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**Buy-back programs for
fishing vessels in Norway**

by

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Buy-back programs for fishing vessels in Norway

Abstract

In Norway, buy-back programs have been in force since 1979. Grants have been given to scrap fishing vessels or to sell them out of the country. These programs have been most successful for the purse seine fleet. Since the early 1970s the purse seine fishery has been controlled by boat licenses denominated as volume of cargo capacity. The government used the decommissioning grants in part to withdraw licenses and in part to stimulate accumulation of licenses on fewer boats, thus achieving both restructuring of the fleet and a reduction in total capacity. For many years the total cargo capacity of the fleet has remained roughly constant while the profits per vessel have increased.

After a short break in the mid-1990s buy-backs were resumed. Since then the program has been mainly directed at smaller boats (shorter than 28 meters). The number of boats has declined substantially since the program was put into effect and the profitability of the fleet has trended upwards.

The success of the buy-backs depends critically on measures being in place for preventing new boats from entering the fishery instead of the ones that have been removed. In the purse seine fishery this was accomplished through limiting the total cargo capacity of the fleet. For the so-called traditional vessels this has been accomplished through assigning fish quotas to certain groups of vessels and closing the entry to these groups. This scheme has now developed into individual vessel quotas (so called unit quotas) which can be bought and sold with the vessel. This system has greatly facilitated the restructuring of the vessel groups affected by this arrangement.

1. INTRODUCTION¹

In Norway, buy-back programs for fishing vessels have been implemented since 1979, except for a brief interlude 1996-97. These programs have been targeted at different types of vessels in different periods. They have involved grants both for scrapping fishing vessels and for selling them for other uses, including to other countries. The purpose has, at least partly, been to improve the profitability of the vessels that remain. This has been accomplished by stripping the scrapped or transferred vessels of their fishing concessions; i.e., their rights to participate in specific fisheries such as purse seining for capelin, trawling for cod or shrimp, etc. With these concessions there usually goes a right to a certain portion of the total quota for one or more fish stocks and so, by nullifying the concession, the quotas of the remaining vessels and their profitability can be raised.

In this paper we discuss these buy-back programs and their effect on the size and profitability of the fishing fleet. Scrapping or selling a given number of fishing vessels does not necessarily mean that the fishing fleet will be reduced by exactly that number, as people may simultaneously be investing in new vessels, perhaps using the grants for that purpose. In order to verify the true net effect of these grants we also consider how the number of fishing concessions and fishing vessels has developed since the late 1970s. Keeping track of the fishing concessions is straightforward, as the numbers of fishing concessions of various kinds are routinely reported in the Norwegian fisheries statistics.² Following the number of vessels in the groups targeted by the grant schemes is much more difficult, as the categories used in the fisheries statistics do not necessarily correspond to these groups.

As to profitability, the Norwegian Directorate of Fisheries publishes annually a detailed study of the costs and earnings of fishing vessels. Here we sometimes encounter the same problem as when trying to follow the development of the number of vessels in a certain group; the results of the costs and earnings study are not always reported specifically for such groups. The only measure of profitability available for the entire period under consideration is the so-called wage potential per boat. Wage potential is what remains after all costs other than the remuneration of fishermen have been subtracted from the revenue. The rationale for this is that fishermen's remuneration is determined as a share of the total revenue of fishing, but the original purpose of the costs and earnings study was to find out whether the fishing industry was providing, or could provide, incomes for fishermen on par with comparable occupations. Unfortunately it has not been possible to relate the wage potential to the number of people employed, or to hours worked or any other reasonable measure of working time. Changes in the average size or capital intensity of fishing vessels within a specific group will detract from the usefulness of the wage potential per vessel within a given group, but better measures are not easily available.

2. AN OVERVIEW OF THE PROGRAMS

During the period 1979-95 a large part of the buy-back grants was used for large vessels, i.e., purse seiners and trawlers. Since buy-backs were resumed in 1998, small boats (less than 28 meters length) have mostly been targeted. A likely reason for this is that the large boats have been put under a so-called unit quota regime, by which quota allocations can be bought and

¹ I am grateful to Anders Østreim, The Norwegian Directorate of Fisheries, for useful comments and guidance on an earlier draft. The views expressed in this paper are the sole responsibility of the author.

² The source here is Statistics Norway: Fisheries Statistics, which is an annual publication.

sold with the vessel (leasing of quotas has not been allowed). This buying and selling of unit quotas has led to a considerable rationalization of the fleet. The unit quota system will be further described below.

