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Managing Fisheries Following Political Transition in South Africa, Faced with Multiple Objectives and Aspirations

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ABSTRACT

Any political transition is fraught with difficulties, and South Africa's has been no exception. South Africa's fisheries, which are already mature and with little room for expansion of catches or hope of finding new resources or stocks, have been targeted for change. Proponents of this change are mainly folk who, for political reasons, were denied access to our fish resources, and on this basis believe that their future security can be guaranteed by being granted access. The emerging new Fisheries Policy addresses some of their needs, but others cannot be met easily because there are already developed fisheries with many people dependent upon them for their livelihood. Against this background, some of South Africa's fisheries which are recovering from former overexploitation are being targeted for their potential to spread access wider. One example in South Africa is the fishery for hake *Merluccius capensis* and *M. paradoxus*, currently one of the two most productive hake resources being exploited in the world today. The established trawling industry has clear objectives and believes that it is due the benefits of two decades of conservative management which has slowly raised catch rates and increased catches by 25%, with the possibility of more to come. The experimental longline fishery has the potential to create many new jobs (a requirement of the transitional programmes), resulting in social upliftment and greater economic viability to more people. However, in addition to the social and economic impacts that longlining may have on the fishermen, it has significant biological and management implications because, compared to trawling, it targets different components of the hake stock. The objectives of the two fisheries are therefore not completely in concert, and managers are having difficulty in meeting the demands of both sectors while underwriting the underlying principle of sustainable utilization, as defined by the results of rigorous scientific assessment.

It is against this background of a mature industry that the timely transition of the South African fishing industry is taking place. The objectives of the various sectors of the fishing industry (including those of potential participants) vary, driven by economic as well as social and political considerations. There are indeed several examples of individual sectors of the South African fishing industry being managed with multiple objectives. This paper uses one of those examples, that of the fishery for Cape hake, as a case study to show how the country's decision-makers and fisheries administrators are coping with the vexing problem of managing such a fishery according to the principle of sustainable utilization, an underlying objective of the country's emergent fisheries policy. Before looking at that fishery, though, a brief review of the current status of the policy-development process is necessary.

THE DEVELOPMENT OF SOUTH AFRICA'S EMERGENT FISHERIES POLICY

Details of the fisheries policy development process in South Africa were given by Payne and Cochrane (1995). However, since that paper was written, there have been several important developments, and these must be outlined if the complexities of the case study are to be understood.

Early on in the policy-development process, local scientists predicted that the focus of discussion and probable disagreement would be that surrounding access rights to the various fisheries. The first few drafts of the policy and the discussions around them indeed confirmed this belief. Consequently, a group of scientists (natural and economic) was formed to investigate the manifold international experiences in access rights transitional processes. The result of its deliberations was a document (Anon. 1995b) devoid of recommendations but full of valuable inputs to the debate that soon had to take place in the so-called Fisheries Policy Development Committee (FPDC).

Soon after the general release of that document, the FPDC assigned a task group of five eminent and representative South African academics to investigate the options open to it in broadening access to those disadvantaged by the apartheid policies of the past. That group took the first document (Anon. 1995b) as the basis for presenting options on how to provide access to as many as possible in a sustainable manner. The result was another document (Branch *et al.* 1996) that received widespread support for its common sense and appropriateness to the South African situation. Again, however, no firm recommendations were made; that group rightly considered that firm recommendations were the province of the FPDC itself. Predictably, however, the various members of the FPDC (and the constituencies they represented) could not agree on which of the options presented by Branch *et al.* (1996) would serve the country (and their own interests) best. Therefore, the FPDC's final report presented to the government addressed the underlying rationale behind the debate about access rights, but failed to make any firm recommendations on which the State could act.

Concurrent with the final negotiation stages of the FPDC, the undercurrent of concern of those without access forced the government to request the FPDC to investigate means of granting interim relief (jobs, food and money) by assigning access to resources (including quotas) to those that needed it most. To address that request, the FPDC appointed another task group to look at all South Africa's fisheries in an effort to find some areas where interim relief could be granted without precluding options once the whole policy-development process (including access determination procedures) was complete. That report (again largely evolved and written by academics) presented its report to the FPDC in May 1996 (van der Elst *et al.* 1996). To date, however, probably owing to the mature and fully subscribed nature of South

Africa's fisheries (a fact acknowledged and stressed by van der Elst and his colleagues), no interim relief has been granted. That situation may, however, change overnight.

