

Two countries sharing a renewable resource

- **the allocation of the renewable natural resources in the Norwegian-Russian fisheries management regime of the Barents Sea**

A multidisciplinary study

by

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1 Introduction

The Barents Sea is regarded as a single ecosystem, and the area is biologically one of the most productive oceans in the world. Both demersal and pelagic species in this area are traditionally important in fisheries. The Northeast Arctic cod is by far the economically most important species. Other demersal species of importance are haddock, redfish and saithe. Herring and capelin are the key pelagic species in the area. In addition, there is considerable shrimp fishery, as well as whaling and sealing. Most of the catch in the area today is taken by Norwegian and Russian fisheries, while third countries are harvesting 12-15 per cent of the total catch (Churchill and Ulfstein 1992).

Traditionally, fishermen from other nations have also exploited the rich fishing grounds in the Barents Sea. In 1976, before the establishment of 200-mile zones, 20 per cent of the most important fish stock, i.e. the Northeast Arctic cod, was caught by states other than Norway and the USSR¹ (Ibid.). Until the mid-1970s the Barents Sea fisheries had virtually open access, as the water beyond 4 and 12 nautic miles were high seas and therefore open to fishermen from any state (Hoel 1994).²

Since 1976, when consensus emerged on establishment of an “exclusive economic zone” (EEZ), Norway and Russia have undertaken a common responsibility for the management of the marine resources in the area. The management regime comprises a Russian-Norwegian co-operation and management procedures on a national level within the fields of *research*, *regulation* and *enforcement* of the fisheries. The management regime is worked out at two levels; the domestic level in both Norway and Russia and the international level. With respect to work related to assessment of the Barents Sea fish stocks, Norwegian and Russian marine biologists co-operate in *the International Council of the Exploration of the Sea (ICES). The Joint Russian-*

¹ In the following named as Russia

² 12-miles fisheries zone around the mainland and 4-miles zone of territorial waters around Svalbard

Norwegian Fishery Commission meets every autumn to establish total allowable catches (TACs) for the three joint stocks: cod, haddock and capelin. Cod and haddock are shared on a 50-50 basis, whereas the capelin quota is shared 60-40 in favour of Norway. Quotas of the parties' exclusive stocks are exchanged between the countries. A co-operation between Norwegian and Russian authorities within the field of compliance control, mainly involving an exchange of information, has been in operation since 1993 (Hønneland and Nilssen 1998).

Some authors have during the 1990s viewed the shared management regime between Norway and Russia in the Barents Sea, as a success.³ Some have even argued that the regime may be seen as ideal to be followed by other states. To regard the management regime of Norway and Russia as a success may, however, not be the general point of view at present.

Problem definition and objective

The objective of the thesis is to analyse the management of renewable resources that are shared between two countries. The focal question is how the *organisation* of a management regime has affected the biological sustainability of resource exploitation and allocation. This question addresses the results the management regime has produced.

There is a relationship between the regime management, and how the allocation of the renewable resources is organised. Furthermore, the allocation of the renewable resources agreed upon influences the basis for the maintenance of the renewable resources. These are relationships, which I will analyse in the thesis.

The Norwegian-Russian co-operation will be analysed in relation to regime theory and bargaining theory. I will make use of rational choice perspective (*the tragedy of*

³ According to Hønneland and Nilssen (2001), Russian-Norwegian fisheries management co-operation, on the whole, proved to be fairly successful during the 1990s

the commons) and co-operative action-/interaction perspective (*the logic of two level games*⁴).

According to Levy, Young and Zurn (1995), regimes are social institutions that influence the behaviour of states and their subjects. They consist of informal and formalised principles and norms, broaden and captures the unwritten understandings and relationships, as well as the formal legal agreements, that influence how states and individuals behave in any given issue area.

The rational choice perspective (the tragedy of the commons) and the co-operative action-/interaction perspective (two level games) are used in the thesis as theoretical frameworks. The two theories will be used for illuminating two different aspects related to fisheries management. The main focus in the idea of “the tragedy of the commons” is *why* there is a need for management of natural renewable resources. The “two level game theory” is, on the other hand, focussing of *how* the management of a fishery is affected by the interaction between domestic and international levels.

In summary, I will make use of political science, social science, law, biology and ecology. Thus the thesis uses a multidisciplinary approach to analyse the issues in question from different perspectives. This seems important and interesting, because an arrangement or situation almost always can be looked at from different perspectives, which also may give different answers.

Choice and delimitation of the thesis

Norway and Russia are two relatively different states in regard to political systems, geographical size, cultural traditions, level of economical development, and history. However, the two countries share at least one similarity; the fisheries in the Barents Sea. The northern part of both Norway and Russia seems to be relatively heavily

⁴ In the following named as “*two level games*”

dependent on the renewable resources, which they are harvesting in the Barents Sea. In addition, the two states have a historical long-standing co-operation in trade.

The thesis is focused on Norway and Russia, but third countries will be included when it is necessary for discussing relevant relations to Norway and Russia. Area in focus is the Barents Sea.

The time considered focus is the period from the establishment of the management regime until now. The first formalisation of the regime was the agreement of 11th April 1975 on co-operation in the fisheries sector between Norway and Russia.

Methodology

The choice of method used in scientific work depends on the *objective* and the *problem definition* of the thesis. It is common to divide the types of methods in two main categories; *qualitative*- and *quantitative* methods (or intensive- and extensive methods). It is not always the case that *one* of the methods is the most preferable one. Which method is best for a thesis, depends as mentioned above, on the problem definition and the objective chosen (Holme and Solvang, 1996).

Generally, the main difference between qualitative- and quantitative methods is that quantitative methods transforms data to values and numbers. From this data one are working out statistical analysis. In qualitative methods, however, it is the scientists understanding and interpretation which is the focus (Ibid.).

The method used in the thesis belongs to the qualitative category. From this category *document analysis* and *interview* were used. The analysis are mainly based on secondary data which includes literature from reports, newspapers, articles, Ministry of Fisheries, the internet, and general literature from the subject fields of political science, economics, law, biology and ecology. Interview is used as supplementary data source.

As noted above there are both negative sides and positive sides related to the different methods. According to Holme and Solvang (1996), the strength of qualitative data is that it gives a good overview, the *profile*, of the total situation. Such general representation may increase the understanding for social processes and connections between such processes. It might, however not be possible, to say if the understanding is covering all units in the phenomenon. It is on this part that the quantitative method has its strength. In the quantitative method one may use statistical analysis, which may be a tool for analysing if the understanding of a phenomenon is special for only a few units, or if it is general for all the units.

Another strength of the qualitative method is its *flexibility*. One may change the structure of the examination through the accomplishment of the examination. The flexibility may, however, be a weakness. The flexibility may result in difficulty of collecting data, especially data of relevance. The quantitative method is solving these weaknesses by using more standardised project descriptions (Holme and Solvang 1996). Qualitative methods are focussing on the distinctive character of each unity and the situation of the unity. Which data are going to be central in the thesis, is to a high degree dependent on the data source. Because of this, the data sources are adjusted to the *situation* of the data source. This, according to Holme and Solvang (1996), makes the data credible. The lack of possibilities for generalisation may be a weakness of the qualitative method, and as mentioned above, which is a potential strength for the quantitative method.

Holme and Solvang (1996) also indicate that, the flexibility of the qualitative method and the nearness to the data source may give good possibilities for relevant interpretations. This may, however, result in the data being spread out and becoming less unity. The quantitative method, on the other hand, may be collected in a more precise manner. The statistical analysis used in the method may also be able to tell one how reliable and representative the data are.

It may be concluded that both methods have weaknesses and strengths. One might, however, not choose method from these assumptions. The method chosen is in accordance to the objective, problem definition and style of the thesis.

Disposition

In chapter **one**, a general introduction of the thesis and specification of the problem definition and objective of the thesis will be presented. This chapter will also cover why the specific problem definition and the delimiting and objective of the thesis were chosen. The methodology to be used will also be presented in chapter one.

Chapter **two** is the chapter where the theoretical framework will be presented. I will give a presentation of the idea of Hardin`s (1968) “the tragedy of the commons”, Putnam`s (1988) “two level games” and the regime concept. The two theoretical frameworks will later in the thesis be used on the empirical information.

In chapter **three** the empirical facts about the Barents Sea and the natural resources which exist in the area will be presented. The concept and background of the exclusive economic zones will also be presented, in addition to problems related to the establishment of the zone. Some of the challenges for Norway and Russia after the EEZ were established, are by now the unsolved areas: The Grey Zone, The Loophole and the jurisdiction related to the conservation zone around Svalbard and the Svalbard Treaty. In chapter three I will shortly explain what these three different areas are containing of problems, and the background for the establishments of the areas. In addition the term, management regime of Norway and Russia, which includes the three concepts of *research*, *regulations* and *enforcement* shall be gone into deeper. In summary, chapter three is focussed on the *establishment* of the regime.

In chapter **four** analyses will be made to find whether the Norwegian-Russian management regime in the Barents Sea has resulted in biological sustainability.

Biological and ecological factors will be taken into consideration in the discussions about the regime with respect to a biological sustainable management. Hardin`s (1968) theory *the tragedy of the commons* is made use of for illuminating why there is a need for managing renewable resources.

Chapter **five** covers how the allocation of the natural resources in the Barents Sea is organised. In this chapter analyses will be made of how the management regime between Norway and Russia is worked out at the international level. In addition I will in depth discuss the level of each countries domestic political system, which is related to the allocation of the natural resources. The empirical data will be analysed in relation to the theoretical framework of Putnam`s “two level games”. Chapter five will be focussed on how the management regime is *organised*, and how the natural resources are *allocated*.

In chapter **six** I will present findings, conclusion and some thoughts about the future regime.

2 Theory

As stated already, the problem definition of the thesis is the issue of *how* the organisation of a management regime has affected the biological sustainability of resource exploitation and allocation. For analysing these questions theories from the field of political science will be used. The co-operative action-/interaction perspective of *two level games* (Putnam 1988) will be used for illuminating the empirical facts related to the thesis; *how* the management regime of Norway and Russia is organised and how the allocation processes work. The rational choice perspective of *the tragedy of the commons* (Hardin 1968) will be used to shed light on *why* there is a need for managing natural renewable resources.

Why theory?

In science, a central objective is to increase the understanding of the phenomena one is focussing on. In doing this, one is dependent on theories and development of theories.

Theories are concepts, which might be used to shed light on a concrete real situation in the society. Theories may be very different in structure and content, but what they have in common is that they are abstracts of concrete phenomena. Through the use of theories, one should be able to understand better, explain and predict phenomena (Holme og Solvang 1996).

Even if a social situation is difficult to explain by using simple theories, there is a great need for approaching the phenomena by using the systematic that a theoretical approach involves. According to Laursen (1993), research should be related to theory or, at least, to some kind of analytical framework. There is therefore a need for criteria to determine what is important, and what is not important. One needs to put some order in the facts, so that one can see patterns and relations. To understand the world one lives in, one may use selected concepts or models.

There are several ways of classifying the system of theories in political/social science. *One* is to use a classification, which separates the representation into for example realistic, institutional and reflective perspectives. *Another* way is to classify the presentation in accordance to norms and ideology. A *third* way is to choose contrasting theoretical and methodological positions, i.e. if the theories depend on structure or process, or if it builds on one single actor or a complex model of actors. A *fourth* way of classifying is to present the theories in accordance to *which level* the *theory* will typically choose, in searching for the explanation of a phenomenon (Hveem 1999). Kenneth Waltz (1979)¹ divides the different levels into three: 1) explanation on an international level, or systematic explaining, 2) explanation on a national level, or internal national explanations and 3) explanation on an individual level, and eventually on a high political level. In the literature of International Politics the two last decades, there have however been tendencies to replace one-factor explanations with multiple-factor explanations. At the same time, one is in a higher degree searching for the explanation on several levels (Ibid.).

The analytical contributions of Gilpin (1987), Strange (1988) and not at least Putnam (1988) were the first to use integration of different levels. Putnam's first assumption was that the negotiator who negotiating on behalf of a national state, have to take into consideration the opposite national state's interest and domestic interests, at the same time. The final result of the negotiation is dependent on both what other national states can accept, and what domestic interests can admit (Hveem 1999).

According to Hønneland (1999), perhaps the most conspicuous issue of contention within the common natural resource debate over the last few decades is the battle between *rational choice* theorists on one hand and adherents of *co-operative action* theory on the other hand. The battle is related to the issue of *how* management systems for common natural resources should be designed.

¹ Kenneth Waltz (1979) in Hveem (1999)

The debate is rooted in a fundamental disagreement on the foundations of human behaviour. According to Hønneland (1999) a basic premise for rational choice theorists is the human act to maximise personal benefit; they behave on the basis of an instrumental or strategic rationality. By implication, rational choice theorists in the common-pool debate claim that users will invariably bring unregulated common natural resources to extinction. On the other hand, co-operative action theorists' claim that there is a possibility of achieving established management objectives by means others than coercion. Hønneland (1999) further states that individuals are here perceived as more complex in their fundamental orientation than in the case of the rational choice perspective; their actions can be explained on the basis of social norms or individual conviction in addition to a potential pursuit of self-interest. A key word in this connection is *legitimacy*. Individuals comply with regulations, which they perceive as legitimising the rules or the process through which they are elaborated.

Hardin's "tragedy of the commons" and Putnam's "two level games" may be seen as representatives for two opposite perspectives, which are related to different *levels* for explaining specific phenomenon. The two theories, in addition to the regime concept, are presented in the following. However, it might first be necessary to say something about why one has to manage.

Why management?

The rapid expansion of world fisheries since the Second World War has been marked by spectacular increases in world total catches (especially in maritime areas) and in the volume (and value) of fish trade. A major slowing-down of growth in marine fisheries occurred during the 1970s (Platteau 1989). At a global level, there is general consensus that marine fish stocks are fully exploited and in some cases overexploited.

The problem of overfishing is not new, and its causes are well known. As early as the late 19th century there were signs of overexploitation of the most valuable fish stocks. In the 19th century fishery biologists pointed to the consequences of overexploitation, and later economists explained why common pool resources become overexploited (Hannesson 1996). Basically, according to Hannesson (1996), there is only one solution to this problem, which involves limiting the access to the common pool.

Traditionally, the main objective of fisheries management has been the *biological* conservation of fish stocks. In modern fisheries management the objective has been extended to address additional *economic, social* and *environmental* issues such as fishers' welfare, economic efficiency, the allocation of resources, and environmental protection. The broad objective of fisheries management may therefore include the maximisation of economic returns from the fishery, and payment of fees to the community from profits made by the exploitation of a public resource. Subsuming all these objectives is the need to ensure that fisheries are exploited on an ecologically sustainable basis (King 1995).

As Apostle et al. (1998) indicates, there is now a widespread concern that national jurisdiction and centralised decision-making based on biological data and bioeconomic models may be neither capable nor sufficient for the conservation of marine resources. The ensuing debate, to which social scientists have contributed, is part of a broader critique of explanatory models such as the tragedy of the commons. Models that are used to support reliance on centralised, science-based regulatory regimes to counter the effects of competitive, open-access use of common property resources often mask or weaken the capacity of decentralised, user-based systems to manage natural renewable resources (McCay and Acheson 1987; Matthews 1993; Ostrom 1990).²

² McCay and Acheson (1987); Matthews (1993); Ostrom (1990) in Apostle et al. (1998)

To have sustainable fisheries in the long run may require that the fisheries be *regulated* in accordance to how much one is harvesting from the natural renewable resources.

The tragedy of the commons

Fishery management, defined as a science-based management regime embedded in state bureaucracy, is of fairly recent origin. At the beginning of the 19th century scientists discussed whether or not fishery had any impact on fish stocks, and in the 1930s, methods to assess the impact were developed (Maurstad and Sundet 1998).³ Decreased catches in the fisheries made one aware of the fact that the marine natural resources not were infinity. The initial situation in the fisheries was in general open access, and there was almost no restriction on individual catches.

