

# Draft

## Problems of Legitimacy in the Management of Norwegian Wild Salmon<sup>1</sup>

Hans Petter Saxi  
Assistant Professor  
Bodoe College, Norway.

### Abstract

Public management of natural resources has problems with legitimacy. One reason for this can be that regulations often imply a decrease in rights for user groups. To secure biological variation, there is often a need to reduce or stop catches of endangered species. Despite plausible reasons being offered from public environmental authorities, regulations meet considerable opposition. The international treaties to keep biological diversity are only first tested substantially at a local level.

The situation for Atlantic salmon is critical. In Norway a third of salmon rivers are vulnerable, threatened or wiped out. The paper aims to describe how this situation is being handled in Norway. Management of scarce natural resources does not usually happen without tension arising, and in some cases it can also lead to open conflicts. To illustrate this, I will present some case studies of attempts to regulate fishing of wild salmon and to prevent establishment of fish-farming industry in North-Norwegian fjords.

The paper will analyse the political game of managing wild salmon in Norway. The focus is on fjords, since this area is at present most influenced by trial of regulations, debate and conflicts. My main questions will be: What types of regulations are chosen by the government to protect the stocks of wild salmon? Who is in favour of and who is against the various types of regulations? Which channels are used to influence the decisions? Do the different interest groups which have been regulated have any influence on the decisions taken? Will decentralisation have an effect on the legitimacy of salmon management?

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<sup>1</sup> This paper will use findings from field work in six North-Norwegian salmon rivers and fjords based on the project: "Integrated Coastal Zone Management and Business development: the Case of Salmon".

## **Introduction**

The situation for the Atlantic salmon is critical. In Norway a special public commission described the situation as follows: *"The authorities reckon that Norwegian Salmon has been wiped out in 42 water systems, threatened with extinction in 55 water systems and vulnerable in 154 water systems. This constitutes approximately a third of all registered Norwegian water systems. Amongst the water systems in which salmon has been wiped out or strongly threatened we find some of the originally most famous and productive salmon rivers in the country."* (NOU 1999:9:47). In Scotland too, salmon is declining. In a Scottish report published in 1997, the situation for wild salmon is described as problematical. Since 1975 the total catch of wild salmon has sunk markedly (Report of the Scottish Salmon Strategy Task Force 1997). The aim of the paper is to describe how this situation is being handled in Norway.

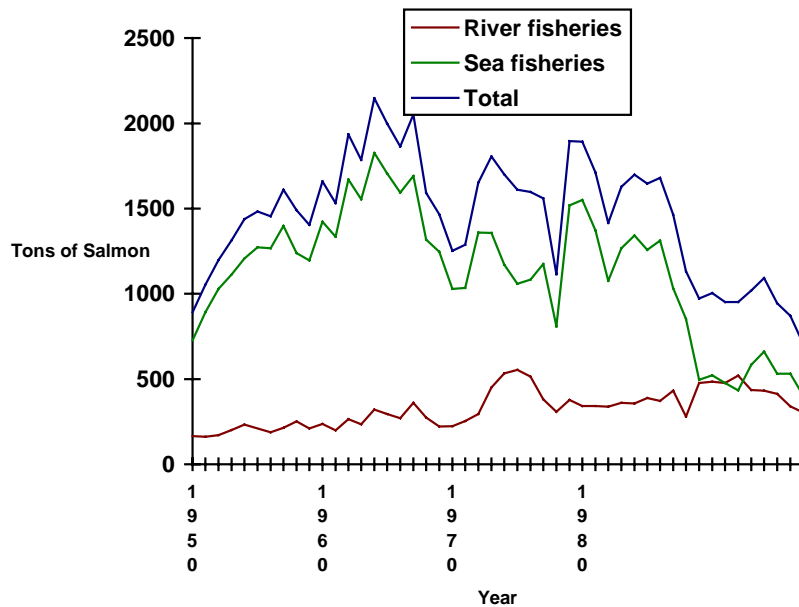
## **What types of regulations are chosen by the government to protect the stocks of wild salmon?**

One strategy is to reduce catches. Internationally, there has been a dramatic change in commercial fishing the last ten to fifteen years. Commercial fishing using long lines was forbidden from 1983 and drift nets were forbidden both in international and in coastal waters from 1989. Norway has been very active in the North Atlantic Salmon Conservation Organisation (NASCO) to stop drift net fishing in international waters.