The FPDC report presented to the government on 4 June 1996 was a watershed in South African fishing history. Although agreement on access was beyond the reach of the committee, the final report (Anon. 1996) made many carefully debated statements (particularly the section on aims and objectives) that will hopefully take the country's fisheries into the next century in a healthy, structured manner. The final document contained not only a broad policy acceptable to all, but also appended the unabridged versions of the Branch *et al.* (1996) and van der Elst *et al.* (1996) reports. A future government white paper, new legislation and regulations, as well as the ultimate, a clearly articulated fisheries policy, are now within reach. However, agreements on access rights will have to be reached first and, recognizing this shortcoming, the Cabinet have appointed yet another committee to address the issue.

Our paper is being written while this process is underway. A small panel of demographically representative academics with no connection to the fishing industry at all has been appointed to address the whole access rights issue. They have been given a short time-frame to study the reports mentioned above, as well as summary reports on the current status of each sector of the fishing industry, and to present firm recommendations on how best to redress imbalances in the South African fishing industry, while not adversely affecting those currently involved. To assist the panel, provision has been made for briefings by experts from various parts of the world who have had experience of such activities (these experts are likely to be well known fisheries management scientists). It is hoped that their recommendations will be ready for Cabinet to react before the 1997 fishing season (ideally), so that the current climate of insecurity and distrust can be laid to rest.

MULTIPLE OBJECTIVES IN FISHERIES MANAGEMENT IN SOUTH AFRICA

Against the backdrop of what has been written above, it should be clear that political emancipation has resulted in various constituencies having different objectives in the South African fisheries context. However, the objectives themselves have been agreed upon already in the policy and they will presumably form the underlying principles of all future fisheries management in the country. Broadly, the 11 agreed fisheries policy objectives are:

- optimization of long-term social and economic benefits for the nation;
- sustainable utilization and replenishment of living marine resources;
- managing and developing the fisheries to contribute to South Africa's Reconstruction and Development Programme (RDP);
- transparency and accountability in management of resources;
- fair and equitable access;
- management in accordance with the best available knowledge and the results of multidisciplinary research;
- a holistic approach to fisheries and other forms of utilization;
- participatory management;
- acceptable conditions of employment;
- national management, with some devolution of certain responsibilities for some species to provinces;
- all acts, regulations and management strategies to remain in place until acceptably replaced.

As broad objectives, these are all laudable and apparently acceptable to the majority of fisherfolk and fishery managers in South Africa. They also give guidance to the government on how the various fishing sectors should be managed for the benefit of the nation. However, it is in the *interpretation* of these objectives that the pitfalls lie because, clear as they are to seemingly everybody, not everyone understands them in the same manner.

A CASE STUDY OF A FISHERY WITH MULTIPLE OBJECTIVES AND ASPIRATIONS - LONGLINING AND TRAWLING FOR CAPE HAKE

Historical development of the hake fishery and the associated trawl industry

The Cape hake stocks comprise two species, the deep-water *Merluccius paradoxus* (caught from 200 to at least 600 m deep) and the shallow-water (caught up to 350 m) *M. capensis*. This fact was only discovered as recently as the 1960s (Franca 1962, van Eck 1969, Botha 1971). The two species are, however, still difficult to tell apart and are assessed as a single stock (Punt 1994) with subdivisions on the West and South coasts. Trawling first started in South Africa at the beginning of the century and was not directed at hake (Scott 1950, Payne 1989). As the fishery operated close inshore where stocks other than hake were plentiful, linefish such as the kob *Argyrosomus hololepidotus* and Agulhas sole *Austroglossus pectoralis* were targeted. This situation changed with time as technology permitted vessels to fish farther from land and to stay longer periods at sea. The industry began to target increasingly on demersal species and particularly on the plentiful Cape hake.

The demersal fishery therefore developed as a trawl-directed fishery that required a large capital outlay, a substantial employment base and large land-based processing and marketing facilities. The trawl fleet has grown steadily and currently consists of some 70 deep-sea stern trawlers and 35 smaller vessels operating inshore using either stern or side trawls. Of significance to this discussion is that the historical growth of the trawl fishery was facilitated by a healthy resource and, particularly since 1977, by a stock-rebuilding process achieved through a sound system of co-management between the industry, researchers and management. This is clearly illustrated by the catch trends shown since the introduction of South Africa's Exclusive Fishing Zone (EFZ) in 1977 (Fig. 1). At that point hake stocks in the Benguela system were considered to have been heavily overexploited, mostly by foreign fleets. The removal of those fleets from South African waters and the rationalization of the local industry facilitated both the recovery of the resource and the growth of the local trawl industry to its current level.