Hardin`s essay, *the tragedy of the commons*, were challenging the dominant tendency of thought related to Adam Smith and the focus on the individual freedom. In the *Wealth of Nations* (1776); “*the idea that an individual who “intends only his own gain” is, as it were, “led by an invisible hand to promote...the public interest”*.”⁴ The dominant tendency was to assume that decisions reached individually would be the best decisions for an entire society (Hardin 1968).

According to Jentoft (1998), Hardin`s essay “The Tragedy of the Commons” have had convincing power over the whole world. The metaphor has been used as both popular and academic explanations to many kinds of environmental problems. In both fisheries and reindeer management Hardin is referred to when politics and planning are discussed and reasons stated (Jentoft 1998).

Hardin (1968) developed “the tragedy of the commons” idea to illustrate his view that unrestricted freedom to produce children would, in the long run, bring ruin to all in the form of population explosion. To illustrate the scenario, which he called “The

³ Maurstad and Sundet (1998) in Jentoft (1998)

Tragedy of the Commons”; Hardin (1968) used a parable sketched by a mathematical amateur named William Forster Lloyd. The parable deals with unrestricted grazing-rights in a hypothetical village “commons”, and the collective tragedy caused by the rational individual greed of the cattle-owners (Berkes 1985).

Hardin asks the reader to imagine a pasture, which is open for all. Hardin implied that it is expected that each herdsman will try to keep as many cattle as possible in the commons. Such an arrangement may work reasonably well for centuries, because tribal wars, poaching and disease keep the number of both man and animals within the carrying capacity of the area. Finally, however, according to Hardin, comes the day of reckoning. That is the day when the long-desired goal of social stability becomes a reality. At this point, Hardin argues, “*the inherent logic of the commons remorselessly generates tragedy.*”⁵

According to Hardin (1968), human beings act as rationalists, seeking to maximise their gain. This means, “*The rational herdsman concludes that the only sensible course for him to pursue, is to add another animal to his herd.*”⁶ The other herdsman are also thinking in this rational way. According to Hardin, the fact that each herdsman is increasing his herd by one animal will result in the suffering of the fellowship. In the short run each individual herdsman will gain by increasing the herd, but in the long run all the herdsman will suffer because of the individual rational thinking. The individual rational thinking will result in overexploitation, and finally in a tragedy.

The main line of reasoning of Hardin is that humans are egoistically calculating actors who will bring a common-pool resource to extinction if they are *not* subjected to social arrangements, which imply *coercion* of some sort. He further argues that one must accept controls on individual freedom or we will all suffer the tragedy of the commons as a result of population increase. According to Hardin (1968), there is

⁴ Adam Smith (1776) in Hardin (1968), *The Tragedy of the Commons*, page 1244

⁵ Hardin (1968) in *Science vol. 162*, page 1244

⁶ Hardin (1968) in *Science vol. 162*, page 1244

a need to recognise the need for “social arrangements” which limit individual freedom, and he assumes that this will involve administrative law and coercion. He then recommends that the only kind of coercion is coercion mutually agreed upon by the majority of the people affected.

In conclusion, the main point of Hardin is that the additional income of one fish for one fisherman (+1) is covered by the “costs” divided on the all the other fishermen (-1).

The idea of “The Tragedy of the Commons” can, according to Hardin (1968), also be adapted for fisheries. He states that the oceans of the world continue to suffer from the survival of the philosophy of the commons, and that “*maritime nation’s still respond automatically to the shibboleth of the freedom of the seas*”. Professing to believe in the “*inexhaustible resources of the oceans*”, *they bring species after species of fish and whales closer to extinction*”⁷

The “the tragedy of the commons” situation can also be presented in a more mathematical manner, by using relatively simple equations.⁸ Under open access to the fishery, each fisherman receives the *average product* (AP) of the fisheries total effort (i.e., the total harvest divided by the total number of traps set). A fisherman does not capture the *marginal product* (MP) of its effort; rather, he harvests the fisheries AP, which must lie above MP. By harvesting the AP, each fisherman imposes *external costs* on every other fisherman. Each firm treats the stock X as exogenous when actually the action of fisherman, *i*, leads to a lower equilibrium stock and slightly higher harvest cost for every boat. This occurs because harvesting H pounds with a higher stock requires less effort than with a lower stock. The total harvest from the fishery will be equal to the average product of effort times the amount of effort used (with P=1, average revenue equals average product). This can be shown algebraically as below.

⁷ Hardin (1968) in *Science vol. 162*, page 1245

⁸ The mathematical description and equations of the *stock effect* situation are related to “The Economics of Natural Resource Use” by Hartwick and Olewiler (1998)

$$H = AP_E * E$$

Consider what would happen to the harvest with a marginal increase in effort when one fisherman sets an additional lobster trap. If one differentiates the equation above with respect to E (the marginal change), one finds that,

$$dH/dE = AP_E + E(dAP_E / dE)$$

The term dH/dE refers to the MP of effort (in the long run). The equation means that the MP of effort is equal to the average product of effort plus the term $E (dAP_E/dE)$. This term shows the change in the harvest per unit effort due to the use of an additional unit of effort. It is negative because an increase in effort reduces the sustainable fish stock 'X' thus, the lower the stock, the lower the catch per unit effort. All fishermen in the fisheries are then affected by the marginal change in effort. But because the effort per fisherman is relatively small, each fisherman ignores the term $E (dAP_E/dE)$. The fisherman ignores the effect an increase in the number of traps has on the stock of fish and hence on the harvest of other fishermen. The term $E (dAP_E/dE)$ therefore reflects an externality one can call the *stock effect*. For each increment in effort, fishermen actually receive the fisheries AP of effort minus the stock effect. One will end up with the same situation as stated above in the "tragedy of the commons".

The concept of regime

According to Underdal (2002)⁹, many of the major political challenges facing governments today are collective problems calling for joint solutions. However, even when effective solutions can be developed and implemented only through joint efforts, voluntary co-operation can be hard to establish and maintain, making it even more important to understand the condition of success and the causes of failure.

⁹ Underdal in Miles et al. (2002)

Underdal (2002) also states that the reasons why some efforts at developing and implementing joint solutions to international challenges succeed while other fail seems to have two possible answers. The first lies in the character of the *problem itself*: some problems are intellectually less complicated or politically more benign than others and hence are easier to solve. The second answer focuses on *problem-solving capacity*: some efforts are more successful than others because more powerful (institutional) tools are used or because greater skill or energy is used to attack the problem.

Underdal (2002) takes as a point of departure a common-sense notion of effectiveness, saying simply that a regime is effective to the extent that it successfully performs some generic function or solves the problem that motivated its establishment. For most environmental regimes the ultimate test will, according to Underdal (2002), be the extent to which they improve the state of the environment itself. Environmental objectives are to be achieved through changes in the human behaviour that causes environmental damage (such as non-sustainable harvesting).

It seems to be an accepted view on regime formation that the members of these arrangements are states. This does not mean however, that non-state actors and even individuals are irrelevant to processes of regime formation (Levy, Young and Zurn 1995). The original analytic concern of regime analysis was to demonstrate, against neo-realist claims, that institutions are a necessary ingredient of any theory of world politics. Today, this general point is more or less accepted, and the open question according to Levy, Young and Zurn (1995), is more specific: “*how do institutions affect politics, how do institutions interact with actors, and what are the independent consequences of regimes?*”

Early studies of regime formation treated participating states as unitary actors seeking to maximise some sort of national interest. This practice has, however, given way to a number of newly emerging lines of analysis emphasising the fact that the

participants in regime formation are complex collective entities. Perhaps the most influential of these, is the study of two-level games (Levy, Young and Zurn 1995).

According to Young (1994), the analytic perspectives currently dominating the study of regime formation in international society, do not only clash with another but are also incapable of capturing some of the essential features of the process involved in the formation of international regimes. Young (1994) further states that the *utilitarian perspective* on regime fails to attach sufficient weight to an array of factors that can block the efforts of utility, hence, maximising actors to realise feasible joint gains. On the other hand, the *power theorists* overemphasise the role of dominant actors or hegemony in the formation of institutional arrangements at the international level.

In accordance to Young (1994), what one needs, is to provide a satisfactory account of the process of regime formation, especially the negotiation stage of the process. A model of institutional bargaining that takes into account the essential features of international society, including those that distinguish this social setting from the situation prevailing in domestic societies is needed. Such a model of institutional bargaining is emphasising the significance of multiple actors, consensus rules, integrative bargaining, the veil of uncertainty, problem-solving activities, transitional alliances, and shifting involvement (Young 1994).

In the “*Conceptual models and the Cuban missile crisis*” Allison (1969), explores some of the fundamental assumptions and categories employed by the analysts in thinking about problems of governmental behaviour. According to Allison (1969), what each analyst seeks and judges to be important is a function not only of the evidence about what happened but also of the “conceptual lenses” through which he looks at the evidence. Allison summarises the general argument in three models; Rational policy (model I), Organisational process (model II) and Bureaucratic politics (model III).

In model I the basic unit of analysis is *policy as national choice*. Happenings in foreign affairs are conceived as actions chosen by the nation or national government. Government selects the action that will maximise strategic goals and objectives. The nation or government, conceived as a rational, unitary decision-maker, is the agent. Action is chosen in response to the strategic problem, which the nation faces. The sum of activity of representatives of the government relevant to a problem constitutes what the nation has chosen as its “solution”.

Allison (1969) states that, the simplification of model I must not be allowed to conceal the fact that a “government” consists of a conglomerate of semi-feudal, loosely allied organisations, each with a substantial life of its own. Government leaders do sit formally, and to some extent in fact, on top of this conglomerate. Governments define alternatives and estimate consequences as organisation process information. Governments act as these organisations enact routines. The basic unit of analysis in model II is *policy as organisational output*. The actor in model II is not a monolithic “nation” or “government”, but rather a constellation of loosely allied organisations on top of which government leaders sit. The characteristics of a government’s action in any instance follows from the established routines, and from the choice of government leaders (Allison 1969).

The leaders who sit on top of organisations are, according to Allison in model III, not a monolithic group. Rather each is, in his own right, a player in a central, competitive game. The name of the game is bureaucratic politics: bargaining along regularised channels among players positioned hierarchically within the government. The bureaucratic politics model sees no unitary actor but rather many actors as players, who focus not on a single strategic issue but on many diverse intra-national problems as well. Men share power, and men differ concerning what must be done. What the nation does is sometimes the result of the triumph of one group over others. Basic unit of analysis in model III is *policy as political outcome*. The decisions and actions of governments are essentially intra-national political outcomes: outcomes in the sense that what happens is not chosen as a solution to a problem but rather results

from compromise, coalition, competition, and confusion among government officials who see different faces of an issue. The actor is neither a unitary nation, nor a conglomerate of organisations, but rather a number of individual players. Positions define what players may and must do (Allison 1969).

Summarised, model I assert that nations quit when costs outweigh their benefits. Model II and III focus upon the government machine (Ibid.).

Hardin (1968) views coercion of power from a centralised authority as the only means of inducing temperance in individuals and thus avoiding a depletion of resources. This point of view may be related to the rational choice- and realistic theory (one-level perspective), where one is focussing on an approach where there may be little opportunities for co-operation between interest groups and government in the relevant country. According to Laursen (1993), a realistic perspective, in general, puts emphasis on the national interest as perceived by a relatively small group of central decision-makers, largely located in the cabinet and foreign ministry of the country in question. Realists see the state as a rational and unitary character. This way of viewing the relationship between the state and the society within the national state is also transformed to the international system.

One of the critics against the realistic perspective is that the state will often, however, not be as unitary as suggested. The national state politics are, according to such point of view, the sum of different and sometimes diverging user groups' interest. The foreign politics is not solely a result of government decisions, but a result of non-government actors' influencing on the domestic, and foreign politics (Hveem 1999). In these perspectives, which according to Hveem (1999) may be called complex actor-/interplay theories¹⁰, one goes deeper into the political situation than what is done in the realistic perspective. One is takes into consideration more than one level

¹⁰ According to Hveem (1999), it is problematic to categorise these kinds of theories/models in relation to the traditional social scientific classification of theories or level of analysis. Within these theories the different traditional classification factors may be present within the same theory

in the analysis, and each level contains different actors and user groups with different interests and opinions. Various domestic groups will have formulated demands for the central decision-makers. These demands may affect the politics in the relevant country, both at the domestic- and the international level.

A theory, which takes both the domestic and international level of a regime into consideration, and which may be used for illuminating the interplay between them is as noted Putnam's (1968) *two level game* theory. The theory may be seen as a sub-set of regime theory. While "the tragedy of the commons" idea may be related to *rational choice theory* and a *realistic* (one-level) *perspective*, the "two level games" may, on the other hand, be related to *co-operative action theory* and an *institutional* (two-level) *perspective*. The two theories may be viewed as two different perspectives of considering how to manage a shared natural resource, but the main difference between the two theories are that the *tragedy of the commons* theory is focussing on "why management?" while the *two level game* theory is taking into consideration "how to explain management?"

Two-level games

The most portentous development in the field of comparative politics and international relations in the recent years are, according to Putnam (1988), the drawing recognition among practitioners in each field of the need to take into account entanglements between the two. Unlike state-centric theories, the two-level approach recognises the inevitability of domestic conflict about what the "national interest" requires. The two-level approach recognises, according to Putnam (1988), that central decision-makers strive to reconcile domestic and international imperatives simultaneously. This theoretical approach highlights several significant features of the links between diplomacy and domestic politics. He further states that "two-level games" seem a ubiquitous feature of social life.

Two-level games: a metaphor for domestic-international interaction

According to Putnam (1988), the politics of many international negotiations can usefully be conceived as a two level game. At the national level (level I), domestic groups pursue their interests by pressuring the government to adopt favourable policies, and politicians seek power by constructing coalitions among these groups. At the international level (level II), national governments seek to maximise their own ability to satisfy domestic pressures, while minimising the adverse consequences of foreign developments. Neither of the two games can be ignored by central decision-makers, as long as their countries remain interdependent, yet sovereign.

Each national political leader appears at both the domestic and international level. Across the international table sit her foreign counterparts, and at her elbows sit diplomats and other international advisors. Around the domestic table behind her sit party and parliamentary figures, spokespersons for domestic agencies, representatives of key interest groups, and the leader's own political advisors. The unusual complexity of this two-level game is that *moves* that are rational for a player at one board may be impolitic for the same player at another board. Nevertheless, there are powerful incentives for consistency between the two games. Players tolerate some differences in rhetoric between the two games (Putnam 1988).

Restructuring and reverberation

Much of what happens in any bargaining situation involves attempts by the players to restructure the game and to alter one another's perceptions of the costs of no-agreement and the benefits of proposed agreements. Such tactics are, according to Putnam (1988), more difficult in two-level games than in conventional negotiations, because it is harder to reach constituents on the other side with persuasive messages. Nevertheless, governments do seek to expand one another's win-sets.

The role of the chief negotiator

According to Putnam (1988), the chief negotiator is most probably an institution or a role. This may be the Prime Minister, the whole government or a limited part of the leadership in a country.

According to Putnam, the motives of the chief negotiator include:

1. Enhancing her standing in the level II game by increasing her political resources or by minimising potential losses.
2. Shifting the balance of power at level II in favour of domestic policies that she prefers for exogenous reasons.¹¹
3. To pursue her own conception of the national interest in the international context.

It is, according to Putnam (1988), reasonable to presume, at least in the international case of two-level bargaining, that the chief negotiator will normally give primacy to her domestic calculus, if a choice must be made, not the least, because her own incumbency often depends on her standing at level II. Another constraint on successful two-level negotiation derives from the leader's existing domestic coalition. Any political entrepreneur has a fixed investment in a particular pattern of political positions and a supporting coalition.

In chapter three I will go deeper into the Norwegian/Russian fisheries management regime, which includes co-operation related to enforcement, regulation and research. Focus is on the *establishment* of the regime in the Barents Sea.

