Unclassified **AGR/FI/HSA(2006)1**

Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development **27-Sep-2006**

English text only

DIRECTORATE FOR FOOD, AGRICULTURE AND FISHERIES
FISHERIES COMMITTEE

AGR/FI/HSA(2006)1
Unclassified

Expert Meeting on the Human Side of Fisheries Adjustment

ALWAYS TOO MANY?
THE HUMAN SIDE OF FISHERY CAPACITY ADJUSTMENT IN NORWAY

19th October 2006
Union de l'Europe occidentale, 43 avenue Président Wilson, 75116 Paris

This paper has been prepared by Professor Bjorn Hersoug of the Norwegian College of Fishery Science, University of Tromso, Norway.

It is submitted for discussion under Session 3 of the Programme.

For further information, please contact:
Anthony COX (Email: anthony.cox@oecd.org)
Carl-Christian SCHMIDT (Email: carl-christian.schmidt@oecd.org)

JT03214482

English text only

ALWAYS TOO MANY?

THE HUMAN SIDE OF FISHERY CAPACITY ADJUSTMENT IN NORWAY[1]

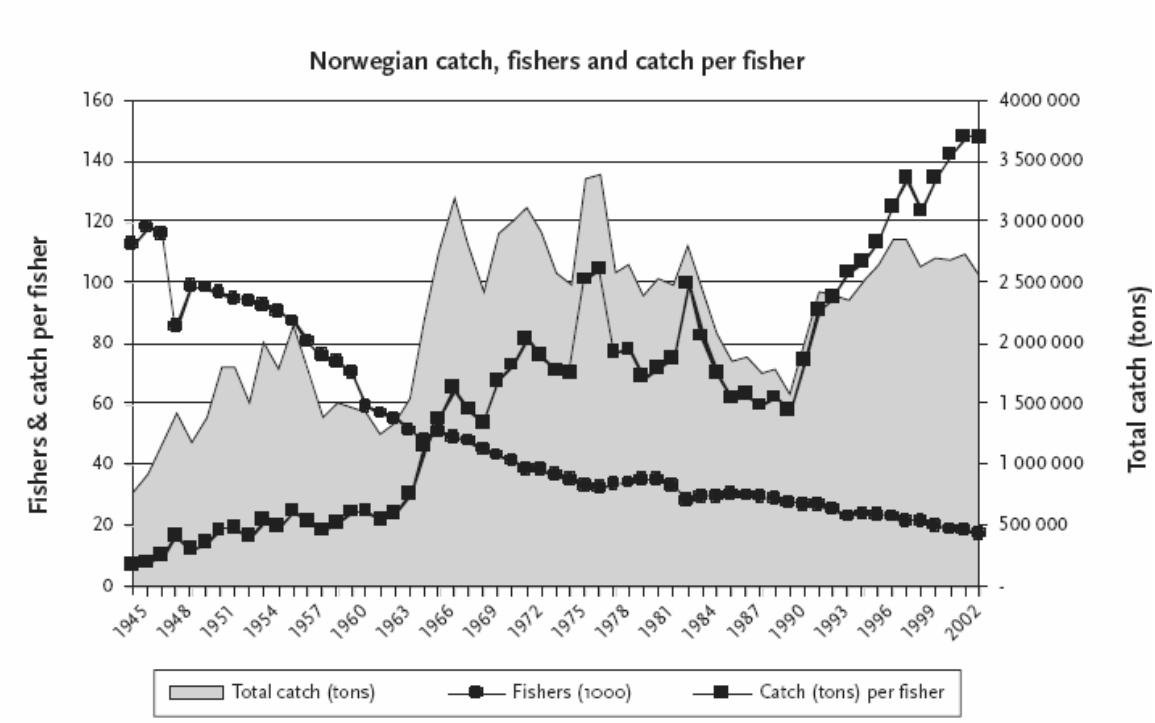
Introduction

1. In 1945, just after WWII, Norway had 115 000 registered fishers, while at present (2005) the number is approximately 15,000. In the meantime total catch has increased threefold, indicating that catch per fisher has increased from approximately 8 tons to 160 tons (see Figure 1). At the same time, there has not been massive unemployment in coastal areas during this period. Hence Norway could serve as an interesting example of how to manage structural adjustments in fisheries. Structural adjustments have been managed in various ways. While adjustment in the first part of the period was implemented through the market, scrapping schemes paid by the state were introduced in the 1960s. In 2003 a new system of shared responsibility for scrapping was introduced, with 50% paid by the fishers and 50% paid by the state. Throughout the period there has been various schemes based on merging rights and quotas, originally developed for the larger ocean-going fleet (trawlers and purse seiners), but from 2003 extended also to the larger vessels in the coastal fleet (vessels larger than 15 m).

2. The paper is divided into eight sections. Following the introduction, the second section presents some insights from labour market studies in coastal communities. The third section illustrates development on the macro level, related to the number of fishers, unemployment as well as migration. Recognizing that fishing is a marginal economic activity on the national level, the fourth section presents the need for a regional or a local approach, focusing on coastal areas where fishing, fish processing and aquaculture play an important part. The fifth section presents the Norwegian system for labour market and social policies, together with the more long-term policies for rural development. The sixth section deals with how we can measure success and failures in fisheries adjustment, while the seventh focuses on the incompatibility of the processes involved; fisheries adjustment as a gradual process whereas management measures may produce sudden shocks (such as the closing of a specific fishery). These effects are, however, intertwined with natural and market variations, whereas the mitigating effects of unemployment as well as rural development policies tend to be long-term and often targeted to more central places. The last section deals with the lessons to be learnt from the Norwegian experiences, both in terms of how to frame fisheries policies as well as unemployment and regional policies. A central point here is to understand the strong position of a stable coastal settlement pattern in Norwegian policy, as well as the extremely favorable conditions offered by postwar economic development with large public funds available both for rural development as well as labour market policies, combined with a limited number of people affected. Ultimately the effects of globalization and the "education society" are briefly discussed, claiming that fisheries capacity reduction is still a complicated challenge, not least because the fisheries (including fish processing) can no longer be used to mitigate the effects of economic transformation of coastal communities. The fisheries sector and in particular the actual fishing is no longer an "employer of last resort".