Table 2.1

Total expenditures on buy-backs 1979-95
Source: *Statens Fiskarbank*

	Mill. kroner	No. boats
Coastal fleet	324.0	706
Sprat	6.3	26
Whaling	3.2	10
Trawling for pelagics	65.0	57
Trawling for cod	146.2	28
Purse seiners	449.7	102
Sealing	12.5	12
Small trawlers	10.7	4
Shrimp trawlers	2.3	1
Other	18.3	
Total	1,038.2	946

Table 2.2

Total budget allocations for buy backs 1998-2002
Source: *Statens nærings- og distriktsutviklingsfond*

Year	Million kroner	Applications	
		accepted	accepted but not used
1998	25.0	42	7
1999	35.5	68	5
2000	53.3	48	3
2001	21.0	36	10
2002	21.7	24	9
Total	156.5	218	34

Tables 2.1 - 2.3 show the amount of money spent on buy-backs and the number of vessels affected 1979-95 and since 1998. The first period was by far the most active one (note that, due to inflation, the money spent in the first period may have been worth about twice as much as the same sum spent in the latter period). Almost one-half of the money was spent on purse seiners, which are relatively large boats (40-70 meters long) used for catching capelin, mackerel, herring and other pelagic species. About 15 percent was spent on trawlers fishing cod and other groundfish species. These vessels are of a similar size.

By contrast, most of the money spent since 1998 has been targeted at smaller boats, usually less than 28 meters long, except that in 2000 some money was used for boats larger than 28 meters fishing with so-called traditional gear (nets, long lines or hand lines). The "Group I"

label in Table 2.3 refers to specific rights of participation in the cod fisheries. In 1990 these vessels were given individual vessel quotas for cod. In later years they have continued to get a specific quota allocation, but not individually; they have competed for a total quota allocated to sub-groups distinguished by size.³ What distinguishes Group I vessels from Group II vessels is that entry into Group I has been closed. Since the fishing rights of Group I vessels have been transferable with the vessel, these vessels have acquired a market value over and above their value as production equipment, reflecting the value of these rights. One much debated case in the fall of 2002 involved a Group I boat sold for 90 million kroner and bought back the next day for 10 million by its previous owner, after having been stripped of its fishing rights.⁴

Table 2.3

Buy-backs 1998-2002. Types of boats affected
Source: *Statens nærings- og distriktsutviklingsfond*

Fishery	1998	1999	2000	2001	2002	Total
Shrimp trawlers	8	20	12	15	16	71
North Sea & shrimp trawl	3	1	1	5	4	14
Purse seining for mackerel	1	11	5	5	6	28
Saithe		3	2			5
Cod, Group I	27	35	10	10	5	87
Cod, Group I, > 28 m			18			18
No rights		9	3	9	2	23

3. EFFECTS ON FLEET CAPACITY AND PROFITABILITY

3.1 Purse seiners

In Norway, purse seiners larger than 90 feet or 1500 hectoliters cargo capacity have been subject to licensing (concessions) since the early 1970s. The concessions were initially given for free to those who were in the industry at the time and denominated in hectoliters of cargo capacity. From the beginning there was some buying and selling of boats for the sole purpose of stripping them of their concessions. There are economies of scale in the industry and, therefore, boatowners typically wanted to replace their boats with larger ones, but in order to do so they had to acquire another boat, strip it of its concession and add its concessionary cargo capacity to their old boat.

A further reason to buy concessions was that as soon as the stocks fished by the purse seine fleet were put under a quota regulation, the total quota was divided among the vessels participating in the fishery according to the individual vessel's concession capacity. Each vessel got a "base quota" according to a certain rule, and its share of the total catch quota was determined by its share of the total amount of base quotas. The base quotas increased with the

³ Since the beginning of 2004 the Group I vessels get individual quota allocations (unit quotas) that can be bought and sold with the boat, and in some cases even leased, with certain restrictions.

⁴ Reported in the trade journal "Fiskaren," November 1, 2002, p. 2.

concession capacity but at a diminishing rate. To begin with different rules were in effect for different fish stocks or fishing seasons, but they have long since congealed into a rule common for all stocks. Figure 3.1 shows the rule now in effect.

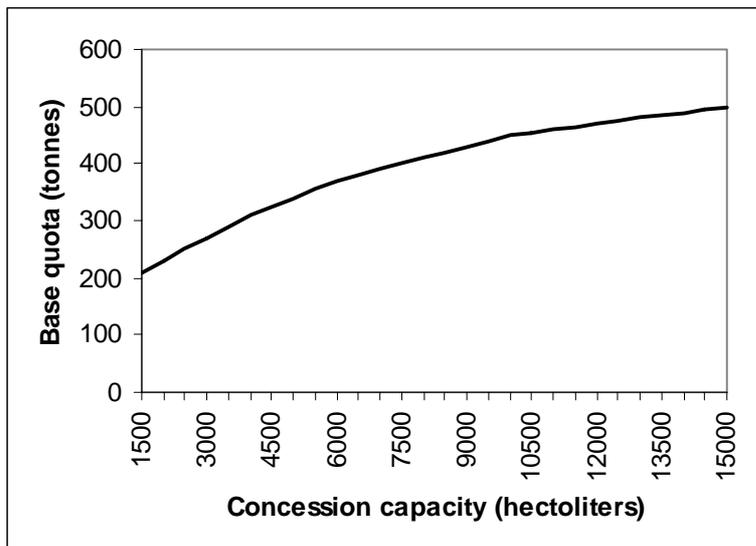


Figure 3.1: Relationship between a vessel's base quota and its size (cargo capacity). Source: *Directorate of Fisheries*.

