

Chapter 21

Small-Scale Fisheries Governance in Norway: Hierarchy, Institutions and Markets

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Abstract Small-scale fisheries are highly relevant in Norway. Until 1989, small-scale fisheries were open access and, like other Norwegian fisheries, subsidised; since then they have changed radically. The closure of major fisheries in the early 1990s, following collapses in important stocks and the removal of direct subsidies, has affected fisheries of all sizes. Societal changes have also had an impact on Norwegian small-scale fisheries. There have been changes to the welfare state and the adoption of strategies designed to make the fishing industry ecologically and economically sustainable. These have contributed to new developments in fishing technology and practices and altered the social organisation of fisheries. Although Norwegian fisheries' policy has focused on the structural adaptation of the fishing fleet and economic efficiency, it has also attempted to protect the small-scale fishing fleet, originally defined as vessels under eleven metres in length. This has meant that the national fisheries' policy framework, though focusing on sustainability and profitability, has allowed small-scale fishing to survive both as a part-time activity and a full-time profession, and ensured its full integration into the fishing industry. This chapter presents the background to this situation and describes important drivers behind these changes in Norwegian small-scale fisheries and concludes with some lessons that can be learnt from developments in Norway.

Keywords Norway • Small-scale fisheries • Governance • Institutions • Mandated Sales Organisations

21.1 Introduction

In Norway, fisheries are more productive than agriculture. The warm water from the Atlantic current keeps the Norwegian coast ice-free throughout the year, and the natural conditions make the shallow coastal waters and fjords a perfect spot for fish to spawn and feed. Thus, from January to April, there are huge winter fisheries for Arctic cod (*Gadus morhua*) and Atlantic herring (*Clupea harengus*) taking place typically less than an hour from the nearest harbour. As much as 70% of the total catch of cod and herring is landed in these months. In addition, species like saithe (*Polaccius virens*), haddock (*Melanogrammus aeglefinnus*), mackerel (*Scomber scombrus*) and capelin (*Mallotus villosus*) and several other fish species and crustaceans form

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a resource base for year-round fisheries. The abundance of near shore fish has made small-scale, labour-intensive commercial, subsistence and recreational fishing important to Norway's coastal population. For centuries small-scale vessels from all over Norway fished cod in the northernmost regions in the spring. Owing to the seasonality of fishing, with less fishing in late spring and summer, fishers combined small-scale, seasonal fishing with small-scale farming or other livelihoods. Although most of the commercial fishers were men, women and children were also heavily involved in preparing the boats, gear and supplies and in processing the catch.

In Norway, coastal and inshore fishing took place in an open-access regime with few regulations for many years. Self-ownership and cooperative institutional arrangements have always been fundamental to the Norwegian fishing industry (Jentoft and Johnsen 2015). Moreover, the organisation of the fisheries has traditionally been "organic" (Johnsen et al. 2009a), consisting of a network of close affective relationships between fishers, family and other community members, and the industry has been labour-intensive and low-capital. Part-ownership was quite common. Recruitment and knowledge transfer took place inside this local network (Wadel and Jentoft 1984; Sønvisen et al. 2011; Johnsen 2005). During the 1960s, 70s and 80s fisheries policy was focused on the low profitability of the fisheries sector. For these three decades, the industry was dependent on state subsidies. This organic, social network-based organisation of small-scale Norwegian fisheries and the subsidies that sustained them persisted until 1989, when the cod stock collapsed resulting in the closure of cod fisheries. Moreover, in 1989, Norway also agreed to stop subsidising the fisheries sector under the European Free Trade Agreement (EFTA). The changes in resource management and market policies that followed during the early 1990s changed the climate in which small-scale Norwegian fisheries operated.

After 1989, a new regime designed to limit participation in the fisheries, control capture capacity and ensure profitable fisheries developed. The profitability focus followed from the EFTA agreement and an agreement with the European Community (EC).¹ Removal of subsidies forced economic rationalisation of the industry. The new resource management regime was based on a tragedy of commons image with measures inspired by Gordon-Schaeffer's bio-economic model. Over time, a partly market based allocation system also developed, although this was modified by the Norwegian "negotiated economy". Regulation of market forces, collaboration and negotiations between state and organised interests are central elements in Scandinavian negotiated economies (Nielsen and Pedersen 1991). One outcome of the need to rationalise - and the wish to control - was a rather complex fisheries governance system in which protection of small-scale fisheries was the central objective (Holm and Nielsen 2007; Johnsen 2014; Jentoft and Johnsen 2015).

The earlier fisher welfare-oriented policy that focused on fisheries' populations and communities dependent on the fisheries changed, and biological sustainability became the first objective, with closed access and fish quotas as the main measures. In addition, economic sustainability became the secondary objective, whilst employment, maintaining settlement and equity were given lower priority. Nevertheless, although neo-liberal, market-based approaches gained ground in Norway, market mechanisms were deployed in society's service and subject to legal and political controls. Neo-liberalism is about deregulation, liberalisation, privatisation and marketisation, and shifting power from state governance to private interests (Mansfield 2004). Norwegian coastal fisheries went from being subject to very few formal regulations to being strictly regulated and controlled. Market mechanisms were deployed, but as a part of the Norwegian "mixed economy" approach. The idea of a mixed economy is that state power, cooperative institutions and market instruments should work in concert. Today, Norwegian

¹ Norway is member of EFTA and through an agreement between EFTA and the European Community, now the European Union (EU), EFTA and EU are united in an internal market governed by the same basic rules (<http://www.efta.int/eea>, accessed 09.06.2017)

fisheries governance is a hybrid of hierarchical control by a powerful ministry, and modified by a culture of negotiated solutions through co-management and challenged by market dynamics following the EFTA and EC agreements (Jentoft and Johnsen 2015; Johnsen and Jentoft 2018). As the small-scale fleet is the backbone of coastal communities, its protection became a major policy focus (Royal Norwegian Ministry of Fisheries 1991, 1991-92). Despite this protection, the policy changes and technological developments affected the small-scale fleet's profitability, employment and relationship with local communities. The small-scale sector has continued to change since the new regime was introduced. Changes notwithstanding, political control and stakeholder influence have helped to maintain fishing as a rural industry (Figures 21.1 and 21.2). This chapter shows that small-scale fisheries can still be important in a modern, industrialised fishing industry. The next section defines what constitutes a small-scale fishery in contemporary Norway today. The subsequent sections describe some of the changes that have taken place, the developments in small-scale fisheries' regulations and the organisation of the market. Finally, the chapter discusses the potential future for the small-scale fishing industry in Norway. The data sources for this chapter are research literature, official reports, political documents, newspaper articles, official statistics and personal experiences from work and research in the Norwegian fisheries sector.

