

Hannesson and Norwegian fishery management

Picture 1

Dear Hannesson, Vice Dean, Ladies and Gentlemen

First, let me thank Stein Ivar Steinshamn for the invitation to speak about Røgnvaldur Hannesson and Norwegian Fisheries Management. When asked, I must admit I hesitated. As in most fisheries around the world, there are a lot of people with opinions on how the fisheries sector should develop, and Norwegian fisheries is no exception. We have a saying going like this; *put 10 fishermen in a room and confront them with a management question, you will get at least 10 opinions*. Add scientific reasoning and advice to solve the question, and you will achieve even louder expression of opinions. This is the background against which fisheries managers must make their decisions, and in general, it may then be difficult to trace the effect that the various voices have had on the actual decisions.

But then again, Hannessons voice has been quite clear. This, combined with his ability to pinpoint his critical messages, is of course of great help when trying to identify his effect on Norwegian fisheries management.

As we know, the list over Hannessons academic production is long. This production is the background or basis, so to speak, for Hannessons more direct opinions and advice to Fishery Managers, often given at seminars or as letters to various newspapers. The source I went to was the fishery newspaper “Fiskaren” or “The Fisherman (in English)” as well as the Directorate of Fisheries’ own publication “Fiskets Gang” which could be translated to something like the Fishery Bulletin. There is now an electronic version of “Fiskaren” back to 1999 and of Fiskets Gang back to 1910. I sat down with my computer, pressed “Find” and entered the name “Hannesson” in the search field. And to put it this way – I got many hits.

Picture 2

Hannesson has been active in the public debate on fisheries management for decades. To assess his influence, it is necessary to have a picture of what Norwegian fisheries looked like when he entered the stage. I will therefore start by giving a few remarks on key elements of our management. What was the main feature of Norwegian fisheries, and how were they managed when Hannesson entered the public debate? Having said something about this management context, I will try to identify some of his messages, and to assess their influence on actual management decisions.

Traditionally, Norwegian fishermen were poor, and their income low compared to income in other industries. As from the early 1900s, the key management questions were how to understand the productivity of fish stocks and to increase the landings (especially of cod and herring). This paved the way for larger and technically more advanced fishing vessels. Management was also concerned about the quality of fish as well as to monitor the cod fisheries in the Lofoten area (to avoid conflicts between fishermen).

In addition to the management focus on increased landings and good quality of the fish, fishermen were eager to increase their bargaining power when negotiating price with the buyers of the fish. Through political action they argued for a law guaranteeing fishermen's organisations the right to establish minimum prices on fish. The law (Råfiskloven) was established in 1938 and amended in 1951. It has recently been debated, but our present government has suggested a prolongation of this law this spring.

We also have a law regulating the right to participate in Norwegian fisheries (Deltakerloven). A central feature of this law is that ownership to Norwegian fishing vessels shall be limited to fishermen. So, as you can see – in Norway only active fishermen may own fishing vessels, and they have a monopoly on the first hand selling of fish. Both ownership to fishing vessels and the first-hand market of fish are regulated. Some people - and I shall of course not disclose one of them – have expressed their reservation as to whether these two laws can be said to be of benefit to mankind in the long run, but I shall return to this later.

Picture 3

Hannesson entered the public debate on Fisheries management around mid to the late 1970s. At this time, the Norwegian Exclusive Economic Zone(s) were not established, and the fishery resources in the northeast Atlantic were exploited by fishing vessels from several European countries. Almost the entire northeast Atlantic could be regarded as “High Seas” with no national jurisdiction. Attempts to manage the fisheries in this area started in the 1950s, or more exactly in 1954 when *The Permanent Commission* was established. This Commission was succeeded by *The Northeast Atlantic Fisheries Commission (NEAFC)*, and their major focus in these early days were to set minimum standards for mesh sizes in fishing gear as well as minimum landing size for fish. Regulations targeting the annual volume of catches, later known as Total Allowable Catch, was not on the agenda.

New item on Picture 3

However, 1. January 1977 the Norwegian Exclusive Economic Zone was established, followed by the establishment of the Fishery Protection Zone around Svalbard and (in 1981) the Fishery Zone around Jan Mayen. As from this period, Norway had jurisdiction over large areas in the oceans and the necessary tool to enforce fishery regulations. Already identified management measures like limiting the Total Allowable Catch (TAC), and dividing such a TAC between Norway and its neighbours, could then be put on the agenda. This highlighted the need for scientifically based advice on management measures like setting and dividing the TAC for various fish stocks.

As already touched upon, fishermen had a much lower income than the workforce in the Norwegian industry. After WWII our parliament agreed that something should be done to increase fishermen’s income, and the sector started receiving subsidies from the Norwegian state. In the mid 1970s, the Norwegian fishing fleet was heavily subsidized from the state, and the capacity to fish was far larger than available resources. The stock of Norwegian Spring Spawning Herring had collapsed at the start of the decade as a consequence of fishing and environmental fluctuations.