There is also a reduction in net and bag-net fishing in the fjords in Norway. From 1967 to 1997 there was a 70% reduction in registered net and bag-net fishermen. In 1999 there were 1.793 sea fishermen left in Norway, and as much as 700 places to have bag-nets anchored up are not in use. There are many reasons for this. One obvious reason is reduction in catches in some regions. There is almost no salmon left. Another reason is stagnation in prices because of the rise of the fish farming industry. The third reason is due to regulations. The state authorities have during the last 20 years introduced many regulations:

- Shortening the summer-season
- Shortening the time allowed to fish in the week
- Stop in the autumn fishing
- Stop in net fishing (except of Finnmark)
- Stop in net fishing near the river mouth (munningsfredning)
- Stricter rules for gears and monofilament

The fall in catches, stagnation in prices and state regulations work together to make the fjord fishing for salmon less attractive. In figure 1, we can see that there is a decline in catches of salmon, sea-trout and sea-char in fjords and in international waters the last decades. The dramatic decline in sea fisheries around 1990 being due to the stop in drift net fishing.



**Fig. 1: Catches of Salmon, Sea-trout and Sea-char in Norway.**

In the rivers there is a great variation in catches, owner structures and regulations.

In the North East of Norway, we find the *Neiden* river which is in good health and has increases in catches. In 1999 this river was ranked as the 6th best river in Norway. Local land owners and farmers own the fishing rights to the river collectively. They have built up an organisation which organise the sport fishery. In *Neiden* licences are cheap, and three camping firms make a living out of the 4.000 anglers in the summer season. The owners have formal rights to fish with nets, but they don't use these rights. It is allowed to fish with different sorts of hooks (one exception is a 200 m zone for fly fishing only).

*The Alta* river is for many dedicated anglers a dream river. There has been a reduction in catches the last years in the upper parts. One reason for this is a 110 m hydroelectric dam in use from 1987. The licence to fish is expensive, and fishing is exclusive. The spin-offs for the village are not as great as in *Neiden*, but the owners do more money out of their parts of the river. Here too, fishing rights in the river belong to local farmers and landowners collectively. The river is fished by fly only (an exception before Midsummer Eve where spinners is allowed). In some parts of the river, catch and release is practised.

In the four other rivers in the project, there are great problems for the salmon stocks. In the *Skibotn* and *Beiarn* rivers, the salmon parr is infected by *Gyrodactylus salaris*. Gyro is a disease which kills almost every parr in the river. To get rid of the parasite, they treat the whole river with rotenone which is a poison who kill the hosts, like salmon, trout and char. In fact, every animal breathing with gills is killed by rotenone. *Skibotn* has been treated twice, but is reinfected. *Beiarn* has been treated once in 1994, but is still not declared healthy again. There is a rising debate in Norway about

the rotenone treatment. It is an expensive cure, and some rivers have got gyro back despite of the cure. The main moral dilemma is formulated by environmental activists and sea-trout anglers; is it right to kill every animal in a river just to save the stocks of salmon? For every failure with the rotenone cure, the legitimacy of this strategy and the Environmental department responsible for it is questioned. At present 40 rivers in Norway are infected by gyro, 25 rivers are treated and in 4 rivers the rotenone treatment has been unsuccessful.

In the *Reisa* and *Saltdal* rivers there is a critical reduction in spawning salmon. The reasons for reductions in the salmon stocks in these rivers is not clear, but construction work, hydroelectric power plants and poison from agriculture possible constitute some of the reasons. In the Saltdal river 50% of the salmon caught in 1995 were escapees from the fish farming industry. To save the few spawning salmon left in the river, it is not allowed to kill salmon. It is allowed to fish for trout and char, and the anglers respect the regulations (Olsen 2000).

Beside catch reduction, the other main strategy to protect wild salmon is to prevent escapees of farmed salmon, the spread of lice and sickness in wild salmon.