Due to the base quota rule, a boatowner could increase his share of the total catch quota by buying a vessel and stripping it of its concession. Because of the regressive character of the rule, the gain in quota allocation was limited. If, for example, the owner of an 8,000 hl. vessel bought a 5,000 hl. vessel, stripped it of its concession and acquired a new vessel of 13,000 hl., he increased his base quota from 410 tonnes to only 480. Still, considerable rationalization of the fleet took place through this trading in concessions.

The buy-back program initiated by the Ministry of Fisheries in 1979 capitalized in part on this trading in concessions. Some buy-back grants were "sales subsidies" rather than outright decommissioning grants; the concessions of the boats involved could be sold, on condition that the boat be either destroyed or sold out of the country. This promoted restructuring of the fleet towards fewer but larger vessels. In other cases the concessions of boats receiving decommissioning grants were withdrawn, so reducing the total concession capacity of the fleet. There is anecdotal evidence that the boatowners themselves, realizing the gains that could be obtained from rationalizing the fleet, had a preliminary plan for an industry-financed buy-back program, but this was quickly shelved when it transpired that the authorities were prepared to use public money for this purpose.

In 1996, after nearly 500 million kroner of taxpayers' money had been spent on rationalizing the purse seine fleet, the time was apparently ripe to let the industry itself take over the financing of its further rationalization. This was accomplished through the so-called unit quota system. Under this system, those who buy boats and strip them of their concessions can keep a certain percentage of the quota allocation of the boats for 13 years, and 18 if the boat is destroyed. The share one keeps depends on whether the boat is sold from northern to southern Norway, or vice versa, or within the northern or the southern district. The remainder goes into the common pool and is thus divided among all boats in the industry. To return to the previous example of the 5,000 hl. boat, the buyer of that boat would now be able to keep 60,

85 or 95 percent of that boat's base quota, which is 340 tonnes. The minimum gain is thus 204 tonnes of base quota for 13 or 18 years, against 70 in perpetuity under the earlier system. Several boatowners have taken advantage of this; since 1996 the number of purse seiners with concession has fallen from 111 to 94.

The amounts spent on the purse seine fleet and the number of boats and cargo capacity involved are shown in Table 3.1.1. Clearly the program was most active in two periods, 1979-83 and again in 1987-91. No less than about 100 boats were affected by the program, which is a quite large number; presently there are less than 100 boats left in this fishery. The amount spent may have amounted to the value of 10-15 new boats; in 1985 the cost and earnings study undertaken annually by the Directorate of Fisheries reported the value of a new purse seiner over 8,000 hl. at 34 million kroner.

Table 3.1.1

Grants for scrapping or selling purse seiners
Source: *Statens fiskarbank*

Period	Million kroner	Number of boats
1979-83	225.2	67
1984-86	24.5	5
1987-91	193.8	29
1992-93	3.0	1
	446.5	102