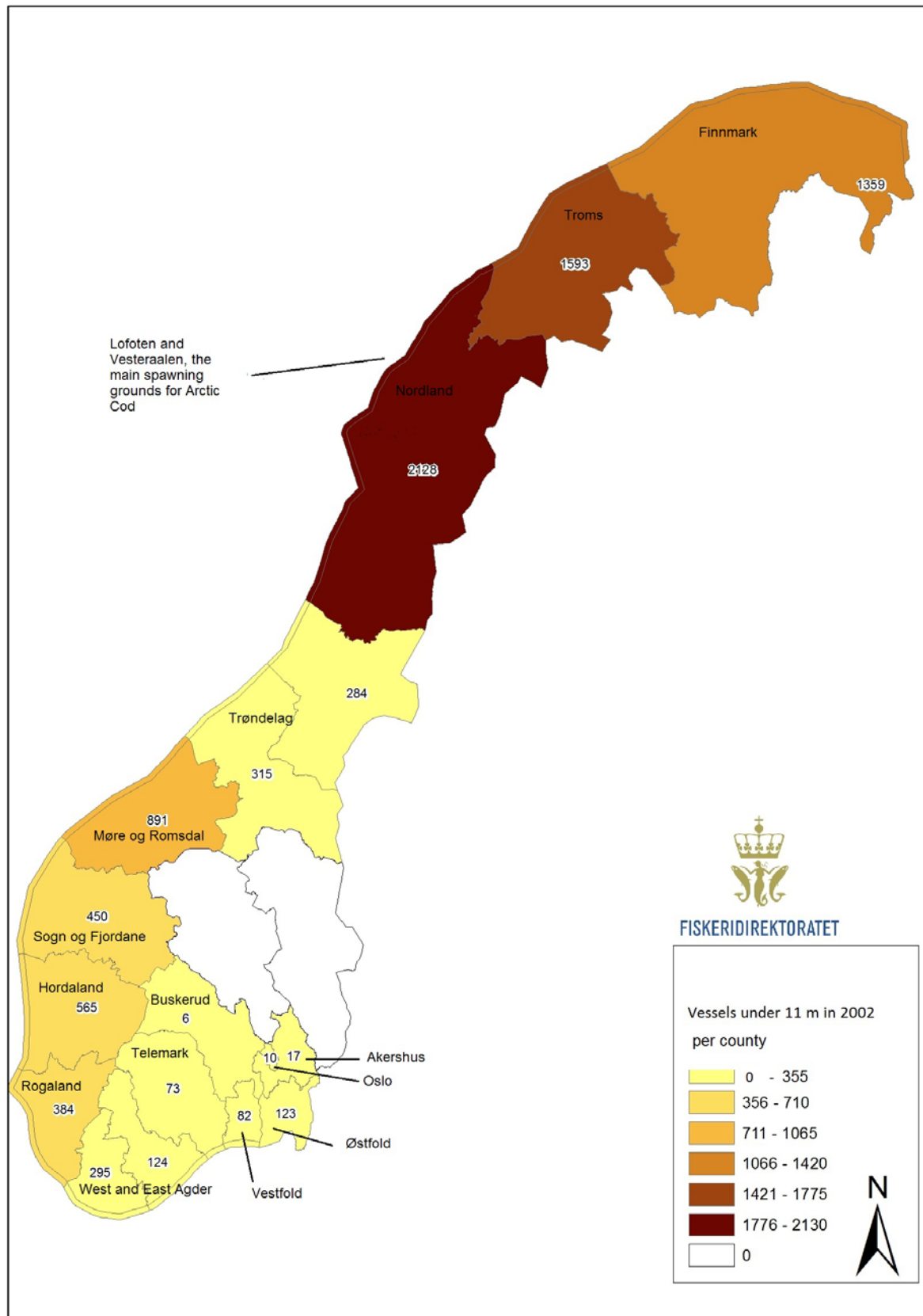


Fig. 21.1 Vessels under 11 m in 2002 Norway

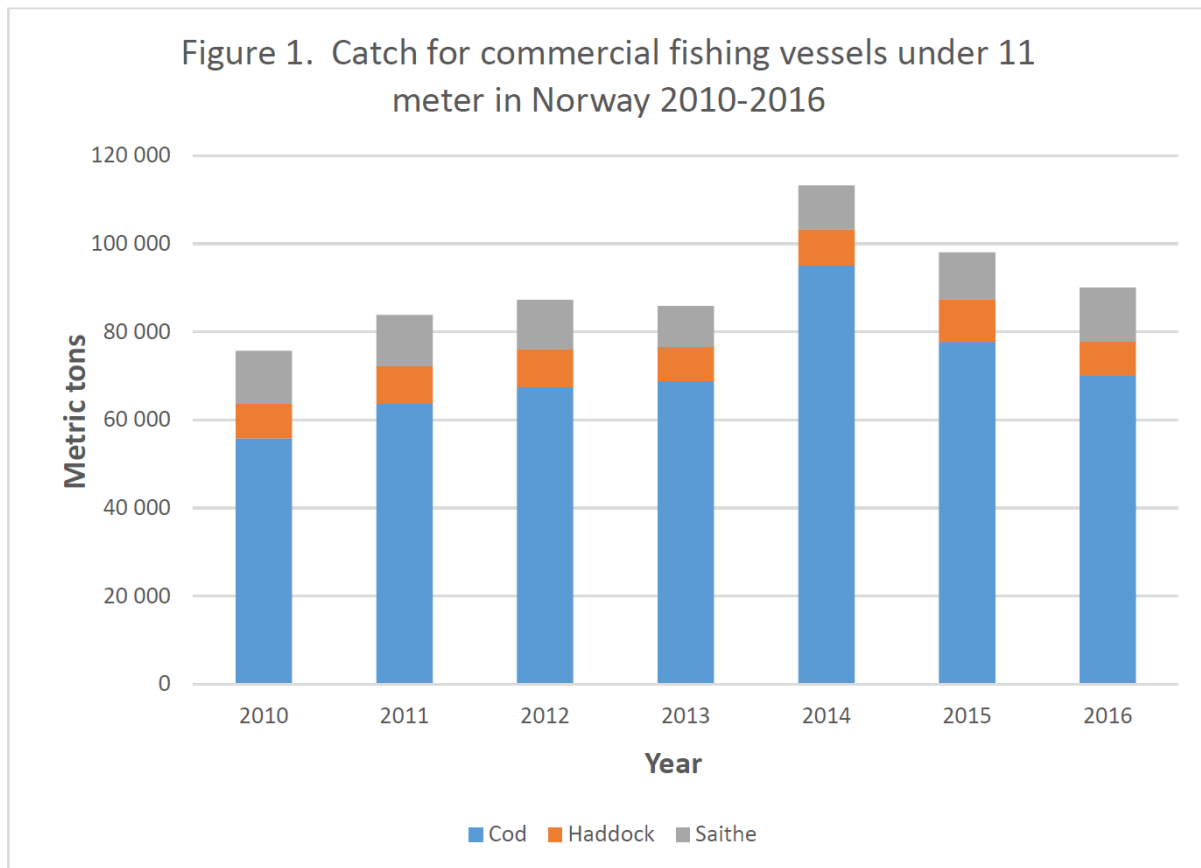


Fig. 21.2 Catch for commercial fishing vessels under 11 m in Norway 2010–2016

21.2 What are Small-Scale Fisheries in Norway?

Norway has no official definition of small-scale fisheries. In Norway, the policy and regulatory framework for fisheries define three different categories of fishing that are designated as small-scale: “free-for-all” recreational fishery, open access commercial fishing with boats less than 11m long and closed commercial fishing with boats under 11m in length. This categorisation is based on the fact that in commercial fisheries the regulatory regime governing vessels less than 11m long is different from that for larger vessels, even if, in terms of landings and capture efficiency, some Norwegian small-scale fishers, particularly in the closed commercial fisheries, would be regarded as large-scale operators in many countries. By quantity, cod, haddock and saithe are the main species fished by vessels under 11m, but these vessels also land a wide range of smaller quantities of other species such as crab, lobster, king crab, herring, eels, flat fish and other ground fish species. Small-scale vessels have the most varied catch composition in the Norwegian fishing fleet and the catch varies according to the area of the coast in which the vessels fish (Figure 21.1 and 21.2). In this chapter, the focus is on all fishing with vessels that are less than 11 m long and where the vessel length is used as the main criterion of small scale. Small-scale fishing is important along the entire Norwegian coast, particularly in the north (Fig. 21.1), and it remains important, although the number of vessels is declining (Fig. 21.3).

