

Role and Problems of the Scientific Committee of the International Whaling Commission in terms of Conservation and Sustainable Utilization of Whale Stocks

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Abstract

The deep philosophical and political divisions between the International Whaling Commission (IWC) member countries that support managed whaling activities and those opposed to any harvesting of whales has caused a seriously dysfunctional situation at the IWC. The IWC Scientific Committee, reflecting the division of the whole organization, has been failing to provide consensus scientific advice on important whale conservation and management issues. Strong personal positions on the issues related to whaling, the influence of national government positions on scientists and advocacy have polarized the debates within the Scientific Committee. Scientific uncertainty and the precautionary approach have often been misused to promote anti-whaling positions. Furthermore, considerable effort and energy have been spent collecting as many names as possible on working papers to demonstrate that many share a certain view with the original author. This voting-like practice gives a false impression that a larger number of co-authors means a greater plausibility of the views expressed. This dysfunctional situation not only prevents proper conservation and sustainable utilization of whale stocks but also sets a bad precedent for other natural resource management issues. The Scientific Committee and its advice are becoming increasingly irrelevant to decisions regarding the management of whales and it is legitimate to ask whether under current circumstances it is even needed. However, science has never been the real issue behind the dispute. Unless the Commission and its member governments change their institutionalized dysfunctional discourse and procedures, it is naive to expect outputs from the Scientific Committee that are useful for the sustainable use and management of whale resources in accordance with the objectives of the ICRW.

Key words: the International Whaling Commission (IWC), Natural resource management, Precautionary principle, Scientific uncertainty, Sustainable utilization, Whaling

1. Introduction

Article V(2) of the 1946 International Convention for the Regulation of Whaling (ICRW)⁽¹⁾ requires that regulations adopted by the International Whaling Commission (IWC) shall, *inter alia*, be based on scientific findings. However, it has been argued (Iino & Goodman, 2003) that 'it is in large measure the failure by the majority of the IWC members to comply with this Article of the Convention in good faith that has caused the current dysfunctional situation of the IWC.'

The purpose of this paper is to focus more closely on the current situation within the Scientific Committee and a number of specific issues as they relate to

the attempts by anti-whaling members of the IWC to prevent the sustainable utilization of whale resources. In doing so, we examine the adoption of the moratorium on commercial whaling in 1982 without advice from the Scientific Committee that such a measure was required for conservation, the development of the Revised Management Procedure and its application to North Pacific minke whales, the adoption of sanctuaries that prohibit whaling irrespective of the status of stocks, and changes in the membership and focus of the Scientific Committee whose agenda dissociated the Committee's work from science and its primary objective related to the provision of management advice for the sustainable utilization of whales.

On all of these issues, we agree with Aron (2001)

that 'the role of science in its [the IWC's] decision making has been generally ineffective' and with Heazle (2004) that 'science and its various shortcomings have never been the real issue behind the IWC's various disputes and policy decisions.' We also share the concerns expressed by Butterworth (1992) at 'the use of alleged scientific concerns as a surrogate rationale for this [animal rights] standpoint' and that, 'if science is manipulated or rendered irrelevant on issues where public emotion can be tapped, it will simultaneously become redundant on less emotive environmental issues, to the detriment of long-term conservation.'

2. Background

2.1 The ICRW

The purpose of the ICRW as set out in the last paragraph of its Preamble is '...to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry.' The Preamble also notes that 'it is essential to protect all species from further overfishing' and that 'whale stocks are susceptible of natural increases if whaling is properly regulated.'

In order to meet the objective of the Convention, and with particular reference to science, Article V empowers the IWC to adopt regulations with respect to the conservation and utilization of whale resources which must be based on scientific findings and, Article VIII provides that 'notwithstanding anything contained in this Convention' special permits may be issued for the killing of whales for scientific purposes. Taken together, it is clear that what have now become the primary two paradigms for those involved with the management of living resources, that is, consistent application of the fundamental principle of science-based policy and rule making and sustainable use,⁽²⁾ were already in the minds of the drafters of the ICRW almost 60 years ago.

2.2 Brief review of historical developments

At the outset, however, the IWC did little to prevent or slow the overfishing of whales, particularly in the Antarctic (Tonnessen & Johnsen, 1982). Scientific advice in the 1950s urging lower quotas was opposed by the majority of members who were all whaling nations and this eventually led to the collapse of Antarctic stocks. The dozen or so scientists who participated in the Scientific Committee during this period were well-known whale biologists but there were no scientists from the rapidly evolving field of population dynamics and abundance estimation (Aron, 2001). The resulting scientific uncertainty concerning the status of stocks meant that there were no compelling arguments for reducing catches at the expense of the whaling industries (Heazle, 2004).