[1] Written by Professor Bjorn Hersoug, the Norwegian College of Fishery Science, University of *Tromsø*

Figure 1. Norwegian catch, fishers and catch per fisher



(Source: Hersoug 2005: 242)

Labour market theory applied to fisheries

3. Neo-classical economic theory may serve as a starting point for understanding labour market behaviour in the fisheries. According to this theory, somewhat simplified, employment in the fisheries is a result of supply and demand. Expansions of the model due to imperfections, such as monopoly situations, limited information or transaction costs, may be useful as these modifications allow the existence of *several labour markets,* divided according to geographical or occupational barriers (Colbjørnsen 1980). But even with these modifications in mind, neoclassical economics gives a limited understanding of how the various labour markets function. First of all because the actual labour transaction takes place in social networks, where friendship, kinship and neighbourhood influence both who are recruited and the actual remuneration. Jentoft (1976) and Wadel (1980) characterize this process as *network recruitment*, and consequently as an alternative to market recruitment. Instead of perceiving the market and networks as two separate ways of recruiting, it is probably more fruitful to see them as two extremes on a continuum, or alternatively that market recruitment is *modified* by social networks.

4. In addition there are three characteristics traditionally influencing labour markets in the fisheries. The first is connected to the actual recruitment. At least up to the 1990s, learning in the fisheries did not rely much on formal education. The necessary knowledge and abilities were acquired through doing, through the gradual socialization following the actual cooperation on board (Hetland 1984). It is typical that in a large national survey of fishers, 83% had a father that was a fisher and 95% had their upbringing in a fishing community (Hersoug 1984). On the importance of kinship, Hersoug (1984) demonstrates how 75% of a large sample of fishers started their career with family members, neighbours and community members, that is, in a "protected situation". The same is found in many other countries as well (Firestone

1967, Stiles 1979)**.** Shortly summarised, the recruitment situation was characterised by an early start, little formal education and with a large influence of kin and neighbours onboard.

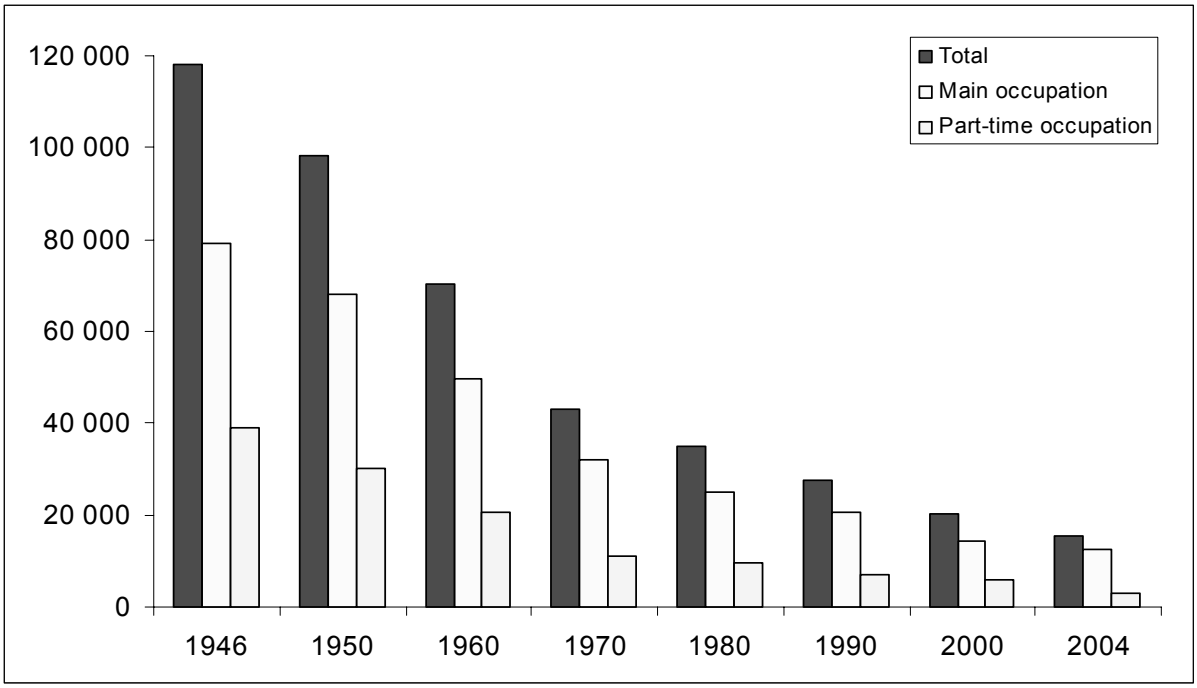
5. The second characteristic applies to the importance of networks and cooperation, not only onboard but among vessels from the same community or on a higher level, between the fleet, the processing factories and the households. Jentoft and Wadel (1984) have introduced the term *employment system,* where the fishing industry and the fisheries are constituted by sets of reciprocal roles and activities. A diversified fleet can serve to employ different members of the community, such as when older boats are used for recruitment or for fishers who are scaling down their level of activity. In some communities there is a close cooperation between fleet, processing factory and households, all trying to optimise their income within given constraints, while in others lack of internal coordination may imply recruitment, capacity or career problems. While natural conditions, markets and technological developments will determine the aggregate level of employment in the fisheries, the local network will to a large degree determine the success or failure of the separate fishing community.

6. The third characteristic applies to fishing as part of a coastal labour market system. Fishing has for years been an *employer of last resort*, but also a buffer system, meaning that the fishing sector has lost manpower when other sectors have expanded, but received workers when other sectors contracted. As shown in Figure 2 the general tendency in the whole post WWII period has been reduction, but the annual fluctuations have been influenced by a close cooperation between certain sectors, so that fishers temporarily may work as construction workers, processing workers, in shipbuilding or sea transport. These occupations have been characterised as coastal occupations (*kystyrker*) or a domain of coastal employment. The typical trait of such a coastal system of occupation is that it is flexible. Reduction in one sector does not necessarily result in unemployment. The individual has an occupational mobility which contributes to stability of the coastal settlement pattern, because even if a former fisher starts commuting, the family remains in the fishing community. These occupations were characterised as flexible, as they all required little formal education and few specific certificates. Today, this flexibility is considerably reduced as most coastal occupations have been through a process of professionalisation, where more formal education and certificates are required.

7. There is little doubt about the general decline in the number of fishers, but labour researchers have for years debated whether push or pull factors have been the most important. While Brox (1966, 1984) has stressed that fishers have been *forced out* of their occupation due to highhanded fisheries policies by the authorities, Seierstad (1983) describes how the coastal economy over time has become more inflexible, with fewer possibilities of changing jobs. His main point is, however, that fisheries in the entire period since WWII has been an "employer of last resort". The availability of more attractive jobs in towns and more densely-populated areas can be considered a "scarce commodity", where there at any time has been a queue of potential employees from coastal areas. Bad times in the fishing industry may certainly explain why many quit and why few are recruited, but good times in other industries (such as construction, oil and gas, and public and private service), may be equally important.

8. Based on these characteristics Hersoug (1985) makes a distinction between "life-time fishers", "employment switchers", "employment commuters" and "tourists", where only the first group is stable in the fishing industry throughout their lives. Consequently, the migration of the fishers may therefore be as complicated as that of the fish.