Hannesson therefore entered the stage at a time when modern fishery management, as we know it today, was in the shaping. The sector was heavily subsidized, there was overcapacity in the fleet and some of our major fish stocks were depleted. However, through extended jurisdiction it was now possible to establish TACs and to adjust the capacity to fish to sustainable harvest levels.

I will now go through some of Hannessons messages to Norwegian Fishery Managers.

Picture 4

On fishing mortality

The long-term yield of a fish stock depend upon natural fluctuations and the fishery, the latter commonly denoted by the more technical term “fishing mortality”. Through simulation it is possible to calculate the fishing mortality that will give high long term physical yield (catch) or economic yield. In **1979** Hannesson published *“En bioøkonomisk produktfunksjon for lofotfisket”* unofficially translated to; *“A bioeconomic product function for the arcto-Norwegian cod fishery”*.

At a time when this cod stock was overexploited, Hannesson found that the optimal fishing mortality should be reduced from 0.95 to 0.29, and that fishermen using passive gears like long-line and nets would benefit most from such a reduction in fishing mortality. Hannesson’s results showed that a reduction in fishing mortality is not only a biological, but also an economic rational management. Later analysis have confirmed that the optimal fishing mortality for cod lies in the range 0.2-0.4, but it was a long struggle to reach these levels in practical fishery management. The cod stock is now managed with a harvest control rule where the target fishing mortality is set to 0.4, and the cod stock has grown to record-high levels.

It should be stated that the biologists at the IMR for decades have argued that the fishing mortality of several fish stocks should be reduced, and Hannessons empirical results confirmed this. His results were treated as news among management and industry – where economic arguments – when taken onboard in the context of fish stock management – usually was in the context of “socioeconomic considerations”, or “yes, we understand that it would be beneficial to reduce F in the long term, but just not now”. In the discussion on how rapid the reduction of fishing mortality – F – should be, socioeconomic considerations had usually been used as an argument to stick to status quo. Hannesson was one of the economists helping to change the perspective on this matter.

Picture 5

On subsidies

In an article in the fishery bulletin - *Fiskets Gang* - in 1981, Hannesson argues against subsidizing the fisheries sector. Translated to English, the heading of the article reads; *“Norwegian fishermen have been represented by skilled negotiators”*, in other words – a typical way for Hannesson to pinpoint his message. He argues that open access fisheries is a classic example where government intervention is necessary, and that taxation could be the relevant management measure (on either catch or effort). He argues; *Norwegian fishery policy has, in many years, done the opposite. The subsidization of fisheries started off as some kind of help to avoid a catastrophe. People with a sense for dramatic comparisons might have said that the subsidies have had the same effect (on the fisheries sector) as narcotics.* Again – a typical pinpointing of Hannessons message.

As mentioned in the introduction, the argument for subsidizing the Norwegian fisheries sector was the need to increase the income of fishermen. Retrospectively we can say these subsidies helped to sustain overcapacity in the fleet. Today, it is common knowledge that fisheries should not be subsidized, but at the time Hannesson stated this, it was less obvious. Approximately at the same time, an advisor working in the ministry of fisheries (Bjørn Brochmann) also argued against subsidizing the sector. He is well known for the following statement; *“Every economic sector should provide an economic surplus. If this is not the case, the employees should rather be paid to relax in the sun”*. I do not know whether Hannesson had any influence on this man, but they were both good at pinpointing their cases. And they both raised debate.

New item on Picture 5

Norwegian subsidies to the fisheries sectors were close to 4 billion NOK in 1981 (measured in 2012 values). They were thereafter gradually reduced, and has since 1995 been practically zero. The reduction of subsidies has been a consequence of many factors, but Hannesson was early in giving his advice.

Picture 6

On capacity and ITQ

At a meeting in 1985 arranged by the (then) Norwegian Fisheries Research Council (NFFR), Hannesson is quoted on arguing against overcapacity and pro/for ITQs. *From an economic point of view, it is nonsense to claim that we need a fishing capacity large enough to catch the largest catch volumes that may sometimes be available. Each vessel should be allocated a permanent share of the total allowable catch, and these shares should be freely tradable, as shares on the stock market. If we had such a system, it would be the owners of the vessel that would have to make a comparison between the cost of the vessel and the revenues derived from it.*"

In Norway, we used buy-back schemes for several decades to reduce the number of fishing vessels. As from 1996, a new system was introduced, where it was allowed to transfer individual vessel quotas, if the delivering vessel was taken out of the fishery. This system is now working for all vessel groups - except vessels with an overall length below 11 metres. But in contrast to the economic efficient system that Hannesson campaigned for, there are safeguards in the system to prevent concentration of quota rights on specific owners, geographic areas or fleet segments.