In 1960, the IWC set up an independent Committee of Three (later Four) Scientists to provide advice

on quotas for whaling in the Antarctic. However, as Aron (2001) has noted, 'the Commission's use of the BWU (Blue Whale Unit) as its basic management tool makes it clear that regulations were designed more to control oil production and for the convenience of the whaling fleets than to conserve whales'. Notwithstanding the recommendation of the Committee of Three in 1963 that it be eliminated, the BWU remained as the Commission's management tool until 1972.

A turning point for whale preservation came with the nearly unanimous adoption of a resolution calling for a ten-year moratorium on commercial whaling at the United Nations Stockholm Conference on the Human Environment in 1972. The moratorium issue was on the agenda for the Scientific Committee meeting immediately following the Stockholm Conference; however, the Scientific Committee agreed by consensus that a blanket moratorium could not be scientifically justified (IWC/24/4R in: Report of the International Whaling Commission, 24th Meeting, London, 1972).

However, in 1982, and with a substantial increase in new non-whaling membership, the Commission decided that beginning with the 1986 coastal season and the 1985/86 pelagic season and thereafter, catch limits for commercial whaling were to be zero. This provision which was subject to review by 1990, and is commonly referred to as the IWC's moratorium on commercial whaling, was adopted without advice from the Scientific Committee that such a measure was required for conservation purposes. The primary reason given by those who supported adoption of the moratorium in 1982 was the uncertainty concerning the status of the whale stocks and the effects of continued catches.

2.3 Scientific committee membership, agenda and modus operandi of science in the IWC

In 1976, 29 scientists representing eleven countries and one intergovernmental organization participated in the annual meeting of the Commission's Scientific Committee. The agenda for this meeting consisted of 21 items primarily focused on the status of stocks and providing advice to the Commission on quotas for whaling (IWC/28/2 in: Report of the International Whaling Commission, 28th Meeting, London, 1976). In contrast to this, the 2004 meeting of the Scientific Committee was attended by 202 scientists from 30 member countries and eight international organizations, and included 41 'invited participants' and one representative from a non-governmental organization. The 26-item agenda for the 2004 meeting included numerous items which are regarded by approximately half of the IWC member countries as outside of the Commission's mandate such as small cetaceans, DNA testing, environmental concerns, whalewatching, bycatch in fisheries and ship strikes (IWC/56/Rep 1 Annexes A and B1). These items are regarded as

being outside of the Commission's mandate since none of the articles of the ICRW provide authority for the Commission to deal with them.

This drastic change in the Scientific Committee took place over a number of years, beginning with the recruitment of additional Commission members with an anti-whaling position in the late 1970s and coincided with the intentional insertion of increasing equivocation in the scientific advice. This movement away from unanimous advice on important scientific matters essentially left the Commission in a position of having to make political rather than science-based decisions. Reports of the Scientific Committee clearly show a progression from unanimous advice on the abundance estimates of whale stocks and quota recommendations to the presentation of minority views by a small number of scientists and finally to statements of 'some members' and 'other members.' While in most cases, the expression of different or minority views are considered as a normal and helpful part of scientific debate, in this case the minority views were presented only to prevent scientific consensus which would support utilization of whales.

Other problems occurred because, as Gulland (1988) noted 'some people opposed to whaling largely for ethical reasons have not been wholly objective in their use of science. As passions rose in the IWC, there were a number of participants who were selective in the data they used and the interpretations they made.' And of course the difficulties in dealing with uncertain data were exacerbated by strong personal philosophies, which in some cases were influenced by national positions (Aron, 2001).

These views have been confirmed by Butterworth (1992) who interpreted these problems as stemming from 'a debate in the IWC between some countries wishing to preserve industries, employment and a food source based on whales, and others wanting these animals classed as sacrosanct' within the context of a Convention which requires that the debate be conducted in a scientific guise, so that these hidden agendas have had to be played out in the Scientific Committee.

All of these problems have severely hampered the ability of the Scientific Committee to provide management advice to meet the objectives of the Convention. Unfortunately, these tendencies have become institutionalized as demonstrated in the following sections of this paper.

3. Problems

3.1 Scientific uncertainty: from the new management procedure to introduction of the moratorium

The New Management Procedure (NMP) adopted in 1974 and implemented for the 1975-1976 whaling season was the first systematic attempt to place the

management of whaling on a scientific basis with the aim of ensuring sustainability (Cooke, 1995). The NMP was a set of rules for classifying stocks and setting quotas for those stocks of whales which could be exploited.