Figure 2. Number of Norwegian Fishers (1946-2004)



Source: SSB

Fishers – fewer and older

9. As can be seen from Figure 2, the number of fishers has decreased steadily since 1946. While natural variations and market conditions may have caused short-term fluctuations, the long-term trend has been steadily downward. This points to the enormous increase in technical efficiency over time, since the actual catch level is three times higher than in 1950, although the number of fishers have been reduced to a mere fraction of the original (15 000 left in 2004 out of 118 000 in 1946).

10. However, there are more to the numbers than can be seen by simple computation of the three categories (main or sole occupation versus part-time occupation). There is, as pointed out by Apostle *et al*. (1999), a puzzling paradox in the development of the Norwegian fishing industry compared with the Canadian. Between 1945 and 1990, 90 000 fishers "disappeared" in Norway, while the number in Atlantic Canada increased slightly. This has happened in spite of the Canadian fisheries being reorganised along industrial (Fordist) lines in these years, which would normally require both technological development and rationalisation. However, even though Norwegian fishers succeeded in fighting off the extreme versions of the Fordist regime, the petty capitalist model also had a double edge:

> "On the one hand, it entailed fierce resistance against Fordist solutions. On the other, it undermined the traditional economic adaptation, as it put the fisherman-farmer under pressure to become either a professional farmer or a professional fisherman. In this way, the rejection of the Fordist model did not mean a retreat to tradition, but a quick transformation from occupational pluralism and domestic commodity production to specialisation and technological innovation within a petty capitalist framework" (Apostle *et al.* 1999:61).

11. While the number of fishers needed in Norway has always been a disputed point, the issue can be seen from at least two different angles. The first one is; how many fishers are needed to catch the available quotas? That of course depends on the fleet structure and the choice of technology. The second one is; how many fishers are needed to maintain the coastal settlement pattern, or more precisely, to secure a critical minimum of employment to maintain the small coastal communities? When the modernisation drive started after WWII, there were indisputably too many fishers around, with the sector acting as an *employer of last resort* all through the crisis years in the 1930s. The question was how the reduction should take place (push or pull) and how fast. In spite of generous subsidies throughout the period 1950-1990, which undoubtedly kept more manpower in the sector than was strictly needed, the reduction continued and most politicians and administrators seemed to see this as a natural law. Today there are, according to the former Minister of Fisheries, still too many fishers, although the fisher organisations have started questioning whether there is indeed a "minimum critical mass" in certain fisheries.

12. According to the settlement perspective, fisheries and hence fisheries policy has always been an important part of rural development. Fishing, processing and more recently aquaculture have been essential in securing basic employment in a large number of coastal communities. When the numbers are drastically reduced and the recruitment made difficult through the actual closing of the fisheries (requiring a much higher initial investment in order to buy rights and quotas), this undermines these coastal communities. Here it should be added that even if the service sector (public and private) is much larger than the primary fishing sector or the secondary processing sector, the tertiary sector is largely based on fishing, processing and aquaculture. Without the fisheries there are few reasons to maintain a substantial public infrastructure in many of these communities, as tourist activity is limited and mainly seasonal.

Table 1. Percentage registered fishers by age, with fishing as their occupation[1]

Age (year)	1990	1995	2000	2005
<20	5.9	3.2	3.1	1.8
20-29	26.8	25.6	18.2	15.9
30-39	20.5	21.8	22.8	22.8
40-49	20.6	21.3	21.3	22.7
50-59	14.4	17.9	22.9	22.8
>=60	11.7	10.4	11.7	14.0
Total %	100.0	100.0	100.0	100.0
Total number	20 475	17 160	14 262	11 848

Note:
1. The figures given in table 1 have to be treated with caution, because being registered is connected to several benefits. An investigation from 1989 showed that only 75% of the registered fishers delivered fish that particular year (Hersoug 2001). In 2000 fewer than 10,000 fishers were responsible for more than 90% of the total catch, a figure that has decreased even further over the last five years.

Source: Directorate of Fisheries.

13. The recruitment situation can be illustrated by a simple computation of fishers by age over the last 15 years. As can be seen from Table 1, the number of fishers younger than 20 years decreased from 6% in 1990 to 2% in 2005, while the number in the age group 20-30 years decreased from 27% to 16%, a clear indication that the recruitment of new fishers is steadily on the way down. This impression is further

strengthened if we consult the so called Group I fishers (in the coastal cod fisheries), the ones with guaranteed harvest rights. Here only 89 out of 2 500 are younger than 30 years, indicating that younger fishers find it increasingly difficult to buy not only the vessel but also the accompanying rights (Hersoug 2005:133).

14. What happened to the fishers that left the industry? Judging from the national figures for unemployment there were no significant increase in the number of unemployed in the most important fishing regions. As can be seen from Table 2 the level of unemployment in the most fishery dependent counties (Finnmark, Troms and Nordland) has always been higher than the national average, but on the other hand lower than the OECD average. The same is illustrated by Figure 3, where we compare unemployment in North-Norway, the most fisheries dependent region, with unemployment in the entire country in the period 1980 -2005.

Table 2. Unemployment According to County (North Norwegian counties and Norway overall)

(% of available labour force)

	1960	**1970**	**1980**	**1990**	**1995**	**2000**	**2004**	**2005**
Nordland	2.3	2.3	3.0	4.7	5.7	3.5	4.4	4.3
Troms	2.8	2.5	3.0	4.9	5.2	2.9	3.8	3.7
Finnmark	2.9	2.6	2.9	5.4	6.1	4.9	5.7	5.5
Norway	0.9	0.8	0.0	4.3	4.7	2.7	3.9	3.5

Source: The Norwegian Public Employment Service (*A-etat*): Historical statistics

15. However, even on this level it is difficult to connect development in the fishing sector to the level of unemployment. As explained in the previous section, unemployment figures depend not only on *push* factors (losing jobs in the fisheries) but on *pull* factors as well, which often means the availability of work in other counties, frequently in the south. Figure 4 demonstrates the "paradox"; when unemployment figures increase, migration out of North-Norway is reduced and vice versa.