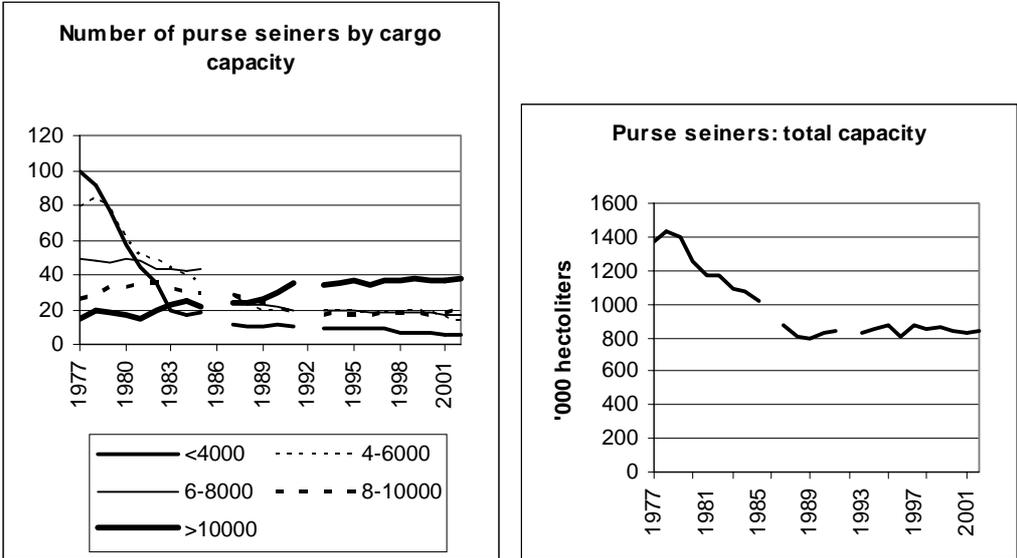


Figure 3.1.1: Number and cargo capacity of purse seiners with concession 1977-2002. Source: *Statistics Norway, Fishery Statistics and Directorate of Fisheries.*

Figure 3.1.1 shows the development of the purse seine fleet. There has clearly been a development towards fewer but larger boats. This reflects the economies of scale in the fleet.

The total capacity of the fleet, measured as hl. cargo capacity, began to decline in 1979, the year the buy-back program was put into effect, but bottomed out from the late 1980s onwards, when the buy-back scheme came to an end. The unit quota system apparently has not had much effect; since 1996 there has been only a minor change in the structure of the fleet from small to large vessels.

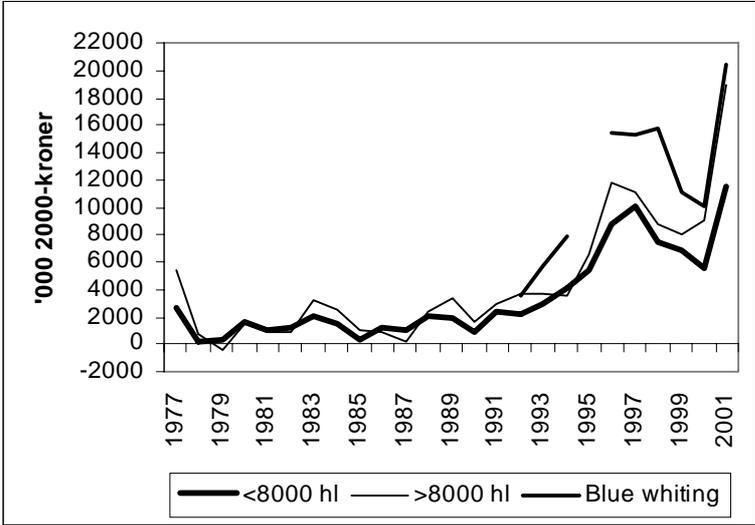


Figure 3.1.2: Wage potential per boat of purse seiners with concession 1977-2001. Source: Directorate of Fisheries, cost and earnings studies.

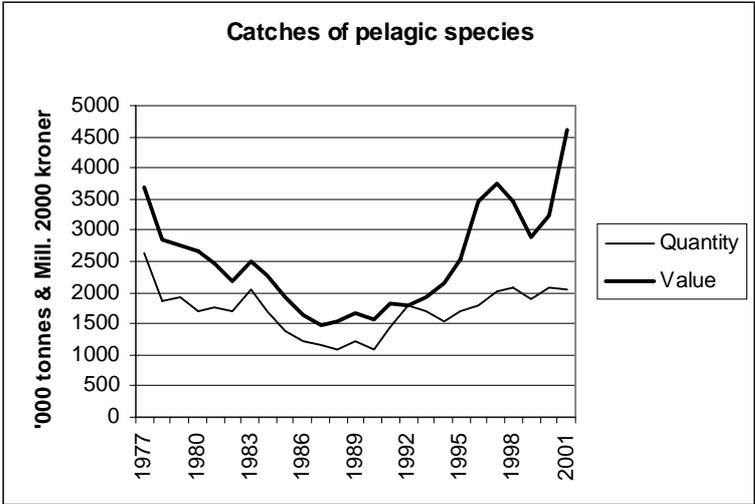


Figure 3.1.3: Catches of pelagic species in Norway 1977-2001. Source: Statistics Norway, Fishery Statistics and Directorate of Fisheries.

Despite the fall in total fleet capacity and the increased dominance of large and more profitable boats, the profitability of the industry does not seem to have improved until after the buy-back program had long since ended and the total fleet capacity flattened out. Figure 3.1.2 shows the wage potential, in constant value of money (year 2000), for three different categories of boats, larger versus smaller than 8,000 hl., and the “blue whiting” boats. The latter are large and equipped for fishing blue whiting, which for some time has been quite

profitable. From the figure we see that the wage potential shot up in the 1990s and has been quite high since 1996.