¹¹ International negotiators sometimes enable government leaders to do what they privately wish to do, but are powerless to do domestically (Putnam 1988)

3 The Barents Sea: natural resources, EEZ, jurisdiction and management regime

Description of the Barents Sea

It is difficult to define seas with great precision, except for those seas that are relatively enclosed. Nevertheless, there is a fairly generally accepted definition of the Barents Sea. To the south the Barents Sea is bounded by the mainland coasts of Norway and Russia, to the east by the large Russian archipelago of Novaya Zemlya, and to the north by the archipelagos of Franz Josef Land and Svalbard. In the west the Barents Sea meets the Greenland and Norwegian Seas, the conventional dividing line runs from the South Cape (in Svalbard) to the North Cape on the Norwegian mainland (figure 3.1). The Barents Sea is about 1.4 million square kilometres (about 542 000 square miles) in area² (Churchill and Ulfstein 1992).

Figure 3.1: The Barents Sea region (source: Hønneland and Nilssen (2001)).

Renewable natural resources in the Barents Sea

A *renewable natural resource* is one that can supply productive inputs to an economic system indefinitely. A *non-renewable natural resource* is one with a finite stock or supply that, once used up, is gone. There is, however, a caution regarding this distinction (Hartwick and Olewiler 1998). According to Hartwick and Olewiler (1998), most renewable resources can be depleted or exhausted, thus, they can become non-renewable. For example a fish population can be harvested to extinction. The link between renewable and non-renewable resources is thus very close

Large-scale commercial fishing began in the Barents Sea in the late nineteenth century with the development of larger and more efficient fishing vessels, better gears, and better ways of preserving and marketing the catch. In recent years the most commercially important species fished in the Barents Sea have been cod, haddock, saithe, redfish, capelin, herring and shrimp. By no means are all of these stocks confined to the Barents Sea during their life cycle (Churchill and Ulfstein 1992).

As far as cod is concerned, there are according to Churchill and Ulfstein (1992), in fact two distinct stocks in the Barents Sea, the *Northeast Arctic cod* and the *Polar cod*. The former, historically the most *commercially valuable* stock in the area, inhabits the Barents Sea between North Norway and Svalbard and along the mainland coasts of Norway and Russia. Spawning takes place in March and April close inshore, mainly around the Lofoten islands. Developing pelagic eggs drift northward to the western Barents Sea. The juveniles stay in the Barents Sea until they are mature, when they return to the Lofoten islands to spawn. After spawning they return to the Barents Sea.

The distribution and life cycle of the *Northeast haddock* are, according to Churchill and Ulfstein (1992), similar to those of the *Northeast Arctic cod*. The *Northeast*

Arctic saithe migrates from the Barents Sea and Northern Norway to spawn off western Norway. The eggs and fry are then carried northwards, back to Northern Norway and eventually the Barents. The Barents Sea stock of the *Northeast Arctic redfish* spawns off the northern coast of Norway. As they grow, redfish migrate over the whole of the western and southern parts of the Barents Sea. Prior to the late 1960s the Barents Sea was an important nursery area and feeding ground for the Norwegian spring spawning stock of the *Atlanto-Scandian herring*, which spawned off the west and north coasts of Norway, and supported a sizeable herring fishery. As a result of heavy over-fishing in the 1960s, however, the stock declined to an extremely low level. It has however recovered in recent years.

According to the Institute of Marine Research (2002), the stock is at present considered to be within safe biological limits. Capelin spawn along the North Norwegian and Murman coasts in March and April. They then migrate northwards, spending the summer in the northern part of the Barents Sea, before moving south to the central part of the Sea in autumn and returning to the coast in winter. Finally, the Barents Sea supports an important shrimp fishery (Churchill and Ulfstein 1992).

Norway and Russia have always been the principal nations fishing in the Barents Sea, but the fishermen of a number of other European countries also fish in the area. Indeed some of the countries have a long history of participation in the Barents Sea fisheries. Since the establishment of 200-mile fishery and economic zones in 1977, the level of third country fishing in the Barents Sea has, however, declined.

The structure of the Norwegian and the Russian fisheries

The Norwegian fishery sector consists of a large number of actors with partly divergent interests. The main groups include the ocean-going fishing fleet, the coastal fishing fleet, and the land-based fish processing industry. The ocean-going fishing fleet consists of a relatively limited number of vessels. The Norwegian coastal fishing fleet consists of a large number of small vessels fishing with conventional gear. Most of these boats are registered in Northern Norway

(Hønneland 1999). At the end of 1999, 13,199 fishing vessels were registered, of which 8,450 were covered vessels and the rest open boats. Only a part of the large number of registered vessels is used for fishing all year.¹

From 1960 to 1975, the total number of fishermen in Norway declined from about 61.000 to about 35.000. In 1995 the figure was almost 24.000. Meanwhile more selective criteria had been introduced in the official Fishermen's Register. In 1999 21.274 fishermen were registered. Of these, only 72% (15.326) had fishing as their sole or main occupation, while fishing was a secondary occupation for the remaining 5.948.²

Fish processing plants ashore constitute industrial backbones for many small fishing communities along the coast of Northern Norway (Hønneland 1999). The Norwegian fish processing industry consists of a large number of small and medium-sized businesses scattered along the entire coastline. In 1999, some 600 processing businesses employed approximately 13.500 people.³

Also in Northwest Russia fishing is an important activity. The active building of an expensive big fleet after the Second World War containing different types of fishing vessels with and without fish processing capacities and also transport vessels.⁴ The majority of the approximately 450 big fishing vessels located in Northwestern Russia are controlled by a handful of fishing companies. The total number of vessels has rather been stable over the last decade since old vessels have not been taken out of service to a large extent, and few new vessels have been purchased (Hønneland and Nilssen 2001).

¹ FID – Facts about Norwegian Fisheries Industry – 2000
(<http://www.odin.dep.no/fid/engelsk/>)

² Ibid

³ Ibid

⁴ Problems of Fisheries - 2000. State Committee of Fisheries of the Russian Federation

According to Hønneland (1999), a sharp reduction in catches, and subsequently employees, set in at the beginning of the 1990s. Throughout the 1990s, the total annual catch of the fishing fleet based in Murmansk *oblast* has dropped year by year. The main reason for this catch reduction is, according to Hønneland (1999), a major decline in fishing activity in distant waters as a result of increased fuel costs. Adding to the problems of the land-based processing industry in Murmansk, Russian landings of fish abroad increased markedly during the same period. Russian landings of cod to Norway, for instance, reached 94,000 tons in 1992, while in 1988 they had only totalled 10,000 tons. Thereafter the Russian landings in Norway increased further to nearly 150,000 tons around the mid 1990s. Since that time, there has been some reduction, and Russian deliveries of cod to Norway totalled 119,800 tons in 1998 (Hønneland and Nilssen 2001). The main result of the landings in Norway of most Russian-caught fish is loss of employment opportunities in Murmansk, both in active fishing and in processing industries ashore (Hønneland 1999).

The Murmansk Fish Combinat has, according to Hønneland and Nilssen (2001), been practically at a standstill since the mid-1990s. The total employment in the northern fishery basin is believed to have dropped to some 35,000-40,000 people.

The fishing industry of North-western Russia is now largely concentrated to the Kola Peninsula. The association of fishing companies in *the northern basin* of the Soviet Union was established in 1965. It was given the status of General Directorate of the Soviet Ministry of Fisheries in North-western Russia. The General Directorates was reorganised into so-called *all-union production combines* (VRPOs) in 1973 (Hønneland 1999). These units were, according to Hønneland (1999), still directly subordinate to the Ministry of Fisheries. VRPO "Sevryba" embraced all companies involved in the fishing industry or more loosely connected in the regions of Murmansk, Arkhangelsk and Kareliya. "Sevryba" was organised as a private joint-stock company in the autumn of 1992. Twenty-three companies with various core activities that included shipowners, on-shore processing factories, a shipyard,

research institutions, sales and supply organisations and various other firms constituted the founders of the new conglomerate (Hønneland 1999).

Establishment of the EEZ

In 1959 a regional fisheries organisation named the Northeast Atlantic Fisheries Commission (NEAFC) was established. The Commission became operative from 1963, and was authorised to make recommendations in accordance to total catches. In 1974 the Commission's power was considerably enlarged when it was authorised to regulate the total catch. A major problem was that TAC's set by NEAFC often exceeded those recommended by the International Council for the Exploration on the Sea (ICES). Because of this there was heavy overfishing, which resulted in depletion of fish stocks. An evaluation of major stocks in the Northeast Atlantic by 1975-1976 classified two stocks as underexploited, one as fully exploited, twenty-eight as over-exploited and two as depleted⁵ (Churchill and Ulfstein 1992).

In the course of the UNCLOS III in the 1970s, consensus emerged on establishment of EEZs, conferring upon coastal states the right to manage and control their natural resources within 200 nautical miles (360 kilometres) (Ibid.)

By 1977 most states in the North Atlantic area had enacted legislation providing for such zones, which has caused a revolutionary change in the legal-political context of marine resources management. The authority to manage resources now resides with the individual coastal states (Hoel 1994). As far as Norway's management of marine resources is concerned, the change in international law led to a transition from multilateral negotiations under the auspices of the NEAFC to bilateral negotiations between coastal states with sovereign rights to fish stocks. This was a result of the fact that Norway is sharing several important fish stocks with other countries. It is a principle in the UNCLOS III that coastal states sharing one or several fish stocks cooperate in their management efforts (art. 63.1). This means that Norway and Russia

⁵ This development may be related to "the tragedy of the commons"

are required to co-operate in the management of the Northeast Arctic cod, haddock and of capelin.

Norway and Russia entered into several bilateral fishery co-operation agreements in the mid-1970s.⁶ The first, which was related to the establishment of the management regime are the mutual agreements of 11th April 1975 on co-operation in the fisheries sector and 15th October 1976 on reciprocal fisheries relations. The former established a fisheries commission, *the Joint Soviet (Russian) – Norwegian Fishery Commission*, which since 1976 has been the forum for fishery co-operation between Norway and Russia.

With the introduction of the 200-mile EEZ, the legal-political context of marine resource management in the Barents Sea became more complex. Most of the former international waters came under the jurisdiction of Norway and Russia, and since the two countries rely on different principles for drawing up boundaries, the extension of jurisdiction has resulted in a 175 000-sq. kilometres disputed area where claims overlap (Hoel 1994). As Norway and Russia could not agree on the principle for drawing a delimitation line between their respective zones, a temporary arrangement on this adjacent area was reached in an agreement of 11th January 1978 to avoid a no control situation in the contended area. The arrangement is popularly called *the Grey Zone*. Another area of contention in the Barents Sea is the *Fishery Conservation Zone* around Svalbard. The so-called Barents Sea *Loophole* is a remainder of international waters in the northeastern part of the Barents Sea.

The Grey Zone Arrangement

Norway and Russia entered into the «Grey Zone Agreement» by the exchange of letters on 11th January 1978. The purpose of the agreement is indicated by its title, which says that the agreement is “interim” and a “practical arrangement” limited to

⁶ A certain management co-operation between the two states had existed also prior to this time, most notably between their marine biologists in assessing the state of the Barents Sea fish stocks (Hønneland 1998)

the control of fishing. The intention was thus to find an arrangement for fisheries management in the disputed area pending a final boundary delimitation (Churchill and Ulfstein 1992).

As mentioned, Norway and Russia could not agree on the principles for drawing a delimitation line between their respective exclusive economic zones in the Barents Sea. Norway claims the delimitation line should follow the median line from between the islands, while Russia sticks to the so-called sector line principle, implying the line of delimitation to run from the tip of the mainland border to the North Pole. According to Churchill and Ulfstein (1992), the intention by the “Grey Zone” arrangement was to make it possible to enforce fisheries regulation in the disputed area by controlling fishing vessels from the two coastal states and from third states. The arrangement is explicitly temporary, and the agreement has to be renewed each year to stay in force.

The letters exchanged provide that the joint Norwegian-Russian fisheries Commission shall execute the co-ordination of the practical implementation of the Agreement, including the setting of the TAC. It is further provided that the TAC shall be utilised in essentially equal shares by the two states, while a part of the TAC is to be allocated to third states after consultation between the parties (Churchill and Ulfstein 1992). Vessels from third states shall be allowed access only if licensed by one or both parties. Conditions for third states fishing are set out (art. 6 and 7) and it is required that the licensing party informs the other party about the vessels licensed (art. 5). Article 7 of the protocol provides that all fishing shall be conducted in accordance with the regulation on fishing gear, minimum mesh size of trawls and minimum size of fish adopted by the Northeast Atlantic Fisheries Commission.⁷

There have not been any serious confrontations over the interpretation or implementation of the Agreement. Negotiations on a final settlement of the boundary

⁷ St. prp. Nr. 70 (1977-78) Om samtykke til inngåelse av en avtale mellom Norge og Sovietunionen om en midlertidig praktisk ordning for fisket i et tilstøtende område i Barentshavet

line have been conducted throughout the whole period since 1977 (Churchill and Ulfstein 1992).

The Loophole

As mentioned previously, the so-called Barents Sea Loophole is the remainder of international waters in the northeastern part of the Barents Sea. Icelandic and other vessels of various nationalities (mainly under flags of convenience) have caught considerable amounts of cod in the period from 1993 to 1996. Norwegian Coast Guard vessels followed this fishery closely without the possibility to interfere. Conflicts with Greenland and the EU after Greenlandic and French vessels started fishing in the Barents Sea Loophole in 1991-92 were solved through diplomatic bargaining (Hønneland 1999).

Norway and Russia worked strongly for bringing fishing activity in the Loophole to an end through diplomatic communication with the concerned states. Through the agreement of the 15th May 1999, the Norwegian and Russian government managed to put an end to Icelandic unregulated fishing activity on regulated species in the Loophole.⁸

Fisheries co-operation between Iceland and Norway in the Barents Sea today is related to the agreement of the 15th May 1999. This agreement is between Norway, Iceland and the Russian federation, and it relates to specific co-operation issues in connection to the Loophole. The agreement requires that Iceland follow Norwegian governments principles related to responsible fishing on regulated species in the Barents Sea. Together with the bilateral protocol of Norway and Iceland of the same date, the “Loophole Treaty” regulates an exchange of fish quotas between Iceland and Norway, and a refrain of Iceland from fishing in the conservation zone around Svalbard.⁹

⁸ FID – Fiskerisamarbeidet med Island (<http://www.dep.no/fid/norsk/internasjonal>)

The Svalbard Treaty of 1920

By the 1919 Peace Conference in Versailles, the territorial dispute related to Svalbard was addressed, which resulted in the *Svalbard Treaty* of 1920 (Churchill and Ulfstein 1992).¹⁰ Because of the generality of the Svalbard Treaty, the Treaty has been legally analysed differently, by the states involved. The core of the dispute is whether the legislation is to be based on the Svalbard Treaty or the law of Norwegian economic zones (NEZ). This is the main reason for the dispute about the waters around the Svalbard area. Since Norway has sovereignty over Svalbard (article 1 of the Treaty), and since there is nothing in the Treaty which either expressly or by implication restricts Norway's right of claim to the maritime zones in respect of Svalbard (the Treaty in fact expressly refers to Svalbard's territorial sea), it follows that Norway has the right to claim the maritime zones around Svalbard (Ibid.).

The waters around Svalbard are important feeding grounds for juvenile cod stocks, and the Conservation Zone, represent a "middle course" which is supposed to secure the young fish a certain protection from unregulated fishery (Hønneland 1998). The area around Svalbard also covers important nursery ground for haddock and capelin, which migrate between the waters off the Norwegian mainland, Svalbard and Russia. The migration area of other fish stocks is restricted to the zone off the Norwegian mainland and Svalbard, whereas shrimps are exclusively found in the Svalbard zone. For all stocks it is important to ensure proper conservation measures to prevent depletion by the large fishing fleet habitually fishing in this area (Churchill and Ulfstein 1992).