Figure 3. Number of unemployed as percentage of labour force (1980-2004)

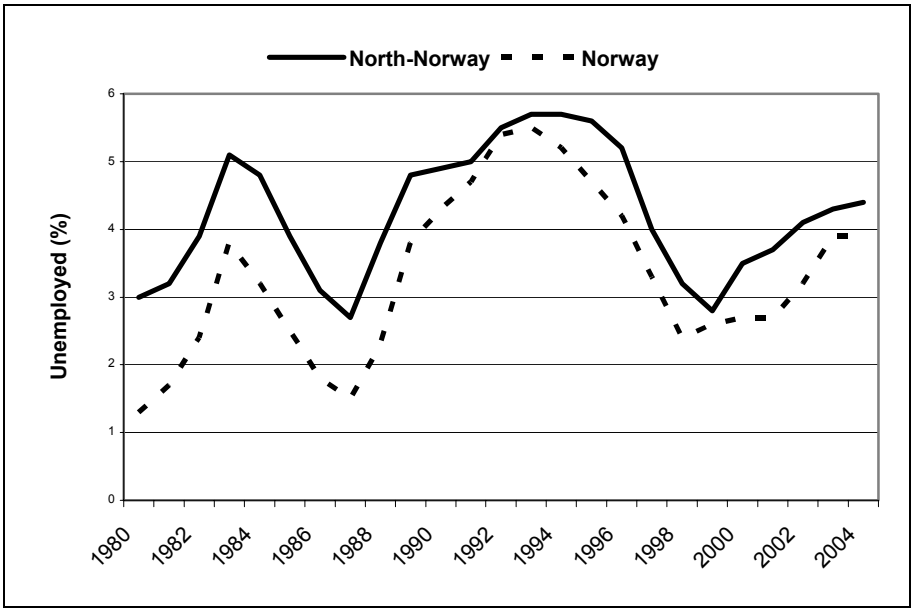
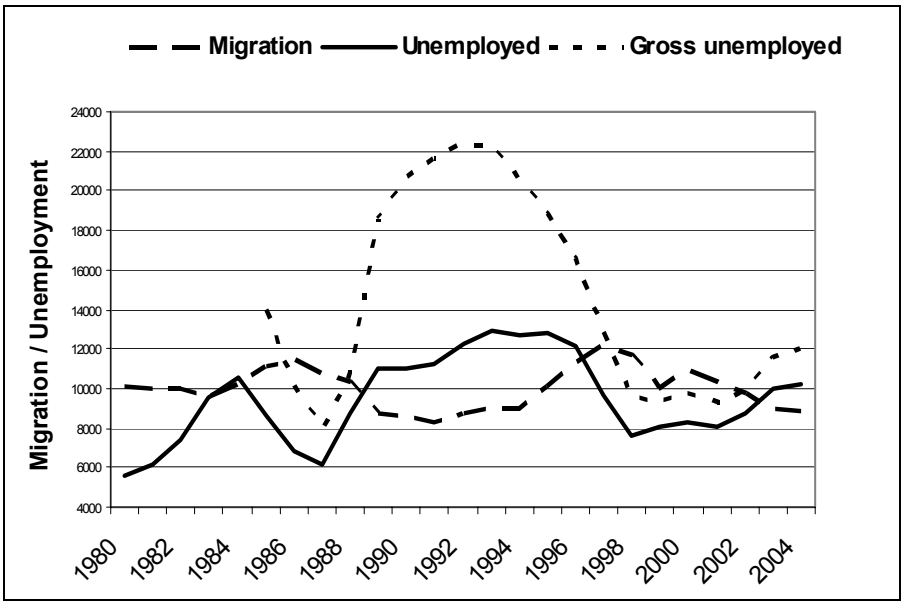


Figure 4. Number of migrants, number of unemployed and the combined number of unemployed and people on employment training programmes in North Norway (1980-2005)



16. In the latest publication from a public committee analysing the effects of structural adjustment measures in the Norwegian fisheries the problem is described as follows:

> "Reduction of the fleet will imply reduced employment. The ones made redundant that do not find new employment, represent a social cost to society…..It is not given that this represents a major problem. If we study

> the history of the fishing industry we find a reduction in employment similar to most other industrial sectors; they are in a situation of continuous adjustment and have been so for the last 50 years. The development of unemployment benefits for fishers does not indicate that fishers have major problems with unemployment and manpower projections indicate that there will be scarcity of available labour in the relative near future." (NOU 2006:16:81, own transl.).

Unemployment on the local level

17. While a macro economic perspective of the fisheries labour market will indicate minor problems (some unemployment due to friction in the labour transfers and some mismatches regarding qualifications), the perspective of the local fishing communities may be more dramatic. Having experienced 10-15% unemployment for years, as is the case for many coastal communities in the north, this is bound to affect the communities negatively. The municipalities get a "crisis stamp" in the public opinion, affecting both the present inhabitants as well as the prospective entrants, the ones that possibly could move into the municipality. Last but not least, such a situation with a permanent high degree of unemployment, largely connected to fishing and fish processing, also influence recruitment into the industry. The implicit message to young people is that the fishing industry has no future and that they should try their luck in more modern and promising sectors, such as IT, services or oil and gas. In the next round this is bound to influence also their choice of where to settle. Crisis communities do not appear to be attractive places for settlement, as the downscaling of the fishing and processing activities normally is accompanied with a gradual downscaling of public and private services as well.

18. In Norway we have experienced several resource crises over the years, with the most dramatic connected to the cod crisis in 1989/90 when drastic cuts in the TAC were made and the former open access fishery was closed. The actual process is described in detail in Hersoug (2005), Holm *et al.* (1996) and Holm and Raanes (1996). What should be highlighted here is how the closing and the dramatic quota cuts affected the fishing communities, what type of remedies that were offered and how they succeeded. To get an impression of how the situation was perceived in the fishing communities, listen to the leader of the Norwegian Coastal Fishermen's Union (*Norges Kystfiskarlag*):

> "Today we write 17 January 1990. The coastal fleet is tied up. The processing factories are silent. The fishers and their families have great economic problems. They fear the winter, the spring and the autumn for next year, five years - many years. They fear the message from the bank, the sound of the auction hammer, and most of all they fear the authorities that refer to democracy while ruining thousands of livelihoods - making the coastal population refugees in their own territory"(Jentoft1994:46, own transl.).

The crisis was serious, incomes were dramatically reduced, unemployment soared, and the number of bankruptcies increased and people in the coastal communities started migrating. Representatives of the coastal communities demanded "disaster aid" immediately and the public authorities responded positively. A number of measures were put in place, ranging from debt relief (support for interest and instalment payments in the State Fishermen's Bank and the State Housing Bank), extraordinary support to the processing industry for further capacity adjustment, support for alternative fisheries as well as specific labour market measures such as training and education and the establishment of a specific zone in the north with reduced taxes and fees, all meant to provide new employment possibilities.

19. While 1990 and 1991 undoubtedly represented a tough period for many fishing communities (see Table 3), the crisis was, unlike in Canada, not long-term. Already in 1993 the TAC for cod was more than

doubled. Increased prices also mitigated some of the worst consequences of reduced quantities. The Norwegian fishing industry was also assisted by the dismantling of the old Soviet Union, with Russian fishing vessels starting to deliver in the north of Norway, thus obtaining hard currency while the processing industry received additional raw material (Arbo and Hersoug 1997).

