fisheries-related administrative decisions
Other regulations	Entities are in charge of policy implementation
Decommissioning schemes	Entities are in charge of policy monitoring
Exceptions for artisanal fishers	Entities in charge of data collection and reporting

2. A decade of fisheries policy change

This section describes fisheries policy change between 2005 and 2016, as identified by the questionnaire results and in other OECD policy datasets (OECD, 2018[34]; Hutniczak, Delpeuch and Leroy, 2019, forthcoming[35]). While it does not comprehensively cover all OECD countries or all types of policy change, it provides a good proxy for some of the the main trends over the last decade: increasing uptake of stock management policy tools, the redirection of public support to general services rather than direct support to fishers, and the reinforcement of measures to prevent IUU fishing.

2.1. An increasing focus on resource and ecosystem sustainability

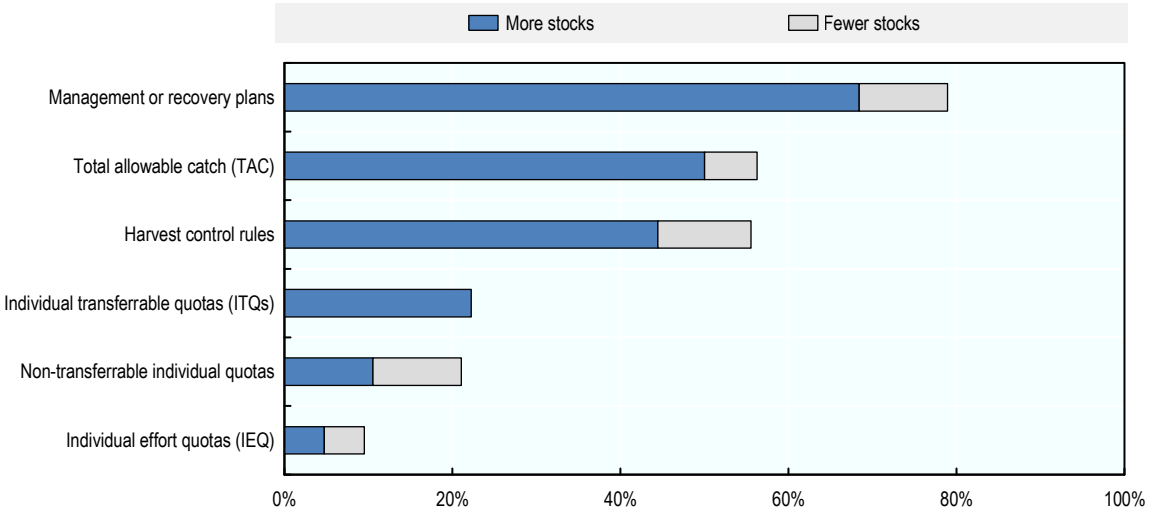
The first striking element of policy change emerging from the questionnaire results is an increasing focus on resource and ecosystem sustainability. They indeed show significant uptake of the ecosystem-based management (EBM) of fisheries, with over 80% of the countries surveyed considering it an objective in 2016 (compared to about 50% in 2005) and about half of countries reporting they apply it in practice (compared to only 10% in 2005).[15]

Greater focus on resource and ecosystem sustainability is also apparent in the increasing use of stock management instruments (Figure 2.1). Over two-thirds of respondents to the questionnaire reported they managed more stocks through management or recovery plans in 2016 than in 2005. Half of them reported they had more stocks under total allowable catch (TAC) limits, with the total number of national TACs increasing by 16%. The number of stocks under harvest control rules had also increased for about 40% of respondents.

[15] The understanding of what EBM is, however, varies across countries and among stakeholders. Fisheries policy makers typically consider the management of bycatch or multi-species fisheries as central elements of EBM. Conservation specialists, on other hand, often regret that an overall concern for biodiversity protection is rarely integrated into fisheries management policies. Many consider, for example, that from a biodiversity protection perspective, fishing limits should be more restrictive than maximum sustainable yield targets (Worm et al., 2009[115]).

Figure 2.1. Use of stock-management instruments (2016 versus 2005)

Percentage of respondents reporting changes in the number of stocks managed



Note: ITQs and territorial use rights for fishing in Lithuania were accounted for in 2016 despite the fact that they became effective only as of 1 January 2017.
Source: Information shared by respondents through the questionnaire.

The use of individual catch and effort quotas has increased much more modestly: 22% of respondents reported managing more stocks with individual transferrable quotas (ITQs), while only 11% reported increased use of non-transferrable individual quotas, and 5% increased use of individual effort quotas. For both these instruments, about as many respondents reported lower use as reported it had risen.[16]

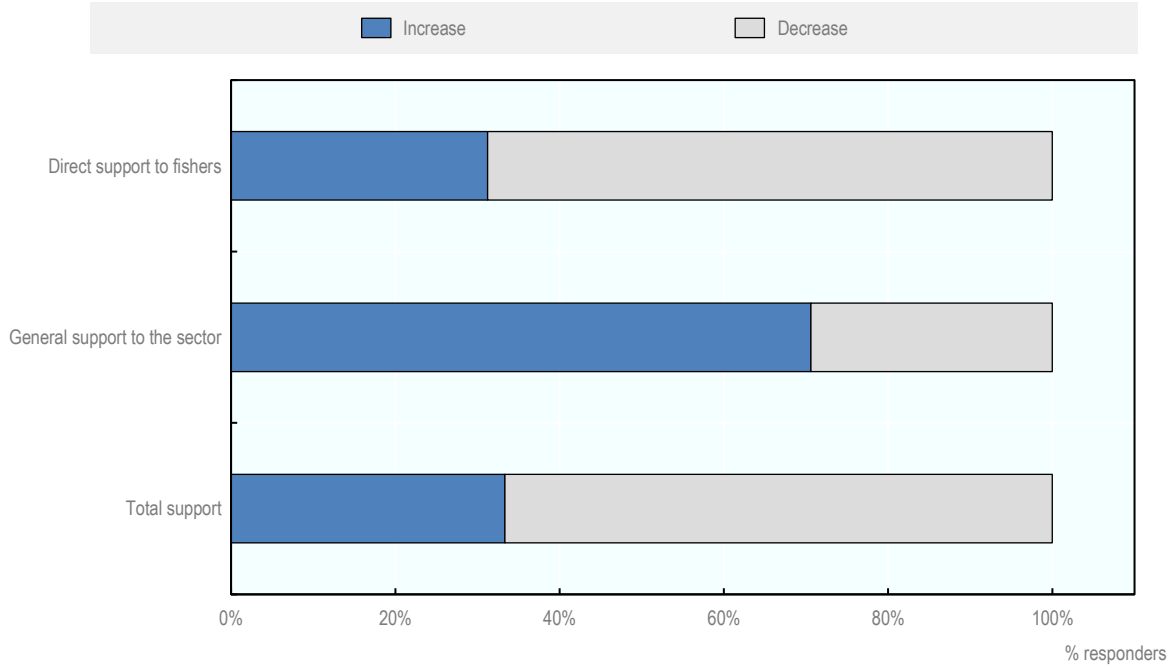
Over half of respondents also flagged up amendments to their input restrictions and over three-quarters amendments to other regulations – either though the introduction of new policies, the extension of existing policies to cover more species or the elimination of obsolete policies.

[16] In the fisheries context, setting an appropriate TAC limit is the main policy tool to ensure sustainability for a specific stocks (OECD, 2013[84]). The extent to which this contributes to ecosystem sustainability more generally depends on the extent to which TACs cover the species present in the ecosystem. However, ITQs can also be considered as stock-management instruments aiming at improving resources' situation as they reduce incentives to overcapitalise and to "race to fish"; situations that can result in greater levels of effort, bycatch, habitat damage and pollution than is needed to harvest the TAC.

2.2. Fewer transfers to individual fishers but more investment in general services

Figure 2.2. Evolution of support to fisheries (2014-16 versus 2009-11)

Percentage of respondents reporting changes in the composition of their support



Note: Direct support to fishers is captured in the FSE database under the transfers to individual fishers – budgetary (TIFB) category and general support to the sector under the general service support estimate (GSSE) category. Exact coverage of those support categories can be found in the FSE manual (OECD, 2016[36]). Percentage changes are based on comparing the 2014-16 averages with those for 2009-11 for respondents with sufficient data (18 countries or economies).
Source: OECD (2018[34]), *Fisheries Support Estimate (database)*, oe.cd/fse.

Support to the sector has also significantly evolved, with a marked trend towards less direct support to fishers (such as payments for modernisation or decommissioning of fishing vessels) but more investment in general support for the sector, such as in port infrastructure; monitoring, control and surveillance; or training and research.

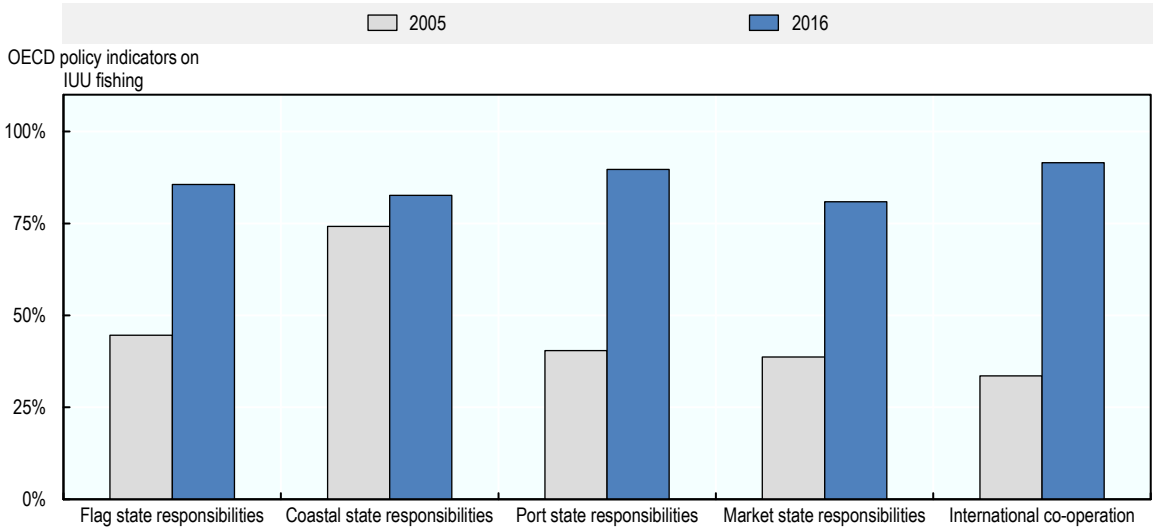
In 11 of the 16 respondents for which the OECD had data in the FSE database, direct support had declined (Figure 2.2). On average, among those economies, direct support in 2014-16 was less than half the value for 2009-11 and in some cases had fallen to less than 5% of the 2009-11 value. In particular, decommissioning schemes – transfers to reduce or otherwise adjust fleet capacity through the scrapping of vessels or retirement of fishing licenses – have fallen after peaking in the mid-2000s (OECD, 2017[18]).

In parallel, investment in general support to the sector has increased since 2009-11 for about two-thirds of the respondents. Combined with the decline in direct support to fishers, this has resulted in general services policies making up a larger share of the total support captured in the FSE since 2009. After taking cost recovery charges into account, general support to the sector made up 91% of total FSE transfers in the period 2014-16, up from 82% in the period 2009-11 (for the same sub-sample of countries).

2.3. Increasing use of best policies and practices against IUU fishing

According to an OECD analysis of progress in implementing internationally recognised best policies and practices against IUU fishing since 2005 (Hutniczak, Delpeuch and Leroy, 2019, forthcoming[35]), countries have made substantial policy changes in all dimensions of policies and practices aimed at preventing IUU fishing (Figure 2.3).[17]

Figure 2.3. Implementation of best policies and practices against IUU fishing (2005 versus 2016)



Note: Policy indicators are based on weighted average of responses to the OECD survey on measures against IUU fishing.
Source: (Hutniczak, Delpeuch and Leroy, 2019, forthcoming[35]).

For example, as port states, 87% of OECD countries surveyed for the purposes of that report,[18] had measures in place to deny port access or services to vessels suspected of IUU fishing in 2016, up from 40% in 2005, and 87% had developed lists of ports designated for use by foreign-flagged vessels, compared to 27% in 2005.

As flag states, all surveyed OECD countries reported they had fully functioning registration processes for national vessels conducting both fishing and fishing-related activities in other jurisdictions or in areas beyond national jurisdiction in 2016, up from 60% for fishing and 33% for fishing-related activities in 2005. The share of surveyed OECD countries which prohibit registration of vessels with a history of IUU fishing also increased from 40% to

[17] The results of this survey also highlight the fact that further progress is needed, however. Among OECD countries, regulations applicable to fishing-related activities, such as transhipment, remain more permissive than those governing fishing and the report notes room for improvement in relation to enforcement mechanisms for fisheries regulations. In addition, IUU fishing can only be contained effectively, when best practices are universally adopted worldwide and co-operation between OECD countries and partner countries will prove essential in this respect.
[18] This report draws on the result of a survey to which 23 OECD members responded in 2017. In 2015, these countries together accounted for about 23% of the global harvest volume (FAO, 2017[103]) and 85% of the value of landings in the OECD member countries (OECD, 2017[18]).

83%, while the share of countries that prohibit registration of vessels already registered by another state increased from 33% to 91%.