As noted above, Norway established the 200-mile conservation zone around Svalbard by Royal Decree in 1977, with effect from 15th June the same year. The zone was established on the basis of the Norwegian Law on the Economic Zone of

⁹ Ibid

¹⁰ The treaty entered into force in 1925 and has been ratified or accepted to by about forty states, including the United States, the USSR, Japan, and most European states (Churchill and Ulfstein 1992)

17th December 1976. Norway wanted in this way to signal that it has the right to establish an EEZ around Svalbard, but has not as yet made use of this right. Fisheries regulations in this area have been refrained from (except for vessels from nations, which do not have a quota in the Barents Sea at all) (Hønneland 1999).¹¹ Meanwhile, a fishery conservation zone based on non-discrimination is being applied. The intention in establishing such a zone was to control fishing in the area without confrontation with other states (Ibid.).

There have been a numbers of reservations from the other signatory powers of the Svalbard Treaty. These claim that the non-discriminatory code of the Treaty applies to the ocean area around the archipelago, while Norway's stance is that it refers only to the mainland and its territorial waters. The zone is not formally recognised by any of the other states, which have had quotas in the area since the introduction of the EEZs (Hønneland 1998). The disputes concerning Svalbard might in general be related to the complex legal context of the archipelago.

The management regime of Norway and Russia in the Barents Sea

Article 56(1) of the Los Convention establishes the coastal state's sovereign rights for the purpose of "exploring and exploiting, conserving and managing" the living resources in the 200-mile zone. This means that the two coastal states of the Barents Sea, Norway and Russia have exclusive jurisdiction over the living resources in their 200-mile zones (Churchill and Ulfstein 1992). On the other hand, co-operation over the management of shared fish stocks is also an obligation under the LOS Convention (art. 63). Article 63 in the UNCLOS III states as follows:

"1. Where the same stock or stocks of associated species occur within the exclusive economic zones of two or more coastal States, these States shall seek, either directly

¹¹ Force was for the first time used in the Protection Zone around Svalbard in the summer of 1993, when Icelandic trawlers and Faeroes vessels under flags of convenience started fishing in the area without having been allocated quota. The Norwegian Coast Guard fired warning shots at the ships, and they left the zone. The following summer, an Icelandic fishing vessel was for the first time arrested for having fished in the Svalbard zone without a quota (Hønneland 1998)

or through appropriate sub-regional organisations, to agree upon the measures necessary to co-ordinate and ensure the conservation and development of such stocks.”

“2. Where the same stock or stocks of associated species occur both within the exclusive economic zone and in the area beyond and adjacent to the zone, the coastal State and the States fishing for such stocks in the adjacent area shall seek, either directly or through appropriate sub-regional or regional organisations, to agree upon the measures necessary for the conservation of these stocks in the adjacent area.”

From this follows that Russia and Norway are required to co-operate over the management of the living marine natural resources they are sharing.

As mentioned earlier, the Barents Sea is one of the world’s richest fishing grounds. Since 1976, Norway and Russia have undertaken a common responsibility for the management of these living marine resources. The management regime comprises a Russian-Norwegian co-operation in addition to management procedures on a national level within the fields of *research, regulation and enforcement* (Hønneland and Nilssen 1998). *The Joint Norwegian-Russian Fishery Commission*¹² includes members of the two countries’ fishery authorities, ministries of foreign affairs, marine scientists, and representatives of fishermen’s organisations (Hønneland 2000). One of the main objectives of the Commission is to set yearly TACs concerning the shared stocks of cod, haddock and capelin. In addition, the Commission contributes to the co-ordination of the scientific work of the “Institute of Marine Research” in Bergen, “Fiskeriforskning” in Tromsø and PINRO in Murmansk. The Treaty emphasises the importance of resource conservation, rational harvesting and development of good neighbour relations (Stokke et al. 1992). According to Stokke et al. (1992), The Joint Commission is the “corner stone” in the Norwegian-Russian management regime.

¹² In the following named as The Commission

According to Hoel (1994) fisheries management comprises of three tasks that is establishing the knowledge base for management (*research*), formulation measures to conserve resources (*regulation*) and enforcing of regulations (*control*).

Research

The scientific work of the Barents Sea fisheries is, as noted above, provided within an international organ - the International Council for the Exploration of the Sea (ICES).¹³ Regulations for shared stocks (cod, haddock and capelin) are basically worked out at the bilateral level between Norway and Russia, and the control function, which will be presented later, is carried out at the national level (Hoel 1994). The co-operation between Norway and Russia scientists in the mapping of the Barents Sea fish resources dates back to the 1950s. The main participants are the Knipovich Scientific Polar Institute for Marine Fisheries and Oceanography (PINRO) in Murmansk, the Norwegian Institute of Marine Research in Bergen (IMR), and the Norwegian Institute for Fisheries and Aquaculture Ltd. in Tromsø. The institute in Tromsø has in recent years assumed the main responsibility for research on shrimp, king crab, and marine mammals, while the other species of the Barents Sea are largely the responsibility of the IMR (Hønneland1999).

In Norway, fishery science was “invented” in the 1850s. IMR was established early in the 19th century, in Bergen. Research covers both physical as well biological science, and has grown steadily over the years to date. Until 1988 the IMR was a division of the Fisheries Directorate, which in Norway is a subsidiary of the Ministry of Fisheries. With time, the IMR was granted a more independent status (Hoel 1993). According to Hoel (1993), it has always been a decidedly management-oriented institution, with its research personnel being dedicated more to tasks geared at serving the fishing industry and providing the authorities with management advice

¹³ The ICES is an international organisation composed of the states bordering the North Atlantic. It only provides scientific advice and is not involved in regulations per se. Its Advisory Committee on Fisheries (ACFM) formulates management advice, with one representative from each member country (Hoel 1994)

rather than academic research. Funding has been provided by the Ministry of Fisheries.

Fisheries research institutions emerged in the northern part of Norway only in the last two decades. Fishery research here is mostly located in Tromsø, in various university institutes and in the Norwegian Institute of Fisheries Research. These institutions are according to Hoel (1993), not as tightly linked with fisheries authorities, and funding is more varied. The research carried out is also often of a more academic nature (Hoel 1993).

Marine science in Russia has a strong theoretical tradition. With the establishment of the Russian Federation, the state acquired the fishing industry. While this government monopoly was abolished in other parts of the union in the 1920s, it was maintained in the northwest (Solecki 1979).¹⁴ Thus the Soviet fishing industry has been under the direction of the central organ for northern fisheries, the Sevryba. While the *management* of fish resources formally was the responsibility of the Fisheries Ministry in Moscow, the Sevryba co-ordinates all activities related to fishing. The Polar Research Institute of Marine Fisheries (PINRO), which used to be under the direction of the Fisheries Ministry in Moscow was, according to Hoel (1993), in late 1980s made a part of Sevryba. Like the Norwegian IMR, PINRO is oriented towards management-related tasks in biological as well as physical science. In the 1990s PINRO has been granted independent status.

Also in the Russian north there are other research institutions, perhaps of a more academic nature with no formal ties to the fishing industry and the fishing authorities. The major one of these institutions is the Murmansk Biological Station, an institution with a high profile in the international fisheries management debate. The formal ties in research between Norway and Russia go mainly between the IMR and PINRO, and between the Tromsø Institutions and the Kola Science Centre institutions (Hoel 1993).

¹⁴ Solecki 1979 in Hoel 1993

Regulation

According to King (1995) fisheries regulations are imposed on a fishery to support a strategy designed to achieve predefined objectives. It is unlikely that any single management measure will produce the desired results, and a combination of several regulations may be needed. The main challenges in managing fisheries lies not so much in enforcing fisheries regulations, but in convincing the communities that they are necessary. He further states that the dilemma is that, as demand for fisheries resources is increasing, the ability of the marine environment to sustain them may be decreasing. The renewability of fisheries resources depends on accepting regulations, which not only protect the fish stocks but also ensure that the environment in which they live does not deteriorate.

In the Norwegian-Russian management regime, *bilateral regulations* in use are *TACs* and *area regulations* in relation to where to fish. The TACs include the amount of bycatch each country is allowed to harvest. Discarding is illegal in areas under Norwegian and Russian jurisdiction. Another regulation in use is *limitation of efficiency* by minimum mesh size. Norway and Russia have, however, not agreed upon the mesh size of the trawls. The regulations in use are either to reduce or contain effective fishing effort (*input controls*), or to restrict the total catch (*output controls*) to predefined limits. In addition, *national regulations* are in use in both the countries.

Over the past ten years the most contentious issues have, according to Hoel (1994), been the conflicts reflecting the material structure of the fishing fleets and migration patterns of fish. While two thirds of the Norwegian TAC of cod is taken by the coastal fleet fishing with conventional gear for larger fish, to some extent on spawning grounds, all the Russian TAC is taken by trawlers, a circumstance favouring as few limitations as possible on fish size.

In relation to the *limitation of efficiency and types of fishing gear*, Norway and Russia has not yet agreed upon mesh size on trawls. Norway holds the opinion that

for demersal species bigger mesh size should be used in the trawlers. Norway advocates 135 mm, while the Russians find the existing regulations 125 mm satisfactory. Norway has, according to Stokke *et al.* (1992), always preferred mesh size-regulations in relation to the cod- and haddock fisheries because *selection* of the efficiency it provides in maintaining the total quota without threatening the stock. Russia however does not agree to this. The Russian reluctance is interpreted by the Norwegians as a result of the fact that the size of the demersal fish is smaller in the Russian zone because of migration patterns, and that the Russian do not like to be conducted by the Norwegians.¹⁵

The Norwegian development of rigid sorting grids for trawls (and some other gears) has successfully been implemented in several fisheries, including the Barents Sea (Larsen 1997). Probably the most important factor in the co-operation on regulations is the willingness and capability of setting the TACs, to a responsible level. The bargaining concerning the TACs became easier in that the two countries in the 1970s established “dividing keys” on the different species (Stokke et al. 1992).

Enforcement

During 1992, the Norwegian Coast Guard revealed a dramatic increase in cases of under-reporting from Russian vessels. During the autumn of 1992, Norwegian fishery authorities presented the data to their Russian colleagues indicating overfishing by the Russians of more than 100, 000 tons. The estimated overfishing was supported by export statistics. Towards the end of 1992, both Norwegian and Russian authorities became aware of the shortcomings of the control in Russian fisheries in the Barents Sea (Hønneland 2000).

At the 21st session of the Joint Commission in November 1992, the delegation leaders jointly proposed the appointment of the working group to consider the

¹⁵ The official argument is, however, that regulation of mesh size not are the best way of securing premature fish. Russian scientists assert that premature fish also are killed in trawlers with big meshes, and that the fish are protected better by minimum size regulations. The argument would, according to Stokke et al. (1992) have been even stronger if Russia also had been consequently against an increase in the minimum standards

question of co-operation between the control bodies of the two states. After the Expert Group had presented its proposal in May 1993, the Joint Commission convened a subsequent meeting in June 1993. The two parties (Norway and Russia) agreed that enforcement authorities in the two countries should take steps to strengthen enforcement efforts at sea and in connection with landings of catches (Hønneland 2000).¹⁶ The Parties agreed to appoint a Permanent Committee under the Joint Commission. The Committee was a continuation of the so-called Expert Group that came to be known as the *Permanent Russian-Norwegian Committee for Management and Enforcement Co-operation within the Fisheries Sector* (Ibid.). The composition of the Permanent Committee has, according to Hønneland (2000), been fairly stable since its establishment in 1993.

In 1993, the co-operation between Norway and Russia was enlarged to include control and enforcement of regulations, in addition to research and regulation. In the third component of management, enforcement of regulations, emphasis is placed on national schemes (Ibid.).

According to Hønneland (2000), the Norwegian fisheries enforcement uses the principle of *horizontal control*. Fishermen are subject to control both on shore and at sea. The control system can be divided into *passive* and *active*. The term passive control refers, according to Hønneland (2000), to the examination of the information fishermen are obliged to submit about their activities at sea. Active control, on the other hand, involves physical tests by inspectors of this information.¹⁷ In addition to this, a certain responsibility for quota control rests with the sales organisations, which are verifying data on landings.

¹⁶ One will not go deeper into the agreement in this thesis

¹⁷ The Directorate of fisheries exercises the passive control of Norwegian fisheries management. The active quota control takes place where fish are landed and is exercised by the "Fish Control", a sub-unit of the Directorate of fisheries. The Coast Guard is charged with the control of fishing operations at sea (Hønneland 2000)

The enforcement in the Russian EEZ was until 1998 related to “Murmanrybvod”, which was the regional branch of “Rosrybvod” (“Russian fishery inspection”).¹⁸ “Murmanrybvod” has been responsible for both passive and active control in Russia. In July 1998, the responsibility for control in the Barents Sea was transferred to the military Border Guard. “Murmanrybvod” is still in charge of all control operations except those carried out at sea (Hønneland 2000).

An important new progress in relation to control is the establishment of tracking by satellite system. By the use of satellite tracking system, fisheries authorities in the two countries are able to track the movements of vessels. Norway and Russia introduced satellite tracking of fishing vessels in each others zone in September 2000.¹⁹ In Norway the satellite tracking system was introduced for vessels above 24 meters in length. The vessels are tracked in areas with Norwegian fishing jurisdiction and in areas with foreign fishing jurisdiction.²⁰

After having presented the background of, and the establishment of the Norwegian/Russian fisheries management regime, the next chapter will be focussing on if the fisheries management regime of Norway and Russia has resulted in providing a favourable basis for the maintenance of the renewable resources in the Barents Sea. This question is related to biological sustainability of the regime.

¹⁸ The “Russian fishery inspection” is part of the federal Fisheries Committee

¹⁹ St.meld. nr. 50 (2000-2001)

²⁰ Ibid

4 Sustainable management?

The aim of this chapter is to analyse the Norwegian-Russian management regime of the Barents Sea in relation to biological sustainability, which seems to be one of the major objectives in relation to the establishment of the regime. The analysis will be shed light on through the use of Hardin`s (1968) theoretical framework *the tragedy of the commons*, presented in chapter two. Biological and ecological factors will be taken into consideration, in examining whether the regime has resulted in management and allocation of the natural resources, which is in accordance to biological sustainability.

The concept of sustainability

The concept of sustainability may be related back to the last century, but a “break through” came by the launching of the Brundtland-Commission report; “Our Common Future”. The concept has since then been a core in the debates of several international negotiations, i.e. in relation to the Rio-assignment, Agenda 21 and FAO`s code of conduct. Sustainable development is a question of how to conserve scarce resources, and has become a legitimate concept in the international resource debate.

Sustainability is a difficult concept to define and to put into practice. The concept has been defined in different ways. Sustainability in accordance to fisheries may be defined as a fish stock harvested in such a way that it is not depleted over time. In a sustainable fishery, the next generation has access to the same stream of harvest. The stock “production” remains intact period after period. In a sustainable economy and environment, the use of resources today to meet present needs does not adversely affect the environment or the economy`s ability to produce goods and services in the future. The principle of sustainability does not allow renewable resource flows to decline. This means that there must be a sufficiently large stock of the renewable

resource to generate a flow that can be sustained over time (Hartwick and Olewier 1998).

The concept of sustainability has, according to Pope¹, a long history in the management of marine ecosystems, and forms the rationale for the management systems in most fisheries. The concept of sustainability has led to some important issues such as how to achieve maximum sustainable yield from various fish stocks, and other wider problems. Examples of these problems are the multispecies nature of a fishery, the effects of fishing activities on the sustainability of other parts of the ecosystem and the possible impacts on fisheries of other human activities such as pollution. As a consequence, the approach towards fisheries motivated studies has moved progressively towards the study of marine biodiversity.

Fishery management in modern societies is concerned with regulations of participation, quotas (TAC and its distribution among fishermen), use of gear and the use of monitoring systems (Hoel 1994). These practical tools have two main starting points. First, the regulations are ways modern societies cope with “the tragedy of the commons”. Using the rules of participation and decisions of TAC, government tries to solve the problems of the commons. Second, the regulations are based on a special kind of knowledge about ecological marine systems (Eikeland 1998).² According to Hardin (1968), humans are egoistically calculating actors who will bring a common-pool resource to extinction if they are not subjected to social arrangements, which imply coercion of some sort. He further states that one has to recognise the need for “social arrangements” which limit individual freedom, and he assumes that this will involve administrative law and coercion.