Table 3. Unemployed as percentage of all employees in Norwegian fishing municipalities

Fishing municipalities	Average 1986-88 %	1989 %	1990 %
Finnmark	8.8	15.8	22.9
Troms	7.7	12.3	11.5
Nordland	6.9	10.5	13.0
Southern Norway	3.9	7.4	8.8
Norway (all municipalities)	3.9	6.7	7.4

Source: Jentoft (1994:64).

20. As an act of fisheries management the whole operation took the character of "muddling through". Both fisheries authorities and fisher organisations had originally proclaimed that this was a *crisis measure* and that the industry would return to business as usual as soon as the crisis had passed. However, the closure of the cod fisheries initiated a long-term development of an Individual Vessel Quota (IVQ) system for the coastal fleet, resulting in a situation whereby all major fisheries have been effectively closed by 2005.

21. As can be seen from Table 3, unemployment soared in the fishing communities, especially in Finnmark where alternative occupations are scarce, but so did also the national average, where 1990 marked a particularly bad year (see Figure 4). This implied, all other factors equal, that unemployed fishers (due to the cod crisis) encountered problems entering most other sectors of the economy.

22. In terms of meeting the challenge of the crisis, the public policy was relatively successful. By 1994/95 the most affected municipalities and communities were back to normal, that is, back to a situation whereby the number of fishers was gradually reduced and with relatively small effects on the local labour markets. The crisis measures had worked, while the more permanent measures (the closing of new fisheries and the IVQ regime) should be strongly contested in the coming years. Jentoft (1994) summarises the lessons from the cod crisis management in terms of *flexibility*. The fishing industry should be prepared for boom and bust cycles and increased flexibility is an important measure to meet such fluctuations. Jentoft (*Ibid*.) was not only referring to numerical flexibility, but also *functional flexibility*, where fishers have access to several resources and the processing factories can produce several products for different markets. In the Norwegian setting both sectors were assisted by the rapid expansion of the aquaculture industry.

23. More recently the effects of the new fleet adjustment scheme (introducing an individual transferable rights system) in the period 2004-2006 have been measured and evaluated. As already indicated the employment effects on the national level have been minor while at the local level, the effects have been varied. Due to greater flexibility in buying, selling and merging rights, also in the coastal fleet, many coastal communities have lost vessels and rights, while others have gained. In many fishing communities employment has been reduced but unemployment has not reached the level witnessed in the early 1990s. Some effects have been mitigated by establishing two crews (or 1,5) per vessels in the larger coastal fleet, while others have found alternative employment, often after a certain period on unemployment relief. An attempt of analysing fleet reduction in relation to fisheries dependency (fishers as percentage of total work population) does not show any clear trends. Reductions hit both fisheries dependent and less dependent communities (Hermansen 2006).

24. It is, however, difficult to analyse the effects more in detail after only two years. Effects can turn up at a later stage, and in most cases there is a considerable time-lag between the actual occurrence of unemployment and the decision to relocate. What is important (and extremely difficult to study) is whether certain fisheries are based on a *local* network of actors. According to Jentoft (1984) such societies experience a sort of "domino effect" when the number of active fishers falls under a certain critical minimum, whereby the remaining group of fishers resign within a short period of time. Such effects have been difficult to substantiate, not least because the fisheries are highly diversified and many fishermen/vessel owners belong to *virtual networks* that to a very limited degree depend on the actual local community. They get their information through other networks (mainly national organisations) and they cooperate with partners located in different coastal communities, depending on the task at hand.

From unemployment benefits to training and education

25. What happens when the fishers loose their employment as a result of fisheries capacity adjustment? This is definitely not a new challenge, and the Fishermen's Guarantee Fund (*Garantikassen for fiskere*) was established as early as 1936, in order to meet the needs of the fishing families when the fisheries failed. Hence, a certain guaranteed share (*lott)* is still an important part of the social security system. Fishers who have been fishing as their full time occupation for a certain period, without obtaining a minimum (approx. NOK 115 000 per year) are eligible for payments to make up for the loss of income. In our context the unemployment social security is more important. Fishers who become unemployed as a result of decommissioning or downscaling may apply for unemployment benefits and at present the daily rate is NOK 315 (which is hardly enough to survive as a family). Fishers may receive such support for a maximum of 40 weeks per year and in 2005 altogether 2 000 fishers were receiving benefits from this scheme. However, most of these fishers became unemployed (temporarily) due to other events, such as ship wrecks, sales of vessels, etc. Finally the Fishermen's Guarantee Fund has a system whereby fishers may obtain partial pension from 60 to 67 years of age (when the general pension fund takes over responsibility of all Norwegian citizens). This arrangement is meant as a gradual phasing out of the fisheries for people having worked most of their lives within the fishing occupation and in 2005 a total of 2 000 fishers were involved, a number that has increased over the last few years. Together these arrangements take care of the immediate effects of restructuring of the fishing fleet, at least if we are referring to the full timers. While independent coastal fishers before 1980 were poorly covered by social security benefits, they have gradually been enrolled into the Norwegian social security system, which in principle grants people a descent support.

26. However, after maximum three years of unemployment fishers can no longer be a member of the Fishermen's Guarantee Fund and they will have to find their way into the general labour market system. Here the traditional conflict was whether people could be required to move to a new place (with available employment) or whether they could remain in their original coastal villages and still receive unemployment benefits. The conflict raged for years and ended in a sort of compromise, whereby labour market authorities required tough implementation in times of great demand for labour in the Norwegian economy while a more lax practice was tolerated when demand for labour contracted.

27. Norwegian labour market policies have always had a double edge: On the one hand it has been imperative to facilitate the smooth exchange of labour from low productive sectors to more highly productive sectors, while on the other hand securing redundant workers an acceptable social security. Right up to the 1970s the public employment service concentrated on facilitating job transfers, while the structural crisis in the late 1970s/1980s changed effort more in direction of temporary employment and then in the 1990s, more in direction of qualifications and training. Behind this scheme there has always been a rather generous system of disability pension, presently used by some 325 000 Norwegians or

10.5 % of the entire workforce.[2] This is not the place to review the large field of Norwegian labour market policies, but suffice to say that over the years policies have been much more flexible and diversified, ready to meet different challenges. But even if few experience extreme poverty, unemployment is still considered a dramatic handicap in a culture characterised by a strong work ethos. This is even more so in small and transparent coastal communities where it is fairly evident who are working and who are not.