Fig. 21.3

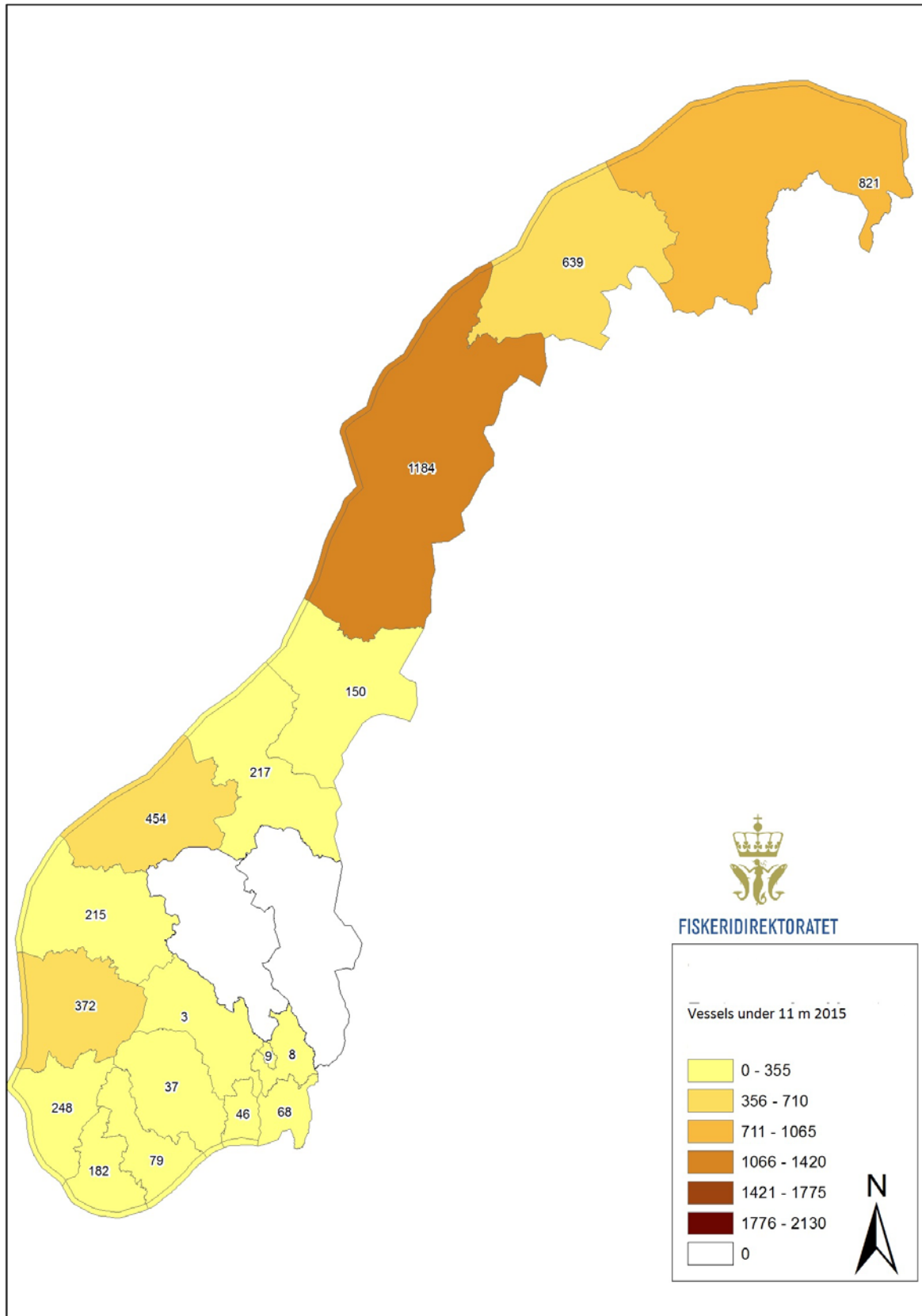


Fig. 21.3 Vessels under 11 m in 2015 Norway

The Marine Resources Act (Norwegian Parliament 2008) states that all living marine resources in Norway and in the Norwegian exclusive economic zone (EEZ) are the property of the people of Norway. The state has a mandate to regulate all extraction of living marine resources on behalf of the people. Fishing for consumption and recreation is an important part of Norwegian coastal culture. Recreational fishing for marine species, including fishing for subsistence and personal consumption and for registered sales of up to 50,000 Norwegian kroner (about 6,000 Euros) is free to all legal residents of Norway both in principle and in practice. In addition to the value limit, subsistence and recreational fishers have to comply with a number of fishing gear restrictions and specific regulations for different species. Under certain conditions, foreign tourists can fish for marine species in Norway (Solstrand 2014). The principle appears to be that recreational fishing in Norway should be subject to “as little management as possible”, although there is continuous discussion about the need for management of recreational fishing. However, for the time being, there is neither public nor political will to restrict the Norwegian population’s right to fish for food and recreation. Free recreational and subsistence fishing is a manifestation of the people’s ownership of fish resources. On the other hand, unregistered commercial fishing is illegal in Norway and special licences or permits are required for closed commercial fisheries.

21.3 Regulations and Requirements for Participation in Norwegian Fisheries

Commercial fishing is a professional year-round activity in Norway, even though the peak season for the small-scale fleet is during the winter fisheries for cod from January to April. The winter fishery is hard and intense, and there are no interactions or combination with for example tourism. Due to strict safety regulations, commercial fishing vessels are used mainly for commercial fishing. The commercial fisheries regulations in Norway are complex and relate to a variety of often-conflicting objectives. Many of the regulations are intended to protect smaller fishing vessels from competition from larger ones.

In Norway, commercial fishing can only take place from registered fishing vessels with a general fishing permission that allows the owner to use the vessel for commercial fishing. In addition to the general fishing permission, specific permissions for participation in different fisheries may be required. Registered fishing vessels can only be owned by registered active fishers or by companies where more than 50% of the shareholders are registered active fishers.² All registered fishers can obtain a general permission for commercial fishing with a registered fishing vessel under 15m long. Moreover, all legal residents of Norway can register as fishers, as long as their income from other sources is not too high and can, in principle, buy a registered vessel and obtain general permission for commercial fishing with that specific vessel. In the case of legally resident foreigners in Norway, they can only own vessels under 15m long if they register as fishers. Crewmembers on fishing boats have to be registered as employees on the fishing vessels, but do not have to register as fishers in the Fishers’ Register (FR) (although most of them do). For all owners and non-owner skippers registration in the FR is mandatory (Fisheries Directorate 2016). As well as obtaining general permission for commercial fishing, specific fishing licences and permits may be required in addition, depending on the type of fishing and vessel length. Licences are not time-limited and they specify what fisheries a vessel can participate in, what gear can be used and the criteria for setting the vessel’s annual quota. At present, special licences are only required for large-scale offshore fishing such as industrial trawling and large-scale pelagic fisheries. Vessels with a hold capacity of under 500m³ (or