By the establishment of the 200-mile EEZ, the countries involved had an incentive to agree on the joint management of the stocks they share. A major goal related to the

¹ Handout by Pope in relation to lectures in IFM-250, autumn 2001

² Eikeland (1998) in Jentoft (1998)

establishment of EEZs was that a good management should generate a surplus, which could be shared among the countries in whose economic zones the fish are located. Article 61 of the Los Convention establishes the coastal state's responsibilities in accordance to conservation of the living resources. Article 61 (1 to 5) states as follows:

- 1. The coastal State shall determine the allowable catch of the living resources in its exclusive economic zone.*
- 2. The coastal state, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation. As appropriate, the coastal State and competent international organisations, whether sub-regional, regional or global, shall co-operate to this end.*
- 3. Such measures shall also be designed to maintain or restore populations of harvested species at levels, which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors...*
- 4. In taking such measures the coastal State shall take into consideration the effects on species associated with or dependent upon harvested species with a view to maintaining or restoring populations of such associated or dependent species above levels which their reproduction may become seriously threatened.*
- 5. Available scientific information, catch and fishing effort statistics and other data relevant to the conservation of fish stocks shall be contributed and exchanged on a regular basis through competent international organisations...*

In addition, as noted in chapter three, it is a principle in the UNCLOS III that coastal states sharing one or several fish stocks co-operate in their management efforts (art. 63.1). The states shall seek to co-ordinate and ensure the conservation and development of such stocks. As already noted, the 200-mile economic zone brought most of the habitat of the Northeast Arctic cod, capelin and haddock within the economic zones of Norway and Russia. In addition to the management of exclusive

fish stocks, Norway and Russia were, by the establishment of the EEZs, obliged to co-operate in accordance to the management of the shared fish stocks in the Barents Sea.

In the reciprocal agreements of 11th April 1975 on co-operation in the fisheries sector and 15th October 1976 on reciprocal fisheries relations, it is emphasised that the bilateral co-operation between the two countries shall put a particular weight on *preservation effort*. In article 7 of the 1976 agreement, it is stated that the parties shall undertake to further co-operate in accordance to *secure management and preservation* of the species which are in both countries' areas of management³ (the shared stocks).

One factor related to the concept of sustainability is *uncertainty*. The fact that one has admitted that the sea is not a predictable mechanism has resulted in the introduction of the concept of precautionary approach, whose definition is closely related to the definition of sustainability. The precautionary approach involves a long-term view or taking into account the needs for future generations.⁴ By using the precautionary approach in relation to fisheries management the uncertainty related to predictions is reduced. It is argued that by using the limit values related to precautionary approach, the assessment of the resource become more certain. A major problem related to the concept of precautionary approach, however, is its definition. Similar to sustainability, the concept is broad, and difficult to specify (Album et al. 2001).

In the face of uncertainty, which according to Berkes et al. (2001) is always the case in fisheries, fishery management systems must be able to cope with a great deal of subjectivity, at least until there is a good scientific basis for management. When one

³ St.prp. nr. 86 (1974-75) Om samtykke til inngåelse av en avtale mellom Norge og Sovietunionen om samarbeid innen fiskerinæringen

St.prp. nr. 74 (1976-77) Om samtykke til ratifisering av en avtale mellom Regjeringen i Kongeriket Norge og Regjeringen i Unionen av Sovjetiske Sosialistiske Republikker om gjensidige fiskeriforbindelser

⁴ Handout by Pope in relation to lecture in IFM- 250, autumn 2001

is uncertain, one should according to Pope give the benefit of the doubt to the resource.⁵

Fishing activity and quota policy in the Barents Sea

Until the introduction of the 200 mile economic zone in 1978, the main pressure on fishery resources in the Barents Sea came from the Norwegian, British, Spanish and the German trawler fleet. In the mid-1970s, the annual catches of Northeast Arctic cod, taken mainly by this fleet, amounted to around 1,1 million tons (Hamre, 1989:7)⁶, much more than recommended by marine biologists. This level of harvest was particularly destructive for the cod stock, because much of it was young and premature (Jentoft 1998). After the establishment of the 200-mile zone in 1978 and the Norwegian-Russian management regime, there was Norwegian over-exploitation of capelin as well as cod and other whitefish stocks, even though the Norwegian fleet of sea-going trawlers and purse seiners were subject to quota restrictions. Consequently, in 1990 the Northeast Arctic cod was at a minimum total stock level of around one millions tons (Ibid.). Russia did not at this point of time regard the cod as an important commercial species, and tried to hold back in relation to the size of the total quota of cod.

The modernised and efficient coastal fleet is partly responsible for this version of “the tragedy of the commons”, as the fleet was not regulated until 1988/1989 and the cod stock had been depleted by international trawler fleets in the 1960s and 70s (Nilsen 1998)⁷. Despite the TAC regime of Norway and Russia, the stock failed to recover to any major scale. Some recovery occurred in the mid 1980s but was soon reversed (Hannesson 1996).

In the 1990s, Norwegian authorities were clearly getting increasingly worried about the cod stock, which had declined again. The TAC agreed between Norway and

⁵ Ibid

⁶ Hamre (1989:7) in Jentoft (1998)

⁷ Nilsen (1998) in Jentoft (1998)

Russia became smaller than ever. A few years later the stock had recovered and the catches were high again. According to Hannesson (1996), whether the regulations between 1990 and 91 were necessary to achieve this will never be known, because the recovery of the stock coincided with an improved climate in the Norwegian Sea and the Barents Sea. Most likely both factors contributed to the stock recovery.

In the 1990s new management problems emerged for the cod stock. The dissolution of the Soviet Union fundamentally changed the mode of operation for the Russian fishing fleet in the Barents Sea. It became profit driven and started to land its catches in Western Europe – Norway in particular – in exchange for hard currency. At the same time it appeared that Russia was more lax than before in adhering to their quotas (Hannesson 1996). The total overfishing of the TAC is, according to Hannesson (1996), believed to have been not less than 130,000 tons in 1992, but declined to 50,000 and 25,000 tons in 1993 and 1994. Most of the overfishing in 1992 was probably due to overfishing of the Russian quota. In addition to overfishing of quotas by the Norwegian and Russian fishing industries, the good catches obtained in the Loophole by the Icelandic trawlers also seems to have been a problem in the early 1990s (Hannesson 1996). This problem was, however, as noted earlier agreed upon through diplomatic bargains between Norway, Russia and Iceland.

Status of the shared stocks and the precautionary approach

If the intensity of fishing effort on a fish stock is increased beyond a certain level, the biological system is thrown out of balance in two ways. First, young recruits entering the fishery may be caught before they grow to a commercial acceptable size (*growth overfishing*). Second, and even more important, the adult stock may be reduced to the extent that insufficient offspring are produced to maintain the population (*recruitment overfishing*) (King 1995).

King (1995) states that in the early stages of development in a fishery, each increase in fishing effort produces a corresponding increase in the annual catch or yield. At this stage, catch rates will be high, encouraging the entry of more fishing units into the fishery. As fishing effort continues to grow, the resulting increases in yield will not be, as great and mean catch rates (catch per unit effort) will decrease. Eventually a level of fishing effort will be reached when further increases will no longer produce an increase in yield. He further states that this is the level of fishing effort that is required to secure the maximum sustainable yield (MSY), which represents the mean maximum catch that can be taken from the fishery without affecting the biology of the stock or the balance of the system.

Status of the shared stocks in the Barents Sea

*“The size of the Northeast Arctic cod stock is at present about 1,2 million tons, with a spawning stock biomass (SSB) of about 270,000 tons. Both the SSB and the agreed exploitation rate are outside safe biological limits. Fishing mortality has recently been very high, and the spawning stock dropped below B_{pa} in 1998 and has remained below B_{pa} since then. The cannibalism has decreased in recent years and in 2001 some decrease in weight at age was observed. The agreed quota for 2002 is 395,000 tons. ”*⁸

*“The Northeast Arctic haddock spawning stock is outside safe biological limits. However, it seems that the decline will halt. The fishing mortality is too high and is recommended to be reduced to an amount, which corresponds to 64,000 tons. The agreed TAC for 2002 is 85,000 tons.”*⁹

“The Barents Sea capelin stock in the Iceland-East Greenland-Jan Mayen area is at a relatively high stock level. The year classes, which now contributes to the spawning

⁸ Source: annual report (“Havets ressurser”) of the “Institute of Marine Research” in Bergen (2002)

⁹ Ibid

*component of the stock is of medium strength, and the recruitment seems to be average. A preliminary TAC of 700,000 tons is set for the autumn part of the 2001-2002 season.”*¹⁰

These statements related to the condition of the fish stocks shared by Norway and Russia, is quoted from the report of “Havets ressurser” (2002), where an account of the status of the fish stocks in the Barents Sea has been given. According to the IMR in Bergen (2002), several of the important stocks still need protection and strong regulatory measures in order to fall within the safe biological limits in the near future. IMR further states that the demersal stocks are, generally, in a worse state than the pelagic stocks.

Recently it has become clear that the method¹¹ in use for assessment of the cod stock has not been satisfactory for this species. The abundance has varied strongly from one year to the next, and according to the IMR, results from specific years has not been in agreement with what the survey data predicted in relation to the stock development. The IMR has because of this, developed a new model for stock assessment of cod (‘FLEXIBEST’). This model was in 2001 tested by ICES` in relation to the Northeast Arctic cod stock assessment. The IMR has in addition, initiated further analysis of commercial data related to cod.¹²

According to the IMR (2001), the cod stock is by now at the same level as in the 1980s, and to some degree below the average level in the whole period after 1946. The individual growth, especially in relation to younger fish, declined considerable in the years after 1990, and has by now stabilised at a level similar the one of 1988. The same method as for cod is in use for assessing the haddock stock. The methodological problems in the assessment are in general the same for haddock as

¹⁰ Ibid

¹¹ The method in use has been XSA (eXtended Survivors Analysis), which is a standard method used by ICES

¹² Source: annual report (“Havets ressurser”) of the “Institute of Marine Research” in Bergen (2001)

for the cod stock, and it is assumed that the improved models for cod in the future also will be used for haddock. The acoustic method is used each autumn to assess the capelin stock. Estimation of natural mortality of capelin is done in relation to the size of the cod stock, by considering how much capelin stock the cod stock consumes. IMR further states that the capelin biomass increased from 1999 to 2000. This is due to strong year-classes. The recruitment has improved each year. Further development is however difficult to predict. Future development is to a high degree dependent on the development of herring. Unfortunately, the lack of permission to do surveys in the Russian EEZ has complicated the assessment of young herring in the Barents Sea, which has further created uncertainty in relation to future abundance of capelin.

The status of the shared stocks in according to the precautionary approach

The consideration of current trends in global fisheries, as described by the Food and Agriculture Organisation (FAO) in many of their documents, demonstrates that precaution is urgently needed and should be widely applied.¹³ The precautionary approach was adapted to fisheries by FAO and incorporated into the *Code of Conduct for Responsible Fisheries* (FAO 1995, Section 6.5 and 7.5). Similar to the sustainability concept, the precautionary approach concept has been problematic to become operational.

In 1998, the precautionary *reference points* were introduced. The idea of the precautionary approach and the limits related to it can be illustrated in a table, where the reference points of the fishing mortality and the spawning stock is integrated (figure 4.1). The degree of crises is accelerating downwards and to the right in the table. In the green part of the table, both the criteria (F and B) are within precautionary limits. Within the yellow part, in most cases, a moderate reduction in the exploitation may be sufficient to relatively get quickly back to a precautionary

¹³ Greenpeace International, March 1984 (“A precautionary approach to fisheries”)

management. The red part of the table requires revolutionary efforts to get the stock back to a precautionary management.¹⁴

Figure 4.1: Schematic presentation of reference points in a diagram showing fish mortality and spawning stock. The areas of reference points indicates different action zones; Green: safe zone, inside precautionary limits (= inside safe biological limits). Yellow: dangerous zone. Red: probably not sustainable state (Source: “Havets Ressurser” IMR 2001).

Considering the historical perspective of the development of the Northeast Arctic cod stock in such a table, it can be seen that after 1946 it is only the years 1946-1951, 1953-1954 and 1991 that the stock has been within the green part of the table. The whole period of 1946-1987 faced a general movement from upper left towards the lower right corner. After the period 1988-1991, the stock has gradually moved towards the right, into the yellow and red part of the table. Considering today's situation, the fishing mortality has to be reduced to a level well below F_{pa} in order to bring the Northeast Atlantic cod stock back to the green part of the table (ICES).¹⁵

In ICES's explanation of how the advises are going to be comprehended, ICES states that when a stock is declared to be outside safe biological limits, the states have to

¹⁴ Source: annual report (“Havets ressurs”) of the “Institute of Marine Research” in Bergen (2001)

make attempts against this situation. It may, however, be difficult (sometimes impossible) to bring the stock towards safe biological limits in the short run. An alternative may then be to make a plan describing how the spawning stock is going to be rebuilt and/or the exploitation reduced. If such a plan of rebuilding does not exist, ICES will normally characterise the government in the respectively state as not following a precautionary approach.

The situation with the Northeast Arctic haddock is that even though the spawning stock is decreasing, it is still within B_{pa} (80,000 tonnes), and it seems that the decrease in the stock is soon coming to a stop. According to ICES the stock is harvested outside safe biological limits. ICES recommend that the fishing mortality be reduced. The Joint Commission established the total quota for haddock in 2001 to be 85,000 tonnes. This is an increase of 13,000 tonnes compared to year 2000.¹⁶

The Barents Sea capelin is at present growing in size, and was estimated at 4,3 million tons during autumn 2000. ICES recommended that up to 630,000 tons was to be harvested during spring 2001. In November 2001, the Joint Commission agreed to harvest 630,000 tons of Barents Sea capelin through the winter of 2001.¹⁷

As already noted the Northeast Arctic cod stock is well below the current precautionary limits, according to fishing mortality and the size of the spawning stock. The cod stock biomass is decreasing and the general size of the fish is also decreasing. Because of the decreasing size of the spawning stock, the recruitment will also decrease. In general the whole cod stock is decreasing, and a depletion of the stock may be the result.

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Ibid

Discussion

As noted earlier, the fisheries management of Norway and Russia within the Joint Commission has not led to any serious conflicts, and the co-operation was for a long time been seen as a success to be followed by other states, which are in a similar situation.

It may be said that the regime as an *institutional arrangement* has been a success. However, it can be argued that the management regime has not succeeded in meeting the objectives of management of the shared stocks in the Barents Sea. This could be related to the issue of biological sustainability and the precautionary approach. On the other hand, if the alternative to the regime is no regime, then most probably the situation today is much more satisfactory than it would have been without any formal agreement between the two countries.

Even if the institutional arrangement of the regime may be seen as a success, the regime is not a goal in itself. Evaluation of the management regime implies the analysis of what the objectives of the regime are, and whether these objectives are met. One of the main expectations of the Norwegian-Russian fisheries management regime was to prevent over-exploitation of the natural resources in the Barents Sea. The question is; has this happened? What are the consequences of the management arrangement on the shared stocks in the area? Has the fisheries management regime of Norway and Russia been able to conserve the shared stocks in a biologically sustainable manner, and in accordance to the objectives of the United Nations Convention of the Law of the Sea?

According to Hønneland (2001)¹⁸, the fisheries management co-operation between Norway and Russia has for a few years gone from being frequently quoted as an example of a well-directed and fruitful co-operation between east and west, to

¹⁸ Dagens Næringsliv, 30th October 2001

become distinguished for bitter accusations and threatened chaos. He further states that whereas the two countries recently boasted of being “world champions” in relation to fisheries management, now they are left with a cod stock in deep crisis. The Joint Commission has repeatedly established quotas, which are higher than scientific advice from ICES.