While the intention was that no stocks would be depleted to below their MSY levels, arguments of uncertainty in the science coming from the Scientific Committee eventually led the Commission, with its newly increased membership to proclaim the NMP unworkable. In the view of some scientists the main difficulty in applying the NMP was that there were insufficient data for its implementation, that for most stocks there was no reliable estimate of population size or MSY or the relationship between the current population and the MSY level and that there were no guidelines as to how to cope with these uncertainties (Cooke, 1995).

From simulation of a whale population with catches set according to the NMP, Cooke (1995) concluded that from both the conservation point of view and the industry's perspective, the NMP would not be expected to perform well in the long term. He suggested that one of the main problems is that the variances associated with population estimates mean that there is always considerable uncertainty about the state of the stock and that the NMP does not handle this uncertainty in a robust way. Essentially, Cooke's arguments gave the anti-whaling members of the Commission a basis to say that because of these uncertainties the Commission was unable to set quotas and at the same time ensure conservation of whale stocks.

A quite different view of the NMP was held by other scientists including Aron who acknowledged that the uncertainties in the science related to the NMP surfaced early in its application but noted that this coincided with a rapid increase in IWC members having strong anti-whaling sentiments (Aron, 2001). He suggested that 'The NMP, unlike the [later] Revised Management Procedure (RMP), did not explicitly take errors into account in its formulation; however, in generating critical numbers, the low end of the estimates was selected to minimize the consequences of error. Also the terms of the NMP were, by themselves, very conservative. The big problem was less the data issue, which was solvable, but more the fact that the NMP permitted whaling. This is the real issue of the RMP as well.'⁽³⁾

This view is supported by the fact that more than 20 years after the moratorium was adopted as a temporary measure it remains in place despite advice from the Scientific Committee that some stocks can be sustainably harvested and despite the Commission's adoption of a risk-averse method (RMP) for calculating catch quotas developed by the Scientific Committee.

The net effect of these problems was that by the early 1980s, the Scientific Committee was unable to

reach a consensus on recommendations for classification and catch limits of stock subject to commercial whaling (Kirkwood, 1992). This uncertainty in the science related to application of the NMP was the primary reason quoted by those who supported the adoption of the moratorium on commercial whaling in 1982. In other words, the Commission's main reason for introducing the moratorium on commercial whaling was the argued inadequacy of the scientific database for harvesting whale populations without exposing them to undue risks (Butterworth, 1992).

As Gulland (1988) noted, 'The moratorium never had much scientific backing because, even more than old measures like the Blue Whale Unit, it makes no distinction between stocks; some would be clearly endangered by continued whaling at any level, while we have no accurate assessment for others of how many could be safely taken. For a few, such as Antarctic minke whales, it is clear that whalers could take substantial quantities for a period without damage to the stocks even though we do not know the maximum sustainable yield accurately.'

Gulland (1988) suggests therefore that while many people welcomed the adoption of the moratorium as a final end to whaling and a great victory for conservation, 'if conservation means ensuring that catches are kept within reasonable bounds, and that depleted whale stocks are allowed to recover, the main victories had been won earlier' and that 'if conservation means a sensible balance between the current use of a resource, and conserving it for possible use in the future, the moratorium was hardly a major victory. Some, myself [Gulland] included, consider it a setback.'

3.2 The Revised Management Procedure (RMP)

Following the adoption of the moratorium, the Scientific Committee began work on the development of an alternative to the NMP for managing whaling with the following three objectives:

- (i) stability of catch limits, which would be desirable for the orderly development of the whaling industry;
- (ii) acceptable risk that a stock not be depleted below some chosen level so that the risk of extinction of the stock is not seriously increased by exploitation.
- (iii) making possible the highest continuing yield from the stock.

The alternative procedure was called the Revised Management Procedure (RMP). Its development involved extensive simulation testing of five different proposed procedures to assess performance over a wide range of possible scenarios and to compare robustness with that of the NMP even in the face of considerable uncertainty about the dynamics of whale stocks (Kirkwood, 1992; Cooke, 1995). Cooke (1995) points out that the procedure is precautionary or risk-averse, in that it specifically takes into account uncertainty related to factors such as possible errors in

population abundance estimates and possible impacts of environmental changes. The application of the RMP is further precautionary in two ways, as agreed by the Commission in 1991 (IWC Report of the 43rd Annual Meeting, 1991 Appendix 4, Resolution on the Revised Management Procedure): (i) the tuning level is set at 0.72 meaning that after 100 years of catches based on quotas derived by the RMP, the population remains at 72% of its pre-exploitation level and, (ii) no quotas are provided for stocks below 54% of their pre-exploitation level.