² The Fishers’ Register is the official record of active commercial fishers in Norway and is administered by the Fisheries Directorate (FD). The Fishing Vessel Register is a record of commercial fishing vessels in Norway and is also administered by the FD.

length less than 28m) are regarded as coastal vessels and do not need licences; they fish under the general permission (open group) or on a specific annual permit (closed group). Specific annual permits allow a vessel to fish a specified vessel quota in a specific fishery in a particular year. Annual permits are renewed if the owner meets the requirements for the fishery concerned. The small-scale fleet (vessels <11m long) comprises vessels in the open group, which have only general permission for commercial fishing and vessels in the closed groups, which have annual permits for specific fisheries. I explain this further below. Coastal vessels in the open and closed groups both over and under 11m can use all types of fishing gear, except otter trawls. Next, the regulatory regime will be described for the open and closed groups and some facts about them presented.

21.4 The Open Commercial Small-Scale Fishery

When the individual vessel quota (IVQ) system for Arctic cod, haddock and saithe fishery was introduced in 1990, quotas were given to those who had landed catches over a threshold during the reference period (1987-89). Those who had participated in the Arctic cod fishery, but had fished less than the threshold could fish in the open group. The threshold for participation in the open group is low: anyone registered as a commercial fisher who does not already participate in the specific fishery as an owner of a closed or open group vessel can participate in the open group fishery with one vessel under 11m. The owner must be on-board during the fishing. Fishers who sell out from the closed group can also start to fish in the open group.

Open group fishers can participate in all open fisheries and fish on group quotas for cod, saithe and haddock. Fishing on a group quota means that vessels compete until the group quota is fished, but normally a part of the group quota is allocated to each boat as a guaranteed minimum quantity, while they have to compete about the remaining part. Some years the authorities have allowed a free, open-group fishery for cod in the second half of the year and group quotas for haddock and saithe are often so high that in practice there is a free fishery for these species. Many of the fjord fishers, who mainly fish close to where they live, fish in the open group. In northern Norway, small-scale fishing is an important part of the livelihood of the coastal Sami population (Johnsen and Søreng 2018). The Sami are Norway's indigenous people. Many of the fishers in Sami areas participate in the open fishery. Thus, the open group provides an important element of protection of the economic foundations of coastal Sami communities in Norway. For this reason, the group quota is higher for vessels registered in Sami areas. Traditionally, small-scale fishery have been combined with small-scale farming, but this combination has steadily declined during the last years.³ Moreover, certification and safety requirements, insurance issues and fisheries regulations restrict the use of commercial fishing vessels for other purposes than fishing.

It is also possible for young fishers to start their own fishing business in the open group. Participating in the open group fishery does not lead to a quota in the closed fishery, but a young fisher can learn how to fish, because the fishing practices, technology and fishing gear, are the same as in the closed group. Participating in the open group also allows fishers to build up equity to invest in the closed group.