From the information above, which is related to the status of the shared stocks, it may be asserted that the management regime between Norway and Russia has not been able to meet what the LOS Convention requires in relation to conservation and utilisation of the natural resources within the EEZ. This seem to be the situation for the Northeast Arctic cod and the haddock. For the haddock and capelin stock, the status seems to be, at least, under control. As mentioned above, the LOS Convention requires coastal states to ensure that fish stocks in the EEZ are not endangered by over-exploitation (art. 61(2)), and that the stocks are maintained at or restored to “levels which can produce the maximum sustainable yield, as qualified by relevant environmental and economic factors” (art. 61(3)).

Both the Directorate of Fisheries and the IMR in Bergen seem to agree that the development in one of the world’s most productive areas is very perilous. Areas, which in general had a high abundance of juveniles, are now emptied, according to the head of division¹⁹ of the Directorate’s section for control of fishing areas. According to Aglen at IMR, there are almost no juveniles in the Barents Sea. The spawning stock is small, and there is a big decrease in recruitment. Three year-classes of cod juveniles are gone.²⁰

According to Knut Korsbrekke, who is a fisheries scientist at the IMR, it is not unnatural that fishers have good catches the winter of year 2002. According to Korsbrekke, the fishers are now catching a relatively great amount of fish, but the size of the fish is small. There may be good catches also next year (2003), but the catches may however reduce after that. This is because of the non-existence of year-

¹⁹ Jens Petter Hansen

classes related to the four latest years. On the other hand, it seems like the haddock stock is in better condition than it was some years ago. The condition of the stock might be much better in the years to come, because the stock is said to be in a rebuilding phase.²¹

There are, however, some that argue that the cod quota is not irresponsibly high. According to the Norwegian Minister for fishery, a cod quota of 395,000 tons in 2002 will contribute positively to the size of the total stock and the spawning stock will increase in the year to come. Even if the quota of 2002 is higher than the advice from ICES, it is not necessarily irresponsible. According to the Minister, it is not in any danger to the cod stock. The size of the stock will increase, even though not as much as first predicted.²²

Fiskerinæringens Landsforbund (FNL) in Norway defended the quota agreement of 395,000 tons in 2001. This was a proceeding from the year before. The agreement has been indicated as being irresponsible and a treat to the cod stock. According to Mordal (director of FNL), there is no basis for using terms such as “irresponsible” and “collapse” in relation to the management of the cod stock. FNL has earlier called attention to the fact that the concept of “outside safe biological limits” is related to assumptions, which is defined on a highly uncertain scientific basis. In accordance with biological criteria, it defines a critical level for the spawning cod stock to be 112,000 tons. Today’s precautionary level for the SSB is 500,000 tons. According to FNL, the resource scientist works with greatly uncertain factors. Experiences show that the biological fluctuations in the sea are factors of even greater uncertainty than the fishing itself.²³

It may be argued that the scepticism related to scientist’s advice, concerning abundance assessment of fish stocks, is legitimate. The major dilemma facing

²⁰ Dagbladet, the 22th February 2002

²¹ Bladet Vesterålen, the 22th February 2002

²² Svein Ludvigse in Nordlys, the 14th November 2001

²³ Vesterålens Avis, the 15th November 2001

resource managers is, according to Gordon and Munro (1996), the necessity to make correct policy choices while having insufficient, wrong or conflicting information. There exists uncertainty connected with all kinds of stock assessments, because the observation assessments are related to are uncertain, and the models in use are only a simplification of the reality, in which case there may be doubts as to how the observations are going to be interpreted. The precautionary approach model, however takes this issue of uncertainty into consideration. The uncertainty is taken into consideration in the way that safety margins are integrated in the approach.²⁴ By using reference points related to the precautionary approach in the fisheries management, it is possible to avoid a high degree of uncertainty in stock assessments and the fisheries management.

On the other hand, there are several scientists, who argue that the state of the fish stocks in the Barents Sea can only *partly* be explained by natural fluctuations in the stocks and uncertainty in scientific stock assessment. A major reason for the decrease in the fish stocks seems to be fishing mortality, which is too high. According to the IMR, the commercially most important fish stock, the Northeast Arctic cod, is outside the biological safe limits and that the fishing mortality is too high, and is still increasing. There has also been an unsatisfactory *catching pattern* in the fishing for Northeast Arctic cod, with too many small fish being caught. According to Churchill and Ulfstein (1992), the two coastal states, Norway and Russia have failed to agree upon the necessary conservation measures for the fishery.

Natural fluctuations are important factors behind the state of the stocks in the Barents Sea, i.e. the capelin stock. But these fluctuations may, however, not explain the long-term drastic decline of the Northeast Arctic cod stock and the herring stock in the 1960s. According to Churchill and Ulfstein (1992), this development must be attributed to an ever-increasing capacity and effectiveness in the fishing fleet and unsatisfactory management. Furthermore, the authors state, that the general trend of over-fishing must be attributed to imperfect scientific advice, and a lack of ability

²⁴ Havets Ressurser – Institute of Marine Research 2001

and will among fisheries managers to follow scientific advice by adopting proper conservation measures, and illegal fishing by the fishermen.

The idea of Hardin (1968); “the tragedy of the commons”, presented in chapter two, illustrates the view that unrestricted harvesting of fish in a hypothetical fishery would most probably result in a collectively tragedy. The Barents Sea fisheries may not, however, be seen as belonging to the category of having unrestricted harvesting. The fisheries are regulated and controlled at the international level through the Norwegian-Russian management regime, and within each of the countries, at the domestic level. Some of the stocks in the Barents Sea are within precautionary limits, while others, i.e. Northeast Arctic cod stock is outside the precautionary limits.

According to Pope²⁵, the most obvious objectives of fisheries management are the biological objectives of resource conservation and the physical yield maximisation, the economic objective of profit maximisation, and the socio-political objectives concerned with employment and equity. In practice as Pope indicates, it is not possible to satisfy all these objectives simultaneously. Trade-offs has to be made between them, but national fisheries plans rarely specify what these should be. Therefore they tend to be of little help in setting the overall goal of fisheries resource management. As seen earlier in the text, i.e. the theory of Putnam, there are many different interest groups in the fishery sector within a state. Taking into consideration the statement of Pope, that there are many potential problems related to management on a unilateral level, one can imagine the many challenges and problems faced in the management of fisheries on a bilateral/international level. The fact that interest groups in both Norway and Russia have to be taken into consideration in relation to fisheries, may be one of the reasons why the management regime in general have not been able to manage i.e. the Northeast Arctic cod stock according to the precautionary approach.

²⁵ Handout in relation to lectures in IFM-230, spring 2001.

The reason for an eventual mismanagement of the shared fish stocks of Norway and Russia may be that the management process in both countries is driven by politics and not by profitability. That unfettered competition leads to economic and possibly biological overexploitation of fish stocks is well established, both in theory and practice (Hannesson 1996). What, according to Hannesson (1996), appears by now to be equally well established, is that government regulation of the industry does not necessarily lead to any better results. At best it may save the fish stocks from ruin, but it typically does so at the cost of making fishing operations much less efficient than they could be, and in addition it uses human and other resources for the purpose of regulation. Economically, the result may be inferior to unfettered competition, as the latter would avoid the costs of the regulation itself (Hannesson 1996).

While economic progress by definition must involve a net gain, the processes by which it proceeds are typical such that some lose and others gain. The role of politicians who wish to promote the welfare of the general public is to make these processes work in such way that the net gain is equitably shared (Hannesson 1996). The result of a politically driven fisheries management process is, according to Hannesson (1996), an industry characterised by overmanning, excessive fleet capacity, and low profits or even losses. At best the fish stocks may be reasonably well protected through various restraints on the industry, but since this pushes costs and erodes profits there is a strong temptation to take more fish than ought to be taken. According to Hannesson (1996), there is no other way out of this impasse than to design management systems that are profit driven and have built-in incentives to further economic efficiency.

In the year 2001, Norway and Russia came to an agreement that the spawning stock of Northeast Arctic cod should rebuild to more than 500,000 tonnes, and that the fishing mortality should be brought down to under $F_{pa} = 0,42$. The parties also agreed to ask ICES to re-evaluate B_{pa} in relation to the dynamics of the cod stock the last 30-40 years. As noted above, the Joint Commission agreed upon a haddock quota in 2001 of 85.000 tons, while the advice from ICES was 66,000 tons. The Joint

Commission chose, however, to follow the advice of ICES in relation to the capelin quota. The advice from ICES was 630,000 tons for capelin, which was followed by the Joint Commission. In addition, in the 30th session of the Joint Commission, Norway and Russia decided to establish a working group related to principles and criteria for long-term- and sustainable management of living marine resources. From this, one may conclude that it seems like Norway and Russia are taking the status of the Northeast Arctic cod stock seriously, and that they are trying to do something to get the stock back within safe biological limits, and furthermore biological sustainability. It also seems the two parties are concerned about the condition of the shared stocks, and that the major objectives of the EEZ, LOS Convention and the bilateral agreements are not satisfactorily aimed at in the Norwegian-Russian fisheries management regime of the Barents Sea.

It seems, however, as a general point of view from the Norwegian and Russian government that the shared stocks are managed in relation to sustainability and that the total quotas for capelin, haddock and cod are not too high. It is argued that the scientific advises from ICES are established on an uncertain basis, and that natural fluctuations might be seen as a reason for the unstable cod stock. Some Russian scientists have even argued that the advice from ICES is a tremendous underestimation, and that much higher quotas may be agreed upon today without threatening the shared stocks.

According to Pope²⁶, ICES has the objective of giving advice to give “Sustainable Fisheries in Healthy Ecosystems”. Advice from ICES is thus mostly concerned with the actions necessary to lift stock size out of the potentially unhealthy levels. It does not recommend those measures which would be necessary to achieve other possible objectives and which would usually require a heavier regulation in relation to cut back in fishing mortality rate than is needed to keep healthy stocks.

²⁶ Handout in relation to lectures in IFM-230, spring 2001

In chapter five analyses will be made on how the allocation of the renewable resources in the Barents Sea are organised in the management regime. In this chapter I will go deeper into how the management regime between Norway and Russia is worked out at the international level (level II), and how the countries domestic political systems (level I), which are related to the allocation of the renewable resources, works. The fact that the regime has *not* resulted in a sustainable management of the shared renewable resources in the Barents Sea, may be an effect of the complex allocation processes of the regime. These allocations of the renewable resources take place in a process where the domestic-and international levels interplay with each other and are interrelated.

5 The allocation of the natural renewable resources in the Barents Sea

Introduction

The objective of this chapter is to present and analyse the organisation of the *allocation* processes of the natural renewable resources in the Norwegian/Russian fisheries management regime of the Barents Sea. Putnam's theory *two level games* is made use of for illuminating the political processes in the international negotiations between Norway and Russia, and the interplay between the domestic and the international level in the negotiations.

As noted in chapter two, Putnam (1988) are viewing the politics of many international negotiations to be conceived as two level games. At the national level (level I), domestic groups pursue their interests by pressurising the government to adopt favourable policies, and politicians seek power by constructing coalitions among these groups. At the international level (level II), national governments seek to maximise their own ability to satisfy domestic pressure, while minimising the adverse consequences of foreign development. At the time Putnam's *two level games* theory was introduced, the theory was innovative in accordance to general regime theory, in the way that it was focussing on analytical levels other than solely the international level.

According to Churchill and Ulfstein (1992), there are two main criteria that may be used when sharing joint stocks between the coastal owner states: historic fishing and the distribution of the fish stock in the zones. Churchill and Ulfstein (1992), further states that it would, seem consistent with the philosophy behind the 200-mile system to share the stocks according to the proportion of the stock found in each of the states' zones. It is, however difficult to establish such proportion as the fish consist of several components: eggs and larvae, young fish and mature fish. In addition it is difficult to measure the spreading/distribution of the species and their exact migration patterns.

The following analyses show the bargaining situation in the Joint Commission at the international level. In accordance with Putnam's *two level game* theory, this is *level II* in the two level game processes. In addition a presentation will be made of how the allocation of the natural renewable resources is institutionalised within each of the two countries. This includes how the domestic political systems are formalised, to which extent user-groups participate in the political processes, and how the quota distribution is formalised within the Norwegian- and Russian political fisheries systems. These processes are related to *level I* in Putnam's theory.

Bilateral negotiation in The Joint Russian-Norwegian Fishery Commission (level II)

*Formal organisation and processes*¹

The Joint Commission includes members of Norwegian and Russian fishery authorities, ministries of foreign affairs, marine scientists and representatives of fishermen's organisations. The administrative leader of the Norwegian Ministry of Fisheries heads the Norwegian delegation to the Joint Commission. The first Deputy Chairman of the State Fisheries Committee of the Russian Federation heads the Russian delegation (Hønneland and Nilssen 2001).

Before the two countries annual meeting in the Joint Commission, there are exchanges of letters throughout the year concerning the agenda of the meeting. The agenda is relatively fixed. The exchange of letters, which is between the Ministry of Fisheries in Norway and the State Fisheries Committee of Russia, contributes to draw up a scheme for the annual meeting.

The meeting of the Joint Commission consists of *plenary sessions, working groups and chairmen meetings*, which in the process work in parallel. There are working groups, which are permanent, and some which are established from year to year (ad

¹ Source: Christel Elvestad (interview 9th February, 2002)

hoc). Permanent working groups are the statistical group, the scientific working group and the working group related to recording (reporting the meeting). In the working groups, representatives from both Norway and Russia participate. In the scientific working group, there are scientists represented. In 2001, an additional working group was established. This working group was related to seal issues. Since this was not a permanent-working group, it may not be represented in year 2002. During the meeting of the Joint Commission, the chairmen group regularly consults with representatives from the different working groups. The permanent committee, which work with practical issues related to regulation is also a permanent unit. When the total quotas for the shared stocks are going to be negotiated, the heads of the Norwegian and Russian fisheries delegation withdraw so that the negotiation can be executed without too many participants.

As a general standard procedure, the Joint Commission starts the yearly meeting by an *opening of the session*. The next step in the process is to *approve the agenda* and to *appoint joint working groups*. Further, the parties *exchange catch data* for the previous year and present year. The next step in the process is related to *regulation of cod and haddock*, which implies the establishment of TACs and allocation of quotas. The established total quotas of the 30th Joint Commission for cod in 2001, was 355, 000 tons and for haddock 85, 000. Third countries were allocated 55,900 tons of cod and 4,400 tons of haddock. The Joint Commission also *establishes total quotas for capelin*, which in the 30th session was agreed to be 650,000 tons. Norway was allocated 390,000 tons (60 %) and Russia 260,000 tons (40 %).

In addition to the allocation of the shared stocks, the Joint Commission deals with other issues related to the management regime; regulation in general, research issues and control. Management issues related to other species than cod, haddock and capelin are discussed, in addition to other issues and problems related to the management regime. Finally, the parties agree upon the place and time for the next Joint Commission.

Fisheries management by “inclusion”: Norway (level I)

Three generalisations arise from an examination of Norwegian fisheries management (Hoel, Jentoft and Mikalsen 1991)²: political and administrative decision-making is centralised, and corporatist in that organised interests play a strong role in policy-making, and yet there are strong internal differences and organisational cleavages within the fishing industries involved.

Formal organisation

The first step in the allocation process takes place at the domestic level, where strategies for bilateral negotiations with Russia are worked out. The next step, on the Norwegian side, is planning the negotiations with the European Union, Greenland, the Faroese and Iceland. These strategic planning takes place as a pre-negotiation at the domestic level (level I). Further the process is moved to the Joint Norwegian-Russian Fishery Commission, at the international level (level II). Finally the allocation and distribution process returns back to the domestic level. The resulting TACs from the bilateral negotiations with Russia, is the starting point of the consultative process at the national level. The most important issue on the agenda is allocating the resulting TACs among different “segments” of the fleet.