The Scientific Committee completed most of its work on the RMP at its meeting in 1992 and unanimously recommended adoption of the draft specifications. These were accepted by the Commission (IWC Report of the 44th Annual Meeting, 1992- Appendix 3, Resolution on the Revised Management System). Then, in 1993, the Scientific Committee completed the RMP and again, unanimously recommended its adoption by the Commission. However, the Commission failed to adopt the RMP in 1993, and that resulted in the resignation of the Chairman of the Scientific Committee.⁽⁴⁾ In his letter of resignation, the Chairman, Dr. Philip Hammond of the U.K. said, 'of course, the reasons for this [RMP not adopted by the Commission] were nothing to do with science,' and, 'what is the point of having a Scientific Committee if its unanimous recommendations on a matter of primary importance are treated with such contempt.' As a further condemnation of the Commission's action, Hammond concluded, 'I can no longer justify to myself being the organizer and spokesman for a Committee whose work is held in such disregard by the body to which it is responsible.' Strong condemnation indeed.

Finally, the Commission did adopt the RMP at its meeting in 1994 (IWC Report of the 46th Annual Meeting, IWC Resolution 1994-5, Resolution on the Revised Management Scheme). Although the RMP has been applied to North Atlantic minke whales and to North Pacific minke whales, quotas have not been implemented by the Commission and the moratorium remains in place. There are however serious difficulties within the Scientific Committee in relation to RMP implementation as illustrated by the case of North Pacific minke whales, which took more than ten years to complete.

3.3 Revised Management Procedure (RMP) for North Pacific minke whales

In addition to the long and unnecessary delays in developing and agreeing on appropriate simulations trials, one of the major problems with the Scientific Committee's work on RMP implementation for North Pacific minke whales was the decision in the final stage in 2003 to assign equal plausibility to stock structure scenarios not supported by data with the scenario supported by data.⁽⁵⁾ While consideration of hypothetical stock structures is a valid strategy for

research purposes it is inappropriate for management purposes in cases where there are stock structure scenarios strongly supported by scientific data. In other words, one could ask why it is necessary to collect the data when the resulting science is given equal plausibility with a pure speculation without supporting data.

The long delays (10 years) were simply part of a strategy to postpone deriving a quota to allow commercial whaling and had little to do with science, whereas the decision concerning plausibility of various stock structure scenarios was simply anti-science. This is particularly so given the fact that the RMP is a feedback system that allows for corrections to be made in the way it is applied if additional data become available.⁽⁶⁾ The outcome of this decision was that most members of the Scientific Committee recommended an RMP variant that provided a quota of about 135 minke whales. However, because of the way that the RMP assigns quotas to what are called 'small areas,' the result was that almost all of this could only be taken in offshore waters. For Japanese coastal whalers this was problematic since these offshore waters were beyond the traditional coastal whaling area.⁽⁷⁾ This process suited the political interests of anti-whaling members of the IWC (Goodman, 2003) since it meant that an unreasonably small quota was provided for an area that was operationally difficult for the whalers and therefore unlikely to be utilized.

3.4 Review of sanctuaries

In 1979, the IWC adopted the Indian Ocean Sanctuary and in 1994, the Southern Ocean Sanctuary. As with the moratorium, both were adopted without a recommendation from the Scientific Committee that they were required for conservation reasons. Most recently, the Southern Ocean Sanctuary was reviewed by the Scientific Committee at its meeting in 2004. In addition to the problem of scientists simply presenting arguments in favor or against sanctuaries in support of the political positions of their governments on this issue, there is also a serious problem within the Scientific Committee concerning the criteria used to conduct its reviews of sanctuaries (Goodman, 2003).

At issue is an instruction to the Scientific Committee contained in a resolution adopted by the Commission at its 2002 meeting (IWC Report of the 54th Annual Meeting, Resolution 2002-1 Guidance to the Scientific Committee on the Sanctuary review process) which specified that overlap of management measures, for example the moratorium on commercial whaling and a sanctuary, cannot be used to invalidate any long-term scientific or conservation value of a given sanctuary. Not only does this instruction contradict previous criteria (Annex E, Annual Report of the IWC 2001) that require consideration of a sanctuary in the context of other existing measures to protect whales, it clearly restricts legitimate scientific debate concerning required conservation measures. That this interpreta-

tion is justified is reflected by the fact that when the resolution referred to above was adopted, the then Chair of the Scientific Committee told the plenary session that she was 'tempted to resign' because she viewed this as 'restricting what the Scientific Committee can consider' (verbatim record, IWC Annual Meeting, 2002).

The point is that there is no scientific or conservation reason to have a sanctuary when the Commission has already adopted a risk-averse RMP and has a moratorium on commercial whaling in place. During limited discussion of this issue at the meeting of the Scientific Committee in 1993, and with expression of views on both sides of this issue, the Scientific Committee agreed that individual scientists should make known their concerns to their Commissioners. This was a very unsatisfactory outcome demonstrating again the political nature of what should have been a scientific debate (Goodman, 2003), and, as expected, the outcome of the 2004 review by the Scientific Committee was what has become the now institutionalized 'some' and 'others' conflicting statements on all aspects of the sanctuary. Clearly, the Scientific Committee was unable to provide useful advice to the Commission on this matter.