One main strategy in Norway has been restrictions on locations of fish farms near the mouths of important salmon rivers. From 1989 so called "security zones" have been established in 125 fjords. The commission mentioned in the introduction want to expand these security zones and make them permanent. The state authorities also have regular control of fish farming to look for sickness, constructions etc.

## **Which channels are used to influence the decisions?**

*Fish farming* has a very strong position in Norway. It is the second most important export industry after oil, and it is rapidly growing. There are already 500 times more farmed than wild salmon along the Norwegian coastline. The fish farming industry gains legitimacy from the fact that it is located in the districts of the country which need growth and work places the most. Local politicians welcome establishing of fish farms, and they want to speed up the growth of this industry. The fish farming industry also has allies in the Fishery department and the regional system of this department. The representatives from the fish farming industry and from the fishery state sector ask for proof when Environmental sector representatives, anglers and river owners declare the fish farming industry to be a threat to the wild salmon stocks. The last mentioned groups point to serious problems with escapees from fish farms and spread of sickness. They highlight the fact that there seems to be serious problems for the wild salmon in areas where the fish farming industry is well established and the situation seems to be positive in areas where the fish industry at the moment is poorly developed. (Hordaland and Nordland county have serious problems, but up in the North, where the industry is weak, the wild salmon seems to be in good health).

*Bag-net fisherman* are another actor group with some potential to have a say. Bag-net fishing for salmon is an old trade. It started in the 1860s and was the most important method of catching salmon from 1880 to 1969 in Norway. Nowadays there is a rapid decline in bag-net fishing. The bag-net fishermen are badly organised. Only one of

ten bag-net fishermen are organised and they do not have money and the leaders to have an influence on the decisions taken. They feel that they have to bear the burden of the problems with the wild salmon alone. They are critical to the regional environmental officers and they dislike the anglers who fish for salmon in the “breeding areas”. The tension between the bag-net fishermen and the Environmental sector officers who regulate them can be described as a legitimacy crisis (Saxi 2000). The bag-net fishery has modest support in the state fishery sector and from local politicians.

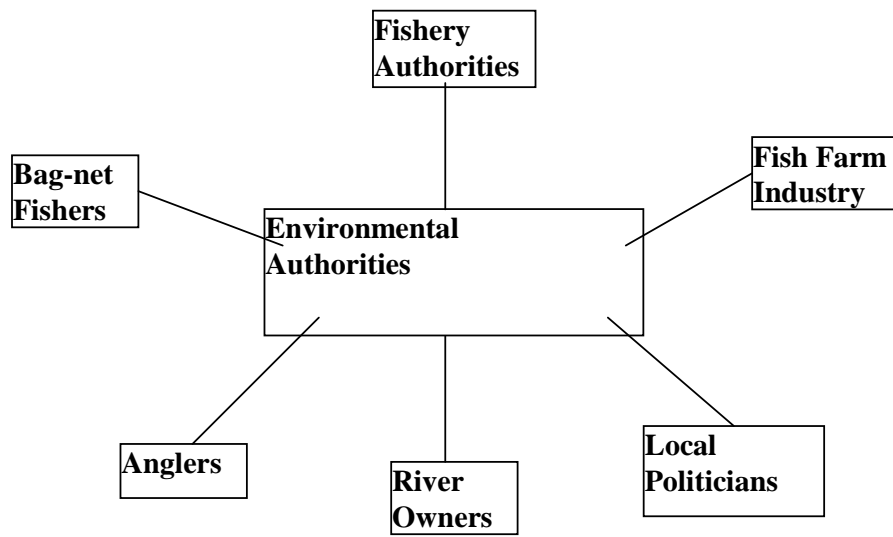
The anglers have a strong and unified organisation behind them. At present, there are 227.000 registered anglers in Norway. 89.700 are fishing after anadromous fish like salmon, sea-trout and sea-char. They have local groups working in every municipality in Norway. The angler’s association (Norges Jeger- og fiskerforbund) also has a professional secretariat with good connections to the Environmental sector.

The owners of the fishing rights are also well organised. Nationally, there is an association with a professional secretariat, and locally there are some places as mentioned in Neiden and Alta with very strong owners organisations. In other rivers however, like Beiarn and Saltdal, the fishing rights belong to single owners from their property to the middle of the river. Because they own small single baits, they have problems acting collectively. We also find more tension between different owner groups here, like the tension between owners near the river mouth and owners in the upper parts of the river.