The Fisheries Directorate (2013) reported that during 2008-2012 an average of 2,243 vessels participated annually in the open group fishery for cod, haddock and saithe. The number of boats in the group was relatively stable over this period, and there is no indication that there

³ Those who combine fishing with other activities will normally be registered as second occupation fishers in the FR. The number of people with fishing as a secondary occupation has declined from 2668 in 2010 to 1834 in 2017. Fishers may invest in or be involved in other businesses in their local communities, but there are no records or registered that can be used to explore how common this is.

have been major changes since. Many of the open group vessels only fish the cod quota. Only about 180 of the 2,243 vessels in the open group fished their minimum guaranteed quantity of saithe and/or haddock during the 2008-2012 period, although the group quota was so high that in practice the vessels had a free fishery. This suggests that open group fishery is a part-time activity for many fishers, who may participate in other fisheries as well. Moreover, it is not possible to estimate exact year-round employment in the open group, but since at least one person is needed to operate a boat; throughout the year, at least 2,200 fishers must be involved in the open group.

21.5 The Closed Group

In 1990, the Fisheries Ministry established the closed group to give priority to coastal vessels that were regarded as being most dependent on cod fishing, based on the catch in the reference period. These vessels were granted annual permits that allowed them to fish an IVQ. In 2016, the closed group comprised about 2,089 vessels ranging from under 11m long to vessels without any length limitation, but with a hold capacity of less than 500m³. These vessels have annual permits and IVQs for cod, haddock and saithe, and for some pelagic species. They can also fish in all unregulated fisheries (Fisheries Directorate 2017). IVQ size is determined by vessel length; in principle a nine-metre vessel should have a smaller quota than a twelve-metre one. Today, however, the vessel length and IVQ do not necessarily correspond and quotas are based on “permit length”. The permit length is the length of the vessel, which the owner had got a specific permit for, on a “cut-off-date” that was set by the Ministry. Thus, in practice, the vessel can be lengthened or replaced by a new vessel with a different length, but the quota is locked to the original permit length to avoid boat owners investing in bigger boats just to get a higher quota. This rule means that today there are vessels in the closed group that are as long as offshore vessels, but fish on small-scale vessel quotas; similarly there are smaller vessels that fish on larger vessel quotas. The owner is not obliged to be on-board during fishing, but has to have the main income from fishing.

In 2014, the closed sub-11m group with permit length under 11 m comprised 1,321 vessels (ground fish and pelagic), of which 1,021 participated in the ground fish fisheries for cod, saithe and haddock. Fisheries Directorate (2016) estimates suggest that there are on average 1.4 fishers working year-round on vessels under 11m in length. This implies that these sub-11m sections of the closed group employ 1,500 to 1,700 fishers.

Figure 21.2 shows changes in catch of three main species over the 2010-2015 period for both the open and closed groups under 11 m. Together, these two groups can fish around 19-20% of the annual quota for Arctic Cod per year. In 2015, the combined catch of these two groups accounted for about 18% of Norway’s cod catch. In years when sub-11m vessels could fish more or less freely, they were able to catch more than the original group quota. This indicates that even the smaller vessels represent a considerable catch effort and should be subjected to some form of regulation. This high catch capacity is mainly due to technological and organisational changes in the small-scale fleet that have increased its efficiency.

Table 21.1 shows the relative importance of small-scale fisheries in relation to the total fisheries in Norway.

Table 21.1 Overview Norwegian fisheries. Total and small scale

| Data refers to: 2015 | Total (all fisheries) | Small-scale fisheries (vessels under 11 m) |
|--|--|---|
| Fleet | | |
| Number of licenced vessels | 5 887 ¹ | 3564 ² |
| Capacity (GT) | n.a. | n.a. |
| Number of fishers (2017) (full time) | 9 486 | 4-5000 ³ |
| Part time | 1 834 | |
| % women full time | 3,2 | n.a. |
| Part time | 3,9 | |
| Average age of fishers | 45,5 (full time) 64 (part time) | n.a. |
| Landings | | |
| Quantity (ton) | 2 334 394 ⁴ | 130 831 |
| Value (1000 Norwegian kroner) | 16 890 000 | 1 716 000 |
| Most common gear used (top 3) (% in total) | Trawl (30%) Passive gear (70%). ⁵ | Passive gear (100%) |
| Most important species in landings: | | |
| Top 3 in quantities (% in total) | Pelagic (52%), cod (18%), Antarctic krill (8%) | Cod (60%), haddock/saithe (15%) other (25%) |
| Top 3 in values (% in total) | Pelagic (32%), cod (33%), saithe (9%) | Cod (47%), other (43%), king crab (10%) |

Notes: ¹Norwegian Fishing Vessel Register (2015), ²Fisheries Directorate (FD) average participation 2008-2012 in the open group and participation in 2014 in the closed group. ³ Based on FD estimate of average crew size on vessels under 11 m, ⁴2015 ⁵Ground fish only,

Source of information: Fisheries Directorate (2015), see also documents referred to in footnote 3.

Links to official stats webpages: <http://www.fiskeridir.no/>

21.6 Changes in Fisheries, Communities and Households

Coastal fishers have considerable power and influence in Norway. Since 1926, the Norwegian Fishermen's Association (NFA) has been a significant partner of the Norwegian authorities with respect to fisheries' governance. Later, in 1987 a new union, The Coastal Fishermen's Association (CFA) was formed to work for the smallest vessels. Still, NFA is organising most of the small-scale fishers, but both organisations participate in all relevant processes like international fisheries negotiations, management meetings and in the boards of the mandated sales organisations. ⁴ The establishment of the mandated sales organisations (MSOs) for first-hand fish sales in the 1930s secured the power and income of the fishing population (Holm 1995). Politically, fishing was regarded as an industry of huge importance to settlement, employment and rural development. The institutional arrangements that developed gradually in the 1930s were intended to protect coastal fishers against competition from industrial capitalist fishing interests. The system developed further after World War II. The 1972 Participation Act ensured that only active fishers could own commercial fishing vessels and the 1983 Saltwater Fishing Act gave the state the power to regulate fishing activity. These three acts, together with the Main Agreement between the NFA and the state over fisheries subsidies that came into

⁴ The English name is the official English name from NFA's home page. The two associations do not publish figures for membership.

force in 1964,⁵ represented the legal and economic foundations for the development of coastal fishing that took place in the 1970s and 80s, when small-scale fishing increasingly became a full-time, year-round activity. Before 1970, small-scale fishing was mainly a part-time activity that was combined with farming, other types of fishing or other work (Finstad 2005; Hundstad 2014). In 1948, there were 86,000 registered commercial fishers, and 36,000 earned additional income from farming. By 1971, the number of commercial fishers had declined by over 50%. Many of those who left the industry were part-time fishers, whereas others expanded their fishing activity, becoming full-time fishers (Ibid).