As coastal states, over three-quarters of surveyed OECD countries regulated access to domestic resources by foreign enterprises through chartering agreements in 2016, up from 23% in 2005.

Policies aimed at discouraging IUU fishing by closing markets to IUU-fished products have also become more widely used. For example, while in 2005 only 33% of surveyed OECD countries reported they had multilateral catch documentation and certification requirements in place for traded fish products (of which 60% were fully implemented), in 2016, all surveyed OECD countries reported such systems (with 91% fully implemented).

Co-operation on monitoring, control and surveillance and joint actions against alleged IUU operations were also reported by 91% of surveyed OECD countries, up from 33% in 2005; 96% reported they had designated channels to exchange information with regional fisheries management organisations (RFMOs) in relation to suspicion of IUU fishing, up from 21% in 2005.

3. Understanding how fisheries policy change happens

3.1. Policy change in a nutshell

Extensive research has been undertaken to explain policy change and identify triggers and enablers. The proposed analytical framework for this report draws particularly on key political economy principles by considering that the interests at stake play an important role in shaping incentives for policy change (Laffont and Martimort, 1999[37]; Drazen, 2000[38]; Laffont, 2005[39]; Alesina, Ardagna and Trebbi, 2006[40]; Persson and Tabellini, 2000[41]) and the relative capacity of different stakeholders to influence policy change (Olson, 1965[42]; Swinnen, 2018[43]; Cingano and Pinotti, 2013[44]; Hellman, Jones and Kaufmann, 2000[45]).

This report also considers the main findings of the new institutional economics literature, by paying attention to the central role of institutions, their constitutive rules and norms, the transaction costs they generate, and the forms of governance implemented to face these costs, all of which play an important role in shaping processes of policy change (Ménard and Shirley, 2008[46]; Coase, 1998[47]; North, 1990[48]; Williamson, 2000[49]).

The implications of imperfect information, information asymmetries and co-ordination failures are also particularly relevant to the analysis of fisheries policies and governance given the difficulty of assessing fisheries resources and the long timeframes before the benefits of co-operation in fisheries management might be felt (as described in Section 1.2; also noted by Ostrom, (1990[50])).

Finally, this report integrates some lessons from behavioural economics (Hallsworth et al., 2018[51]), and the sociology of organisations (Powell and DiMaggio, 1991[52]; Khemani, 2017[53]) on how interactions between actors and organisations also depend on a more realistic view of human behaviour than that commonly assumed in economic and political economy analysis.

This section very briefly summarises how these insights are brought together in this report and used to explore the pathways to policy change towards sustainable and resilient fisheries.

Policy change usually comes – or is presented – as a response to a mixture of structural challenges and particular requests or needs that become drivers of change. These triggers interact with other contextual factors such as socio-economic, institutional and political conditions, as well as historical and cultural norms, to make certain options for policy change feasible and acceptable and others not.

Whether initiatives for policy change emerge, and whether they lead to its adoption and implementation, critically depends on:

- How far the initiated policy change responds to the mix of existing challenges and requests;
- How different stakeholders, and society as a whole, benefit –or lose – from it;
- How feasible and acceptable the proposed policy change is, in the particular context, notably in relation with how it is perceived by stakeholders;
- How far interactions between actors influence the context favourably and/or result in the initial policy proposal being redefined so that it becomes feasible

and acceptable on the ground – this is in particular affected by stakeholders' power to influence;

- The extent of the transaction costs created during the processes of policy change – the administrative costs of designing, proposing and adopting new policies, including those associated with consultation and negotiation; and costs related to implementation, including for compensation schemes or programmes aiming to facilitate the transition for those who might be disadvantaged (OECD, 2016[54]; World Bank, 2010[31]; Ménard, 2016[55]).

It is also important to keep in mind the endogenous nature of policy change – i.e. that present policies influence prospects for policy change – which has important implications for policy makers (Krueger, 2002[56]; Tompson, 2009[23]; OECD, 2010[24]; Alesina, Ardagna and Trebbi, 2006[40]). Some episodes of change can be prerequisites for others, while path dependency means that some episodes of changes will be difficult to undo and will have lasting consequences (Degnbol et al., 2006[57]).

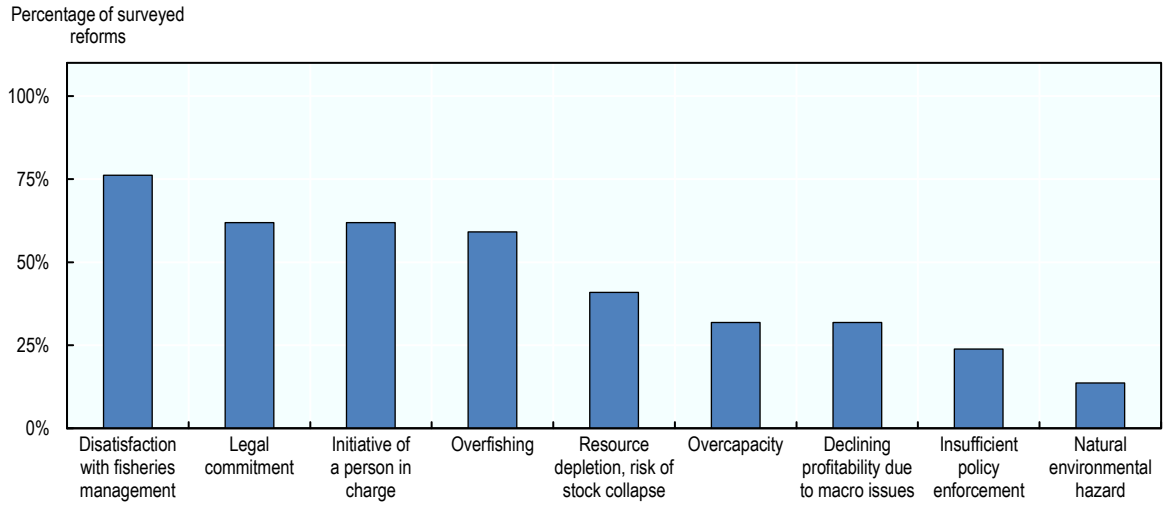
3.2. Lessons from a decade of fisheries policy change

3.2.1. Key triggers of policy change

According to the questionnaire results, the most important trigger of policy change over the past decade appears to have been dissatisfaction with fisheries management: 75% of the surveyed episodes of policy change were reported to have been initiated in response to such dissatisfaction (Figure 3.1).[19] The next commonest were legal commitments to change policies, initiatives by the person in charge and overfishing, with about two-thirds of change episodes said to be initiated in response to these. This makes overfishing the most common topical concern trigging policy change in the questionnaire results. Other important triggers were concerns about resource depletion and risk of stock collapse (reported in 43% of change episodes) and overcapacity (33%).

[19] As mentioned in Section 1.3, the fact that countries self-selected the episodes of policy change they reported on, rather than randomly selected them, implies that the statistical findings of the report need to be seen cautiously, and in the context of the triangulation strategy adopted for the report. In particular, aborted processes of policy change, or those driven by crisis, may have been downplayed in the reporting.

Figure 3.1. Key triggers of fisheries policy change



Source: Information shared by respondents through the questionnaire.

Dissatisfaction with the management of resources

This hierarchy of drivers suggests that policy change has largely been triggered by attempts to manage resources better, more than attempts to improve the economic performance of fisheries. This is consistent with a reported historic under-representation of economic and social perspectives in fisheries management (OECD, 2016[11]).

This is not unique to fisheries. Overuse of resources and depletion, or the risk of depletion, have been found to be key triggers of reform for many sectors (OECD, 2017[27]; Gruère, Ashley and Cadilhon, 2018[28]). The risk of depletion provides a particularly strong incentive for policy change in sectors where supply, productivity and profitability are directly and significantly affected by the status of resources (OECD, 2011[58]; OECD, 2016[59]; World Bank, 2017[4]).

Perceptions about the effectiveness of fisheries management are also a key factor. Dissatisfaction with fisheries management depends on both the objective performance of policies against the goals they were assigned and also on how stakeholders assess that performance, which can depend not only on performance but also on expectations (World Bank, 2010[31]; Tompson, 2009[23]; Deacon, 2010[32]). The introduction of policies aiming at limiting or preventing discards, for example, were reported to have been initiated largely in response to a perception among conservation NGOs – but also some of the general public – that discard levels and the associated waste of resources and food were not acceptable. At issue was not just the ineffectiveness of fishing practices at limiting discards but also the evolution of what was considered acceptable from an ethical standpoint.

If concerns over fisheries management's capacity to address overfishing and other issues related to the condition of stocks continue to be the main driver of policy change in the future, the effects of climate change on ocean ecosystems can be expected to increasingly drive policy changes. This invites to explore how evidence and scientific analysis could play a greater role in motivating and initiating reform by making performance issues apparent in a credible way.

Dissatisfaction with socio-economic performance

Declining profitability due to macroeconomic factors such as changes in inflation, currency exchange rates, the price of fuel, or international trade disruptions,[20] was cited less frequently in the questionnaire than issues related to the state of resources as a key trigger (it was so in about a third of surveyed episodes of change - Figure 3.1). However, there are reasons to believe that these factors, which have been found to significantly influence policy change in many policy domains (OECD, 2010[25]), could also play a particular role for fisheries in the future, as seafood is one of the most globally traded food products (Barange and Cochrane, 2018[17]).

The geographical distribution of global seafood production and trade and the contribution of capture fisheries and aquaculture to them have greatly changed over half a century. Developing countries, especially in Asia, have more than tripled their shares of both global production and trade since the 1950s, to about 70% in 2015 (FAO, 2018[2]). Over the same period, however, global consumption of seafood also increased dramatically, from about 9 kg per capita in 1960 to 20 kg in 2015 (FAO, 2018[2]). Future combined evolutions in international trade and global consumption of seafood products might trigger policy change, in order for countries to remain competitive or maintain market shares. This might be even more the case in countries where fisheries are nationally important, as declining performance or competitiveness can create pressure on national budgets.

The search for competitiveness could also create incentives for policy change towards more sustainable fisheries if – in addition to operating costs, quality, demand and prices – resilience becomes an important component of comparative advantage in the face of increasing uncertainty and risks. Where they have a choice, investors and operators, as well providers of services such as insurance, could concentrate their resources and effort on fisheries that they perceive to be the most resilient (Flynn, 2018[60]).

What is more, as fishers age and financial resources are required to renew and modernise fleets, the experts interviewed for this project indicated that the need to improve fisheries' competitiveness in attracting labour and investment could become a key trigger of future policy change (Nielsen et al., 2018[61]).

Commitment mechanisms and personal initiatives

Two other important triggers of policy change stood out in the questionnaire results: initiatives by people in charge and legal commitments to policy change had together initiated over 60% of the surveyed policy change episodes.

Discussions with the experts consulted for this project confirmed that the people in charge at a given moment can act as triggers of policy change, for example because of the particular leverage they enjoy among decision makers, the authority they have to convince stakeholders or their personal interest in particular aspects of policy management (OECD, 2007[26]). Leadership and individual political will are often cited as key ingredients contributing to policy change in other policy domains (OECD, 2007[26]; OECD, 2010[24]). The difficulty is identifying how they may emerge in a particular context. While this is beyond the scope of this report, it would be interesting to look into whether best practices in nomination and selection processes could help put people in charge who can effectively trigger policy change.

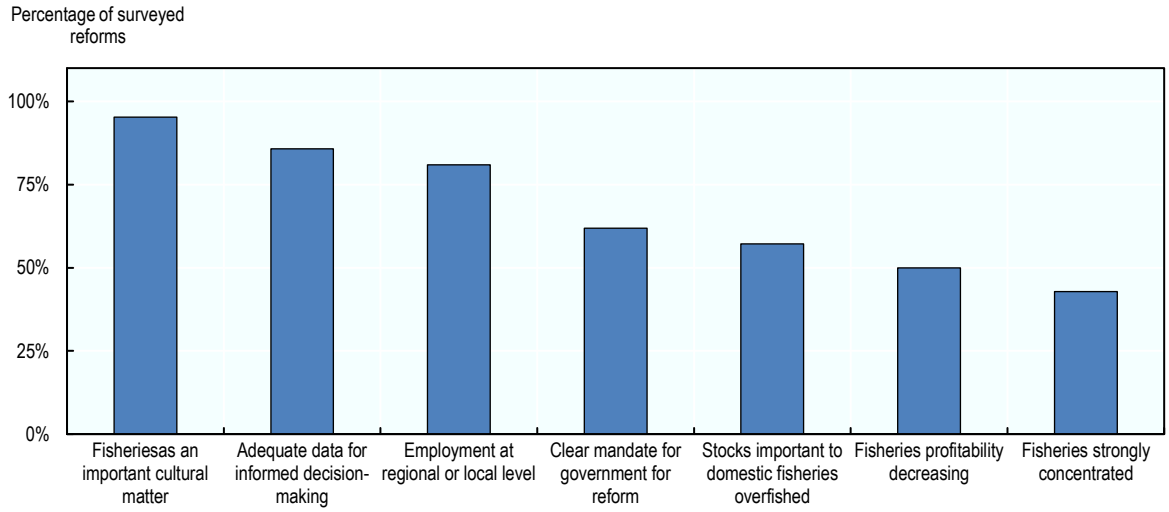
[20] Arising, for example, from regional or bilateral trade agreements, the imposition of temporary trade bans, new non-tariff barriers to trade, or market evolutions in other parts of the world.