The development of the trawl industry in South Africa was achieved hand in hand with a political system that certainly resulted in lopsided allocations of quota. Hake quotas were first introduced in 1978 (Japp *et al.* 1994) and were arguably most probably allocated to a few companies for reasons such as industrial stability, lack of interest from other groups, and political favour. Nevertheless, the situation as it stood in 1994 was one of limited access to a fishery in which about 80% was held by two companies (Fig. 2). The *TAC* had increased slowly since 1978 (120 000 tons) and in 1995 was set at 151 000 tons (an increase of 26%). This provided a strong basis for requests for access from proponents of change in the industry, particularly by groups who felt that they had been discriminated against in the past. The arguments were further strengthened by the apparent status of the hake resource, which was perceived by many as underexploited and one of the only South African fisheries in which access could be gained through growth of the resource or by cutting the *TAC* into smaller slices. Adding fuel to the debate was the high market value of the hake as well as the

large by-catch potential. In 1993 the demersal fishery was estimated to be 52% of the total value of all fisheries in South Africa (Anon. 1993).

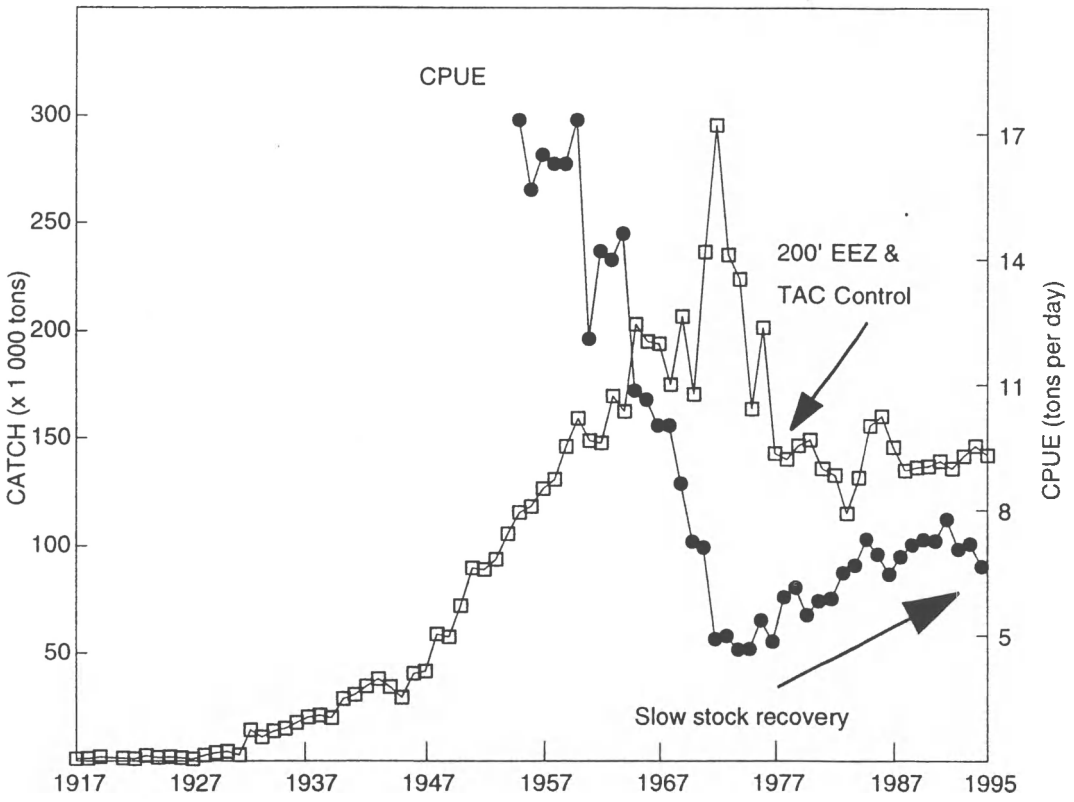

Fig. 1: Historical catch and catch rates of the South African hake fishery

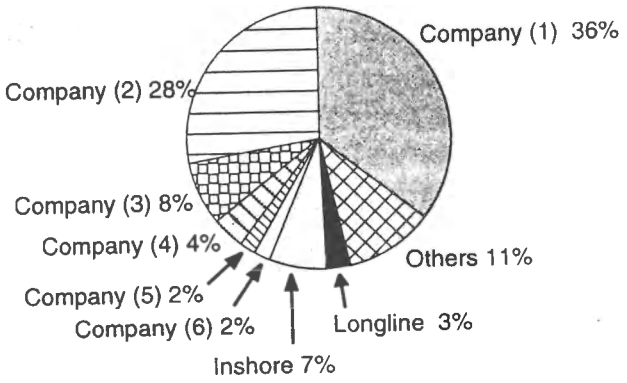

Fig. 2: Hake quota allocations for 1994 in South Africa, by sector

Development of longlining for hake in South Africa

Until 1983, hake were not considered a prime line species and were only occasionally taken by handline fishermen (they were invariably considered a trashfish and certainly less desirable than the target linefish species). Hake are, however, caught by many different gear types worldwide and, in this regard therefore, South Africa is anomalous (Japp 1989). It is a debatable point, but the most likely reasons for the absence of demersal longlining in South Africa were the apparent inclement sea and weather conditions, poor demand, availability of quality linefish other than hake, complacency through limited competition and, not least of all, restricted access to hake quota through the dominance of large trawling groups. Several factors changed this.

In the period up to 1983 vessel capacity in South Africa grew in several sectors, whereas the trawl fleet remained relatively stable and, mostly because of the technology and capital outlay required, was not readily replaced. Nevertheless, there was growth in vessel capacity in the linefish, tuna and squid fisheries. These fisheries used vessels considerably smaller than those of the trawl fleet and, for that reason, operated mainly out of smaller harbours and river mouths and even off beaches. They were, however, subject to seasonality as well as, in many cases, to steady declines in stocks of the species they were targeting. The lucrative tuna poling fishery, for example, began to decline to a point where boats were active for just a few months of each year, the squid jigging fishery was subject to strong interannual variability (Augustyn and Smale 1995) and traditional linefish stocks declined to almost uneconomic levels (Penney *et al.