Norwegian society changed radically in the 1970s and 1980s. General national industrial policy was intended to facilitate the transition from a fisheries and agriculture-based economy to a more industrial economy. Reducing employment in fisheries and agriculture in favour of manufacturing industries and the public sector was a political objective, both to increase general productivity and to improve the living standards of those who remained in the fisheries (Sønvisen et al. 2011; Johnsen and Vik 2013; Johnsen 2004). Even among fishing communities, the public service sector produced new jobs in education and health care. The public sector became an important source of female employment, women could get permanent jobs rather than taking seasonal work in fish processing or as “land crew” for their fishing husbands. The improving economy and expansion of the educational system also increased educational opportunities for young people.

Although subsidies helped to guarantee a minimum income for the fishing population, a huge number of fishers left the industry in the 1960s, 70s and 80s. A lot of younger people and families moved away from coastal communities (Finstad 2014). The combination of small-scale farming and fishing became less common and fishers started regarding earning a living from fishing as a last resort due to its low incomes, unstable conditions and rather poor working conditions (Hersoug 1985). When the cod crisis occurred in 1989, the focus of policy shifted from protecting the fishers to protecting fish resources. To some extent, this resulted in a political shift towards a resource management-oriented policy designed to ensure sustainable resource exploitation and - through removal of subsidies - the profitability of the remaining fisheries. Employment and settlement in rural areas became secondary concerns. To achieve the goal of sustainable resource exploitation, the IVQ system was introduced in 1990.

Since the 1990s, fishing households have been affected by population centralisation, the increase in double income families, changes in gender equality, education and expectations about how life should be lived. Norway has high living costs and a certain income is required to maintain a reasonable living standard. Wives and partners of fishers expect to balance their own interests and careers against their fishing partner's needs. Most fishers are men, but they must now meet higher expectations about participation in family life in general and involvement in their children's lives and activities in particular. Households are not solely organised around fishing as the main income; the spouse's work may be just as important. Fishers are therefore adopting a similar lifestyle to others. However, it is difficult to combine the freedom of the sea that is praised by many fishers with the requirements of being a modern citizen and member of a community and family (Johnsen and Vik 2013).

21.7 Development of the Small-Scale Fleet

⁵ In 2014 the Raw Fish Act of 1939 was replaced by Fiskesalgslova (Mandated Sales Organisation Act) and in 2009 the Salt Water Fisheries Act was replaced by the Marine Resources Act. Current and previous Norwegian laws can be accessed through the portal Lovdata (<https://lovdata.no>). See also: Ministry for Fisheries and Coastal Affairs 2013.

In accordance with the UN Law of the Seas (UNCLOS), Norway established a 200 NM EEZ in 1977. Until 1977, foreign fishing vessels could fish to within 12 nautical miles (NM) of the Norwegian coast. The EEZ did not have an immediate impact on the coastal fleet, which normally operates within 12 NM of the coast, but it laid the foundation for a more sophisticated national governance system. Without the 200 NM EEZ, the current Norwegian regulatory system, which has been essential to the continued existence of the small-scale commercial fleet, would not have existed.

With the introduction of the IVQ system in the 1990s, protection of the small-scale fleet became important. The IVQ system evolved over several years, with protection of the most “cod-dependent” vessels as the guiding principle. IVQs were based on the average of annual catches during 1987-1989, before the collapse in stocks. Only vessels that had fished over the threshold were granted a quota. Second, the smallest boats (under 10m) that qualified got a quota that was 100% of their average annual catch during the reference period, whereas the larger vessels got quota cuts, varying from 20% of their reference catch for the smallest vessels to 50% for bigger vessels. This meant that under the quota system the smallest vessels avoided the cuts and thus smaller boats could survive under the new closure regime (Hersoug 2005; Standal and Hersoug 2014).

Smaller fishing vessels became progressively more effective during the 1970s and 80s due to developments in vessel and gear technology. In the 1970s, mass-produced glass-fibre boats 7-10m long became increasingly popular as commercial fishing vessel. New, more seaworthy designs of small-scale wooden vessels were also introduced. In fact, smaller fishing boats became somewhat standardised in terms of size, equipment and rigging (Johnsen et al. 2009b). Year-round highly specialised, professional small-scale fishing became possible, although winter and spring remained the main fishing seasons. Many fishers responded to the cod collapse of 1989 by investing in new technology and organising their operations in new ways. Capital replaced labour; increased living costs and higher wage expectations combined with largely stable prices forced the rationalisation of the fleet. The number of vessels fell. Small-scale vessels, which had once been seen as old-fashioned technology (Figures 21.4 and 21.5) became highly effective capture machines that fished more efficiently than much larger vessels had done just a decade earlier with just one to three crew members (Johnsen 2005). Small boats now have good working conditions and high safety standards and comfort (Figure 21.6). The boats have automated equipment for gear handling and the latest navigational and fish-finding equipment; some are even certified for offshore fishing. In fact, some of these smaller vessels land larger catches than larger boats because the regulatory regime favours smaller vessels under certain conditions. As technology, organisation and work processes have changed and the number of fishers has declined, the fishing industry as a whole has become more governable, effective and profitable (Johnsen et al. 2009b; Johnsen 2014).



Fig. 21.4 Traditional small-scale fishing vessel. (Photo credit: J.P. Johnsen)

21.8 Regulations for a Governable, Profitable and Effective Small-Scale Fishery

Since the introduction of the IVQ system of quotas based on vessel length, the sub-11 m segment of the closed group has become a profitable segment of Norwegian fisheries. During the first

decade the IVQ system was in operation fishers could get a higher quota and thus higher income by lengthening their fishing vessels. This resulted in a reduction in the quotas of those that did not increase vessel length, and the Finnmark model was established in 2002 to address this problem. Thus, the closed group has been divided into four length groups based on permit length: under 11m, 11-14.9m, 15-20.9m and over 21m, and in 2007 IVQs were locked to permit length and transfer of quotas between length groups became impossible (Standal and Hersoug 2014).