On the other hand, legal commitment mechanisms – which can arise from domestic legislation, for example when it is specified that a policy will have to be re-evaluated, amended or replaced after a defined period of time, or from the adoption of treaties, agreements, or standards of practice at the international or regional level – are policy-change triggers that policy makers can influence directly, making them a promising factor to consider in this report.

3.2.2. The impact of socio-economic and cultural contexts on policy processes

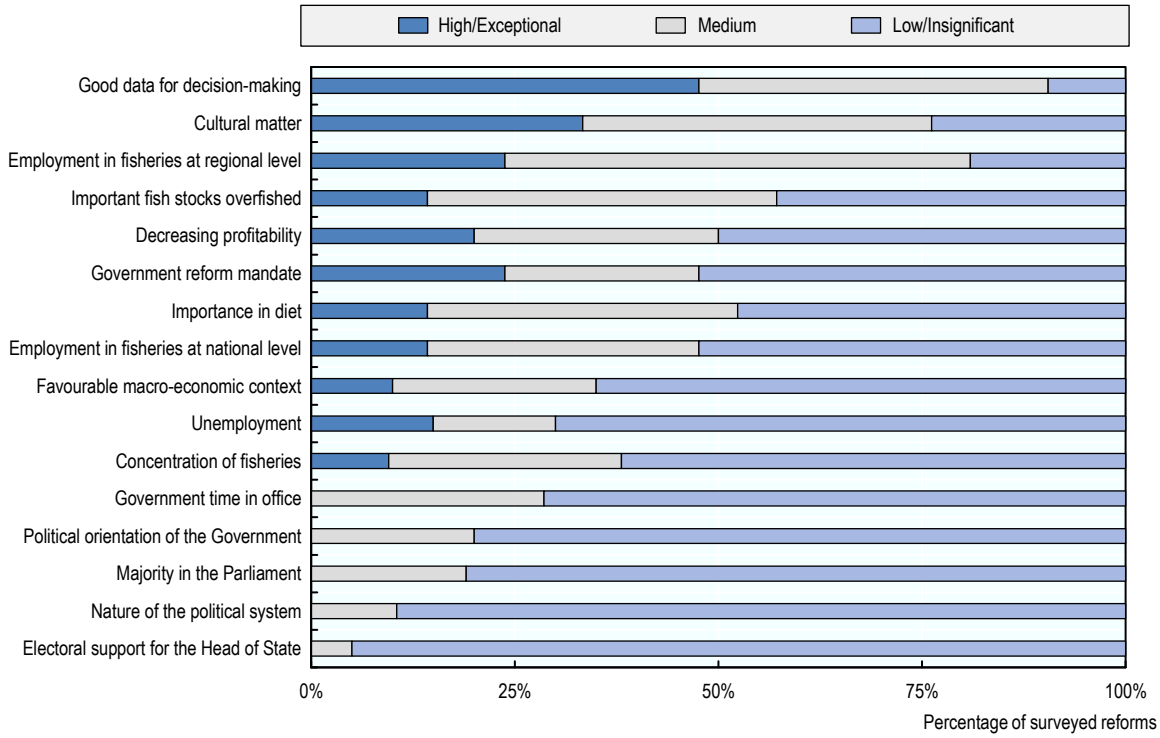
Examining the context in which policy change has happened over the past decade (Figure 3.2), and respondents' understanding of how important that context was (Figure 3.3), suggests that fisheries policy change is mainly about fisheries. While this may sound obvious, it is interesting to note how often respondents flag the particular relevance of the fact that fisheries are culturally important and important for employment at regional or local level. The latter factors were similarly highlighted as central to explaining the policy-change processes associated with the introduction of ITQs in Nordic countries in a recent report (Host and Christiansen, 2018[62]).

Figure 3.2. Contextual factors during the surveyed episodes of policy change



Source: Information shared by respondents through the questionnaire.

Figure 3.3. Importance of contextual factors during the surveyed episodes of policy change



Note: Factors are ordered by the weighted average of reported importance, with the following weights: exceptional-5, high-4, medium-3, low-2 and insignificant-1.
Source: Information shared by respondents through the questionnaire.

In contrast, fisheries policy-change processes seem to be relatively independent of macroeconomic trends and even more so from macro-political processes. In particular, respondents ranked the importance of factors such as government time in office, the political orientation of the government, whether it had a parliamentary majority, the nature of the political system and whether the head of state had electoral support as very low. This seems to differ from the experience in other policy domains (OECD, 2010[25]; Gruère, Ashley and Cadilhon, 2018[28]).

The only macro-political factor which seems to have had an important impact is whether the government had a mandate to engage in policy change, which was the case in about 60% of surveyed episodes of change. The experts consulted for this project mentioned how building a cross-party coalition to obtain a political mandate for policy change that applies to successive governments despite possible changes in the governing majority, can facilitate the process by reconciling the political cycle, which is usually short term, with the longer-term horizons of fisheries rebuilding.

The experts consulted for this project also flagged the distributional impacts of policy change, with adverse consequences for some – or just the threat of such impacts – as one of the major reasons why governments find it difficult to engage in policy change (OECD, 2007[22]) in relation with the particular importance of the cultural and regional socio-economic context of fisheries. Stakeholders are most likely to fear socio-economic impacts and resist policy change when there is a history of similar change, in the past or in other

countries, which led to significant unanticipated adjustment and distributional effects (Tompson, 2009[23]).

Distributional impacts are said to be of particular concern in fisheries because the sector can be characterised by relatively low job mobility, due to a lack of employment alternatives in some coastal regions combined with specialised skills, and sometimes greater reluctance to relocate in search of work. Fishing's particular working conditions, ranging from seasonality to payment systems based on share of catch, sometimes also mean that fishers may not be entitled to sufficient unemployment or other social benefits when they need them (OECD, 2007[22]). This can have a knock-on effect on the flexibility and resilience of fishery-dependent communities.

In OECD countries, however, there is little evidence that fisheries and communities have, overall, lower resilience than the economy as a whole. As Nielsen and colleagues noted (2018[61]), "*many studies investigating fisher income focus on few communities in a specific place or region, or* […] *identifying local communities with high fisheries dependency*". By taking a different approach and looking comprehensively at levels of incomes in four Nordic fisheries, and comparing them to alternative occupations, the authors challenge what they define as the myth of the poor fisher. They found that: "*fishers in* [Denmark, Iceland, Norway and Sweden] *are doing relatively well, and only in Sweden is the fishers' average income level below the average national income. Within the fleets, there are substantial differences. Owners of coastal vessels tend to have the lowest income, and also lower than crews. Owners as well as crews on larger vessels tend to do much better and in the largest fishing nations, Iceland and Norway, they do especially well*." These results are specific to the Nordic region, but they seem in line with observations elsewhere in the European Union (DG MARE, 2011[63]).[21]

Resistance to change may also be due to the anticipation of reductions in individuals or companies' competitiveness. Policy change can indeed reduce fisheries' competitiveness by increasing the harvest costs of some fishers through reduced harvest possibilities, the need for investment in new fishing practices or the elimination of support that others, operating in the same or similar fisheries, will not face.

In addition, the effects of fisheries policies in one country also depend on policies in other communities, regions or countries. Fishing operators find it hard to accept policy changes if the benefits they should generate in the long term through reduced pressure on resources and ecosystems might be compromised by increased pressure from other fishers in the short term. This concern is particularly acute in waters bordered by countries with different capacity for management and enforcement. It also explains why transboundary fisheries are often in worse shape than fisheries that lie entirely within individual countries' waters (Song et al., 2017[64]). Section 4.2.2 thus looks into how international and regional commitment mechanisms can help create a level playing field that facilitates policy change.

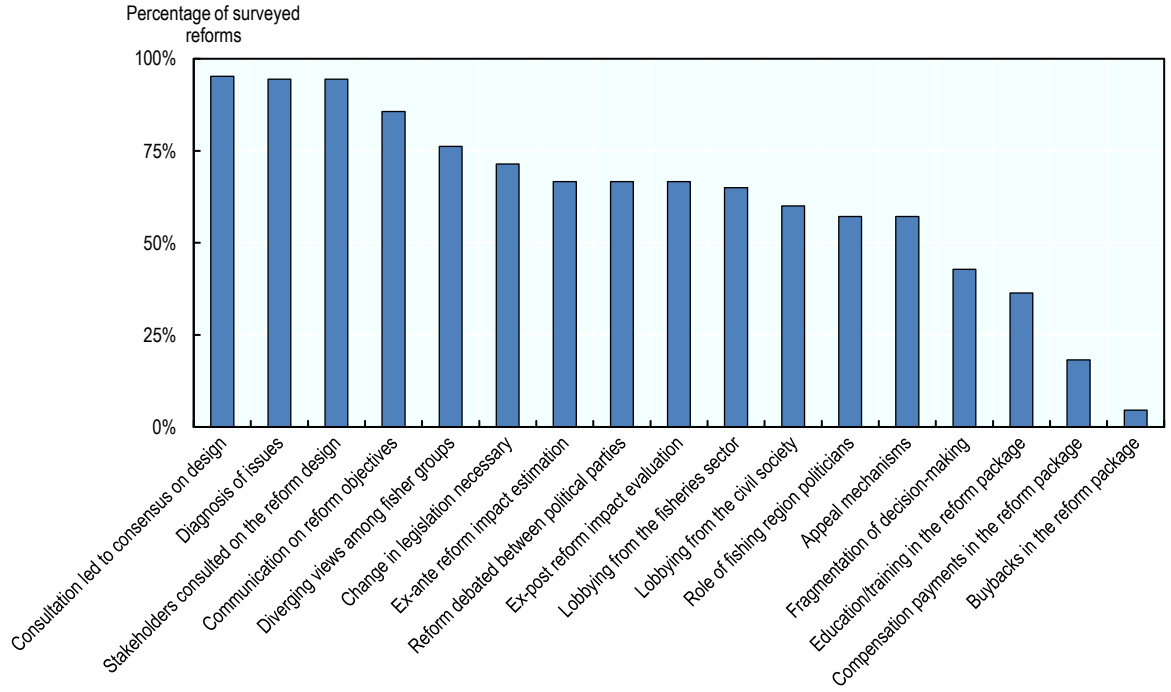
[21] Low resilience of communities in remote coastal areas is greater in developing and emerging countries, notably in small island developing states (SIDS), where social safety nets are less available and the reliance on harvested seafood for food security and incomes is very high (Vannuccini et al., 2018[114]; Kalikoski et al., 2018[107]). In these countries, fishing is indeed often an occupation of last resort, notably in the absence of access to land, and sometimes even a subsistence activity when access to markets is challenging (Béné et al., 2016[1]).

3.2.3. The impact of stakeholders interactions on policy processes

Among the processes that lead to policy change, the questionnaire results suggest that consultation and communication are widely undertaken (Figure 3.4) and believed to matter in facilitating change (Figure 3.5). Interactions with sector stakeholders, and their lobbying efforts, are also seen as important determinants of policy change.

Given that fisheries account for a small and decreasing share of gross domestic product (GDP) and employment in most OECD countries, rarely exceeding 1% of either, it might be expected that the power of sector stakeholders to oppose policy change may be limited.[22] However, in 65% of surveyed episodes of change, lobbying from the fisheries sector was found to have affected the design of policy change and such lobbying was ranked as having an exceptional or high impact on the process in about one-quarter of cases and a medium impact in about half of them.

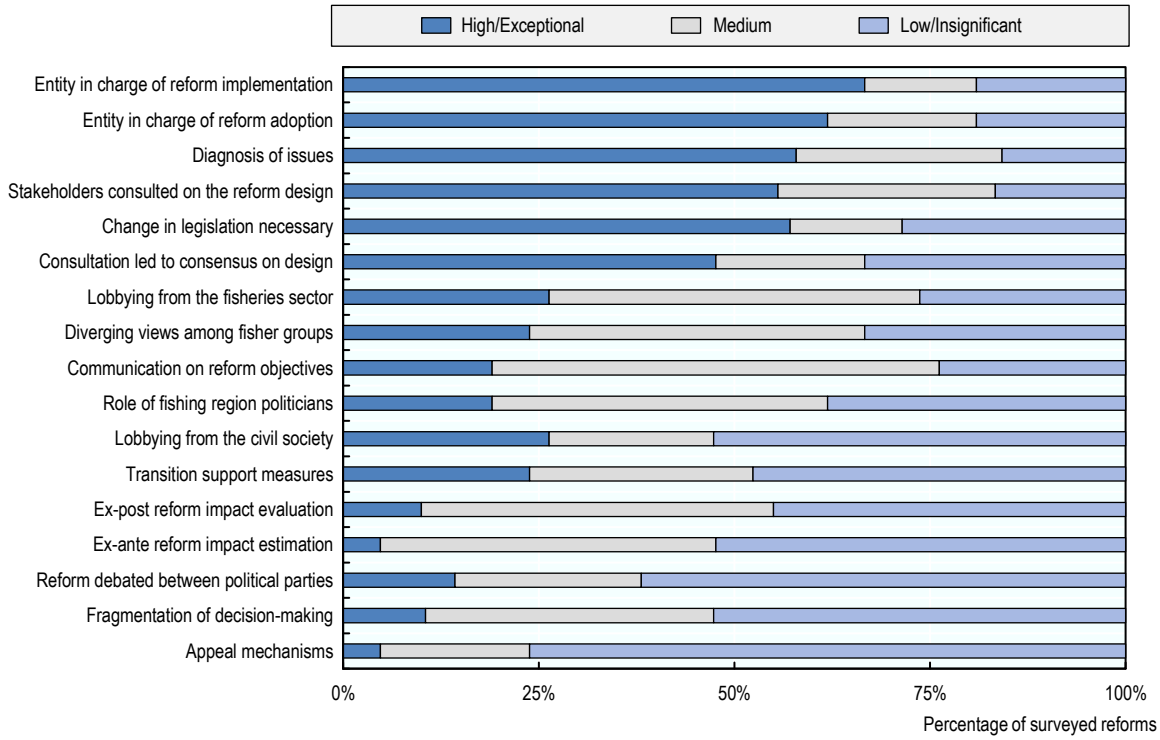
Figure 3.4. Characteristics of the surveyed policy-change processes



Source: Information shared by respondents through the questionnaire in response to a list of characteristics they could select from.