* 1995). In combination with these factors, a proposal by a local entrepreneur to start longlining for hake in 1983 sparked the longline/trawl controversy.

It is significant that the initial interest in longlining came from within the established trawling sector. An "experimental" longline fishery was initiated with access limited to a few (7) existing hake quota holders (Badenhorst 1988). At the time, it was considered that such effort posed no threat to the hake fishery because all participants were existing hake quota holders. Further, experimental effort was directed at kingklip *Genypterus capensis*, not hake. Interest in longlining grew rapidly and resource administrators were soon inundated with applications to longline. These applications came mostly from the tuna fishing sector, which consisted predominantly of fisherfolk of Portuguese or Spanish descent. The longline techniques employed had their origins in the Portuguese and Spanish-based longline fishery of the North Atlantic and were specifically modified for local South African conditions and species (Japp 1989). The pressure to allow participation by non-hake quota holders persisted and, in 1985, six new entrants to the experimental kingklip-directed fishery were issued permits (Badenhorst 1988, Japp 1988, 1989).

This was a significant development, because it meant that hake by-catch had to be accommodated within the existing hake *TAC*, although the target species (kingklip) had no effective management controls. The apparent selectivity of the longline gear for adult kingklip, and more specifically for aggregations of spawning females, led to a rapid decline in kingklip stocks and an apparent serious decline in kingklip recruitment (Japp and Punt 1989). For that reason, the "experimental" fishery was stopped in 1990, but not before poor kingklip-directed catch rates had forced participants to switch to targeting on hake. As a result, longlining became the subject of fierce objection by the trawling industry, because they believed that the demise of the kingklip and subsequent poor recruitment of juvenile kingklip to the trawl fishery showed that the same could happen to the much larger hake resource (the mainstay of the demersal trawl fishery). Scientists held a similar view, although there was no

conclusive scientific evidence either to support or to disallow longlining for hake. An important outcome of the kingklip fishery was, however, that hake quota was given to the tuna participants in the experimental fishery as compensation for withdrawal of their longline permits. Nevertheless, this quota could only be trawled.