One interesting point when it comes to tension between groups is the tension inside the state system between the fishery department and the environmental department. This tension we also find at the regional level. The regional department of fishery seems to support the fish farming industry, while the environmental department seems to support the wild salmon. The fish part has a lot to say when it comes to establishing of fish farm industry and the control of fish farming. The environmental department has a lot of say concerning fishing roles in the rivers and the regulation of bag-net fishing in the fjords. There is frustration in the environmental department that they do not have any substantial influence on the fish farming industry. They have great problems with the documentation of the negative influences from fish farming industry to wild salmon. The precautionary principle seems to have low legitimacy. When it comes to the security zones, the environmental sector and the fishery sector do not agree about the space and the time limits on these regulations.

## **Who is in favour of and who is against the various types of regulations?**

Figure 2 tries to map some of the tensions and legitimacy problems between actors who take part in the political game of management of salmon in Norway. The environmental authorities are put in the centre because they are the most eager to produce management tools to save the wild salmon. As we see, they have supporters and opponents.



Opponents:

Those who earn money are against. Fish farming and bag-net fishermen.  
The fishery department and their regional representatives. Local politicians in the municipalities and counties.

Supporters:

Anglers and river owners (they earn money by selling fish licences, but they seem to have the ability to think in the long term bearing in mind the precautional principle).

### **Will decentralisation have an effect on legitimacy of salmon management?**

Today's management of natural resources in Norway is based on a hierarchical management system, using centralised decisional authority given to national and regional state offices. The Department of the Environment has the overriding management authority for wild salmon, whereas the practical management work is delegated to the Directorate for Natural Management. Regionally this responsibility is delegated further to the State's County Authority's environmental offices, which, amongst other things, lay down rules and regulations for salmon river fishing. The State's County Authority's opportunities to steer and its contact with the local level is, however, weakened after the abolishing of the wild life and inland fishing boards in 1993 (Sande 2000). A strategic change in the authorities' management of anadrome fish has also occurred. Previously the State County Authority's environmental office engaged itself in the active cultivation of wild salmon, through the construction of salmon stairs, artificial stocking of rivers and biotope improvement measures. Having introduced the Law of Salmon Fishing and Inland Fishing in 1992 a change of policy took place. From now on human operations were seen as potentially detrimental for wild salmon. A change then occurs from an optimistic development orientation to a management strategy built on the "precautionary" principle. This change has had the effect of reducing the positive co-operation previously developed between the State's County Authority's environmental office, local land-owners and sports fishermen. The State's County Authority's salmon management office has at the same time been reduced in the number of staff positions, and the office has been more concerned with the control aspect than with developmental work. All in all there is a tendency for the State's County Authority to withdraw and have less contact with local actors. The vacuum then arising can be filled in time by the municipalities.

The municipalities in Norway have had little influence on salmon management and they have also shown little interest for what is happening to wild salmon. Even in municipalities, in which the salmon river is an absolutely central resource, the municipality has shown little involvement. One has looked at the river as being "*the domain of the land-owners*" and "*salmon has to a small extent appeared on the municipal agenda, whether in rivers or at sea*" (Olsen 2000:45). Potentially the municipalities do have several possibilities to steer and direct. One possibility consists of commencing coastal zone planning. Another possibility consists of taking the

initiative to plan the running of rivers. A third possibility lies in drawing in user representatives for the catching and management of wild salmon.

These possibilities may create a new management structure, in which the municipal level is drawn in more strongly at the cost of the State's County Authority's environmental office. This implies *decentralisation* of management from county to municipal (local) level. Correspondingly this can represent a *politicisation* of management in that the municipality is run by politically elected representatives, whereas the State's County Authority's environmental office is a State organ. The issue to be discussed in what follows is whether this decentralisation and politicisation will be positive or negative, based on the goal of obtaining sustainable management of wild salmon.