[22] In a few countries, notably outside the OECD, fisheries play a more important role at the national level, in terms of GDP, employment and as an employer of last resort as well as an uneasily substitutable source of key nutrients, particularly to the poorest communities (Kawarazuka and C, 2011[108]). In such contexts, the dynamics of collective action and the lobbying capacity of the fisheries sector to influence reform pathways may be different.

Figure 3.5. Perceived importance of the characteristics of the surveyed policy-change process



Note: Factors are ordered by the weighted average of reported importance, with the following values: exceptional-5, high-4, medium-3, low-2 and insignificant-1.
Source: Information shared by respondents through the questionnaire.

There are many reasons why fishers and the fishing industry can, in fact, act as a strong interest group with significant power to influence policy change (OECD, 2007[22]). According to the theory of collective action (Olson, 1965[42]), the very fact that the direct beneficiaries of public fisheries policies are often only a small fraction of the population means that their capacity to organise to defend their interests is likely to be greater than that of larger groups, relative to the economic importance of the sector.[23] Fishers are also often described as belonging to geographically concentrated and tight-knit communities that internally value solidarity and fairness, reinforcing their capacity to lobby when it comes to triggering or hindering reforms (OECD, 2007[22]).

The literature review for this study did not find any empirical evidence of fishers' particular cohesion, compared to users of water or land, for example. But the policy makers interviewed confirmed the perception that industrial fishing actors have historically been very well organised and connected to decision makers.

In many countries, the political importance of fisheries is also better understood from a territorial perspective, as fishing and downstream activities can act as the engine of the economy at the local level, where it can be a major and not easily replaced source of income. In the questionnaire, 81% of reviewed policy changes were said to have happened

[23] Because of the relatively small size of the sector, the aggregate cost of fisheries policies tends to be smaller than for other sectors, which means it might not be of key concern to taxpayers, hence potentially creating little public concern about delayed reforms even if they are needed.

in a context where fisheries and downstream activities were an important provider of employment at regional or local level in fishing areas (Figure 3.2).

There is also a cultural dimension to the perception of fishing activities and the status and role of fishers, not only among fishing communities but also the general public. This may reinforce the political importance of fisheries issues and increase the sensitivity of changes to fisheries policies. Fisheries were seen as culturally important at national or local level in 95% of the surveyed episodes of policy change (Figure 3.2). In regions and countries where fishing had played an important role in their socio-economic history, fishers often continue to be seen as working hard at a demanding and risky activity that involves facing the natural elements and that is essential for the well-being of everyone, and to be part of a valued regional or local identity (OECD, 2007[22]).

The socio-economic and cultural importance of fisheries can raise key political concerns for policy makers, especially those with an electoral mandate from fishing regions. As a result, parliamentarians from such regions sometimes do not follow their party's line when it comes to designing and adopting fisheries policy change, but rather act in line with views expressed by their fisheries stakeholders.[24] Political coalitions on fisheries-related matters can be quite different from the coalitions found in other policy areas. Over half of questionnaire respondents reported that interventions by politicians from fishing regions had an impact on policy changes (Figure 3.4).

The influence of fishers also depends on the influence of other sector stakeholders. In the questionnaire, respondents reported that lobbying by environmental NGOs have affected the design of about 60% of surveyed episodes of policy change (Figure 3.4) and they considered that such lobbying had an exceptional or high impact in about 26% of them (Figure 3.5).

It is often assumed that the influence of environmental NGOs is relatively new as it would have increased in recent years, for instance as Degnbol and colleagues have described (2006[57]). There is even concern among fisher representatives that environmental lobbying has increased beyond legitimate boundaries (Giron, 2012[65]). However, no evidence has been found to ascertain that increasing public concern for environmental issues in relation to marine ecosystems (as seen in the rising share of certified seafood in global consumption) would have translated into more lobbying activities on issues such as the preservation of biodiversity and marine ecosystems. Section 4.4 considers how consultation of stakeholders can be framed so that it enriches and eases policy-change processes while ensuring a balanced influence of different stakeholders.

The questionnaire results also show that factors which might influence the socio-economic impact of policy change (such as the inclusion of transition measures), and those that could help make it clear to stakeholders, (such as conducting impact estimates), are seen less frequently and also are seen as less important. This is surprising given the reported importance of concerns about the socio-economic impact of reforms and suggests that there is scope to make better use of such tools. This important issue for future policy change is addressed in Section 4.1.

[24] This suggests that attention might have to be paid to the composition of parliamentary commissions in charge of previewing legislation, whose decisions can affect decisions by wider legislative assemblies, to ensure a balance between parliamentarians with an electoral mandate from fishing regions, who are likely to have a good understanding of issues at stake, and parliamentarians who have no vested interests in the short-term satisfaction of fisheries actors.

3.2.4. Practical recommendations to facilitate policy change

The main findings of the questionnaire described above suggest there are four main avenues to facilitate policy change towards more sustainable and resilient fisheries, which are investigated in the next section:

- Invest in data and improve the governance of data collection and scientific evidence production to better motivate, prioritise and design policy change;
- Make greater use of commitment mechanisms to initiate policy change;
- Make policy change more legitimate and acceptable by adopting a whole-of-government approach to address the socio-economic issues affecting coastal communities;
- Encourage inclusive, open and transparent dialogues with stakeholders and across branches of the administration, throughout the processes of policy change.

4. Walking a tightrope: Encouraging policy change towards sustainable and resilient fisheries

4.1. Mobilising evidence and scientific analysis

4.1.1. Understanding the risks and the benefits of all options

The central role of sector performance, and how it is assessed, in policy change processes suggests that evidence and scientific analysis should play a key role in motivating and initiating policy change. The fact that questionnaire respondents identified the availability of good data for policy making as the second most important contextual factor affecting policy-change processes reinforces this argument (Figure 3.2). This is also in line with lessons from other policy domains and the finding that involving respected research institutions in providing information to the general public has facilitated major processes of policy change by depoliticising debates about the status of resources or sector performance (Tompson, 2009[23]).

Evidence and scientific analysis can indeed play a key role in motivating policy change by describing the status of fisheries, and the resources and ecosystems on which they rely. It has also been shown that lack of knowledge about risks is one of the main barriers to policy change towards more resilience (Flynn, 2018[60]). Scientific evidence can therefore also be expected to play a key role in initiating policy change by anticipating the risks induced by climate change and making people aware of them.

Because fisheries are very diverse in the socio-economic benefits they bring to society, but also very diverse in the challenges and risks they face, policy change is more urgent – or more promising – for some fisheries than for others. Where public resources are limited, and so is the scope for policy change, evidence and scientific analysis can help identify the fisheries, and the fleet segments and communities within them, which need the most investment, management and co-operation effort and which will yield the greatest results in terms of sustainability and resilience. This in turn can help deliver sustainability and resilience more quickly.

For example, when looking at the impact on the seafloor from bottom-contacting fishing, the International Council for the Exploration of the Sea (ICES) (2017[66]) found that landings from such fishing were geographically concentrated in what they define as "core" fishing grounds (both in weight and value). This meant that "*an overall reduction of fishing impact on the seabed, achieved by reducing fishing at the peripheral grounds, may result in a smaller reduction in landings and a larger reduction in pressure than if the reduction were at the core fishing grounds*". When looking at the need for policy change to adapt to climate change, Gaines and colleagues (2018[13]) found that a large proportion of the potential global economic gains, or a large proportion of the loss minimisation – depending on the climate change scenario envisioned – can be achieved through improving the management of less than 10% of global fish stocks, as long as it targets large overfished stocks. This stresses the value of granular data for policy makers to be able to identify the need for policy change and design solutions adapted to particular contexts.

Finally, ex-ante estimation of a reform's impact can also play a key role both in guiding policy-change design and convincing people about the potential benefits of different options for policy change. In particular, the experts interviewed for this project highlighted

the use of projections and comparisons of the anticipated effects of both keeping the status quo and options for new or amended policies as a key way to motivate and initiate policy change.[25] For example, the government of Indonesia worked closely with researchers to estimate the impact of proposed policy change in relation to changing the conditions for access to its EEZ to different segments of its fleet, and curbing IUU fishing through strict controls. The minister in charge of fisheries management used the results to explain the policy change and gain support in the sector (OECD, 2017[19]). Impact estimation has in fact become a legal requirement for many policy makers. For example, the European Commission introduced an internal system of integrated impact assessment for its major policy proposals in May 2002 (Commission of the European Communities, 2002[67]).

The relatively low importance ascribed to impact assessments for policy-change processes in the questionnaire results (Figure 3.5) may suggest that this is an area that needs more focus and investment in the future. However, it is a difficult task and needs to take place at the right time in the process (OECD, 2007[26]).

Assessing the possible costs and benefits of change by using measures such as gains (or loss) in productivity, impact on employment and the size of eventual support on the basis of projections, and investigating the possible effectiveness, relevance, acceptability and value added of envisioned policy change, requires significant information and formulation of hypotheses as to how key sector variables might respond to the envisioned change. The more detailed the level of analysis, the greater the information requirements. And it is very important to make sure that impact assessment does not just concentrate on average effects. Indeed, failure to consider the detrimental effects of policy change on some groups can challenge its perceived legitimacy and reduce its acceptability, even when it is expected to bring an overall economic gain. The unexpected or unanticipated impacts of past reforms have had serious effects on processes of policy change, creating the need for and the desire for further change, sometimes with radically different objectives and policy instruments (OECD, 2015[68]; Hutniczak, 2014[69]). Hence the experts consulted for this project said that measuring impact at disaggregated levels, acknowledging the distributional effects, being transparent about the need to endure immediate losses to achieve bigger gains in the future and being clear about the timeline of the expected impact, are all key to avoiding pushback in the absence of immediate benefits for all.

There is a general lack of evidence on the socio-economic condition of fisheries at the relevant scales, and in relation to other sectors, in part due to a historical emphasis on the biophysical rather economic and social processes associated with the marine environment (OECD, 2016[11]). This may explain why 1) only two-thirds of the surveyed change processes undertook an estimate of the socio-economic impact of the reform (Figure 3.4); and 2) socio-economic impact estimations are often only focused on the cost-benefit analysis and total change for society as whole, and do not provide evidence on how the effects might be distributed (Nielsen et al., 2018[61]).

In addition, the absence of definitive scientific evidence in fisheries is particularly challenging for policy makers as it weakens the evidence that could support the need for policy change but calls for more preventive action before robust evidence is produced, especially in countries where the capacity to produce such evidence is scarce. For example, accurately predicting where, when and how fish distributions will evolve may be difficult

[25] It has also been shown, through examples of successful and failed structural reforms, that estimating the costs of inaction, that is the consequences of not redefining objectives and of maintaining the status quo, and communicating about these costs, is an important part of attracting support for the objectives of a reform (Tompson, 2009[29]).

(Gaines et al., 2018[13]). This is due to interdependences among species and fisheries, the complexity of the bio-ecological system in which they develop, and the difficulty and cost of collecting information. Very little is known about how the effects of different uses and users interact, and data on marine resources are fragmented, in part due to the historically sector-driven regulation of ocean activities (OECD, 2016[11]). However, there is increasing information available about the economic value of marine ecosystems and the services they provide, which can usefully inform more efficient decision-making processes (OECD, 2017[12]).

The challenge therefore is to turn uncertainty about the status of resources into a rationale for precautionary policy change rather than a reason for delaying it.[26] As uncertainty about stock resources is increasingly coupled to uncertainty over the effects of climate change, the paradigm might need to change from a sustainability objective (economic, social and environmental) to one of long-term resilience (Gaines et al., 2018[13]).

4.1.2. Improving how evidence is gathered and used

In a context where evidence and scientific analysis have a key role to play, but where the evidence remains incomplete and the analysis partly uncertain, the mechanisms for producing and sharing them are a major factor affecting their capacity to initiate policy change in a credible way.

First, greater investment in gathering socio-economic data on fisheries that are comparable across regions and countries and over time, and in developing socio-economic indicators, would help create a more granular understanding of the issues at stake, and identify the segments of the population within countries and sectors who are most exposed to both risks and policy change.

Second, considering different sources of evidence and data, including fishers' knowledge, may improve understanding of the status of fisheries, especially in countries where scientific capacity is scarce. This may make assessments of fisheries' status more acceptable and legitimate to actors and stakeholders (Fischer et al., 2015[70]).