Fig. 21.5 Working onboard a traditional small-scale fishing vessel. (Photo credit J.P. Johnsen)

Today, vessels with permit lengths greater than 11m are allowed to buy out other vessels in the same permit length group; decommission them and transfer their quotas to a single boat and retain the combined quota for 20 years. These arrangements are called the structure adjustment policy. Vessels with permit lengths of less than 11m cannot permanently transfer quotas; instead the skippers on two vessels can decide to “buddy up” and fish two quotas with one boat on a temporary basis. Both vessels have to be equipped and have permits to fish and both skippers must participate in the fishing.

To give the smallest vessels in the closed group more opportunity to operate when fish are abundant and close to the coast, sub-11m vessels have also been given an IVQ with “overregulation”. Overregulation means that they can overfish their IVQ by as much as 50% (even more in the case of saithe and haddock) as long as the total quota for their length group is not overfished. This creates competition between vessels in the sub-11m group. Thus, the most effective vessels can fish more at the expense of those that are less effective. Overregulation reduces the need for the authorities to reallocate quotas from smaller to larger vessels to ensure that the total allowable catch is fished, because there are always some vessels in each length group that will be able to catch more than others. Vessels whose permit length is smaller than the actual vessel length have lower overregulation percentages and vessels whose actual length is over 15m will often have no overregulation. This is to ensure that quotas remain

in the actual length group (Standal and Hersoug 2014). Overregulation is a flexible way of giving the smallest vessels opportunities to fish when fish stocks are abundant; however it also creates an incentive to fish more effectively. The small-scale autoliner described in Box 21.1 (Fig. 21.6) is an example of an innovation that increases small-scale fishing's capture capacity and highlights the need to monitor such developments in small-scale fisheries.



Fig. 21.6 New autoliner. (Photo credit: J.P. Johnsen)

Finally, there is also a special management regime to protect inshore areas from larger fishing vessels. Larger vessels have to fish outside limits called the “Fjord Lines”, whereas small-scale vessels are not bound by these limits, which gives them a further advantage and puts some limit on the competition they face from larger vessels over fishing areas. Both overregulation and spatial restrictions were adopted to meet the needs of the small-scale fleet. The regulatory regime plays to the small-scale fleet's advantage and makes it possible for the fishers to make a profit when fish are available. That the Norwegian small-scale fleet is able to make a profit is also due to market regulation through a system known as mandated sales organisations (MSOs).

Box 21.1 Different Adaptations in Coastal Longlining in Norway

It is almost two o'clock in a mid-April morning, and we are heading out of a small harbour in northern Norway towards a fishing ground that is about two hours from land. It is dark when we leave the harbour, but as we are in April, dawn will be breaking here, north of the Arctic Circle, in an hour. I am on board a small one-man boat, fishing for Arctic cod with a longline.

Arctic cod spawn in shallow waters along the Norwegian coast between January and April, and this large annual migration of cod is the basis for a rich coastal winter cod fishery. The cod fishery is the most important fishery for small-scale fishing in Norway.

The sub-11m small-scale fishing vessels, like the one I am on (Fig. 21.3), can fish almost any species and have almost complete freedom to choose gear, so there is a great variety of gear and techniques in the Norwegian small-scale fisheries. Our fisher uses a hand-baited longline that is baited onshore between trips. He deploys and hauls a longline with about 3,600 hooks every second or third day, depending on the weather (Fig. 21.4). He fishes with a "floatline", which involves the use of floats and weights to keep the longline a few fathoms from the sea bed. This allows the fisher to place the longline at a planned depth, but because fish are less abundant higher in the water column the line needs a longer soaking time. On the other hand, bottom-dwelling organisms do not prey on the bait or caught fish. Floatline is a common technique and does not require small boats to go to sea every day. The amount of gear varies between boats depending on the space on board (although boat length is limited there are no regulations on width), the crew size and the onshore baiting capacity. Some fishers bait themselves, sometimes with help from family members; others hire baiters, get baited lines from the processing plant or have land-based crew members: land-men, who bait the line. The organisation varies a lot. Most boats that bait on land fish with 3,500-10,000 hooks per trip. Some fish with a floatline, like our fisher, whereas others fish with a bottom-set line. Bottom-set lines have to be hauled every day because bottom-dwelling organisms prey on bait and catch. Every time our fisher goes to sea, he takes tubs of baited lines with him. Normally, he sets the line in three fleets with two tubs in each fleet; a fleet is called a "stub". The length and number of stubs varies between boats. At the fishing ground, our fisher hauls the first "stub" with 1,200 hooks. Because the fishing is good he sets a new stub with 1,200 hooks in the same position. He then moves to the next stub and repeats the process. After hauling 3,600 hooks, we head for shore to land the catch and bait the lines.

This morning, we are passed by an "autoliner" with automatised baiters whilst we are hauling (Fig. 21.5). On this small (under 11m long) autoliner with sheltered deck, four men fish with 15,000 to 20,000 hooks per day. It is one of several vessels owned by a fisher-controlled company specialising in high tech small-scale fisheries. The four-man crew sets and hauls bottom lines continuously until the boat is full and then returns to land the catch. They fish all year round. Our fisher works out of a specific harbour where he baits his lines, stores his gear and lands his catch, but the autoliners are more self-contained and can follow fish migrations. They can fish and land anywhere, as long as they get fuel, water and bait. However, due to their size (under 11m), they also need to go to shore to unload and fill up with bait at least every second day. If the fishing is good, they land every day and most boats of this type have landing agreements with specific processors. Thus, even if they can migrate with the fish, they tend to operate from one harbour, but can change location during the season if it is required.

Two different worlds of small-scale fisheries meet this morning. I am on board a small-scale fishing vessel linked to the traditional household and community organisation of small-scale fisheries, while the autoliner represents something new. A small-scale fishery more detached from the local community and its structures.

Based on observation and author's field notes from fieldwork on a fishing vessel 15 April 2016.