The system as it works today is still controversial, especially in relation to fairness. Can it be considered fair that a fisherman allocated an Individual Vessel Quota can exit the sector, and in so doing become a millionaire? Are the harvesting rights his property, or are they the property of society (the people)? The system puts up a barrier to enter the fishery – only entrants with large equity can make it as a newcomer in the sector. The economists answer will usually be that the alternative – maintaining higher harvesting costs than necessary to catch sustainable levels from our fish stocks – is not a better alternative. And – as Hannesson has advocated repeatedly – to tax the sector to transfer the resource rent from fishermen to society.

Notwithstanding these objections, the Norwegian system delivers in respect of reducing overcapacity in the fleet. We have also seen a dramatic reduction in the number of fishermen, and a corresponding increase in their productivity. Compared to the number of fishermen right after the WWII, only 10% remain. Their productivity, measured in number of tons per fisherman has increased from around 5-6 tonnes to around 180 tons per year. We have, however, still not imposed a resource rent on the sector.

Picture 7

On management costs

In a book titled *The cost of Fisheries Management* Hannesson (with Ragnar Arnason and William E. Shrank) discusses the cost of Fisheries Management in Norway, Iceland and New Foundland. They find that the Icelandic management system is most efficient whereas the management costs in New Foundland are highest. The Norwegian management costs lies somewhere in between these two.

The findings were presented at a seminar at the Norwegian School of Economics and Business Administration during the spring 1999, and followed up by an interview in the newspaper "Fiskaren". The heading of the interview reads: "Kvifor dreg ikkje Hannesson heim? – or in English: *Why do not Hannesson leave Norway and settle in Iceland?, and goes on; According to Professor Røgnvaldur Hannesson, the Norwegian fishery sector has too high management costs. The professor at the Norwegian School of Economics and Business Administration has compared fishery management costs on Iceland and Norway. The management costs are inversely proportional to profitability says the **Icelandic** professor – and continues to pour more salt in the wounds he already has inflicted on the Norwegian fishery sector. Why do not this man leave for Iceland?*

The Director General of Fisheries as well as the Secretary General in the Ministry of Fisheries were asked for comments. They stated that, in contrast to Iceland, Norway has to manage three different ecosystems and that the majority of fish stocks are transboundary. Thus, managing fisheries must be more costly in Norway than on Iceland.

Picture 8

On fish wars

Fish – wars sounds a bit dramatic, but refers to situations where there is a conflict of interest in the fisheries sector between Norway and its neighbouring countries. Røgnvaldur Hannesson has, on several occasions, offered his view on what the Norwegian positions should be on questions that arise under such circumstances. As mentioned, Norway established its Exclusive Economic Zone (EEZ) in 1977, and this made it possible to establish and enforce a regulation like Total Allowable Catch (TAC) each year. With transboundary fish stocks, Norway has to agree with its neighbours on the size of the TAC each year. This is done by establishing Harvest Control Rules (HCRs). In addition, there is a need for Norway and its counterparts to agree on the division of the TAC as well as monitoring and control systems to ensure that none of the parts to the agreement fish more than their allocated share.

Hannesson's opinions have often been stated in articles or chronicles in the newspaper "Fiskaren". I will, in my own words, give some examples of his opinions. If I fail to reflect the message he has given, I am to blame.

1. On Russian overfishing

During the first years after the turn of the century Russia caught a lot more cod than their allocated share of the TAC. It took much effort, both on the Norwegian and the Russian side, to stop this overfishing. It also took many years to do so. In a letter to the newspaper Fiskaren during the autumn 2005, Hannesson offered his quite alternative view on what should be done, and the logic in his argument is water proof; A) The Russian overfishing is motivated by profitability, but implies a high non-sustainable fishing mortality. B) We all know that in the long run a high fishing mortality is detrimental to the stock and the profitability in the fishery. C) The Russian overfishing therefore inflicts a cost on Norwegian fishermen. D) The only way to stop this will be to reduce the profitability of the Russian fishery by starting a Norwegian overfishing of the quota.

2. Fishing on high seas

Another example is how to deal with potential IUU-fisheries on the high seas. Fish stocks may have a distribution in the EEZ of one or more nations, as well as to the high seas. Extensive IUU fisheries on the high seas may undermine effective fishery regulations established by the relevant coastal states. To curb this IUU activity Norway engages in several regional fishery organisations like NEAFC, NAFO, ICCAT, SEAFO etc. Hannesson

offered his alternative solution which is quite simple: Extend the fishery jurisdiction! This will be a prolongation of what was done in 1977 and set a stop to IUU activity immediately.