Third, transparency in methods and financing are generally recommended to avoid the strategic use of biased scientific expertise to influence decision making, as has been found to be the case in relation to environmental regulations of energy policies, for example (OECD, 2017[71]). Requiring transparency about the evidence base used to make policy decisions, perhaps with external scrutiny, can both encourage policy makers to review the evidence more thoroughly and increase its legitimacy (De Fine Licht et al., 2014[72]), both among stakeholders and in society at large. The latter is important as it has been shown that well-informed citizens are more engaged in their community and more likely to influence public policy choices that provide an adequate level of public good (Khemani, 2017[53]).

Fourth, because the way in which research questions and requests for evidence are formulated also influences the evidence and conclusions produced, it is also important to establish inclusive and transparent processes for requesting and designing scientific analysis. This can be done by promoting regular dialogue between policy makers, different stakeholders and the scientific community.[27] It is particularly important given a human

[26] This very much mirrors the challenge raised by evidence of climate change in general.

[27] New Zealand launched an interesting initiative in 2014, the Curious Minds project, to encourage all New Zealanders to engage with science and technology. The project includes a Participatory Science Platform where citizens can share the areas of scientific research they perceive to be the most locally relevant (Curious Minds, 2018[116]).

"*tendency to seek out or interpret evidence in line with your existing views*", which Hallsworth and colleagues (2018[51]) refer to as "confirmation bias".

What is more, when a policy change is designed to address a wide range of issues, it needs to be informed by knowledge about all dimensions of fisheries – economic, social, environmental and cultural. However, the people in charge often request specific advice on very specific issues. Degnbol and colleagues (2006[57]) showed how "tunnel visions", emerging from fragmented specialised advice, can lead to particular policies which were meant to address specific issues in particular contexts being framed as universal solutions for the management of fisheries overall. They illustrate this finding with the example of individual transferrable quotas (ITQs), marine protected areas (MPAs) and community-based management (CBM), which can be perfectly effective policies to solve some issues in particular contexts but can divert attention from the full range of policy options if they are presented as easily implementable universal solutions.

To avoid such tunnel vision, they recommend that knowledge be combined in a holistic way. This requires explicit co-ordination efforts to assemble research teams that are cognitively diverse and to overcome the fact that "*barriers of understanding* […] *arise across disciplines from differences in disciplinary language, theoretical frameworks and worldview, including of what constitutes valid scientific methods and process*" (Degnbol et al., 2006[57]). Organisations providing policy advice that convey scientific messages to policy makers, in particular international organisations like the FAO, the OECD and the World Bank could play a particular role in this respect. It is encouraging to note that fisheries-focused organisations, such as the ICES, an international organisation that develops science and advice to support the sustainable use of the oceans, are expanding their fields of expertise beyond natural sciences to also include economics and social sciences with the creation of specific research groups.

4.2. Using commitment mechanisms to initiate policy change

Knowledge about challenges (thanks to the availability of good-quality data and scientific analysis), and the capacity to address them do not inevitably lead to policy change. One reason for resistance to policy change is that a combination of urgency and complex problems can discourage change initiation (Degnbol et al., 2006[57]), especially when barriers to change are anticipated, for example in terms of the acceptability of the envisioned policy change. Opposition from different stakeholders may also arise throughout the change process, eventually stopping initiatives.

The questionnaire results however pointed at commitment mechanisms as a key trigger behind just under two-thirds of the surveyed episodes of change, suggesting that it can be a powerful tool for overcoming inertia in the future (Figure 3.1).[28]

4.2.1. Encouraging continuous policy change to adapt to changing conditions

Commitment mechanisms can arise from domestic legislation, for example when it is specified that a policy will have to be re-evaluated, amended or replaced after a defined period of time, or upon particular circumstance, by the government, a legislative assembly or sometimes independent committees or auditors. These sometimes also arise from habitus, rather than legal obligations. In the United States, for example, the main fisheries

[28] The role of commitment mechanisms may in fact have been even greater as the survey only enquired about legal commitment but habits are also said to engender commitment as explained in what follows.

management policies are reviewed and replaced relatively regularly, following a historical habit to do so. The advantage of legal commitment mechanisms over those deriving from habit is that, in principle, the commitment should be stronger, reducing the need to convince stakeholders and policy makers, and also reducing the associated transaction costs (as will be discussed in Section 4.4.1) so the benefit should be greater.

Finally, although much attention has been paid to policy changes initiated in response to a crisis (Drazen, 2000[38]; Alesina, Ardagna and Trebbi, 2006[40]; OECD, 2017[21]), it has been rightly noticed that processes of policy change, particularly incremental ones, also develop under normal political conditions and in a favourable socio-economic context (Tompson, 2009[23]). This seems to be particularly true in the fisheries sector: only half of the surveyed change processes were said to occur in a context of declining profitability and slightly more (57%) when important stocks were being overfished (Figure 3.2).[29] Engaging policy change in a favourable context can facilitate the process as it should reduce the need for costly transition and compensation measures. For example, consulted experts reported that, thanks to increasing prices for landings, improvement in the status of important stocks, lower fuel costs and a generally improving macroeconomic context, the profitability of the German fishing fleets improved after the 2008 global macroeconomic crisis. This favourable socio-economic situation for the fisheries sector eased the process related to the 2013 European Common Fisheries Policy (Regulation (EU) No 1380/2013).

Commitment mechanisms are also important to help embed scientific advice into decision making. While respondents to the questionnaire reported that data were generally available (in 86 % of surveyed change episodes, see Figure 3.2), they also questioned the extent to which, and how, these data had been used during processes of policy change. For example, the experts consulted for this report stressed how, in many countries, scientific advice for setting TACs only translates into decision making when the rules commit policy makers to follow it.

The experts consulted for this project saw adaptive policies – policies that build in flexibility coupled to mechanisms for automatic policy change in the face of possible evolutions of the fishery situation – as particularly promising because they can provide legal commitments to ensure that scientific evidence is used to motivate and design change when it is available. Such policies include adaptive management (Walters, 2007[73]), phased implementation strategies and exit options if measures prove inefficient at achieving their goals.

The use of pilots, with commitments to scale them up if they show a positive impact, can also contribute to accelerating the adoption of best policies and practices if the need for evidence is less at a smaller scale, or if a policy is more acceptable in some fisheries than in others.

Adaptive management, using a step-by-step approach that includes monitoring the conditions and performance of the fishery and commitments to use feedback to adjust policies, will create a need for more frequent data collection and impact assessment, with additional associated costs. But it will also create incentives for the fishing sector to cover these additional costs, either financially or by engaging directly in data collection, with the

[29] This seems to be different from what is observed for water policy change, which seems to be highly driven by crises, and where policy makers are encouraged to look for windows of opportunities to engage policy change (Gruère, Ashley and Cadilhon, 2018[34]).

prospect of increased harvest possibilities if continuous monitoring provides evidence of stock improvement.

Moreover, adaptive management can be particularly important where the existing information is imperfect, future trends are uncertain and definitive scientific conclusions lacking, which is often the case for fisheries.[30] Indeed, precautionary policy making (Hilborn et al., 2001[74]) may become more acceptable if policies can be designed to be adjusted as more data are collected and evidence becomes more reliable.

On the other hand, consultation and co-operation during the policy-change process need to carefully framed to make room for flexibility without compromising the pursuit of the main objectives of sustainability and resilience requires, so that flexibility does not become a pretext to undermine past decisions by the most vocal stakeholders (this will be addressed in Section 4.4.2).[31]

4.2.2. Using international and regional commitments

Commitment mechanisms can also derive from the adoption of treaties, agreements, or standards of practice at the international or regional level. For example, the FAO found that adoption of the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing led to concrete policy change, particularly, in developing countries, when the adoption was accompanied by financial support for implementation (FAO, 2015[75]; Hutniczak, Delpeuch and Leroy, 2019, forthcoming[35]). RFMOs are increasingly a major arena for such commitments,[32] potentially giving rise to policy change when existing systems are not already in line with the standards adopted and the engagements made.[33]

By committing several countries to policy change, international and regional treaties, agreements, and standards of practice have a particular role to play in creating a level playing field that helps overcome concerns about their impact on competitiveness (described in Section 3.2.2). In this perspective, ongoing multilateral negotiations over fisheries subsidies disciplines in the context of the World Trade Organization (WTO) and, increasingly, in regional trade agreements, as well as the inclusion of a target to prohibit harmful subsidies in Sustainable Development Goal 14 (SDG 14), adopted as part of the 2030 Agenda for Sustainable Development of the United Nations (UN) in 2015, will be essential to finding agreement about which policies are to be collectively avoided. SDG 14

[30] This could be even more necessary in the context of climate change. Unanticipated changes in stock condition and localisation, could lead, for example, to a need for change in the boundaries of an MPA or even the questioning of the objectives pursued by a given MPA or a need to change the authority responsible for a stock's management, if it becomes shared between communities or countries (Gaines et al., 2018[13]). Evidence may also show that estimates of the harvest pressure that a stock can sustainably cope with were wrong.

[31] Legal decisions were required in over two-thirds of the change episodes surveyed (Figure 3.4).

[32] Five new RFMOs have been created since 2000, initiating commitment mechanisms in the Northern, Southern, West and Central Pacific, South East Atlantic and South Indian Ocean: The North Pacific Fisheries Commission was established in 2015; the South Pacific Regional Fisheries Management Organisation and the Southern Indian Ocean Fisheries Agreement in 2012; the Western and Central Pacific Fisheries Commission in 2004; and the South East Atlantic Fisheries Organisation in 2003.

[33] See testimonials of such policy change at: http://www.fao.org/port-state-measures/background/testimonials/en/ and NOAA Fisheries (2017[117]).

also calls for effective regulation of fishing activities on the basis of science and requires countries to end overfishing and IUU fishing by 2020 (OECD, 2017[19]).[34]

However, the adoption and implementation of international treaties, agreements or standards of practice are inherently slow processes. International negotiations, in particular, are diplomatic processes, in which injecting scientific evidence, and getting stakeholders to engage is sometimes difficult (Wright et al., 2018[76]). What is more, international and regional treaties, agreements and standards produce different levels of commitment, depending on their legal characteristics, the enforcement mechanisms and systems of sanctions in place, and the perceived legitimacy and credibility of the system.[35] For example, RFMOs have different processes in place for reviewing compliance with the obligations that membership generates, as well as different sanctioning systems that may result in different levels of adherence to adopted conservation and management measures – thus being unequally effective at encouraging the needed policy change (Hutniczak, Delpeuch and Leroy, 2019, forthcoming[77]).

While beyond the scope of this paper, it would be interesting to conduct an in-depth investigation into why and how some commitments have triggered policy change in the past while others have been signed with little effect, to identify best practice in the use of international and regional commitment mechanisms to encourage fisheries policy change. For example, this could be along the lines of work looking into increasing participation and compliance in international climate change agreements presented in Barrett and Stavins (2003[78]).

4.3. Designing acceptable policy change

4.3.1. Adopting whole-of-government approaches to address the multiple objectives of fisheries policy change

One direct consequence of the central role of social concerns in the resistance to fisheries policy change (as described in Section 1.2) is that fisheries policies are often designed to address multiple overlapping goals covering fisheries sustainability (such as the declining abundance of resources or declining economic performance) and broader socio-economic issues such as producing more food, creating more jobs and increasing incomes in coastal areas (World Bank, 2010[31]).[36]

[34] As of November 2018, a number of countries will also engage in negotiations at the UN for an international legally binding instrument for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, under which disciplines on fishing in the high seas may be discussed (Wright et al., 2018[81]).

[35] The difficulty of producing effective commitment mechanisms is illustrated by the fact that the targets included in SDG 14 were already largely part of existing international commitments, which have not yet led to widespread policy change. The Aichi Biodiversity Targets associated with the Convention on Biological Diversity of the UN, which entered into force in December 1993, already specifically addressed fisheries management. Subsidies that contribute to overcapacity and overfishing were considered in Target 3, which aims to eliminate, phase-out or reform incentives harmful to biodiversity by 2020, and Target 6 notably posits that, by 2020, all fish and invertebrate stocks should be managed and harvested sustainably, legally and applying ecosystem-based approaches.

[36] Sometimes, fisheries policies even aim to achieve strategic objectives related to territorial sovereignty (OECD, 2017[19]), preserving biodiversity in marine ecosystems or improving a country's fiscal situation. Increasing evidence that mitigation strategies are needed from all sectors of the economy to limit climate change as much as possible also suggests that fuel efficiency of fishing should could become an additional objective of fisheries management (He et al., 2018[104]).

To the extent that objectives are complementary and do not conflict with each other, designing comprehensive reforms which target multiple objectives, can lead to balanced policy packages, in which policy instruments are combined to offset each others' adverse impacts on those disadvantaged by certain aspects of reform. For example, combatting IUU fishing at the same time as improving fisheries management may improve prospects for legal fishing operations by freeing resources captured by illegal operations, potentially compensating legal fishers for more restrictive policies aimed at improving sustainability (Cabral et al., 2018[79]). In contrast, combatting IUU fishing without also ensuring the sustainable management of domestic fisheries, may deliver disappointing results in terms of overall resource sustainability (OECD, 2017[19]). Designing comprehensive policy change around packages of instruments may thus increase their capacity to promote sustainability and reduce opposition to them (OECD, 2007[26]).

On the other hand, a key problem with designing policy change to meet multiple objectives is that not all objectives may be compatible in the short term. For example, policy instruments to attain a certain fleet size and associated employment opportunities, are unlikely to also contribute to rebuilding overfished resources. Adverse consequences for some stakeholders are indeed inherent to any change in access to resources or support mechanisms (OECD, 2007[22]; OECD, 2007[26]). These consequences do not just affect fishers themselves but also actors in the downstream industries of the seafood value chains.