28. So while the short-term effects are managed through various employment policies, the more long-term challenges are met by rural and regional policies, both of which have long traditions in Norway. Whereas the specific rural policy (*distriktspolitikk*), presently largely managed through Innovation Norway, has a specific target area, regional policy (*regionalpolitikk*) is in principle applied for all Norwegian regions. And while rural policies aim at strengthening the business sector as its main target through various subsidy schemes, regional policy contain the coordination of all public policies. With regard to coastal communities, rural policies were for years concentrated on expanding the fish processing sector. (Until 1997 the fishing fleet had its own loan and subsidy schemes administrated by the State Fishermen's Bank, later to be taken over by what is now called Innovation Norway). When it was evident that price subsidies had to be scaled down and labour costs in Norway escalated way beyond the level of most competitors, structural adjustments had to be made also in the processing sector, and more of the specific rural policy was geared towards other sectors, such as tourism and the private service sector. While the effects of both rural and regional policies have been debated for years, there can be little doubt that the main effect has been to slow down the migration away from coastal and rural areas.

29. Adjustments, whether on the individual, business or societal level always entail gains and costs, and they do not necessarily accrue to the same people. In a dynamic industry like the fishing industry, there will always be adjustments, in terms of having to adapt to changing conditions, in terms of resources, markets and technology. As pointed out by Hansen and Selstad (1998) there is often a tendency to believe that crisis are short-term, where short-term support is needed until we can return to "business as usual". In the fishing natural variations may often produce such short-term crises, but quite often crises are structural, as in the case of e.g. frozen products, which no longer attracts consumers to the same degree as before. A crisis can be "solved" by the market, ending with bankruptcies and unemployment, or by public authorities trying to *manage the adjustment process*. And management can again be based on an *offensive* or a *defensive* attitude. Meeting structural adjustment in the fisheries by social support in terms of unemployment benefits is definitely on the defensive end, while rural policies trying to diversify employment in the coastal communities may be characterised as offensive, trying to meet adjustments that are seen as inevitable. The drive towards larger efficiency in the fisheries seems to be inevitable, but as will be demonstrated later, this does not rule out the possibilities of making a choice. Adjustments can be managed in various ways and with quite different results.

[2] A point that is often forgotten is that the costs of transformation are often borne by other ministries, that is, not by the Ministry of Fisheries. This has particularly been the case in the processing industry, where unemployed and underemployed personnel after some time have been transferred to the category of disabled pensioners (*uføretrygdede*), recognizing that alternative employment in a particular fishing community is difficult or impossible to obtain. This may be the case also in other single occupation societies (company towns) as well, but the point is that capacity adjustments may entail considerable costs as well, especially when the labour force is unable to transfer to more productive work in other sectors.
This is not an argument against capacity adjustment, but may have consequences for the speed of adjustment processes. When costs have to be measured directly against gains, calculations may turn out differently from the situation characterized by "privatizing gains, while socializing costs".

How do we measure success or failure?

30. As already indicated there are complex measurement problems connected to vessels and fishers, sorting out the active ones and deciding on who should legitimately be counted as *fishers*. Even more complicated is the issue of how to measure success or failure in fisheries capacity adjustment. A simple starting point can be that gradual transformation processes that do not appear in the public as problematic have been successful. Fishers have retired or quietly got another job, which from an economist's point of view is a contribution to increased general welfare. The same global quotas (TACs) are divided by fewer fishers, which, all other factors equal, means more fish per remaining fisher. Unfortunately most of fleet reductions do not occur in this manner. Reductions come in chunks, suddenly affecting a particular fleet group, a particular fishery or a particular area, creating unemployment on a large scale, locally.[3] A successful administration of such shocks would imply the gradual movement of these former fishers to other gainful employment within a certain period of time. The greatest success would be if these former fishers continued to live in the same communities, municipality or region, given the strong political commitment to a stable settlement pattern. An outright failure would be if such capacity adjustments led to long-term unemployment and eventually to migration from the region (accompanied with no or minimal immigration).

31. Normally we measure success or failure according to what degree the goals have been fulfilled. Looking at the goals for the Norwegian fisheries policy over the last 30 years, there has been a remarkable consistency. In 1977, laying the foundation for the new 200 miles EEZ regime there were three development goals:

- "The main features of the settlement pattern shall be maintained
- The marine resources shall be protected
- People should have secure and good employment opportunities" (St.meld. nr.18 (1977-78)).

Four years later these goals were supplemented by a fourth:

- "The real earning capacity shall be improved" (St.meld. nr.93 (1982-83)).

Fiften years later the main goal is formulated as:

> "The fisheries policy shall arrange for a profitable development of the fishing industry. A sustainable development is a prerequisite to reach this goal. Through market orientation and increased value added the fishing industry shall contribute to good employment opportunities and settlement along the coast" (St.meld. nr. 51 (1997-98)).

In the most recent program document the vision for the fishing industry is the following:

> "The Government's vision is a sustainable marine industry constituted by profitable and adaptable entities with considerable innovative capability. A marine industry that together with other economic activities is able to develop robust and viable coastal communities and an industry that is able to compete on the international market. (St.meld. nr. 19 (2004-2005)).

[3] Losing 50 jobs in fishing in Berlevåg, in Finnmark county, is comparable to the loss of 30,000 jobs in a city the size of Oslo

32. The problem with these and most other policy goals is that they are formulated in such a general manner that it is hard to measure performance against them. Take for example the goal of a stable settlement pattern. Should it refer to settlement on the regional, county, municipality or community level? And what is precisely meant by "the main features"? Could it be acceptable with a 5% reduction or even 10%, and what is the time perspective; five, ten or twenty years? One way of making such goals operational can be illustrated by the latest Structural Commission, tasked with the difficult question of how to implement future adjustments in fisheries capacity. Here the effects of the various structural measures are analyzed according to the dimensions indicated in Table 4.

Table 4. Evaluation criteria (fleet adjustment through structural measures)

1. Common property	**2. Activity along the coast**	**3. Modern, differentiated and profitable industry**
1a. Legitimacy	2a. Geographical distribution of rights	3a. Profitability
1b. Allocation of fishing rights	2b. Geographical distribution of landings	3b. Capacity reduction
1c. Recruitment	2c. Employment	3c. Fleet structure
1d. Aboriginal rights		

Source: NOU 2006:16:53 (own transl.).

33. In this case the structural measures have been evaluated according to their contribution to the three main goals specified by the government, namely; to which degree the fish resources still can be considered public property, to what extent they contribute to fishing activities along the entire coast and finally, to what extent they contribute to a modern, diversified and profitable fishing industry.

34. As can be seen, there are obvious contradictions between the goals, and goal attainment can only be measured as some form of compromise. Greater attention to profitability will for example lead to less employment and most probably to legitimacy problems. (In this case sustainable resource utilisation is taken as given, that is, quotas have to be fixed at levels securing sustainable stocks also in the future).