3. On zonal attachment

When coastal states share harvest rights to straddling fish stocks there is a need to establish an allocation key (that divides the TAC on various countries). Several arguments have been brought forward in such discussions, and one of these is the argument of zonal attachment. The argument goes like this; if 80% of such a stock resides within the EEZ of Coastal state **A** and 20% resides within the EEZ of Coastal state **B**, the allocation of the TAC between the two countries should be 80/20. Whereas some management bodies are sole believers of the argument of zonal attachment, Hannesson is not. He points to the simple fact that this allocation key may not correspond to some of the parties self-interest, and that this self-interest should be taken into account to arrive at a stable allocation key.

These are only three examples of Hannessons intervention when dealing with international fishery questions. Taking into account the multiple objectives that often arise when solving international fishery disputes, it cannot be said that Norwegian management – so far – has followed Hannessons advice closely.

Picture 9

On fish and oil

Whereas fisheries have always been an important export sector for Norway, the extraction of oil and gas has overtaken its role during the last 40 years. As both sectors are based in the ocean, it is generally seen as important that the two sectors can coexist. It is of course of vital interest that the petroleum sector do not produce externalities that has negative effects on fisheries. To assess the consequences of coexistence, Norwegian government has produced so-called Management plans for the various marine ecosystems with several industries. However, uncertainty about negative externalities of future oil and gas extraction is a central element.

Hannesson is not worried about coexistence and has stated this clearly. In an article in the newspaper *Fiskaren* he calculates the economic consequences for the fisheries (especially cod fisheries) of a blow-out from a future petroleum platform in the Lofoten area, and finds these to be negligible, and far smaller than natural variations in the income from fisheries. He also states that oil and gas exploration should take the position as job-creator in the northern part of Norway since fisheries will become more and more capital intensive.

The Norwegian government decides where to start looking for petroleum, but given the uncertain negative externalities from this sector on fisheries (as well as other sectors), these decisions are politically highly sensitive. Hannesson has argued for efficient fisheries for decades, and it would be understandable if his affiliation to the fishery sector in some way influenced his view on these tradeoffs. But again – Hannesson stands “out of the crowd” and argues his case according to what he finds to be logical.

Picture 10

Summing up

I will try to wind up and finish my presentation.

Røgnvaldur Hannesson has, during the last 40 years, had a clear voice with a view on several aspects of Norwegian fishery management, and I have tried to present a few of these. In my opinion he has always stated what he saw as the right thing to do and defended his views on economic arguments. At first sight it may be difficult to trace effects of his advice on Norwegian fishery management. There are several reasons why this is difficult, but the most important ones are the following;

- Norwegian fishery management has had several objectives. The most important ones have been sustainable management of the fish stocks, profitability and the preservation of the existing settlement in rural areas. Hannesson has argued for sustainable management of fish stocks, but first and foremost for efficiency and profitability in the fisheries industry. He has quite openly disagreed with the objective related to preservation of existing settlement in rural areas.
- Norwegian fishery management has been based on biological advice related to how to manage fish stocks. The Institute of Marine Research (IMR) was founded 110 years ago and has constantly delivered new knowledge and advice in this respect. Although institutes of economics around the world have delivered both research and advice, it has seldom been in the form of repeated advice or tailor-made to address question that managers have in mind. In other words – there has not been as tight an institutional link between institutes of economics and DoF as between the IMR and DoF.
- Hannesson has, as I see it, seldom yielded for compromises related to how to manage fisheries. I would say he has had a clear voice on the purely economic aspects of fishery management, and as such acted as a **beacon** (hence the picture) throwing light on the economic consequences of various management questions. But, again as I see it, he has seldom been engaged in the final decision-making process where so many compromises have to be made.

While it may be difficult to trace the effects of Hannessons advice at first sight, it is clear that Norwegian fishery management has changed in some of the directions Hannesson argued for approximately 30 years ago. First and foremost – the subsidies to the fisheries sector which at their heights summed up to approximately 4 billion NOK has vanished. Second – tools to reduce the overcapacity in the fishing fleet have been implemented – although not through the introduction of ITQs, but by other instruments also addressing non-economic objectives. It could therefore be argued that management has followed Hannessons advice

in these two important issues. But typically, this has happened a long time after Hannessons advice was given.

As mentioned earlier we do have a law protecting fishermen's monopoly on the selling of fish as well as a law limiting the ownership of fishing vessels to Norwegian fishermen. It should come as no surprise that Hannesson – on principle of efficiency – argues against these laws. His views are controversial as they are when advocating the cut of management costs, recipes to tackle conflicts in fishery negotiations and coexistence of petroleum exploitation and fisheries.

Although controversial in his time, it is noteworthy that society has developed along with some of Hannessons earlier predictions. Will his view on topics controversial today be common knowledge 30 to 50 years from now? Only time will tell.

Congratulation with your birthday, and thank you all for your attention!