Focusing on key objectives related to promoting sustainable fisheries may be more acceptable if they are combined with specific programmes to address any anticipated distributional impacts. For instance they could compensate those disadvantaged by the reform, facilitate transitions to other activities or modify changes through selective exemptions for the most vulnerable stakeholders (OECD, 2013[80]). It is important in these situations to consider the opportunity costs related to exemptions and amendments, as well as budgetary costs for compensation and policies facilitating transitions, in the decision-making process.

In many cases, targeted social policies, training and measures or public support enabling local economic development can help increase the resilience of coastal communities more effectively and efficiently than fisheries policies, including support to fisheries, making required change in fisheries management policies more acceptable at lower cost. For instance, Nielsen and colleagues (2018[61]) identified the Nordic countries' welfare model as a key factor facilitating changing fisheries policies in those countries.[37] A recent report (OECD, 2018[81]) recommends how governments can harness innovation in information, planning, financing and monitoring to help improve the resilience of coastal areas and stresses the need for close engagement with coastal communities in designing, planning and operating coastal infrastructure.

Increasing focus on supporting a sustainable blue economy could facilitate future processes of policy change in fisheries by creating new opportunities along coasts. The experts interviewed for this project mentioned some examples of compensation schemes used in the context of blue economy programmes. These included payments for ecosystem services during periods when fisheries were closed, payments to those wanting to use their vessels for alternative activities (such as for cleaning up plastic waste, data collection or monitoring), and the development of aquaculture or tourism through means such as micro-finance to support those starting other activities (Nielsen et al., 2018[61]).

[37] The ageing of fishers was also mentioned as a facilitating factor, as it meant that exit from the sector was facilitated through lower cost of compensation.

However, the use of policy tools other than fisheries policies usually require different budgets and decision-making channels because they are under the responsibility of different institutions – typically, ministries for social affairs, regional authorities or institutions in charge of infrastructure or education. This may partly explain why, surprisingly, only a few of the surveyed episodes of policy change involved transition support measures: education and training were offered in 36% of cases, compensation payments in 18% and buyback schemes in only 5% (Figure 3.4).

Adopting a whole-of-government approach to policy-change design is therefore critical to ensuring that the most efficient policy tools are considered and that they are designed and handled by the entities in charge of the relevant policy domains, or in close co-operation with them. Section 4.4.3 looks into concrete ways different branches of the administration can engage in fisheries policy-change processes.

4.3.2. Leaving the door open to appeals from stakeholders

Appeal mechanisms, allowing new policies to be challenged in the face of unexpected adverse consequences or dispute over implementation have been shown to be another important way to introduce adaptive policy change, reduce vulnerabilities, and hence increase the acceptability of policy-change processes. Ménard and Shirley (2008[46]) show how adequate appeal mechanisms strengthen the credibility of adopted rules, particularly when they impose constraints on actors, by allowing some flexibility in their interpretation while simultaneously limiting the scope for politically motivated interventions that would distort or circumvent newly adopted policies in favour of specific subgroups.

This positive finding presumes that the mechanisms of appeal (typically courts or administrative jurisdiction) are themselves credible, however, and that they can respond to concerns within acceptable timeframes. In many countries, courts have been found to play a key role in framing policy and governance changes through their interpretation of the law or the constitution, upon requests from fishing actors or environmental NGOs.

The questionnaire results suggested that policy makers may need to pay more attention to this feature of policy-change processes in the future, as over 40% of reviewed episodes of change were reported to have no appeal mechanisms, and only 14% created specific mechanisms for appeal through the change process.

4.4. Making the most of consultation and co-operation

4.4.1. Enriching and easing policy change through communication and consultation

Stakeholder consultation can inform policy makers of issues that may require and motivate policy change (OECD, 2014[82]). It is also key to mobilising collective intelligence to design the best possible options for policy change. It has also been found useful to channel opposition to policy change by integrating concerns throughout processes of policy change.

Combined with communication, consultation may also contribute to a better understanding among different parties of the rationale behind the changes, potentially modifying their positions on the proposed changes (OECD, 2017[21]). Experience from reforms of public utilities, as well as of major public policies on pensions or labour markets, has suggested the importance of having clear objectives and developing a narrative for policy change with sector stakeholders, to help build a stable coalition to support the change, make it credible and create favourable conditions for its successful implementation (Ostrom, 1990[50];

Cowan and Vickers, 1994[83]; Savedoff and Spiller, 1999[84]; Shirley, 2002[85]; Ménard and Shirley, 2008[46]; Tompson, 2009[23]; OECD, 2017[27]).

These points seem to have been taken on board by fisheries administrations. Communication on reform objectives, and the options chosen to achieve them, was reported in 86% of surveyed episodes of change (Figure 3.4). An interesting lesson from discussions among experts participating in the *Making Reform Happen* conference was that stakeholders themselves play an important role as communicators, by disseminating their interpretation of the reform objectives to each other and the wider public. Hence, by making sure that communication targets all sector stakeholders, they will, in turn, communicate to a larger audience. Lessons from behavioural economics also stress the importance of problem framing in communication efforts, as the acceptability of proposed policy changes does not only depend on its substance but also on how it is presented (Hallsworth et al., 2018[51]).

The questionnaire results also suggested that stakeholder consultation was almost universally undertaken over the design of the policy change and the diagnosis of the issues to be tackled. Such consultation processes emerged as the third and fourth most important features of processes of policy change (Figure 3.5). In addition, 95% of respondents reported that consultation on policy design contributed to building consensus for change (Figure 3.4).

4.4.2. Giving stakeholders a fair voice

Balancing influence in transparent consultation processes

Consultation can also open the door to undue influence, unfair competition and policy capture to the detriment of some stakeholders, the public interest and effective public policies (OECD, 2014[82]; OECD, 2017[71]).

For example, consultation processes are likely to be shaped by the culture of public administrations. In some countries, the authorities in charge of productive sectors, such as agriculture, food or fisheries, are known to have historically worked closely with the industry, while the authorities in charge of environmental protection have been more inclined to co-operate with civil society. It is therefore important to make sure that these natural inclinations are countered by explicit efforts to also consult and co-operate with less natural partners. Encouraging staff training and mobility across different parts of the government to promote open-minded attitudes could help avoid policies being designed and implemented in silos and could encourage policy makers to give stakeholders' lobbying a more balanced reception. On the other hand, establishing cooling-off periods before those in public employment can work as lobbyists helps avoiding issues of revolving doors between the industry and the public sector.

Transparent consultation processes also enable lobbying activities and capacity to be monitored in a way that can be compared across countries and time. Such monitoring could help inform discussions about the relative capacities of different stakeholders to influence policy. This is important to avoid perceptions of unfair representation, which create tensions among stakeholders. Such tensions are indeed very apparent in the fisheries sector, with mutual accusations of excess influence and distrust between industry and environmental NGOs. Some of the experts consulted for this project perceived these tensions to be more significant in fisheries than in agriculture.

The OECD's work on transparency and integrity in lobbying outlines key principles to ensure that all stakeholders have a fair and equitable voice in the decision-making process. These principles should apply throughout the policy-change process, not just at the decision-making stage, as significant pushback can also occur during implementation.[38] The following are of particular relevance to consultation taking place in processes of fisheries policy change:

- Publish the names of the organisations and people consulted when drafting legislation or defining a state's official position for a negotiation.
- Have clear processes and venues for physical consultations between ministers and stakeholders. Ministries can also proactively make public the meeting agendas of key officials. Announcing meetings in advance, and publishing lists of participants, agendas and main outcomes also contributes to the general transparency of the consultation process.
- Allow sufficient public scrutiny of the evolving discussions and negotiations by publishing the relevant documents in a timely manner, such as minutes of meetings, records of Member States' official positions, the arguments presented and their sources, contributions received from interest groups, and votes. Timeliness is key to allowing stakeholders with more limited capacity to participate in consultation.

Different approaches may be appropriate in applying these principles to policy change processes, depending upon their scope and magnitude. The frequency of meetings may, for example, make it impractical to publish detailed minutes. Confidentiality may also be required in some instances to allow sensitive issues to be openly discussed. In such cases, policy makers should look into alternative ways to make all stakeholders confident that the processes are remaining fair and transparent.

One particular issue that deserves attention in relation with consultation and lobbying is that fishing activities tend to be clustered and specialised, with differences in the scale of operation, the inputs used and the stocks targeted. Fishers therefore do not form a perfectly homogenous entity and are likely to be affected differently by policy changes. The questionnaire results suggested that in about three-quarters of reviewed policy changes, different groups of fishers or downstream industry representatives expressed different positions on the proposed changes (Figure 3.4). While this is not unique to the fisheries sector, it means that attention must be given, in consultation processes, to not neglect the segments of fisheries which have the least capacity to be heard. The experts consulted reported that conflicts between fisheries types, gears, and spatial areas were becoming more frequent and that it was the small-scale fishers who were probably the most under-represented, as their financial and human capacities for lobbying are sometimes low due to fragmentation and limited resources. One challenge when ensuring balance between

[38] In 2010, the OECD adopted the *Recommendation of the Council on Principles for Transparency and Integrity in Lobbying* (OECD, 2010[110]) to help decision makers promote good governance in lobbying and ensure that stakeholders can effectively scrutinise lobbying activities. The recommendation also provides a wider integrity framework that includes policies for managing conflict of interest to ensure that revolving door practices and the unbalanced representation of advisory groups are effectively mitigated. The OECD series of comparative reports, *Lobbyists, Government and Public Trust* (OECD, 2009[100]; OECD, 2012[101]; OECD, 2014[86]) take stock of progress made in implementing the recommendation, while the OECD report *Policy Capture* provides guidance for policy makers on how to mitigate the risks of public decisions over policies being directed away from the public interest (OECD, 2017[76]). The report *Stakeholder Engagement for Inclusive Water Governance* (OECD, 2015[99]) also provides a good example of how such principles can be applied in a particular sector, on the basis of a comprehensive mapping of who could have a stake in decisions, including those who can have a weaker voice in policy debates.

different fisher lobbies is that, because large-scale industrial operations might be less sympathetic to the general public than small artisanal fishing, lobbying groups representing fishers at large tend to "*use the artisanal fishery as the face of their communications strategy*" and "*claim that policies that benefit them will also benefit the economy at large, supporting this with exaggerated multiplier effects and broad definitions of the sector*" (OECD, 2013[80]). The experts also shared the view that, on the other hand, recreational fishers, who account for relatively low shares of captures but are numerous in some countries, can be vocal in debates around fisheries policy change.

Advisory groups

One promising way to balance the influence of different stakeholders while making the most of consultation to support policy change is to create advisory groups which can act as a forum for dialogue.[39] These advisory groups allow representatives of different institutions concerned with fisheries and related policy domains, groups of stakeholders, NGOs, and scientific institutions to directly intervene in decision making through a process that is already institutionalised. Such groups seem to be relatively widely used in the context of fisheries policy-change processes. Advisory groups were set up to diagnose issues in 72% of the surveyed episodes of change, and for participatory policy-change design in 61% of them.

Consultation through such groups is potentially more under the control of authorities and more transparent than consultation through lobbying, as participation and decision making are clearly decided and agreed on by all participants beforehand, rather than resulting from individual initiatives.

The same issue of balanced representation still applies, however, just as it does with lobbying. Advisory groups need to be inclusive enough to avoid issues arising from some stakeholders being left out and reforms designed without adequate consideration of their impact on them. On the other hand, over-representation of some groups can lead to the appropriation of policy change. Advisory groups that include very polarized interests can also see their role minimized if parties cannot agree on joint positions.

The composition of advisory groups has been found to be sensitive in the fisheries sector, with tensions sometimes arising from perceived imbalances or questions over the legitimacy of having non-sectoral stakeholders (notably NGOs) intervening in decision making (Peñas Lado, 2016[86]). This has also arisen in the particular case of groups representing countries in RFMO discussions.

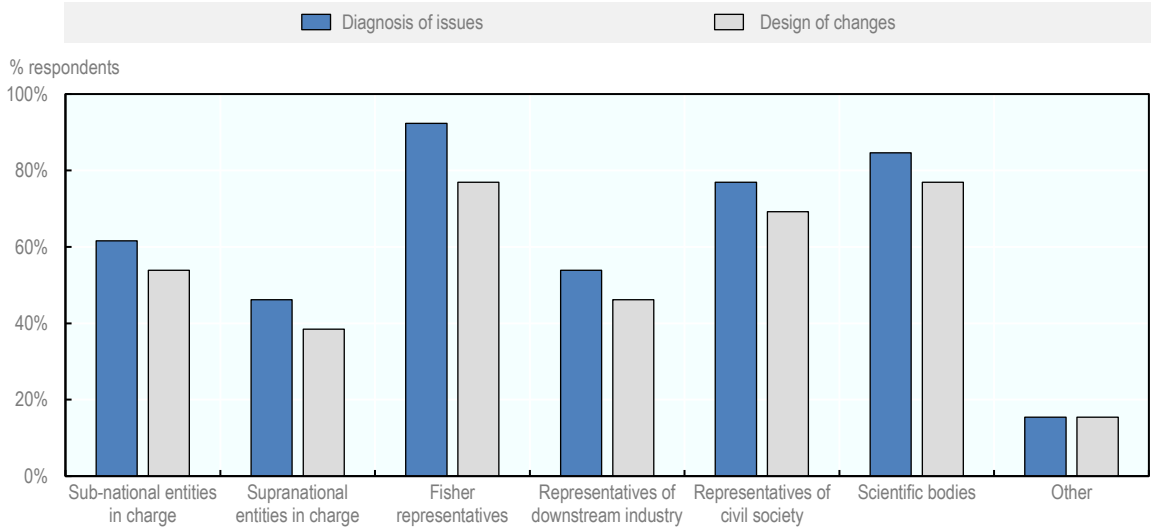
These tensions are not unique to fisheries. A survey on the use of advisory groups in the OECD (2014[82]) found that the influence of private interests through such groups is an emerging concern among OECD countries: 82% of OECD country respondents said they regularly consulted advisory groups when drafting primary laws, but 79% of legislators surveyed believed that advisory groups wielded influence over policy making and outcomes, and 47% felt that advisory groups were driven by special interests.