21.9 Mandated Sales Organisations

The two professional organisations, NFA and CFA, are both involved in management. According to Jentoft and Mikalsen (2014, 3), fisheries management in Norway is "a system of centralised consultation based on institutionalised bargaining between government and a key group of industry stakeholders". Hence, the fisheries authorities, normally discusses all important decisions with the organisations. However, the most important institutional element

in Norwegian fisheries are the Mandated Sales Organisations (MSOs), owned and controlled by the fishers, small-scale as well as large scale. In an unregulated market, fishers would be dependent on the processors' willingness to pay for fish. In Norway, however, the raw fish market is controlled by MSOs that guarantee the fishers a minimum price. The 1938 Raw Fish Act gave MSOs a monopoly on the sale of fish from fishers to the processing industry (Holm 1995), and they are still the main market regulatory instrument in Norwegian fisheries, although they now operate under a new law (see footnote 2). MSOs are cooperatives owned and controlled by fishers and funded by a fee on first-hand sales. MSOs also issue the permits that allow processors to buy fish directly from fishers. All processors that fulfil certain technical and financial standards are granted permits. MSOs have no interest in limiting the market, since they run Internet auctions for fish, and they can support transport and ensure supplies for processors if necessary. No money is exchanged directly between fishers and processors. The MSOs' credit and guarantee function reduces risks for both parties. Hence, for both fishers and processors, it is illegal to sell and buy fish outside the MSO system. For fishers there is an economic risk attached to illegal sales as there is no guarantee of payment. MSOs cooperate with the authorities over quota control. The control is both based on fishers' logbooks (electronic for all vessels) from 2015 and registration of landings.

In addition, MSOs protect the fishers from the direct impact of markets fluctuations and create economic stability. Although the rules are sometimes violated - unregistered overfishing of quotas, transfer of fish between boats, false registration of species - the constantly evolving control system makes cheating increasingly difficult. Hence, the MSO system is of crucial importance for the small-scale fleet; individual small-scale vessels would have little power in the market and would normally lose in price negotiations with processors. In Norway, MSOs negotiate on behalf of the fishers and secure a decent price for all (Holm 1995; Ministry for Fisheries and Coastal Affairs 2013).

21.10 Conclusion - The Future of Small-Scale Fishing in Norway

Small-scale fishing in Norway may involve small boats, but as this chapter has described the fleet is "too big to ignore". A lesson to be learned from Norway is that it is possible to regulate small-scale fisheries as ecologically, economically and socially sustainable commercial fisheries even in a climate where neo-liberal ideas have become more influential in fisheries governance. Moreover, arrangements that take the social, cultural and geographical features of small-scale fisheries into account can modify the effects of the market instruments used to govern fisheries.

The Norwegian fishing fleet has had to cope with the change from a liberal, open access regime to a complex regulatory regime. As discussed the regime consists of hierarchical state governance, market instruments and institutionally negotiated regulations. It has developed incrementally within Norway's negotiated economy tradition and reflects pragmatism and political willingness to find solutions, rather than any consistent ideology. It also reflects organised interests in Norway. Even when the state has the power to decide, there is a preference for negotiated solutions amongst stakeholders. In the Norwegian governance system, negotiations and partnership arrangements form a bridge between hierarchical state control and market forces. The legal framework in Norway mandates co-management solutions. However, the laws do not specify in detail the regulatory instruments to be used, thus giving freedom to find practical solutions. Negotiated solutions between stakeholders and authorities that are politically guaranteed through compromises in the Parliament are thus common in Norwegian fisheries' policy. Some of the compromises, such as the system for allocating quotas to vessel groups, have survived for more than 25 years.

Critics claim that the Norwegian system is too diverse to function properly, too costly to be copied and in urgent need of a reform (Hannesson 2006; NOU 2014; Ministry of Trade, Industry and Fisheries 2015). The many political compromises makes it difficult to change in the short term, but both the system and the stakeholders are willing and able to adapt to new situations when required (Jentoft and Johnsen 2015).

What will happen to small-scale fisheries in the future? In 2019, parliament will vote on a reform proposal (NOU 2016, 26). The proposal acknowledges the need for special arrangements for the small-scale fleet, but does not give clear advice on a structure adjustment policy for the smallest vessels. It recommends that the open group should remain open because of its important role in the recruitment of fishers. To date there has been a political consensus in Norway that a structure adjustment policy for the sub-11m fleet should not be market-based. The future policy also depends on what the stakeholders want. A market-based structure adaptation policy will not be implemented unless it is supported by the industry. Such support may emerge in the future.

Permanent combining of quotas is not allowed in the sub-11m segment of the closed group. Those in favour of permanent quota transfers argue that the use of buddying up indicates that there are too many vessels in the sub-11m segment of the closed group, and hence permanent buy-outs should be allowed in this segment as they are for larger vessels. As described in Box 21.1, developments in fishing technology have contributed to increasing capitalisation, capture capacity and effectiveness of the small-scale fleet. Pressure for structural adaptation measures may come from inside the closed group and from society in general. If permanent quota transfers are allowed, one would expect some closed group fishers to sell up and enter the open group, thus increasing competition in this group.

Annual economic surveys indicate that sub-11m vessels have the lowest profit margins in the Norwegian fishing fleet (Fisheries Directorate 2016). If this is reflected in low incomes, it may be difficult to meet family, community and the broader societal income norms from small-scale fishing. Low profitability can drive policy change. However, it is worth noting that small-scale fishing offers a flexible occupation that makes it possible to sustain a livelihood based on several income sources (Jentoft and Johnsen 2015). The small-scale segment of the fishing industry thus represents an important source of income in smaller communities, where there are few employment opportunities, and so it should be of special concern to legislators and to the wider society.

In conclusion, Norway's negotiated economy has sheltered the small-scale fleet from neo-liberalism, even though fishing policy has been aimed at improving profitability. Moreover, the political willingness to limit the extent to which small-scale fisheries are governed by market forces indicates that fisheries governance will continue to be a political issue and will not solely be left to market mechanisms. In the future, strong institutions and co-management will influence the extent to which Norway moves towards greater neoliberal policies or not.

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Fig. 21.2 Catch for commercial fishing vessels under 11 meter in Norway 2010-2016

Fig. 21.3 Vessels under 11 meter in 2015 Norway

Fig. 21.4 Traditional small-scale fishing vessel. (Photo credit: Jahn Petter Johnsen)

Fig. 21.5 Working onboard a traditional small-scale fishing vessel. (Photo credit: Jahn Petter Johnsen)

Fig. 21.6 New autoliner. (Photo credit: Jahn Petter Johnsen)