It is not given that decentralisation is unconditionally a good thing as regards environmental and resource management. When it comes to salmon management, we see a tendency towards local authorities giving priority to trade development and fish farming even if this may increase the risk of negative effects for local wild salmon stocks. Up to now, the central environmental authorities have been the best defenders of wild salmon! It is at the international level that one has come furthest as regards measures to protect wild salmon. North Atlantic Salmon Conservation Organisation (NASCO) has been a great success as seen from the objective of securing Atlantic wild salmon. The State's County Authority's environmental office has also regionally accomplished the implementation of measures to protect wild salmon against the pressures of catching and the expansion of fish farming. The municipalities have up until today been relatively passive in relation to the problem complex related to wild salmon. When it comes to wild salmon or fish farming, it seems as though the municipalities give priority to fish farming. Based on this, one should be more concerned with centralising decision management rather than decentralising it, which we now see a tendency towards.

The problems involved with centralising environmental and resource management are however, many: firstly it can affect the accuracy and efficiency of management. When one sits far away from the problems and has no concrete feeling for them, it is not certain that one understands the problems and finds good solutions. Secondly, centralised management will often turn to standard solutions, whereas the problems from district to district and from river to river can vary strongly. This will also weaken the problem-solving ability of management. Thirdly, it will be difficult to create legitimacy concerning solutions which the users have not participated in making themselves. Trust in rules and restrictions is expected to increase when the users themselves have taken part in forming them. There is moreover a fourth argument against centralising to do with democracy. It is a goal in itself that they who are affected by decisions should take part in forming them. Besides which there is an expectation about local participation increasing users' knowledge and engagement in public affairs.

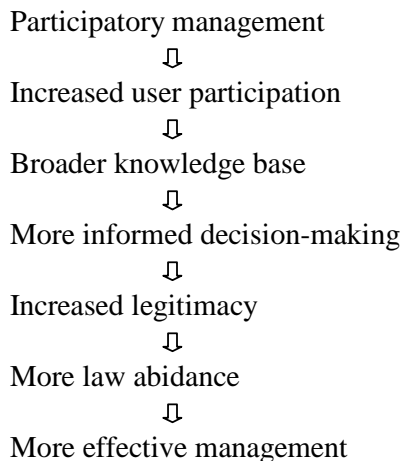
#### *Participatory management*

If the international treaties and obligations which Norway has are to be followed up locally and regionally, one needs to develop both knowledge about wild salmon and



interest for this at a local level. One way of doing this is to bring local users more strongly into management. Landowners, anglers, sea salmon fishermen and fish farmers can to a greater extent participate in the forming of local measures together with public managers and researchers. Such organs can be responsible for surveillance, control, and development of management strategies. Whether such an organisation should just have advisory capacity or decision-making competence for special limited issues, should depend on the problem structure. Theoretically there has been great interest for such management organs, which in international litterature is termed co-management, or participatory management.

*“Participatory management means co-operation and participation between representatives for user groups, authorities and research organs. Participatory management is just as much about rules in resource management, as the way one arrives at them. It means restructuring the role system of management in relation to the hierarchical, state management model” (Jentoft 1998:71).*



**Fig.2: Participatory management hypothesis Jentoft (1998:79).**

As regards the management of salmon, the idea of participatory management is not just a theoretical possibility. *The salmon boards*, which were established just after the turn of the century in Norway and which were active up until 1992, were organs of participation. The salmon boards were state contact organs, and they were to “*acquire an overview of the fishing, obtain annual statistics, fishing regulations and work on fishing culture*” (NOU 1987:46). The salmon boards were to be self-financed by being given the right to demand salmon duty charges from the fishermen. The representatives on the salmon boards were land-owners with rights to both rivers and the sea. The boards were thereby a meeting place for representatives from the two competing groups which conducted the catching of salmon. There was in many places a fairly cool climate between these two groups (Eggum 1997:125). It was not just about a tense relationship between sea and river, but also about the relationship between commercial fishing and sports fishing, which represented very different ways of facing the issues of natural resources. The parties involved on the salmon boards

were, however, united against drift-net fishing for salmon, which increased from the 1960's and during the following period.