The allocation of the TACs is the primary task of the *Regulatory Council*³ (Reguleringsrådet). The Regulatory Council has eleven members, and the composition is as follows: the Fisheries Director (one member), the Norwegian Fishermen’s Association (five members), Fiskerinæringens Landsforening (FNL) (two members), Norsk Nærings- og Nytelsesmiddelarbeiderforbund (NNN) (one member), Norwegian Seamen Union (one member), and the Sami people (one member).⁴ The regulatory councils place user groups in an advisory position. Fishermen advisers represent functional groups (by gear type) and are appointed by the Fishermen’s Union (Jentoft

² Hoel, Jentoft and Mikalsen (1991) in Apostles et al. (1998)

³ The Council is an advisory body to the ministry, which includes representatives from numerous interest organisations and institutions.

and Mikalsen 1994).⁵ The Council's agenda is prepared by the *Directorate of Fisheries*⁶, which also works out a proposal for regulatory measures during the coming year, along with detailed specifications of its distribution implications (Apostle et al. 1998). A few weeks after publication of the proposal, the council meets to discuss and decide on the options outlined. Reportedly, there is, pressure for consensus and unanimity, but a vote is always taken when there is obvious disagreement, which according to Apostle et al. (1998) is often the case. The final decision as to management strategies lies with the *Ministry of Fisheries*.⁷

According to Apostle et al. (1998), there is little decentralised decision-making in the Norwegian political system of fisheries. Fisheries policy-making is thus characterised by a highly formalised system of consultation and negotiation at the national level (level I). On the other hand Apostle et al. (1998) indicates that, internal differences and organisational fragmentation influence the system. On the national level, fisheries management becomes an exercise in conflict resolution through a time-consuming process of consultation and bargaining. The nature and outcomes of this process also depend on the outcome of bilateral negotiations between Norway and other fisheries nations, i.e. Russia (level II).

User-group participation

In Norway the fishermen are represented both in the bilateral management regime (the Joint Commission) and, as mentioned above, in the national distribution of quotas (cf. Figure 5.1). The Norwegian Fishermen's Association⁸ represents close to all Norwegian fishermen and the variety of their interest. It is heavily involved in most aspects of the management process. A particularly fruitful argument for the present context is the claim that this involvement in management issues has increasingly

⁴ FID – Reguleringsrådet, November 2001 (<http://www.dep.no/fid/norsk/tema/fiskeogfangst>)

⁵ Jentoft and Mikalsen (1994) in Jentoft and McCay (1995)

⁶ The Directorate of Fisheries is essentially a "professional" or staff institution whose main role is to provide expertise and advice to the Ministry of Fisheries

⁷ Policy-making and implementation, at least formally, are the exclusive domain of central government, the Ministry of fisheries

⁸ In the following named as the Association

become the core of the *institutional identity* of the Association (Sydnes 1998).⁹ It is, however, important to amplify that though the Association represents the highest amount of members, there are, as noted above, several other interest organisations present in the process.

Until the early 1990s, the Association was mainly occupied with negotiations with the Ministry of Fisheries on the annual subsidies of the fisheries sector. As these subsidies have gradually vanished, participation in the management process has emerged as an important function.

Figure 5.1: Represented user-groups in the two main decision-making bodies in Norwegian fisheries (Source: Hønneland 1999).

According to Hønneland (1999), the fishermen in Norway are members of an interest organisation with a lively activity at the regional and local level. Participation in the management process becomes a part of the fishermen's social life. The existence of a certain level of conflict both among fishermen and between them, and the governmental representatives is perceived as legitimate. According to Christensen and Egeberg (1994); Kvalvik, (1976); Rokkan, (1966)¹⁰, Norway displays a well integrated corporatist system of interest associations, providing for stable and highly formalised relationships between government and interest groups within most sectors of the economy.

⁹ Sydnes (1998) in Hønneland (1999)

Quota allocation in Norway

Quotas are shared among individual shipowners, and catch limitations specified at the national level in Norway. The main conflict tends to occur between the coastal and the ocean-going fleet. The former is mainly registered in Northern Norway and fishes with conventional gear. Around 70% of the total cod quota have been allotted to the coastal fleet in recent years. The dividing keys for allocation between the different “sector” fleets, (which was agreed upon, on the yearly meeting of The Norwegian Fishermen’s Association in 1994 and 2001), has been central in the fisheries management the recent years. The Ministry of Fisheries is putting a major weight on the recommendation from the Association and the Regulation Council when it is stipulating the directions, which regulates the different species.¹¹

The traditionally most important Norwegian fishing activity is on cod, north of 62°N, and the northeast Arctic cod is also the most economically valuable species in Norway. When the Norwegian quota is appointed, it is divided between conventional vessels and trawls. The dividing keys, which are in use, differ in relation to whether the total quota is low or high. If the total quota of cod is low, the trawls will get a relatively lower part of the total quota. However, when the total quota of cod is high, the trawls will get a relatively better disbursement. The Norwegian quota for year 2000 of 193,000 tons was allocated by 57,250 tons (29.6%) to trawls and 136,150 tons (70.4%) to the conventional fleet.¹²

Fisheries management by “federation”: Northwestern Russia (level I)

According to Hønneland and Nilssen (2001), the fishing industry of Northwestern Russia experienced major changes during the 1990s. First, increased fuel costs made it

¹⁰ Christensen and Egeberg (1994), Kvalvik (1976, Rokkan (1966) in Apostle et al. (1998)

¹¹ FID – Regulering av fisket etter torsk nord for 62 grader N
(<http://www.dep.no/fid/norsk/regelverk/rutiner>)

¹² Ibid

impossible to continue a significant distant water fishing, which reduced the total catches from more than 1 million tons at the beginning of the decade to less than 500,000 tons at the end. Combined with an increased tendency to deliver catches from the nearby Barents Sea abroad, this resulted in a major crisis for the land-based fish processing industry of Murmansk. The federal authorities have, according to Hønneland and Nilssen (2001), remained in control of the fisheries management system, but regional authorities have seen their responsibility increased as compared to the Soviet period.

Formal organisation

In the Soviet times, the whole range of fishery-related activities in the Russian northern basin was assembled under one common umbrella of “Sevryba”. Until 1990, the distribution of quotas was in Russia/Soviet carried out by “Sevryba”. In 1992, “Sevryba” was transformed into a stock company, and has gradually lost control of the business activities of its member enterprises. The distribution of quotas was afterwards transferred to a corporate organ, the Technical-Scientific Catch Council (TSCC), consisting of representatives from “Sevryba”, marine science as well as federal authorities. Since 1994, regional authorities have gradually been given a greater say in the management process (Hønneland 1999).

According to Hønneland (1999), the TSCC (which continues to be controlled by “Sevryba”) has seen its responsibility reduced to the distribution of the total Russian Barents Sea quota between the three federal subjects of Murmansk and Arkhangelsk oblasti, and the Kareliya republic. Within each federal subject, regional Fishery Councils, headed by representatives from respective oblast`/republic, perform the further distribution of quota shares between individual shipowners.

In 1993, the Murmansk *regional administration* for the first time demanded to have a say in the quotas distribution. The Murmansk regional administration in 1993 attempted to gain control of quota share, which it intended to subsequently sell to

fishing companies. The demand was turned down by the TSCC with the argument that only organisations actually owning vessels could be allotted quotas (Hønneland 1999). Towards the end of 1993, negotiations led to an agreement which transferred the responsibility for managing the Russian part of the Barents Sea fish quota to the regional/republican administrations in Murmansk, Arkhangelsk and Kareliya. A fisheries Department was set up in the Murmansk regional administration in November 1993. Similar bodies were established in Arkhangelsk and the Karelian republic during spring 1994 (ibid.). However, although the agreement between the Fisheries Committee and the Murmansk regional administration is still in effect, it has, according to Hønneland (1999), not had the practical consequences that many, especially in the West, had anticipated. "Sevryba" immediately denounced the agreements as contrary to federal law, and pointed out that the regional administration lacks the expertise and experience to take on responsibility for the complicated management process.

Since the distribution of quotas for 1996, the agreement has been implemented in the sense that the regional administrations issue quota decrees. However, their role seems, according to Hønneland (1999), to be more secretarial; actual decision making power continues to rest with the federal Fisheries Committee and partly still with its regional representative "Sevryba".

The Fisheries Committee was deprived of its ministerial status and subordinated to the Ministry of Agriculture and Foodstuffs in March 1997. The governmental structure of the Russian Federation was reorganised in connection with the economic and political crisis in the autumn of 1998. The Fisheries Committee was re-established as a separate structure (Hønneland 1999).

User-group participation

In an analysis of the extent to which the contemporary fisheries of Northwestern Russia can be characterised as having user-group participation, the single most

conspicuous feature is, according to Hønneland (1999), the legacy from the past. The system was a corporate one where all activities within a given sphere of the economy were assembled under one common umbrella. “Sevryba” was at one and the same time the enacting management body (“government”) and the representative of industry interests (“user-groups”).

The aim of the post-Soviet transformation of “Sevryba” was to separate management and industry interest from each other: regional authorities were to take over management responsibilities whereas “Sevryba” was to retain its role as an association of industry enterprises (Hønneland 1999).

“Government” in the context of Northwest Russian fisheries is today, according to Hønneland (1999), above all represented by the federal fishery authorities on the one hand, and the Murmansk regional administration – the governor and his apparatus – on the other hand. The federal fishing authorities have the final say in all the important decisions.

The “user-groups” of Northwest Russian fisheries are today, according to Hønneland (1999), made up of the individual fishing enterprises, the collective fleet, the approximately 70 small enterprises assembled in “The Union of Private Fishery Enterprises in the North” (“Sever”), including the emerging coastal fishing fleet, and the administration of “Sevryba” as one of the numerous shipowners. He further states that the user-groups of Northwest Russia fisheries are heavily represented in the management process. In fact, all major user-groups are represented in all three levels of management: in the Joint Norwegian-Russian Fishery Commission, in the TSCC, and in the regional Fishery Councils (cf. Table 5.2).

Table 5.2: Represented user-groups in the three main decision-making bodies in Northwest Russian fisheries (Source: Hønneland 1999).

Quota allocation in Russia

The Russian total catch in the northern basin has, according to Hønneland and Nilssen (2001), in recent years been distributed in two stages. The TSCC divides the catch between the federal subjects and decides how much of the catch is to be allocated for “basin purposes”. Most of the catch is allotted to Murmansk *oblast`*, whereas Arkhangelsk *oblast`* and the Republic of Karelia receive less. Percentage distribution of Russian total cod quota between the three federal subjects in 1999 was as follows: 49 percent to Murmansk *oblast`*, 16 percent to Arkhangelsk *oblast`*, and 13 percent to The Republic of Karelia (Hønneland and Nilssen 2001).

The regional fisheries councils divide the quotas between the ship-owners. The head of the fisheries division of the regional administration presides over these councils, but

“Sevryba” has also largely maintained its position here (Ibid.). All decisions made in both the TSCC and in the regional fisheries councils, according to Hønneland and Nilssen (2001), must be approved by the State Fisheries Committee.

The allocation of quotas is regulated through a preliminary provision of 22th March 1995 from the State Fisheries Committee.¹³ In addition to the criteria of proven catch capacity and fished quotas of previous years, several circumstances are listed that may affect quota allocation. These include: the rights of indigenous people, the interests of fishery-dependent communities, contributions to research funding, rescue service, supervision and reproduction of fish stocks, and compliance with fishing regulations (Hønneland and Nilssen 2001).

In connection with the attempted reorganisation of the quota distribution system in 1997, new criteria were determined: maintenance of employment, contribution to the social welfare of fishermen, payment of taxes, and catch of other species other than cod and haddock. Finally, fish supplies to the domestic market were emphasised in the 1999 proposal as a main criterion for the quota distribution (Hønneland and Nilssen 2001). In reality, the new criteria according to Hønneland and Nilssen (2001) are not in practice equally important for quota distribution. It seems that the old principle of catch capacity is in practice still a major criterion in the quota distribution of Russia’s northern basin.

One will in the following analyse the bilateral negotiation process of Norway and Russia at the international level (level II). This bargaining is carried out within *The Joint Russian-Norwegian Fishery Commission*.

Discussion

One aspect, which has got major attention in Norwegian media, is that the negotiation in the Joint Commission is closed to the public. This is the general procedure, however, for the majority of international negotiations of this kind, and results in the situation where information related to what is discussed in the committee, and the arguments and strategic positions of the two parties are not easy to get. The general argument for this closure is that the negotiations between the countries are a strategic game, where one party does not want the other to know their strategic argument in the negotiation process. According to the Norwegian Minister of Fisheries¹⁴, the negotiations between Norway and Russia are a process of “give” and “take” for establishing a final agreement. Making the negotiation strategy public may result in a worse position for Norway in the following negotiation with Russia. The industry interests of Norway might be injured because of a potential publicity in a short- and long-term perspective.¹⁵ One may assume that Russia has the same attitude. According to Putnam (1988), much of what happens in any bargaining situation involves attempts by the players to restructure the game and to alter one another’s perceptions of the cost of no-agreement and the benefits of proposed agreements. In some instances, perhaps even unintentionally, international pressures “reverberate” within domestic politics, tipping the domestic balance and thus influencing the international negotiations.

Decisions pertaining to the size of the TACs and subsequent allocations, in particular, is not just a question of abiding by the scientific advice from ICES. The scientific advises changes over time, and is not a constant factor. Negotiations between Norway and Russia are according to Apostle et al. (1998), highly political. Obvious national interests are at stake, as illuminated by the annual “tug of war” within the Joint Norwegian-Russian Fishery Commission. It seems the negotiation process is susceptible also to “internal” pressures, that is, from interest groups like the

¹³ The State Committee of the Russian Federation for Fisheries No. 49 of 22 March 1995 in Hønneland and Nilssen (2001)

¹⁴ Svein Ludvigsen

¹⁵ Oral question time in Stortinget, 2001 – 11 (<http://www.stortinget.no/spti>)

Norwegian Fishermen's Association and Fiskerinæringens Landsforbund, which is represented in the Joint Commission. The fact that the interest organisations are represented in the allocation process indicates that they also, at least, have a *say* in relation to the negotiations. Participation is an important assumption in accordance with democratic political theories, and user group participation strengthens the legitimacy of the system. Democratic values have a fundamental basis in at least the Norwegian political system (co-management). The fact that the overall quota from time to time has been different from the advice of ICES indicates that biological assessments are not the only factor at work (Apostle et al. 1998). According to Apostle et al. (1998), fisheries management is political: it is about the articulation and coordination of conflicting interests and demands and the exercise of "cruel" and controversial choices.

It may be stated that *user group interests* have an influence in relation to the allocation processes in the management regime. On the other hand, there are also *national* interests at stake. These might be interests related to the domestic political objectives of the state, which are benefits the whole society. Both organisational interest, national interest and scientific interest seems to influence the allocation process, but it is important to have in mind that the government has the final decision and the formal power.

In the 1980s the Norwegian quota politics was, according to Aasjord (2001)¹⁶, much more aggressive than the Russian one. Until 1988 it was Norway which to a high degree was forcing an increase in the total quota of cod, while Russia was trying to hold back. The explanation for this may be that Russia did not view the cod as an economically valuable species, and thus not an incentive to increase the cod quota. The capelin seemed to be more important for the Russian fisheries. In relation to the resource crises of the cod in the end of the 1980s, there was a general political consensus in Norway that one in the future has to be more responsible and cautious with respect to the fisheries management.

¹⁶ Aasjord (2001) in Album et al. (2001)

According to Aasjord (2001), there was a change in attitude within both government and industry in Norway during the 1990s. The attitude today is moving in the direction of increased responsibility and sustainable principles. On the other hand, it is emphasised that Russia has changed focus in a direction of a more aggressive quota politics, which includes demands for increased quotas on cod. One reason for this seems to be the structural and political changes in Russia, which has resulted in decreased status for fishery politics in the political system. A second reason, which might be the most important one, is that introduction of market economy in Russia has made the cod economically important as an export product. The director of fisheries in Norway, who is deputy chairman in the Norwegian delegation, stated that the differences between Norway and Russia in the negotiations of 1999 were considerable, and increased in the two previous years. In reality, the Norwegian delegation had the choice between no agreements or to accept a total quota, which was above the Norwegian position (Album et al. 2001). If the result had been no agreement, the situation would probably have been worse, because the result would have been free fishing in the area. The situation of no agreement would most probably have resulted in Russia in addition to third countries harvesting an amount much higher than the quota agreed upon.