One way to ensure appropriate representation may be to require that the membership, agendas, minutes and participant submissions of such groups be made publicly available,

[39] According to OECD (2014[86]), an advisory group "*refers to any committee, board, commission, council, conference, panel, task force, or similar group, or any subcommittee or other subgroup thereof that provides governments with advice, expertise, or recommendations. They are made up of public and/or private-sector members and/or representatives from civil society and may be put in place by the executive, legislative or judicial branches of government or government subdivisions*".

allowing under-represented stakeholders to identify imbalances and ask for adjustments. It will also increase the potential for public scrutiny of their activities and reduce the risk of appropriation. In addition, OECD work on lobbying (OECD, 2014[82]) suggests that it is especially important to publish the interests of scientific representatives on advisory groups, to make sure only independent scientific advisors are nominated.

Figure 4.1. Participants in advisory groups set up during surveyed episodes of policy change



Source: Information shared by respondents through the questionnaire.

The results of the questionnaire carried out for this report seem to indicate that such bodies are less likely to have representatives from subnational and supranational authorities, and from downstream industries than representatives from the fishing industry and NGOs (Figure 4.1). However the sample is not representative enough to identify trends that would be robust across different types of advisory groups throughout the OECD.

Another challenge with advisory groups relates to their degree of responsibility in the decision-making process. Advisory groups can have roles that range from purely advisory to making recommendations that imply effective constraints. The greater the degree of constraint – that is, the higher the degree of co-decision – the more pressing the need for policy makers to build a coalition (or even some degree of consensus) around the need for change and the options chosen to undertake it, and the greater the potential of institutionalised consultation to bring consensus and commitment.

When advisory groups have a co-decision role, they can also create commitment from different parties, hence making changes in policies and governance more sustainable by reducing the need for control, solving conflicts resolving disputes during the process. This is particularly important for parties which have responsibilities to implement reforms, such as local institutions or private stakeholders in countries which partly delegate control and monitoring to the industry.

However, the greater the degree of co-decision, the greater the risk of delaying reform or derailing it from its initial goals (Tompson, 2009[23]). Longer and more complex co-decision processes can also create additional transaction costs. It could even be argued that representing the interests of society as a whole, including paying attention to particular

groups, is precisely the role of policy makers and politicians in a democracy. This suggests limiting the role of advisory groups that are not elected, or based on representatives elected by small sub-groups.

While the political economy literature contributed a lot to help understand how institutions can help put in place incentives that guide different particular interests towards optimal solutions for society as a whole, very little literature was found that would help identify optimal levels of inclusiveness and co-decision for advisory groups (OECD, 2016[87]).

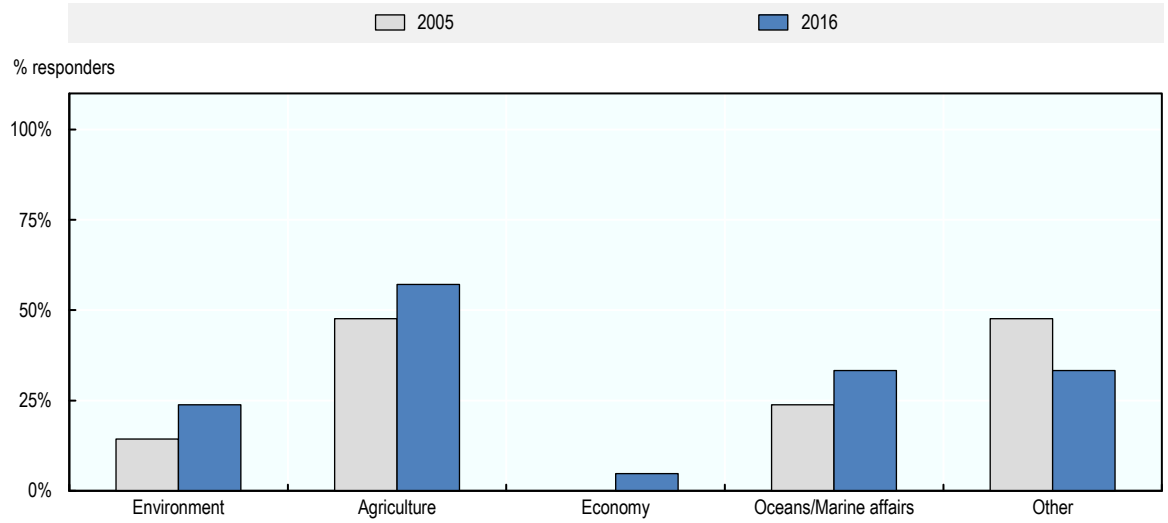
4.4.3. Engaging the administration

Handling fragmented decision making

Fisheries management tends to be fragmented because of the mobility of the resource being managed and because legal provisions assign responsibility for different areas of the seas to different authorities. As a result, responsibilities tend to be divided – and often overlap – between central, regional and local administrations; international co-operation bodies; and institutions managing particular species or fishing areas (OECD, 2011[58]; Ménard, 2016[55])

Responsibilities for fisheries management are also increasingly shared with institutions responsible for different policy domains such as the environment, or maritime or even economic affairs (OECD, 2017[18]). Just over one-third of respondents to the questionnaire reported a change in the overall portfolio of responsibility of the entities in charge of fisheries, mainly integration with agriculture, the environment, or ocean and maritime affairs (see Figure 4.2). A number of respondents also reported that responsibility for different aspects of fisheries management was split between different ministries. In some countries, this follows increasing recognition of the interconnected impact of different human activities taking place at sea, and the need to embed fisheries policies into the wider context of the ocean economy. The objective is to ensure that fisheries policies are coherent with other policies affecting the use of marine resources and support the development of a sustainable and resilient ocean economy, including addressing the combined impact of different activities on the ocean ecosystem (Jay, 2017[88]; Blæsbjerg et al., 2009[89]; OECD, 2016[11]).

Figure 4.2. Additional areas of responsibility of the main government entity in charge of fisheries management (2005 versus 2016)



Source: Information shared by respondents through the questionnaire.

Sometimes, the sharing of responsibilities creates particularly complex set-ups. In France, for example, regional and local entities work closely with and for the Ministry of Agriculture but they are formally part of the Ministry of Environment. Inside these regional and local entities, departments interacting with fishers work directly for the Ministry of Environment while those focusing on fleet management (particularly the rights attached to specific ships and shipowners, and controls) work directly with the Ministry of Agriculture.

Such fragmentation may complicate policy changes by inducing competition among authorities and across institutional layers, raising the multiple principals' problem, which reduces the capacity to adapt policies when needed (Weigel and de Monbrison, 2013[90]). Fragmentation can also result in a complex allocation of decision rights among layers of public authorities and overlapping jurisdictions, sometimes leading to problems of co-ordination, duplication and additional transaction costs, and difficulties in implementing policy change (Ménard, 2016[55]; OECD, 2015[91]; OECD, 2011[92]).[40] In the questionnaire, over 40% of policy changes were reported to have been slowed as a result of the fragmentation of decision-making processes.

On the other hand, the fact that responsibility for fisheries management lies with entities in charge of a variety of policy portfolios shows that there is no single and obvious policy mandate under which it fits. Involving different branches of the administration in decision making, and sharing responsibilities among them, may thus support more comprehensive policy changes by facilitating the consideration of multiple perspectives.

[40] On the other hand, competition among institutions may also limit the risk of governmental monopolies (Laffont and Martimort, 1999[43]; Estache and Martimort, 2001[102]) and decentralised decision making may result in reforms better adapted to local conditions (Jin, Qian and Weingast, 2005[106]). When fragmentation is beneficial to reform processes, and when it hinders it, remains debatable (Laffont, 2005[45]; Estache and Martimort, 2001[102]). At present, only a few empirical studies have assessed the impact of these different contexts on reform processes, something that can be done only through comparative analysis.

This may be all the more necessary in contexts where individuals are very specialised in different branches of the public administration. Indeed, some of the key findings of behavioural economics applied to government suggest that bringing together individuals with different perspectives is necessary to overcome confirmation bias, which "*can make people less able to critically analyse information that conflicts with their beliefs*" but also group reinforcement "*when people self-censor and conform to the group majority view*"; and inter-group opposition "*when the pull towards group identity (and conformity) makes members reject the arguments of other groups even if they are good ones*" (Hallsworth et al., 2018[51]).

The experts consulted also reported that administrative cultures (which are influenced by educational background and other social similarities that people share in the administration) are persistent and can even resist a change in mandate of the institution they work for. Hence, in practice, transferring responsibilities for fisheries management between ministries, or from a ministry to an independent agency, may not always bring about policy change, if there are no changes in staffing or efforts to modify habits and norms.[41]

Inter-governmental co-operation groups

One way to overcome the trade-offs between fragmentation and integration of decision-making responsibilities and the difficulty of allocating responsibility of fisheries management to the right entity is to create inter-governmental co-operation groups. These bring together different levels of the administration – local, regional and national – and branches in charge of other policy domains to address particular policy issues or ensure that general fisheries management objectives are in line with other cross-cutting policy objectives. Such groups can also facilitate whole-of-government approaches to policy change if they include more than just branches of the administration in charge of different aspects of fisheries management.

Interesting examples of such inter-governmental co-operation groups can be found in the governance of IUU fishing, where fisheries authorities commonly benefit from collaboration with port authorities, tax authorities, customs administrations, coastguards, trade authorities, police and other law enforcement authorities. The survey on the uptake of best policies and practices against IUU fishing (Hutniczak, Delpeuch and Leroy, 2019, forthcoming[35]) shows that, since 2005, inter-governmental co-operation mechanisms have been stepped up, allowing a variety of actors to jointly gather, process and disseminate information on IUU fishing activities. In 2016, for example, fisheries authorities shared information with other entities to facilitate detection of IUU fishing in all surveyed OECD countries, customs authorities shared information in 87% of them and even tax authorities shared information in about one-quarter.[42]

[41] The same is true after a change in political orientation of the government, with the sensitivities of the party in charge not always matched by changes in sensitivities in the administration.

[42] Looking at how to mainstream biodiversity in policy making for sustainable development, (OECD, 2018[111]) also highlights the role that inter-ministerial commissions can play in developing national strategies and plans that are more coherent and (OECD, 2016[11]) calls for inter-governmental co-operation between public authorities in charge of all ocean industries and conservation and sustainable use of ocean resources noting the potential associated with more horizontal consideration of ocean activities: "*recent history has demonstrated time and again that once closely interconnected clusters of economic activities begin to be perceived as an economic system or "economy" rather than as a fragmented collection of individual sectors, they garner more attention and benefit from coherent strategic approaches to their development*". It will be interesting to look into whether concrete policy change emerges from such co-operation.

4.4.4. Fostering open and constructive dialogue

A common challenge to all types of multi-actor consultation initiatives, notably advisory and inter-governmental co-operation groups, is that of communication between individuals with different backgrounds and perspectives. However, particularly in the context of climate change, it will become more and more important that conservation and fisheries management are not seen as different perspectives but as inextricably related issues to achieve resilience for fisheries and fishing communities.[43]

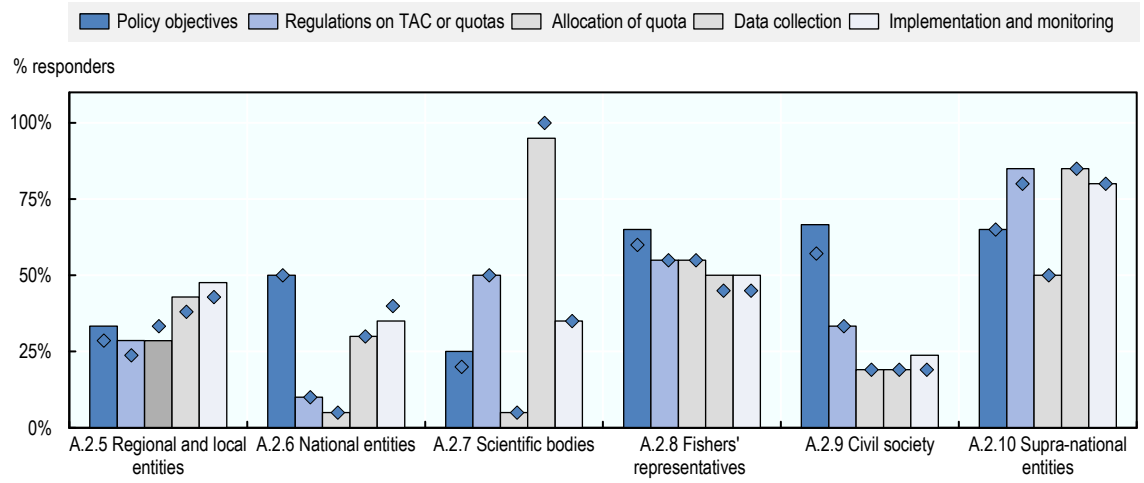
Objectives for fisheries policies and cultural perceptions of their role and the problems they face are deeply grounded in individuals and groups and can complicate communication, especially in contexts where resources, or the benefits of their exploitation, are at stake. This also means that it can be hard for people in charge of fisheries management to translate the outcomes of consultation into actual policy change or to grant co-decision roles to advisory or inter-governmental groups.