The positive effect of the buy-backs on profitability becomes more clear if we look at the development of the catches of pelagic fish. The bulk of these catches is taken by purse seiners with concessions, but some is caught by small purse seiners outside the concession system and by other boats. The quantity and value (in constant value of money) of these catches is shown in Figure 3.1.3. First we may note that the high profitability after 1995 is to a large extent due to high prices; the increase in value in this period is considerably greater than the increase in the catch volume. Secondly, we may note that the volume of catches and their value trended strongly downwards in the period 1979-87, but the wage potential per vessel shows little trend over this period, which is most likely due to the reduction in the number of vessels due to the buy-back program. Finally, we may note that the total value of the catches, in constant value of money, was about 70 percent higher in 2001 than in 1979. In 1979 the wage potential of the fleet was about zero; the revenues were not much higher than the costs excluding labor costs but including capital costs.⁵ An increase in revenue of 70 percent would, at constant costs, imply a wage potential of about 40 percent of revenue.⁶ In 2001 the wage potential was well above that for all vessel groups, or about 50 percent of revenue, which implies that the costs excluding labor costs were about 15 percent lower in 2001 than in 1979.⁷ It is tempting to ascribe the apparent cost reduction from 1979-2001 to the buy-back program and the trading of concessions.⁸

Ironically, the buy-back program was to some extent necessitated by the grants given by the Norwegian government to the building of new purse seiners. This was done in order to maintain employment in the shipyards, which were hard hit by the world recession initiated by the energy crisis in 1973. This subsidy program was put in place despite an analysis made public at about the same time showing that the purse seine fleet was already troubled by overcapacity.⁹

3.2 Groundfish trawlers

The Arcto-Norwegian cod is the most important stock fished by the Norwegian groundfish trawlers, even if they also catch other types of cod-like species (saithe, haddock). Most of these catches take place in the Barents Sea and the Norwegian Sea. After the 200-mile zone was established in 1977, Norway and the Soviet Union agreed on an even split of the TAC from this stock, with a small quantity set aside for third countries which had traditionally fished in this area. A part of the Norwegian share of the TAC was set aside for the trawler fleet and split into vessel quotas. A declining trend in the TAC for cod in fact triggered the

⁵ Since the employees on the purse seine boats get a share of the total revenue, capital owners in the industry apparently made a substantial loss in 1979. It is possible that the cost and earnings studies have overestimated the capital costs, which in fact are imputed and not actual costs; a curious result of these studies is that the remuneration of fishermen have exceeded the potential wage for long periods without this leading to a major reduction in the number of boats.

⁶ Approximately $0.7/1.7 = 0.41$.

⁷ With the costs savings being ΔC , which augments the potential wage by the same amount, $(0.7+\Delta C)/1.7 = 0.5$ gives $\Delta C = 0.15$.

⁸ The methodology applied to imputing capital costs in the cost and earnings studies is no longer the same as it was in 1979. It probably implies lower capital costs. It is unlikely, however, that the lower costs in 2001 relative to 1979 are due solely to this change in methodology.

⁹ Hansen, T. et al. (1976): *En strukturanalyse av sildolje- og sildemelindustrien*. Senter for anvendt forskning, Norges Handelshøyskole.

first unit quota arrangement; starting in 1984, quota transfers between boats were allowed if a boat was permanently removed from the fishery. This arrangement was extended and modified several times after that.

Table 3.2.1

Grants for scrapping and selling groundfish trawlers
 Source: *Statens fiskarbank*

Period	Million kroner	Number of vessels
1979-83	81.8	17
1984-86	16.1	3
1987-91	34.7	10
1992-93	38.0	6
	170.6	36

Table 3.2.1 shows the expenditure of buy-back money on trawlers 1979-93. The numbers are higher than in Table 2.1. This is probably due to an unclear distinction between “industrial trawlers” and “trawlers fishing for cod.” Some of the industrial trawlers fish for cod or cod-like species some of the time.

The money was spent about equally on scrapping and on subsidizing the selling of boats to other uses, including to other countries. About one half of the money was spent in the first five years, 1979-83. During this time the number of trawlers also declined substantially, from 171 in 1978 to 115 in 1983 (Figure 3.2.1). In 1986-88 some new trawling concessions were awarded, and the number of trawlers began to rise again, even if the scrapping and selling subsidy program was continued.