3.5 Review of lethal whale research programs

The discourse related to lethal research and in particular the review of research plans under Article VIII of the Convention also illustrate the current dysfunctional situation in the Scientific Committee (Goodman, 2003).

It is ironic and for purely political reasons that while two recent scientific workshops on modeling marine mammal-fisheries interactions, (NAMMCO, Sept. 2002 and IWC, June 2002) concluded that suitable data and modeling approaches are not available to provide reliable quantitative management advice on the impact of cetaceans on fisheries, the majority within the IWC Scientific Committee oppose the lethal whale research programs that would provide data for the models needed to improve our understanding of ecosystem interactions.

Opposition to Japan's research programs also denies the legitimate scientific need for data to improve the implementation of the RMP. While the majority of Scientific Committee members criticize these programs, at the same time, they insist on access to the data derived from these programs to use in analyses related to estimation of population abundance and stock structure. In this regard it is interesting to note that when Japan's research programs in the Antarctic and the North Pacific were reviewed by a smaller number of scientists from the Scientific Committee in workshop settings, they concluded that the research programs are providing valuable information^{(8),(9)} and recognized the need for lethal research to provide data for improving our ability to manage marine resources on an ecosystem basis.

4. Causes of the Problems

4.1 Scientists as advocates and the role of NGOs

Strong personal positions on the issues related to whaling, the influence of national government positions on scientists and advocacy have polarized the debates within the Scientific Committee. The increasing number of scientists from anti-whaling NGOs appointed by Governments as members of the Scientific Committee has exacerbated this problem. Clearly for example, one should question the scientific objectivity of representatives from NGOs with strong anti-whaling positions irrespective of science in the debates of the Scientific Committee.

The issue of scientists as advocates is also relevant to public debates on the whaling issue outside the IWC forum. For example, in May 2002, 21 distinguished scientists including three Nobel laureates signed an open letter to the Government of Japan. Most of the scientists who signed the letter are not whale biologists or involved with resource management issues. The letter was published as a World Wildlife Fund advertisement in the New York Times on May 20, 2002 and criticizes Japan's whale research program. Because the letter contains numerous errors of science and law⁽¹⁰⁾, Aron *et al.* (2002) expressed 'concern that when scientist-advocates lower their scientific standards in support of popular causes while presenting themselves as scientists, science itself can be diminished, as can the rights of resource users and competent management of the environment.' They argue that the errors in the letter and the lack of attention to relevant facts are a dereliction of a scientist's professional and ethical responsibility, particularly regrettable when public trust in scientists' judgments is an important element in the development of national policies on resource use issues.

4.2 Abuse of the precautionary principle

There are a wide range of formulations of the 'Precautionary Principle' but the most broadly accepted is the Rio Declaration on Environment and Development (1992) which declares that 'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.'⁽¹¹⁾

The 'Precautionary Principle' has, over the past two decades become increasingly accepted as a general principle of environmental policy and management. However, even the IUCN – The World Conservation Union (Cooney, 2004) acknowledges that 'While an important and intuitively sensible principle, the acceptance of the principle into law and policy and its implementation in practice has been marked by controversy and confusion.' Cooney (2004) also notes that on one hand, 'it is seen as a fundamental tool for sustainable development, a safeguard for future generations, and countering a

tendency to overlook scientific uncertainties...' while on the other hand, 'it is seen as anti-scientific, subject to abuse, inherently Northern, anti-innovation, and anti-sustainable use.'

The 'precautionary principle' or 'precautionary approach' is often mentioned in the discussions of the Scientific Committee where it has been used to justify impractical and unnecessarily restrictive management measures to a much greater extent than in for example, regional fisheries management organizations (RFMOs). While the moratorium on commercial whaling adopted by the Commission in 1982 is perhaps the best example of this since all whale stocks that had been depleted from historic over-harvesting were already protected by zero quotas, it is significant that at least in this case it was recognized by the Scientific Committee that such a measure was not required for conservation reasons.

The cases of the RMP and Sanctuaries are different in the sense that in these cases, abuses of the precautionary approach have taken place in the Scientific Committee. The RMP adopted in 1994 was designed to provide risk averse harvest quotas for abundant stocks. As Hammond noted,⁽¹²⁾ '[O]ne of the most interesting and potentially far-reaching chapters in the science of natural resource management came to a conclusion. The Commission could now put in place a mechanism for the safe management of commercial whaling, regardless of whether or not the 'moratorium' was lifted.' However, while the RMP is based on sound scientific concepts and is regarded as one of the most precautionary procedures for the conservation and management of living resources, the use of unrealistic stock structure scenarios without scientific basis to recommend excessively restrictive catch limits for North Pacific minke whales was an abuse of the precautionary approach.