This might explain, why it seems that, in practice, little change has happened over the past decade in terms of who is involved in policy-change decisions, despite adjustments to the overall governance in the sector (as illustrated in Figure 4.2). Figure 4.3 shows that only a few respondents reported changes in the respective responsibilities of different government bodies and relevant stakeholders throughout the decision-making process. The only noticeable changes included an increase in the number of respondents reporting the involvement of civil society in policy objective setting, from 57% to 67% and in those reporting the involvement of regional and local entities in data collection (from 38% to 43%) and in implementation and monitoring (from 43% to 48%).

[43] The agricultural sector seems to have started the transition towards more dialogue with environmental protection actors earlier. One possible explanation could be that the production and consumption of products certified on the basis of different sustainability criteria started earlier in agriculture and is now booming. It would be interesting to look for best practices to be learnt in terms of fostering co-operation between productive activities and environmental protection across sectors.

Figure 4.3. Roles of public entities and relevant stakeholders in fisheries governance

2016 versus 2005 (diamond-shaped markers)



Source: Information shared by respondents through the questionnaire.

This suggests that effectively using consultation and, particularly, advisory and inter-governmental co-operation groups to promote policy change will probably require a better understanding of stakeholders' culture and paradigms as well as specific strategies to foster open and constructive dialogue.

In a report applying the lessons from behavioural economics to government work, Hallsworth and colleagues (2018[51]) recommended training policy makers to design and facilitate more open discussions. This could be done by means such as creating space for diverse views to be expressed before during and after group discussions, through online platforms, and by using framing techniques to make a proposal mutually acceptable. The presentation of a policy change can determine its acceptability as much as its substantive content, so a change in emphasis, or highlighting actions that do not cost one side much but are symbolically important to the other, can make changes more acceptable to all sides.

Box 4.1. Recommendations for policy research organisations

The report also identifies how policy research organisations could further support governments and stakeholders in engaging on effective policy change pathways to achieve more sustainable and resilient fisheries:

- Contribute to offering holistic evidence and space for consultation and debate by bridging between the scientific community, policy makers and civil society, but also across scientific and policy domains.
- Contribute to framing methods to gather socio-economic data on fisheries that are comparable across regions and countries and over time, including through the development of socio-economic indicators.
- Engage in research at the interface of governance and policy making (in fisheries but also in other policy domains), to further investigate best practices to promote policy change. Particular areas where additional practical guidance would complement the insights in this report include: best practice in creating commitment through international agreements and treaties to accelerate policy change; in allocating responsibilities that cut across different policy domains at different levels of the administration and across policy portfolios and institutions; and in creating incentives for co-operation across policy domains.

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Annex A. Questions in the questionnaire

Table A.1. Questionnaire questions: Contextual factors and attributes of the policy-change process

The following questions were included in the questionnaire conducted for this report. In addition, respondents were asked to report their appreciation of the degree of importance of the following factors in shaping pathways to change.

Socio-economic, political, cultural and historical context
How important are fisheries at regional/local levels in fishing areas?
How important are fisheries to employment at national scale?
How important is fish to the national diet?
Are some fish stocks important to domestic fisheries overfished?
Is the fisheries sector in good economic health?
Are fisheries strongly concentrated?
Are fisheries seen as an important cultural matter at national or local level?
Did the Government have a clear mandate for reform?
Was the reform introduced during a particular political window of opportunity?
Institutional context
How fragmented in the decision-making process for fisheries management?
Which stakeholders and institutions were represented in participatory committees?
Did participatory committees intervene in the reform process on an advisory basis or with some degree on constraint in their recommendations?
At which steps of the reform process did participatory committees intervene?
What policy domain did the main entity in charge of fisheries management cover?
Role of stakeholders
Was opposition to the reform process voiced by stakeholders?
Did direct lobbying from the fisheries sector have an impact on the reform process? (e.g. inclusion of exemptions, amendments or compensation)
Were politicians from fishing regions particularly implied in reform design or active in debates around adoption of the reform?
Were fisheries issues debated between political parties?
Were public demands for environmental improvements related to fisheries expressed?
Did different groups of fishers or representatives of the downstream industry voice different positions on the reform process?
Role of institutions and advisory bodies
Did different institutions in charge of different aspects of fisheries management express disagreement over the reform process?
Did the fragmentation of the decision-making process lead to problems of coordination along the reform process?
Did advisory bodies prove useful in lowering opposition to the reform?
Did advice or recommendations from the advisory bodies have an impact on the reform process? (e.g. inclusion of exemptions, amendments or compensation)
Reform process attributes
Was communication undertaken on these objectives and the options chosen to achieve them?
Was estimation of impact undertaken ex-ante and by whom?
Were mechanisms of appeal used in the reform process?
Was a diagnostic of the sector and resources undertaken, and by whom?

Annex B. List of surveyed episodes of change

Table B.1. Surveyed episodes of change

Episodes of change respondents chose to comment on in the survey

Country	Brief description of surveyed change in policy or governance	Initiated on	Adopted on	Implemented as of
Australia	Australian Government Minister for Fisheries, Forestry and Conservation ministerial direction to the Australian Fisheries Management Authority under section 91 of the Fisheries Administration Act 1991	20/12/2005	20/12/2005	01/09/2007
Belgium	Landing obligation introduced by the EU common fisheries (Regulation 1380/2013).	01/01/2013	11/12/2013	01/01/2016
Canada	Pacific Integrated Commercial Fisheries Initiative (http://www.pac.dfo-mpo.gc.ca/fm-gp/picfi-ipcip/index-eng.html)	13/12/2006	16/07/2007	27/09/2007
	Fisheries and Oceans Canada's Sustainable Fisheries Framework	01/01/2007	01/04/2009	01/04/2009
Colombia	Integral Policy for the Development in Sustainable Fisheries in Colombia.	03/03/2014	03/03/2016	15/11/2015
Germany	Reform of the EU common fisheries (Regulation 1380/2013)	02/12/2011	11/12/2013	01/01/2014
Estonia	Reform of the EU common fisheries (Regulation 1380/2013)	01/01/2010	31/12/2013	01/01/2014
France	Reform of the process through which are delivered national authorisations required to get European fishing licenses was deeply transformed.	01/02/2016	30/12/2016	01/02/2017
Greece	Reform of the EU common fisheries (Regulation 1380/2013)	13/07/2011	11/12/2013	01/01/2014
Italy	Reform of the EU common fisheries (Regulation 1380/2013)	11/11/2013	11/11/2013	11/11/2013
Korea, Republic of	First Framework for Fisheries & Fishing Community Development (2016 to 2020): This was adoption of a new Act for the management and internal regulation of fisheries. The main objective was to regulate through community-based fisheries management instruments.	01/01/2015	01/04/2016	16/05/2016
Lithuania	Establishment of a system of transferable fishing concessions.	13/11/2013	29/06/2016	01/11/2016
Latvia	Introduction of individual transferable quotas.	01/01/2009	22/12/2009	22/12/2009
Netherlands	Reform of the EU common fisheries (Regulation 1380/2013)	01/09/2009	15/12/2013	01/01/2014
Norway	Implementation of a new Marine Resources Act	09/06/2003	06/06/2008	01/01/2009
New Zealand	Reform of the conditions under which foreign charter vessels can fish in New Zealand Fisheries waters	01/08/2011	07/08/2014	01/05/2016
Slovenia	Reform of the EU common fisheries (Regulation 1380/2013)	13/07/2011	17/10/2013	01/01/2014
Sweden	Introduction of an ITQ-system in the Swedish pelagic fisheries in 2009	01/01/2007	17/06/2009	22/11/2009
Chinese Taipei	Amendment to the "Regulatory Guidelines for the Competent Local Authorities to Manage Larval Fishery" was promulgated, and it was amended in 2010, 2011 and 2012.	01/01/2013	13/11/2013	10/02/2014
United Kingdom	Reform of the EU common fisheries (Regulation 1380/2013)	01/01/2009	13/07/2011	01/01/2014
United States of America	Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006	19/06/1996	19/06/2006	01/01/2007

Annex C. Agenda of the Making Reform Happen conference

Introductory session
Chair: Rachel Bae, Senior Counsellor, OECD

10:00-10:05 **Welcoming remarks - Leon Lomans**, Chair of the OECD Committee for Fisheries

10:05-10:15 **Introductory remarks - Ken Ash**, Director of the OECD Trade and Agriculture Directorate

10:15-11:00 **Keynote addresses**

H.E. Susi Pujiastuti, Minister of Marine Affairs and Fisheries, Republic of Indonesia

Maria Damanaki, Global Managing Director for Oceans at The Nature Conservancy and former European Union Commissioner for Maritime Affairs and Fisheries

11:00-11:15 **What can we learn from the last decade of fisheries reforms?**

Claire Depleuch, Policy analyst, OECD

Building support for reform
Chair: Karin Mundnich, COFI Delegate, Chile

11:15-11:45 **Sam Rauch**, Deputy Assistant Administrator for Fisheries and Deputy Assistant Secretary for International Fisheries, National Oceanic and Atmospheric Administration, United States

Javier Garat Pérez, Secretary General of Cepesca – Spanish Fisheries Confederation

Vera Coelho, Officer, European Marine Programme, The Pew Charitable Trusts (tbc)

11:45-12:45 **Discussion**

- How to build political support for reform? [e.g. coalition building; role for fishing region representatives]
- How to find support or deal with disagreement from stakeholders? [e.g. at which stage should they be consulted? With what impact?]
- What are the trade-offs between consultation and rapid action in terms of reform effectiveness?
- What is the role of international agreements in driving reforms?
- Are there contextual windows of opportunities that should be exploited? [crisis vs. normal context; macro context; political]

Using evidence throughout the reform process
Chair: Annie Lee, COFI Delegate, Chinese Taipei

13:45-14:15 **Mr Yimin Ye,** Branch Head of the Marine and Inland Fisheries Branch, Food and Agriculture Organization of the United Nations (FAO)

Christopher Costello, Professor of Natural Resource Economics, University of California and Research Associate, National Bureau of Economic Research

Mark Dickey-Collas, Ecosystem Approach Coordinator, International Council for the Exploration of the Sea (ICES)

14:15-15:15 **Discussion**

- How to mobilise evidence – both on the status of resources and on the socio-economic characteristics of fisheries – to describe and communicate the challenges that reform must address?
- How to deal with the uncertainty pertaining to marine sciences? [e.g. precautionary principle rather than delaying reforms]
- How to legitimize scientific findings? [particularly among fishers]
- How to implement science-based decision-making? How can legislation give a prescriptive role to scientific advice?
- What kind of evidence do policy-makers need? What is missing?

Designing successful reform packages

Chair: Greg Schneider, COFI Delegate, United States

15:45-16:15 **Ernesto Peñas Lado**, Principal Advisor – Fisheries Policy, European Commission

Andres Couve, Advisor on International Affairs, Sonapesca, Chilean National Fishing Association

Michel Kaiser, Professor of Marine Conservation Ecology at the School of Ocean Sciences, Bangor University and member of the Fisheries Expert Group of the International Union for Conservation of Nature (IUCN)

16:15-17:15 **Discussion**

- Impact analysis: how can it help design reform packages?
- How can flexibilities be designed in reform to anticipate needs for adjustment without compromising objectives?
- How to address trade-offs between conservation and socio-economic objectives?
- How much should stakeholder participate in reform design?
- How can trade-offs between results and acceptability of reform be resolved through transition periods or compensation measures?

Wrap-up and recommendations

Chair: Martha Astrup, COFI Delegate, Norway

17:15-17:45 **Tour de table**

Each speaker to give one take-away recommendation

17:45-18:00 **Closing remarks - Franck Jesus**, Head of Division, Natural Resources Polices, OECD

Annex D. List of experts consulted outside the *Making Reform Happen* conference

- Mr. Andrés Couve, Advisor on International Affairs, SONAPESCA F.G., Chile.
- Ms. Maria Damanaki, Global Managing Director for Oceans at The Nature Conservancy and former European Union Commissioner for Maritime Affairs and Fisheries.
- Ms. Kristina Gjerde, high seas policy advisor for the IUCN Global Marine Program.
- Mr. Markus Haward, Professor, Oceans and Cryosphere, University of Tasmania.
- Ms. Myeonghwa Jung, Director of the Department of International Fisheries Research at Korea Maritime Institute, Korea.
- Mr. Tae Hoon Lim, Chief of the International Cooperation Division, Ministry of Oceans and Fisheries, Korea.
- Mr. Max Nielsen, Associate Professor, Department of Food and Resource Economics Science Faculty University of Copenhagen, Denmark.
- Mr. Mogens Schou, Denmark, Partner, AquaMind, Denmark.