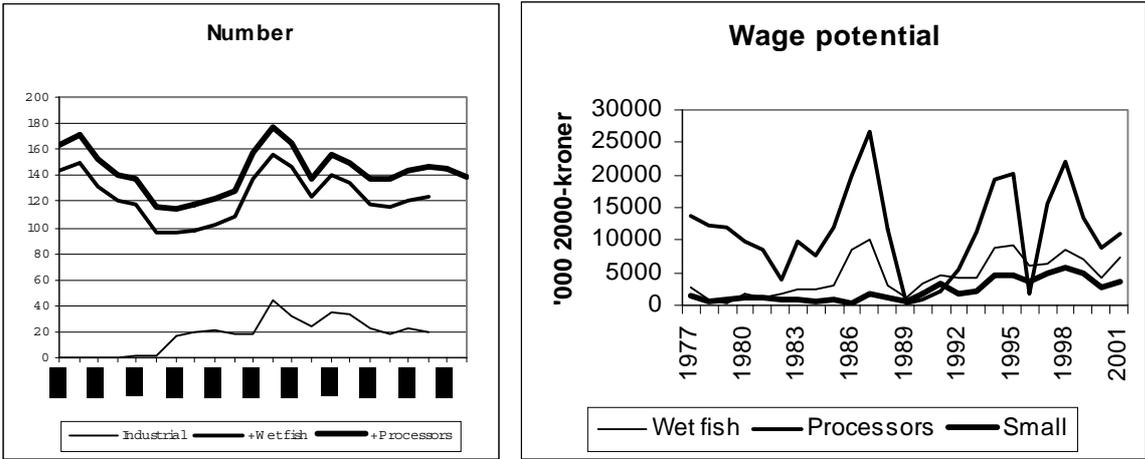


Figure 3.2.1: Number of trawlers with concessions and their wage potential per boat 1977-1998. Source: *Statistics Norway: Fishery Statistics*, and *Directorate of Fisheries, cost and earnings studies*.

No grants have been given to selling or scrapping of trawlers since 1993, but in 1996 a new version of the unit quota program came into effect. This is similar to the arrangement for the purse seiners; a buyer can strip a trawler of its quota and keep it for 13 or 18 years, depending on whether or not the boat is destroyed. This program has had some effect on the size of the trawler fleet. It is not known how many boats have been removed from the fleet because of this program; while 22 trawlers have got additional quota allocations because of the unit quota arrangement, the actual number of boats removed is lower, because quotas from at least some boats have been split between two or more. According to the fisheries statistics, the number of trawlers declined by 7 from 1996-98.

As is clear from Figure 3.2.1, the average profitability of the trawlers that process their catch varies enormously over time. This is primarily due to variations in the Arcto-Norwegian cod stock, the most important stock fished by these vessels. The profitability of the wet fish trawlers delivering their catch to onshore plants varies less, but is roughly in phase with the processors, as the sources of fish are the same. Both for the wet fish trawlers and the small trawlers the profitability has tended upwards since the low point of 1989. A part of the reason could be the unit quota arrangement, which has raised the quotas of some vessels, but this took effect as recently as 1996. Some of the increase in profitability of the wet fish trawlers 1983-88 may be due to the buy-back program, but the peak in 1986-88 was primarily due to a higher TAC for cod.

3.3 “Conventional coastal boats”

3.3.1 Boats under 28 meters length

This group comprises boats fishing with so-called conventional gear, i.e., nets, long lines, and hand lines. Table 3.3.1 shows the grants given for scrapping such boats. Most of the grants were given in the period 1984-91. Over 400 boats were scrapped in 1984-86 and almost 300 in 1987-91. Almost all the grants for scrapping and selling since 1998 have been given to boats under 28 meters (see Table 2.3); over 200 boats have been affected by the program that began in 1998.

Table 3.3.1

Grants for scrapping conventional coastal less than 28 meters long

Source: *Statens fiskarbank*

Period	Million kroner	Number of boats
1979-83	11.5	59
1984-86	98.2	411
1987-91	109.5	283
1992-93	12.4	26
1994-95	1.8	6
Total	223.4	785

The size categories used in the fisheries statistics do not quite correspond to the 28 meter limit, but most wooden boats and steel boats less than 30 meters would be in this category. The number of these boats is shown in Figure 3.3.1. This number declined 1982-90, as one would expect from the above figures on the grants for scrapping. Entry into this group is not restricted, except that entry into Group I in the cod fisheries has been closed since 1990, so the efficacy of the buy-back program in downsizing the fleet is not a forgone conclusion. From 1990 to 1992 the number of boats actually increased somewhat, but started to fall again after 1993, before buy-backs were again initiated in 1998, and has continued since. As already stated, most decommissioning grants since 1998 have been directed at conventional coastal vessels less than 28 meters long.

Figure 3.3.1 also shows the profitability of all boats in the size class 13-31 meters. The “conventional coastal vessels” less than 28 meters fall in this category but it is broader, comprising also small trawlers and purse seiners. The development in the profitability of this group of vessels will therefore not reflect correctly the profitability of conventional coastal vessels, but it should nevertheless be strongly influenced by these vessels. The year 1990 marks a break in the profitability trend; before 1990 it was falling but rising after that. This has much to do with the development of the Arcto-Norwegian cod stock, which is an important resource for these boats, although they are much more heterogeneous with respect to fishing gear and types of fish taken than the groundfish trawlers. It is difficult to detect any direct and immediate effect of the buy-back program on the profitability of the said boats, but it would most likely have been lower without the fall in their number. We may note that the profitability was higher in the late 1990s than in 1977-1988 even if both periods were roughly comparable in terms of catches of Arcto-Norwegian cod.