As is noted above, while the IWC's sanctuaries are themselves an abuse of the precautionary approach since they apply irrespective of the status of stocks, the discussions within the Scientific Committee concerning the conservation value or need for sanctuaries have also involved abuse of the precautionary approach.

At the 2004 meeting of the Scientific Committee in Sorrento, Italy, a group of external experts who were assigned to conduct a review of the Southern Ocean Sanctuary concluded that 'Overall, the SOS – and IWC Sanctuaries in general – are not ecologically justified. The SOS is based on vague goals and objectives that are difficult to measure, lacks a rigorous approach to its design and operation, and does not have an effective monitoring framework to determine whether its objectives are being met. The SOS represents a 'shotgun' approach to conservation, whereby a large area is protected with little apparent rationale for boundary selection and management prescriptions within the sanctuary. While a vast array of ecosystem-level and precautionary conservation benefits

have been invoked for the establishment of the SOS, in reality this large-scale sanctuary does little more than provide a false sense of security by assuming that protections for whale populations are in place. In fact, the SOS does not protect or mitigate other threats to Southern Ocean whale stocks and the marine ecosystems upon which these populations depend, including: pollution, habitat degradation and loss, introduced species, and global climate change.' (Zacharias *et al.* 2004)

This statement clearly demonstrates that the IWC sanctuaries are not management measures supported by objective science. However, even in the Scientific Committee, scientists from anti-whaling countries have insisted that sanctuaries are necessary on the basis of the precautionary approach even when they duplicate total protection provided by the moratorium.

4.3 Voting on science / public participation in science

Although public participation and voting are very important and essential concepts of democracy, in the field of scientific pursuit of truth these procedures may not be appropriate and may even be detrimental. This is because public sentiment and beliefs are often inconsistent with scientific facts and because modern and advanced science is often much more complicated than the simple explanations and statements that reach the public. We believe that in many cases within the Scientific Committee, the need for transparency is misinterpreted as a need for public participation or the need for inclusion of public perceptions in the debates and that a process more resembling voting than proper peer review is employed. This damages the scientific credibility of Scientific Committee outputs.

In the recent meetings of the Scientific Committee, considerable effort and energy have been spent collecting as many names as possible on working papers to demonstrate that many share a certain view with the original author. This voting like practice gives a false impression that a larger number of co-authors means a greater plausibility of the views expressed. Moreover, since richer countries and non-governmental organizations can and do send larger numbers of 'scientists' to the Committee, economic power can produce a false sense of scientific truth.

In addition to the problem of instances where data which cannot be scientifically verified have been provided by both scientists and non-scientists to the Scientific Committee, there are also problems related to data collected in the course of activities which did not follow a rigorous scientific data collection protocol (*e.g.* whalewatching). Such data can be useful and complementary to systematically collected scientific data however, in the IWC, some regard these data as a replacement for, or superior to, the data collected by scientific research which involves lethal sampling. The suggestion that such less rigorously collected data or even anecdotal information should be emphasized

and that they have an equal or higher level of validity than data obtained from lethal research is an imposition of a value judgement which is not based on the actual scientific value of data. The claim is inappropriately based on an *apriory* view against lethal study on whales. This also represents another problem that the discussion appears as if scientific validity is the issue while the real problem is not. This deception could confuse legitimate discussions on the scientific value of research based, anecdotal and traditional user knowledge.

4.4 Scientific uncertainty as a political tool

Like the precautionary principle, scientific uncertainty is often used in the IWC to justify unnecessarily restrictive management measures.

One longtime member of the Scientific Committee responding to a question as to whether in retrospect, the adoption of the moratorium was justified on the grounds of prevailing uncertainties responded that 'in the sense that the adoption of the moratorium forced the development of the RMP, which directly addressed scientific uncertainties in assessment, then I think it was justified. On the other hand, in the sense that the moratorium has now become what we all feared it might, an indiscriminate and permanent ban on whaling, then I don't think it was justified.'⁽¹³⁾

The adoption of the moratorium on commercial whaling and its maintenance under present circumstances clearly demonstrates that it is political agendas that determine the Commission's decisions and that scientific uncertainty is simply a tool used in pursuit of political objectives. In this sense, Heazle (2004) has also concluded that the ability of the Scientific Committee and science to influence IWC policy has been severely limited by the management priorities of particular members or groups within the commission and their willingness to either invoke or ignore uncertainty issues in pursuit of those priorities.