35. This way of evaluating a larger array of societal concerns is also found in international approaches. Fleet reductions imply that former fishing villages over time may become redundant. Some manage to take up new occupations, such as aquaculture or tourism. Other coastal communities experience a long drawn-out death rattle, gradually losing the public and private service institutions (the school and the local shop), ending up as a retiree dwelling place or a community of vacationers, taking over existing houses or constructing new cabins. While such changes by most economists are considered "business as usual" (just like mining communities die when metal resources are exhausted), new management approaches, such as the Ecosystem Approach to Fisheries (EAF), have also started to imply *social and economic sustainability.* Taken literally this implies that fisheries management must include considerations with regard to how these measures affect the social and economic well-being of the communities involved. While EAF cannot reduce the need for continuous adaptation of fishing fleets, the principles involved could affect the allocation of rights and quotas. Larger quotas to the small-scale coastal fleets would imply that more fishing communities could survive, granted that the TACs are given.[4]

[4] In practice this allocation issue is of course more complicated as a successful reallocation is dependent on other factors as well, such as the availability of fish, the availability of processing plants, etc.

Lessons to be learnt from the Norwegian experience

36. As already indicated, the value of the Norwegian experience may be somewhat limited, pointing to the extremely favorable conditions surrounding the adjustment process in the Norwegian fishing fleet. Few other OECD countries can provide similar resources to meet the negative effects of unemployment and migration. Nevertheless, there are lessons that should be learned, although the recipe may have to be adjusted when applied to other countries and other coastal communities.

37. The first lesson refers specifically to the *speed* of the adjustment process. While economic calculations demonstrate that the fishers will have to increase efficiency by 2-3% per annum, in order to maintain income on par with the remaining labour force, fleet adjustments works best if implemented gradually, escaping sudden shocks where particular fleet groups or communities have to face massive unemployment. Fleet adjustment through market mechanisms (transferable fishing rights or quotas) or through long-term state financed scrapping schemes (or a combination, as in Norway) both have the advantage of securing a gradual process, whereby fishers who retreat from active fishing may obtain a premium (the price of fishing rights or quotas), which in turn may assist the transformation process, either as a retirement bonus or as security when transferring to a new occupation. The serious problems occur when crisis decisions have to be made, as in the case of the cod fisheries in 1989/90. Generally, also TAC reductions should, if possible, be made in a gradual manner, as illustrated by the "harvest rules" in the annual negotiations in the Norwegian-Russian Fisheries Commission, where it was agreed to adjust the TAC for cod (either up or down) by a maximum of 10% each year in order to produce greater stability.

38. The second lesson refers to the timing and availability of labour market measures and rural development policies. To the extent these are flexible, and able to be implemented on short term notice, chances of a successful transformation are considerably increased. If fishers lack formal qualifications, certification courses may serve as entry ticket to new occupations, for example in the aquaculture industry. While generous unemployment payments may ease the situation in the short run, only new qualifications may assist the previous fishers in the longer term when they try to access the labour market, either locally or in other regions of the country.

39. With rural development policy it is more difficult to act on short term notice, having to deal with projects which may take years from initiation to finalization. However, having recognized that fishing (and processing) cannot "save" most fishing communities in the future; it is of utmost importance to diversify their economic structures, obtaining more employment in other sectors, be that oil and gas, aquaculture, tourism or private or public services.

40. While in former years (1960s, 1970s) labour market policies were largely geared towards the creation of alternative employment, primarily in industry, more recent policies in the 1990s, have concentrated more on *education and training*, aiming at qualifying former fishers for the new labour market. In the Norwegian economy formal education serves as an entry ticket to an increasing segment of the good jobs, thus acting as a barrier for fishers who are characterized by informal skills, having few formal diplomas. Considerable funds have been used over the last ten years in giving coastal dwellers more formal education, thus increasing their chances on the national labour market. The paradox is of course that the majority of these new jobs are located in towns and generally in the south and central part of the country. What is then a successful outcome on the individual level (the former fisher gets a job) may turn out to be a loss to the community (when the former fisher family migrates to a new locality).

41. While greater stability in the fisheries, combined with flexibility in the labour market policies may ease the adjustment processes in fishing societies, there are still some special characteristics in the Norwegian case. The first applies to the complexity of the labour market in the fishing industry. Not all fishers are full time fishers. Norwegian fisheries are still characterized by fishing in combination with other

occupations. For some fishing is also a way of life, thus indicating that their requirements for income may be different from ordinary wage earners. Many fishing societies still seem to have a *shock absorbing capacity* which is not found in other more "modern" communities. This means that moderate changes in the fishing occupation often go unnoticed, without demands for heavy state intervention.

42. The second characteristic is the strong standing of a stable coastal settlement pattern, thus focusing on mitigating measures. While for example a country like New Zealand, easily will accept that transformation of the fishing industry will imply changes in the settlement pattern, such effects are less tolerated in the Norwegian setting. This is not to say that the goal of a stable settlement pattern has been successfully achieved, not even on a regional level, but it implies strong incentives in the direction of creating alternative occupations for fishers and processing workers, and if not successful, disability pension is an alternative increasingly used, not only in the north and in the coastal communities but in the entire country.

43. Finally, we have the problem of *who* should maintain the local structures. From WWII onwards the challenge has been to provide alternative employment possibilities in the coastal communities, when the fisheries contracted. Industry, aquaculture and tourism were considered appropriate substitutes together with public services, thus securing the local employment and consequently the settlement pattern. However, due to demographic processes, impacting all marginal rural societies and the effects of the new education society, ethnic Norwegians may be less interested not only in fishing and fish processing, but in the substitute employment as well. Then the challenge is much more formidable; the question is not how to provide substitute employment in coastal communities for 2-5% of the fishers each year, but how to maintain the coastal communities when local recruits no longer return.

44. In the industry this has been solved by bringing in refugees and immigrants, while foreigners are still scarce in the actual fishing. This may seem as a paradox, in a situation with unemployment Norwegians prefer to be unemployed (or on social benefits) while foreigners do the actual job! From the point of view of the local community, municipality or processing factory, this may seem like a good solution. Employment is maintained and the population is more or less stable while economic multiplier effects increase. However, as a political strategy, this is risky business. If special treatment is required, mainly to obtain work for people that are only in transition, the political goodwill required to maintain special privileges for the industry may soon erode. In the debate over fish resources it has for a long time been claimed that "a dead cod is a dead cod", no matter from which fleet group it originates, but in the case of workers, origin seems to make a difference, at least in political terms. Considering that fishing, even in the most isolated municipalities in the north only constitutes maximum 20% of the active work force, the substitution of these "lost" work places is within manageable proportions. The maintenance of the remaining 80% is a much more formidable challenge.

45. This challenge is indeed increased by the effects of the education society. During the last generation the share of young people attending higher education in Norway has increased from 10.7% in 1970 to 25.1% in 1995. The same is the case in the most fisheries dependent regions. In North-Norway the share of young people 19-24 years of age attending higher education is now on par with the remaining country, having experienced a dramatic increase over the last 25 years. So while the discussion in the 1980s largely revolved around the effects of extending education to secondary school (from 6 to 9-10 years), postponing the entry of the younger generation into the fisheries and educating them "out of the local communities", the present challenge is how to attract young people with university and college education to the coastal communities.