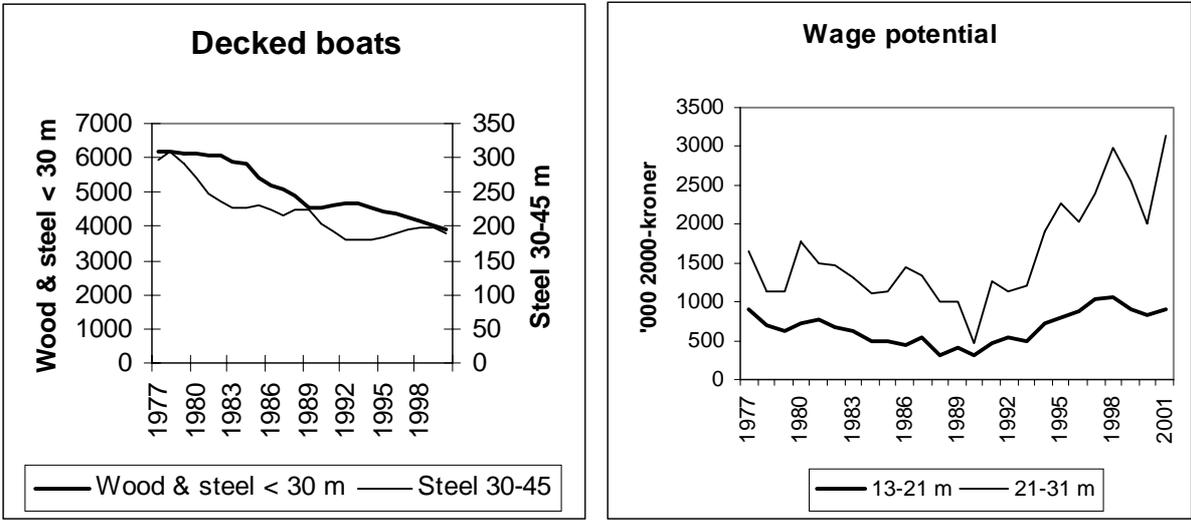


Figure 3.3.1: The number of decked boats under 45 meters and the wage potential (per boat) of boats 13 - 31 meters long. Source: *Statistics Norway, Fishery Statistics, and Directorate of Fisheries, cost and earnings studies.*

3.3.2 Boats over 28 meters length

Table 3.3.2 shows the amount spent on grants for scrapping conventional coastal boats larger than 28 meters. The time profile of these subsidies is not dissimilar to that for the smaller

coastal vessels, but the expenditures peak more sharply in the 1987-91 period, and relatively more was spent in the years 1992-95. The amount spent on this category was about one third of what was spent on the smaller boats, and the boats involved were much fewer.

Table 3.3.2

Grants for scrapping conventional coastal boats longer than 28 meters.

Source: *Statens fiskarbank*

Period	Million kroner	Number of boats
1979-83	1.3	3
1984-86	3.2	3
1987-91	54.9	16
1992-93	7.0	3
1994-95	9.2	3
	75.6	28

Some of the boats over 28 meters length may be in the group “wooden and steel vessels less than 31 meters”, which we have already discussed. Boats larger than 31 meters would be in the group “steel vessels 31-45 meters” also shown in Figure 3.3.1. The number of these vessels in fact rose from 1987-91 but fell markedly after that to a historic low in 1993. This should not be taken, however, as evidence of a negligible impact of the program, because this group includes many other vessels than “conventional coastal vessels.” Owing to the heterogeneity of the vessel group 31-41 meters, the profitability of which is reported in the profitability studies, it is probably not meaningful to relate changes in the average profitability of these vessels to the subsidies to scrapping of conventional coastal vessels larger than 28 meters. In 2000, 32 million kroner were allocated to scrapping 18 vessels of this type.

In 2000 the unit quota arrangement was extended to boats larger than 28 meters fishing with so-called conventional gear (nets, lines). The unit quota arrangement has led to a considerable rationalization of this fleet; since this arrangement was introduced in 2000 the number of boats in this group has been reduced from 86 to 49.¹⁰ Eighteen boats were affected by the grant program for this part of the fleet in 2000 (see Table 2.3), but that program was in effect only one year.