In retrospect there are many who were sorry to see the abolishment of the salmon boards. They were often founded on solid knowledge of salmon and salmon fishing, and they often looked after the best interests of the common good, amongst other things through active cultivation work for many decades (Eggum 1997:123). There are also several tales showing that the salmon boards helped civilise the antipathy felt between sea and land, and between commercial fishermen and sports fishermen. Then leader of the Neiden Fishing Co-operative was a member of the salmon board for 15 years. He deeply regrets the abolishment in 1992. *“Varanger Salmon Board voted against abolishment of the board, which we regarded as democratic and well functioning. We also took a little more human consideration than the State Land Sale's Office which purely followed the letter of the law. We also took more account of district interests, when we thought that people who lived in outlying areas should be allowed to fish when there were unoccupied salmon plots available, even though they did not actually make a living from farming or fishing, as the Salmon Law states.”*

The salmon boards are a good example of participatory management. In retrospect it seems to have been rather hasty to abolish them. Today's attempts to establish a contact organ, with user representation is an example of the need for participatory organisation, in addition to the professional management at county level.

#### *Politicisation of salmon management*

Increasing municipal engagement in environmental affairs and management of natural resources which we can see the contours of in many municipalities, probably also means politicisation. Whereas it previously was environmental bureaucrats at central and regional level who were most engaged in environmental and resource issues, one can expect a stronger local political commitment when the municipalities get more responsibility and authority in these areas. When the management of wild salmon is put on the political agenda in the municipalities, it is probable that the legitimacy of management will increase. Politicisation can also provide more attention and knowledge about wild salmon's economic and cultural meaning for many local societies. This can again lead to a more positive attitude to measures to secure wild salmon's growth environment and routes of wandering. This supposition builds on the idea that democracy also means learning.

When politicians keep getting a special type of issue to decide on, this both leads to increasing the level of knowledge about these issues, but also to gradually wishing to give priority to this field. Studies show that sectorbelonging affects local politicians more strongly than their party connection (Fevolden 1985). This is due to political socialising, and means that increased knowledge about an area of politics also results in increased priority given to this area. This may be an explanation for neither the municipalities or the counties engaging themselves concerned with the protection of wild salmon. The municipal autonomy has not placed wild salmon on its agenda, as long as this was a state matter of business. On the other hand, both municipalities and counties have had trade development as important issues. When politicians on a

seldom occasion are asked to give priority between trade development such as fish farming or taking account of the protection of wild salmon's growth and wandering areas, it is understandable that one generally speaking gives priority to the area one is responsible for.

Work division between politicians in committees and boards leads to them developing completely defined perspectives and preferences. When trade politics in both municipalities and counties stands so strongly, this leads to such questions receiving little attention and priority. Thence the State's County Authority's environmental office often stands alone in its attempts to get an effective protection. This means that support for environmental measures is strongly dependent on the way we have organised this management task. A transfer of the environmental offices to the counties, such as one has in for example Denmark, would lead to environmental protection receiving greater attention amongst politicians. This would also have led to increased political knowledge, interest, and will to act environmentally defensibly. In short one can expect that a politicisation of environmental management will over time lead to environmental protection gaining greater strength. The organisation of salmon management is then an important reason for local authorities and politicians lacking competence and interest in measures for protecting local wild salmon species.

## **Conclusion**

We should admit that we for the foreseeable future will lack "*complete scientific certainty*" about catches, influence from fish farming industry and other factors who have an impact on the decline of Atlantic salmon. To save the rest of the salmon stocks we have to rely on the *precautionary principle*, meaning that we let doubt come to the benefit of nature. If we are to achieve this, however, public opinion for wild salmon must be built up. This is not, however, a technical and scientific matter, but rather a political project. Only by creating legitimacy for radical measures can we get anglers, land-owners, bag-net fishermen, fish farmers and public authorities to aid in an attempt to save wild salmon species.

I think the conditions for such opinion exist. A presupposition is that Norway's 90.000 anglers and 2.000 sea salmon fishermen get involved. The fish farming industry also has its long-term interests of making a contribution to solving the problems of salmon health and escaped fish. The trade does definitely not benefit from having large environmental problems. Such a mobilisation should also happen in local communities where both the economy and the local culture depend strongly on salmon continuing to wander up the river. The tendencies to communalising of salmon management afford reasons to be optimistic.

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