4.5 Hidden agenda

Delays in the development and implementation of the RMP have raised serious questions about the role of the Scientific Committee. Aron (2001) for example, refers to the failure of the Commission to adopt the RMP in 1993 as 'a severe blow to the role of the Scientific Committee,' and Butterworth (1992) notes that 'during the years that the RMP was being developed, the scientific argument has provided a convenient front for a hidden agenda – opposition to resumed commercial whaling is not really a conservation but rather an animal rights issue, backed by powerful public pressure groups opposed to any killing of certain special animals such as whales.'

Butterworth's observations led him to ask, 'How likely are the scientific committees of international fishery organizations to provide an objective scientific basis for political decision makers given the manner in which they are constituted? Is there any real role for

science, or does the IWC example serve only to show how vulnerable science is to reduction to irrelevancy, give hidden agendas such as economic considerations or animal rights?'

5. Discussion – Why the Problems Are a Problem

The objective of the International Convention for the Regulation of Whaling is understood as sustainable use of whale stocks on the basis of the best scientific evidence. This accords with the concept of sustainable development prescribed in Agenda 21 (Rio Declaration, 1992) and reaffirmed by the World Summit on Sustainable Development (Johannesburg, 2002).

However, as described in this paper, the current situation of the IWC is far from satisfactory for fulfilling its prescribed missions. The discussions in the Scientific Committee are becoming increasingly irrelevant to the deliberations and decisions of the IWC. Furthermore, much of the Scientific Committee debate has been degraded to the level of political discourse. The goal of many anti-whaling members of the IWC is a permanent ban on commercial whaling irrespective of the stock status of whales. Even if science demonstrates that some species of whales are abundant and that they can be utilized in a sustainable manner (and science does so demonstrate), the science is irrelevant to the policy of strong anti-whaling countries. For them, the whaling issue is not about science and consequently, science has no real place to contribute to the whaling issue. However, since the discussions within the Scientific Committee and the Commission often require a scientific guise, science is misused to justify political objectives. This is one of the major reasons for the ongoing impasse at the IWC.

This situation in the IWC is problematic because it has set a bad precedent for the management of other resources. The whaling issue has created an exception to the principle of sustainable utilization by prohibiting commercial whaling 'irrespective of stock status' of whale species. Unfortunately, whales are not the only exception. Charismatic species such as elephants and sharks are receiving the same 'honor' at meeting of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) where prohibitions or restrictions on international trade are imposed.

This has become an increasing problem in international governance where questions such as who can decide such exceptions and on the basis of what criteria need to be considered. Unfortunately, justification for such exceptions are often explained as 'world opinion' or abuse of the precautionary principle as described above rather than being based on scientific findings. Also, too often, 'world opinion' is the view of special interest groups and/or the media in developed western countries. These issues are not limited to the management of natural resources but are

also pertinent to many other international negotiations where scientific deliberations affect the course of the discussions and the final decisions. This would include global warming and biodiversity among others.

Further, because sustainable utilization of abundant species of whales has been denied, these species are under-utilized. Almost without exception, the users and the potential beneficiaries of these resources are citizens of developing countries, small indigenous communities, or coastal communities with a long tradition of the utilization of whales and where whales have significant economic, social and cultural importance. This is not surprising since for the most part, people in these situations have little influence on the media which create 'world opinion,' nor do they have the political power to influence governments. This means that the imposition of an exception to the principle of sustainable utilization on the basis of 'world opinion' involves human rights and social justice issues.

Continuation of the moratorium resulting from the current situation in the IWC is also cause for concern because whales occupy the top place in the marine ecosystem and therefore the trends in their stock abundance have great effects on the whole ecosystem. The moratorium on commercial whaling irrespective of the status of whale stocks appears to have provided a chance for the recovery of such species as fin whales and humpback whales that had been heavily harvested by the time the moratorium was implemented. However, zero quotas for these species alone would have produced the same result. On the other hand, minke whales that were robust and abundant even at the time the moratorium was implemented have been given a chance to increase further. The situation was even better for minke whales because a large amount of food and habitat became available to them as a result of the past harvest of other large whales that had created an expanded ecological niche. Similarly, seals have been increasing recently in many parts of the world oceans as seal hunting has been severely curtailed because of the animal rights movements. This increase of marine mammals has caused serious concerns about possible competition between fisheries and marine mammals in many important fishing grounds of the world. The enlarged top portion of the food web may, through predation, be causing serious shifts in the whole marine ecosystem which includes commercial fisheries resources.