3.4 Shrimp trawlers with concessions

Concessions are required for trawling for shrimp with boats larger than 19.8 meters or 50 GRT north of latitude 62°. In the period 1984-93, subsidies were given to scrapping such boats, as shown in Table 3.4.1. The subsidies amounted to about 60 million kroner and involved 20 boats, peaking in 1987-91.

Figure 3.4.1 shows the number of shrimp trawlers with concessions. It fell from 1985 to 1987 (the number for 1986 is missing), and again from 1989 onwards, which coincides with the

¹⁰ According to officials at the Directorate of Fisheries.

subsidy program. From 1996 the number of concessions has been roughly stable. The point of this subsidy program is somewhat obscure; there are no quotas on shrimp fishing except at Greenland, but the subsidy program did not include the vessels with quotas in Greenlandic waters.

Table 3.4.1

Grants for scrapping and selling shrimp trawlers with concession
 Source: *Statens fiskarbank*

Period	Million kroner	Number of boats
1984-86	2.9	1
1987-91	43.9	13
1992-93	13.0	6
Total	59.8	20

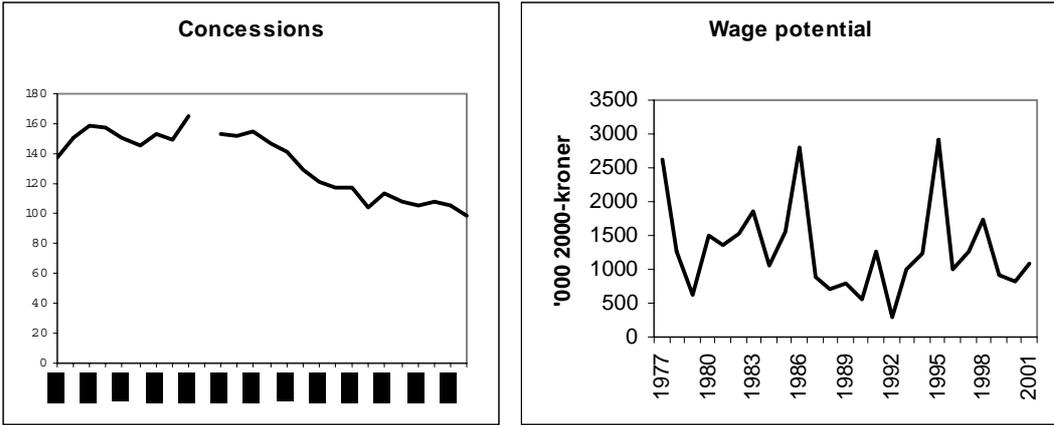


Figure 3.4.1: Number of shrimp trawlers with concessions and the wage potential per boat of shrimp trawlers without freezing equipment (for 1984-91 trawlers without quotas at Greenland but including those with freezing equipment). Source: *Statistics Norway, Fishery Statistics, and Directorate of Fisheries, cost and earnings studies*.

Figure 3.4.1 also shows the wage potential of shrimp vessels without quotas at Greenland. A problem with this series is that for the years 1984-91 it includes shrimp trawlers with freezing equipment, but these were probably not very many. There is no clear trend in the series which would indicate a positive effect of the subsidy program on the profitability of these vessels. This is not entirely surprising, as the vessels are not under quota, so reducing the number of vessels does not automatically increase the quota allocations of the remaining vessels.

Unit quotas for the shrimp trawlers with quotas at Greenland were put in place in 1994. Since 1997 the number of shrimp trawlers with quotas at Greenland has declined from 20 to 18.

4. CONCLUSION

Norway is not alone in having subsidized the decommissioning of fishing boats. The European Union has done so for many years. There has been some doubt about the efficacy of this policy. Some have feared that the money spent on decommissioning has found its way into new investments in the industry and that its effect thus has been limited. Others have feared that programs like this generate a moral hazard problem by bailing out unprofitable or loss making enterprises.

It is quite possible that some of the Norwegian decommissioning money has found its way back into the industry. It is also possible that it has generated a moral hazard problem of the sort mentioned. What seems to be clear beyond doubt, however, is that the decommissioning money has led to a reduction of fleet capacity in the purse seine fishery and an improvement in profitability. What is less clear is whether this has happened on any significant scale in the other fisheries affected by the decommissioning programs; the groundfish trawlers, the boats fishing with nets or lines, and the shrimp trawlers.

Despite the at least partial success of the decommissioning program the question remains whether it was at all well taken to use public money for this kind of purpose. The fact that the profitability of the remaining vessels increased due to the decommissioning programs indicates that the industry could have financed the buy-backs itself, through the buying and selling of fishing rights, as in fact has occurred on a substantial scale, especially in the purse seine fishery. Of late it appears that the government is increasingly relying on this mechanism, through an increased use of the so-called unit quota program, which has many features in common with an individual quota program where the quotas are transferable for the long term.