The representatives from the Russian fishing industry, according to Aasjord (2001), are influencing the premises of Russian quota politics in a higher degree today than in the 1980s. “*The Russian Minister of fishery is dependent of support from the industry to be able to carry out his politics*”.¹⁷ The Russian quota politic has become more similar to the Norwegian one, in the sense that the Russian industry interests, in a much higher degree than in the 1980s, are influencing the premises of the politics. One of the reasons for this may, as noted above, be the structural and political change in Russia. The Russian political system has been changed in the way that user groups, i.e. the fishing industry, may have a say in important political issues related to fisheries. How relevant this influence is in accordance to the final quota result of Norway and Russia

¹⁷ Kjønnøy in Album et al. (2001)

is disputed, but there are factors that seem to indicate that the fishing industry (represented by interest organisations) in both Norway and Russia influence the quota negotiation in the Joint Commission. Statements from interest organisations in Norway previously to the quota bargaining in 1998 and 1999, according to Aasjord (2001), indicate that the government in Norway is facing considerable pressure related to increased quotas.

According to Putnam (1988), the national governments seek to maximise their own ability to satisfy domestic pressure at the international level (level II), while minimising the adverse consequences of foreign development. The chairman in the Norwegian Fishermen's Association Oddmund Bye stated according to the advice from ICES in 1998 that "*I choose to regard the statement with a pinch of salt*".¹⁸ At the same time, statements from the Minister of Fishery that the quotas should be assessed higher than the advice from ICES, might be regarded by opponents as the Norwegian government, to a high extent, trying to take the interest of organisations into consideration.

Even though the quotas of 1998 and 1999 became higher than what was the position from the Norwegian side, it may seem that the Norwegian position has been higher than the advice of ICES. The total quota of cod has in seven of the last ten years (1991-2000) been higher than the advice from ICES (Album et al. 2001). According to Hønneland (2001), the fisheries management co-operation between Norway and Russia has during a few years now withdrawn from being a frequently quoted example of a well-directed and fruitful co-operation between east and west, to become distinguished for bitter accusations and threatened chaos. There might be several reasons for this pattern.

According to Hønneland (2001), the Norwegian fisheries debate is focussing on the dilemma of having short-term- or long-term benefit from the fisheries. The Russian discourse is, on the other hand, steered by the comprehension that there is going to be

¹⁸ Fiskaren 4th November 1997

an interest struggle between the two states involved. The aim is to affect the “competitor”, without having too big losses itself. This way of thinking, according to Hønneland (2001), may be linked to the Russian state- centralised- and mathematical understanding of international politics. The western perspective of political science has in several decades given weight to the state’s interdependence of each other. Within this perspective, the co-operation in the Barents Sea is viewed as being in the interest of both Norway and Russia. Co-operation between states will, according to western political science tradition, contribute to mutual dependency between countries, which may further contribute to stability and prevent hostility. The Russian perspective, on the other hand, has an imagination of the states as unitary and rational actors, which necessarily and at all times are in conflict with each other. If one state is gaining, the other state will necessarily be loosing, and even more important; if one can not win by itself, the “opponents” loss will always be of self-interest. In relation to this perspective, there are many Russians, who comprehend the Norwegian “aggressiveness” in accordance to the fisheries negotiations as something natural.¹⁹

The two states have different political- and cultural background, and thereby have different perspectives in use regarding the bargaining situation, which may be seen as a reason for what Hønneland (2001) characterises as bitter accusations and threatened chaos in the fisheries co-operation between Norway and Russia. The Russians emphasis on science and mathematics in both teaching and research is well known, according to Hønneland (2000). Also the newer social science discipline in Russia, i.e. political science, is to a considerable degree influenced by the scientific- and mathematical perspectives. In Russia social systems are studied in accordance to biological models, and in analysis of international politics the Russians are to a high degree, as noted above, relating the analysis to simple economical models.²⁰

According to Hønneland (2000), it seems to be a general view from the Russian side that there is a war going on from the Norwegian side.

¹⁹ Hønneland in Dagens Næringsliv, the 30th October 2001

This thought might also be strengthened by the striking difference between the two countries heads of delegations. The head representatives from Norway have an *administrative role*, while the head representative of Russia has a *political role* in their respective domestic political system. As mentioned above, the *administrative leader* of the Norwegian Ministry of Fisheries heads the Norwegian delegation to the Joint Commission, and the *first Deputy Chairman* of the State Fisheries Committee of the Russian Federation heads the Russian delegation (Hønneland and Nilssen 2001). It might seem that the Russian perspective regards Norway as willing to decrease its own quota for the only reason that the “competitor” is going to have a quota as small as possible. According to Hønneland (2000), the negotiation between Norway and Russia is in the Russian press described as a struggle where the Norwegians are trying to apply pressure for getting the quota as low as possible. This struggle is from the Russian side described as a desire by the Norwegians to “take away” the cod from Russia. Hønneland (2000) states that this is an odd logic, since the cod quota is divided 50/50 between Norway and Russia and a reduction will therefore strike both parties.²¹

The Norwegian fisheries authority, according to Hønneland (2001), has sought to disclaim some of the responsibility for high cod quotas by acting in collusion with the fact that “Russia is to be pitied”. In 1999, the Joint Commission for the first time established a total quota well above the scientific advises from ICES. From the Norwegian side, however, it was demanded that it should be entered into the protocol that the Norwegians regarded the quota as being too high but that the agreement was made because of the “difficult situation for the population of northwestern Russia”.²² According to Hønneland (2001), this is a statement that really fits into the general Norwegian view of the northwestern Russian people. What this general point of view does not take into consideration, is that i.e. Murmansk is one of the richest and well-fed regions in Russia. The Norwegian point of view also excludes the fact that the cod in the Barents Sea is the Russian natural resources, which to a lesser degree is

²⁰ Hønneland in Nordlys, the 29th May 2000

²¹ Hønneland in Nordlys, the 26th January 2000

²² Hønneland in Dagens Næringsliv, the 30th October 2000

accessible to the Russian people. Because most of the valuable cod is delivered abroad (to a high degree Norway), the contribution to the national account of Russia is at a minimum. The value of the cod quota, according to Hønneland (2001), is reserved for a small group of “newly rich” barons of Murmansk fisheries. He further states that the imagination that “the Russians are to be pitied”, is contributes to how fisheries management can be more understandable.²³ . The discussion according to Hønneland (2001), has resulted in a legitimised agreement, which otherwise would have been unacceptable. In addition, the results might in the long run be that, the Norwegian-Russian management regime is loosing its legitimacy both internationally and in Russia.²⁴

²³ Ibid

²⁴ Ibid

6 Summary/conclusion

The objective of the thesis has been to analyse management of renewable resources that are shared between two countries. The focal question has been how the *organisation* of a management regime has affected the biological sustainability of resource exploitation and allocation. This question addresses the results the management regime has produced.

The rational choice perspective (the tragedy of the commons) and the co-operative action/interaction perspective (two level games) have been used as theoretical frameworks. The two theories are used for illuminating two different aspects related to the Norwegian-Russian management regime. *The tragedy of the commons*¹ perspective have shed light on why there is a need for management of renewable resources, while *the two level games*² theory have been used for illuminating how the negotiations in the Joint Commission is affected by interaction between the domestic and international level.

Findings

From the discussion related to how the organisation of the allocation has affected the biological sustainability of resource exploitation, one may conclude that the Norwegian-Russian management regime of the Barents Sea at this stage is not likely to produce results that are biologically sustainable in the long run. This conclusion can be related to the status of the shared stocks.

According to the Institute of Marine Research in Bergen (2002), the spawning stock (SSB) of both Northeast Arctic cod and Northeast Arctic haddock are outside biological safe limits, and the fishing mortality (F) is too high. A minor increase in the SSB of the Northeast Arctic cod has been observed lately. However, both the SSB and the F will continue to be outside safe biological limits also in 2002. The Barents Sea capelin stock

¹ Hardin (1968)

² Putnam (1988)

is still increasing due to a strong 1999-year class. The demersal stocks are, generally, in worse state than the pelagic stocks.

The management regime might however be seen as an *institutional* success, as comprehensive mechanisms for provision of scientific advice, establishment of regulations and enforcement of regulations are in place at both national and bilateral levels. Thereby an important precondition for the sustainable management of resources is in place. However, as far as regime performance is concerned, the results are less than satisfactory. This can be explained by Hardin's tragedy of the commons theory. Hardin states that human beings act as rationalists, seeking to maximise their own gain, and that they are forced to do so by circumstance and nature. This may also be the dominant attitude of participants in the allocation process of the management regime. It can be discussed whether Hardin's theory applies to states as well as to individuals. It can also be discussed if theory is relevant for a fishery which not has open access, but at least the theory points to important explanatory variables: human nature and circumstance.

The development may be related to the fact that Norway and Russia have different political- and cultural systems, and thereby, as discussed in chapter five, have different perspectives on and attitudes to the substance of the bargaining situation in the Joint Commission. The fisheries co-operation is embedded in a wider bilateral context, where a number of controversial issues have surfaced over the last few years.

When one is analysing reasons for the accusations and threatened chaos, one also has to take into consideration the military situation between Norway and Russia. The Barents Sea area is of major importance for the Russian navy, and though the cold war is over, one should not underestimate the fact that Norway and Russia are related to different military alliances. The fact that Norwegian scientific vessels not are allowed to do surveys in the Russian exclusive economic zone may be related to Russian military policy. Still another problem is related to Russian reduction in catches and employment, which set in at the beginning of the 1990s. Russian landings of fish abroad has increased markedly the last few years, and a major amount of the fish is landed in Norway, where also the processing of the fish is done. According to Hønneland (1999), the main result of the landings of Russian fish in Norway is loss of

employment opportunities in Murmansk, both in active fishing and in processing industries ashore. All the factors mentioned above may be influencing on the Norwegian-Russian co-operation climate.

Still another set of explanatory factors here is related to the diverging interests and opinions between the actors participating in the allocation process of the management regime. Some argues that the quotas are not irresponsibly high. Both the Norwegian Ministries of Fishery and Norwegian interest organisations have stated this.³ According to Fiskerinæringens Landsforbund (FNL), there is no basis for using terms such as “irresponsible” and “collapse” in relation to the management of the cod stock. According to FNL, the resource scientists work with uncertain factors.

From the discussion related to how the *organisation* of allocating renewable resources matters in a management regime, one can conclude that the negotiations between Norway and Russia are organised in a way which results in that the negotiations concerning allocation of the shared stocks becomes highly political. Actors at the domestic level (level I) in both the countries influence the negotiations between the two countries at the international level (level II) to some degree. National interests are at stake, and decisions pertaining to the size of the TACs and subsequent allocations, in particular, are not just a question of abiding by the scientific advice from ICES, but also division of scarce and valuable resources. This is consistent with Putnam’s (1988) theory *two level games*, which indicates that domestic groups at the domestic level pursue their interests, while national governments at the international level seek to maximise their own ability to satisfy domestic demands. There is an interplay between the domestic and the international level in the Norwegian-Russian negotiation processes.

The co-operation climate may also be affected by the fact that Norwegian and Russian scientists not have agreed upon the abundance estimates for the shared stocks in the Barents Sea. Some Russian scientists have argued that the assessment by ICES of the shared stocks (especially the Northeast arctic cod) to a high degree have been underestimated. This may be related to the fact that the cod has become a highly valuable species in Russia, and that the Russians, due to the economic situation in

³ Svein Ludvigsen in Nordlys, 14th November 2001 and Vesterålens avis, 15th November 2001

Northwest Russia, are willing to allocate the shared stocks in a short-term profitable perspective. These are factors that may be influencing on the allocation process in the management regime, and makes it complex in nature.

By using the precautionary approach as a guideline in the fisheries management, it is possible to get rid of some of the uncertainties related to the fisheries management, and in addition be able to have more profitable fisheries. Uncertainty is integrated in the reference points of the approach, and even if the reference points may seem to be very strict, it might be a wise choice for the future. The fisheries should be allocated and exploited in relation to biological sustainability and in relation to the reference points of the precautionary approach that ensure that good conditions of the stocks are satisfied in the long run.

The future regime

As mentioned earlier, there is a relationship between the organisation of the management regime, and the allocation and sustainability of the renewable resources. Furthermore, the allocation of the renewable resources agreed upon and the exploitation of the resources influence the basis for the maintenance and sustainability of the renewable resources. According to Album et al. (2001), the Joint Commission has on the whole since the 1980s decided to agree upon total quotas, which has been higher than the advice given by scientists.

Sustainable management is one of the major challenges for the future regime, and may require that the organisation of the allocation processes and that the exploitation of the natural renewable resources be changed. This may imply that the management regime to a higher degree than today will follow the scientific advice from ICES and other scientific institutions. This may also imply that other interest groups than those represented in the Joint Commission today, will have opportunity to influence in the bilateral bargaining between Norway and Russia concerning the allocation of the shared stocks in the Barents Sea. It has been argued that there are relevant interest groups, which are not represented in the process, but should have been that.⁴ An interesting

⁴ i.e. the Norwegian organisation which is related to environmental issues; Natur og Ungdom

question in this context is however whether the result of the allocation, exploitation and the sustainability of resources would have been different if other interest groups were represented? It can be argued that this could on the other hand complicated the decision-making process even more.

Another perspective is to widen the co-operation between Norway and Russia to other areas, which are related to the fisheries and the shared stocks. This might be Norwegian-Russian co-operation related to development of the processing plants in Russia, so that the Russians can process more of their fish at home and not abroad. This may involve increased Norwegian investments in the Russian processing industry. On the other hand, the Norwegian processing industry is heavily dependent on the Russian landings, and it may not be a political goal in Norway to increase the capacity of the Russian processing industry. In addition one may widened the co-operation concerning environmental issues. To have a closer co-operation with Russia on different fields might strengthen the relationship between the two countries, and might improve the climate of the co-operation in the fisheries management regime. To have a sustainable fishery depends, however in the end, of a *willingness* of the two countries to adjust the quotas so that the shared stocks are allocated and exploited in relation to the precautionary approach and sustainability.

Fisheries management often involves several objectives, which in many cases are contradictory. According to Pope⁵, the most obvious objectives of fisheries management are the biological objectives of resources conservation and the physical yield maximisation, the economic objective of profit maximisation, and the socio-political objectives concerned with employment and equity. Pope further indicates that it is not easy to satisfy all the objectives simultaneously. Trade-offs has to be made between them, and fisheries plans rarely specify what these should be. Therefor they tend to be of little help in setting overall goal of fisheries resource management.

In the mutual agreements of 11th April 1975 on co-operation in the fisheries sector and of 15th October 1976 on reciprocal fisheries relations, it seems to be an objective that the bilateral co-operation between the two countries shall put a particular weight on

⁵ Handout in relation to lectures in IFM-230, spring 2001

conservation effort. This may be related to the *how* the allocation and exploitation of the renewable resources are going to be worked out. It might be stated that trade-offs also have been done in the Norwegian-Russian fisheries management regime. It seems like economic objectives and socio-political objectives have been preferred on the cost of biological objectives of resource preservation, and the physical yield maximisation.

Finally, it is important to have in mind that *one* alternative to the management regime of today is *no regime*, which most probably would have resulted in open access and an even worse status of the shared stocks in the Barents Sea. By having a fisheries management regime in the Barents Sea, Norway and Russia have at least a degree of formal control and overview with the allocation and exploitation of the shared stocks, and with each other. By not having any regime, it most probably would have been more or less open access for any states to fish in the Barents Sea, and the scenario of *the tragedy of the commons* would have been even more realistic.

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