6. Conclusions

Science cannot solve all international governance issues related to resource use, and it is in many instances not even neutral, since science needs to be funded and its objectives are often politically determined. However, it is clear that science provides better guidance to difficult international negotiations than political coercion and cultural imperialism since

it provides a more rational playing field. It is for this reason that the fundamental principle of science-based policy and rule making has become the primary paradigm of resource management

Following the 56th Annual Meeting of the IWC (July 2004, Sorrento, Italy), eleven anti-whaling members of the IWC proposed to either substantially restrict or totally eliminate activities under Article VIII of the ICRW which stipulates the right of the contracting governments to conduct lethal research on whales 'notwithstanding anything contained in this Convention.' This proposal denies the value of a standard scientific tool of research on whales even though the technique is widely accepted in the field of biology for many other species. This attempt to impose an ethical view that research on whales should not involve lethal studies has now taken the form of a proposal to amend the ICRW creating a new phase in the debates on whaling.

How should the Scientific Committee respond to this new development? Should they respond? In part, the Scientific Committee has already responded to these questions by noting that, at least for minke whales in the Antarctic, '...there were non-lethal methods available that could provide information about the population age structure (e.g., natural markings) but that logistics and the abundance of minke populations in Areas IV and V probably precluded their successful application' (IWC document 49/4 Report of the Scientific Committee, 1997). Furthermore, this response does not address the need for lethal research to obtain quantitative data on whale feeding required for ecosystem models. Notwithstanding this, the Scientific Committee and its advice are becoming increasingly irrelevant to decisions regarding the management of whales and it is legitimate to ask whether under current circumstances it is even needed.

At the same time, it must be recognized that the above described problems related to the functioning of the Scientific Committee are primarily the result of the dysfunctional nature of its parent body, the Commission. Scientific uncertainty issues have been an important factor in shaping the IWC's various policy choices but the science has never been the real issue behind the various disputes and policy decisions. Political agendas are what have determined the parameters of policy making and the resultant decisions (Heazle, 2004). Unless the Commission and its member governments change their now institutionalized dysfunctional discourse and procedures, it is naive to expect outputs from the Scientific Committee that are useful for the sustainable use and management of whale resources in accordance with the objectives of the ICRW. As Aron (2001) opined, 'The IWC and its use of scientific advice is an anomaly in the world of resource management agencies. I am unaware of any resource commission charged with regulating harvests that has failed to establish quotas given scientific

advice that provides a strong rationale for a safe harvest.'

Notes

- (1) International Convention for the Regulation of Whaling, Dec. 2, 1946.
- (2) These principles are included, for example, in the United Nations Convention on the Law of the Sea, Dec. 10, 1982, arts. 61 and 119, 21 I.L.M. 1261, 1281 and 1219, Agenda 21, June 14, 1992, para. 17.56, the FAO Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security and the FAO Code of Conduct for Responsible Fisheries, Oct. 31, 1995, arts. 6.4, 6.5 and 7.
- (3) Correspondence with Aron quoted in Heazle, 2004.
- (4) Letter of resignation from Dr. Philip Hammond, Chairman of the Scientific Committee to Dr. R. Gambell, Secretary to the Commission. May 26, 1993.
- (5) Report of the Scientific Committee, IWC/55/Rep1. p.13.
- (6) Comparing this decision on the North Pacific minke whale stock structure with the case for bowhead whales also illustrates the 'double standards' used by the Scientific Committee. For bowhead whales, up till 2004, there was no attempt to apply theoretical methods to genetic data as was insisted on for North Pacific minke whales, yet the Scientific Committee accepted the assumption that there was no stock structure in the bowhead population.
- (7) Report of the Scientific Committee, IWC/55/Rep1. p.14.
- (8) Report of the Intersessional Working Group to Review Data and Results from Special Permit Research on Minke Whales in the Antarctic, Tokyo, 12-16 May 1997. *In: Rep. Int. Whal. Commn.* 48, 1998 pp. 377-393.
- (9) Report of the Workshop to Review the Japanese Whale Research Programme under Special Permit for North Pacific Minke Whales (JARPN). *In: J. Cetacean Res. Manage.* 3 (Suppl.), 2001, pp 375-413.
- (10) For example, the letter states that 'Japan has refused to make the information it collects available for independent review (2nd paragraph of the open letter).' Contrary to this claim, the IWC hosted two meetings to review the results of Japan's research programs in 1997 and 2000 where all the data were made available for review and analysis. Furthermore, even when limited to the Antarctic research program, 163 scientific documents had been submitted to the Scientific Committee during the period from 1987 to 2004. In addition, 79 papers based on the Antarctic research had been published in peer-reviewed scientific journals. Aron *et. al.* (2002) has more detailed descriptions about other errors.
- (11) Rio Declaration on Environment and Development (June 14, 1992, princ. 15, U.N. Doc. A/CONF.151/5 (1992).
- (12) Same reference as for the note number 5 above.
- (13) Dr. Peter Best of South Africa quoted in Heazle, 2004.

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