46. The situation in the fishing communities is in many ways paradoxical; the main challenge is to meet the effects of a steady rationalization in the fisheries, finding jobs for redundant fishers, preferably in the same geographical area, while at the same time also attracting qualified young people into fishing (and

fish processing and aquaculture). Fishing, especially the more specialized version, with advanced vessels and gear, require qualifications. Fishing is in general no longer "an employer of last resort", and competing industries like oil and gas are more than happy to recruit the most qualified ones. In short this means that policy makers, be they at a local or central level, need to have two thoughts in their heads at the same time; finding jobs for redundant fishers leaving the industry and recruiting the most qualified youths into the fishing industry.

47. In economic theory the phenomenon of job-less growth is well known. This is largely the case also for the Norwegian fishing industry; export income increases every year, but the number of employees keeps falling. In such a situation some communities are more successful than others. In a situation where subsidies cannot be used to the same degree as before, it is a battle not only for quotas and rights but also for the best brains, the ones able to connect to new markets, invent new products or combine resources in a new manner. Here public authorities can level the playing field and assist the new entrepreneurs, but in an open world economy it is difficult to take the full responsibility for keeping people in the established communities. The dynamics of the fisheries sector is strong, no matter how the public authorities intervene. Or as formulated by one of the old-timers in the industry: "The only stable truth in the fishing industry is change!"

BIBLIOGRAPHY

Apostle, R., G. Barrett, P. Holm, S. Jentoft, L. Mazany, B. McCay and K. Mikalsen (1998): *Community, State, and the Market on the North Atlantic Rim.* University of Toronto Press, Toronto.

Arbo, P. and B. Hersoug (1997): "The globalization of the fishing industry and the case of Finnmark", *Marine Policy*, Vol. 21, No.2, pp. 121-142.

Brox, O. (1966): *Hva skjer i Nord-Norge?* Pax forlag, Oslo.

Brox, O. (1984): *Nord-Norge fra allmenning til koloni.* Universitetsforlaget, Oslo.

Colbjørnsen, T. (1980): Sysselsettingsproblemer – noen teoretiske hovedsynspunkter. In Halvorsen, K. (ed.): *Arbeid og sysselsetting foran 80-åra*. Pax Forlag, Oslo

Firestone, M. (1967): Brothers and Rivals: Patrilocality in Savage Cove. University of Newfoundland, St. Johns.

Hermansen, Ø. (2006): Notes on quota transfers between municipalities. Unpublished annex to NOU 2006:16 Strukturvirkemidler I fiskeflåten.

Hersoug, B. (1984): Oljevirksomheten – trussel eller redning? In Jentoft, S. and C. Wadel (eds.): *I samme båt. Sysselsettingssystemer i fiskerinæringen.* Universitetsforlaget, Oslo.

Hersoug, B. (1985): Fiskernes vandringer – om yrkesskifte og mobilitet blant norske fiskere 1971-80. Serie D: Fiskeriorganisasjon nr. 1/85. IFF, Universitetet i Tromsø.

Hersoug, B. (2001): Er fiskeripolitikk distriktspolitikk? In Teigen, H. (ed.): B*ygdeutvikling: Historiske spor og framtidige vegval.* Norges forskningsråd. Tapir forlag, Trondheim.

Hersoug, B. (2005): Closing the commons. *Norwegian fisheries from open access to private property,* Eburon, Delft, the Netherlands.

Hetland, P. (1984): "Med 80 stamper line i halinga". In Jentoft, S. and C. Wadel (eds.):I samme båt. Sysselsettingssystemer i fiskerinæringen. Universitetsforlaget, Oslo.

Holm, Petter and Stein A. Raanes (1996): The Individual Vessel Quota system in the Norwegian Arctic Coastal Cod Fishery. Paper presented to "Voices from the Commons", The sixth Annual Conference of the IACP, Berkeley, California, 5-8 June, 1996. Norwegian College of Fishery Science, University of Tromsø.

Holm, P., S. A. Rånes and B. Hersoug (1996): "Political attributes of rights-based management systems: the case of individual vessel quotas in the Norwegian coastal cod fishery" in Symes, D. (ed.): *Property rights and regulatory systems in fisheries*. Fishing News Books, Oxford.

Jentoft, S. (1976): Markeds-vs. Nettverksrekruttering av arbeidskraft. ISV, Universitetet i Tromsø.

Jentoft, S. (1981): *Organisasjon og ansvar. Lokale koordineringsproblemer i fiskerinæringen.* Universitetsforlaget, Oslo.

Jentoft, S. (1984): Hvor sårbare er fiskerimiljøene? In Jentoft, S. and C. Wadel (eds.): *I samme båt. Sysselsettingssystemer i fiskerinæringen.* Universitetsforlaget, Oslo.

Jentoft, S. (1993a): "Dangling lines: the fisheries crisis and the future of the coastal communities: the Norwegian experience". Social and economic studies. Institute of Social and Economic Research. Memorial University of Newfoundland, St. Johns.

Jentoft, S. (1993b): Hvordan forløp fiskerikrisen? In Otterstad, O. and S. Jentoft (eds.): *Leve kysten? Strandhogg i fiskeri-Norge*. ad Notam, Gyldendal, Oslo.

Jentoft, S. and C. Wadel 1984: *I samme båt. Sysselsettingssystemer i fiskerinæringen.* Universitetsforlaget, Oslo

NOU (2006):16 Strukturvirkemidler i fiskeflåten. Fiskeri og kystdepartementet, Oslo.

Pedersen, P. (2005): 25 år med konjunktursvingninger og samfunnsendringer. In Konjunkturbarometer for Nord-Norge. Sparebank 1 Nord-Norge, Tromsø.

Seierstad, S. (1983): Funksjonsmåten til en stiv, nordnorsk utkantøkonomi, i nåtid og oljeframtid. AI-dok-24/83. Arbeidsforskningsinstituttene, Oslo.

Stiles, G. (1979): "Labour recruitment and the family crew in Newfoundland" in Andersen, R. (ed.): *North Atlantic Maritime Cultures.* The Hague, Monton.

St.meld. nr.18 (1977-78): Om langtidsplan for norsk fiskerinæring. Fiskeridepartementet.

St.meld. nr. 93 (1982-83): Om retningslinjer for fiskeripolitikken. Fiskeridepartementet.

St.meld. nr. 51 (1997-1998): Perspektiver på utviklingen av norsk fiskerinæring. Fiskeridepartementet.

St.meld. nr. 19 (2004-2005): Den blå åker. Fiskeridepartementet.