A consequence of this development (the granting of hake quotas) was renewed pressure from entrepreneurs to be permitted to longline for hake. A period of two years of illegal hake-directed longlining followed (Japp 1993) as interest in hake-directed longlining grew to unprecedented levels, especially from the traditional line, squid and tuna sectors. Not only were new markets developed, but longlining was being advocated as a more conservative fishing method (than trawling), less capital intensive, and could provide a means of income for many smaller seasonal operators around the coast. Finally, and most important, the political climate was fast becoming more suitable for opening up of the hitherto closed hake fishery. The debate took on a new and more sensitive political slant with demands for access to the hake *TAC* from fishing communities and other groups who argued that they had been left out of the fishery through political discrimination. Scientists, managers and administrators were left in an unenviable position in facing all the counter accusations and demands. Uncertainty as to the potential impact longlining for hake was likely to have on an already heavily exploited fishery using trawl gear was central to the scientific debate. Existing industry, having supported a conservative management strategy aimed at rebuilding the hake resource, strongly resisted hake longlining. Their concerns were also naturally driven by the threat posed by the new political dispensation that could lose them their existing quota rights.

The approach adopted was considered a milestone in fisheries management in South Africa and preceded political transition. Under ministerial instructions in 1993, a subcommittee of the Sea Fisheries Advisory Committee was appointed to investigate the problem. As a direct result it was recommended that the potential for hake-directed longlining in South Africa be investigated. The processes that followed were completely transparent, independent facilitators being appointed to lead the debate on longline issues in a workshop of people with *bona fide* interests in longlining. The result was a proposed controlled scientific hake-directed experiment. A further development was the recognition of the importance of social and economic issues in the discussion. The experiment was therefore designed with strong socio-economic and natural scientific objectives.

The longline experiment

The proposed longline experiment had several clear objectives focused on testing the viability of longlining for hake. A phased approach was adopted, each phase having different objectives but with the long-term goal of providing management advice on whether a permanent fishery should be introduced. This was a formidable task, especially considering the volatile access debate, the forthcoming elections and the lack of a formal fisheries policy. The experiment was intended to provide sound advice based on the likely biological impact of longlining on hake stocks, the possible ways to manage any future longline fishery, information on the extent to which the hake stocks could support both a trawl and longline-directed fishery, and also on the potential social and economic value of the longline fishery compared to trawling.

The first phase of the experiment ran for one year from May 1994 (shortly after South Africa's first democratic elections) to June 1995. Its main objective was to provide a reliable selectivity pattern on which to model the two fisheries - and on this basis, provided the results

supported a continuation of the experiment, to plan the second two-year phase (experimental fishery). The key to the project was limited access, but with participation by all interested sectors, including the existing deep-sea trawling group, the tuna sector and the smaller informal sectors around the coast. In this manner, appropriate scientific data on all possibilities were provided. Allocation of a limited amount of hake for scientific purposes, especially as there was no guidance from a formal fisheries policy, proved the single largest stumbling block. The main concern was that, with the changing political climate, as well as increasing exposure of the fishery to the public, some potential participants could be excluded. The scientific objectives (both biological and socio-economic) were being lost amid growing demands for access and an apparently poor understanding of the process that had been initiated (many considered the objectives to be devious and to support the existing trawl fishery).

Despite the above, the first phase was successfully completed and, in November 1995, it was recommended that the second phase be started. Despite the discontent of some, the successful completion of the first phase illustrated that all sectors of the industry could work towards a common objective. The cooperation between the different groups showed the value of self-discipline and showed clearly the different selectivity patterns of the two fisheries (Japp 1995) and, based on this information alone, yield-per-recruit modelling suggested that longlining alone was biologically preferable to trawling alone. There were other questions, however. Longlining would clearly impose new management challenges for the hake resource. For example, growth in the longline sector would impact differently on the two hake species - a factor not considered in trawl-based assessments because historical data series (nor modern statistics) fail to distinguish between catches of the two species. Issues related to the control and monitoring of a new and expanding fishery were a major concern and provided strong arguments for the continuation of the experimental phase to allow time to test the impact of the possible controlled introduction of a permanent longline fishery (over-capitalization remains a major threat). Further, many of the social and economic questions were not properly resolved and clearly needed more time to obtain valid conclusions. The potential for longlining to provide upliftment to coastal communities, which in a political sense seemed a good idea, was proving difficult to implement in practice.

The immediate future

The longline trawl debate remains in a controversial and as yet inconclusive state. Political goals (generally short term in nature) are being matched against the long-term management objective of sustainable utilization. Results of the experiment to date suggest that longlining is biologically acceptable. Major decisions still, however, need to be made and unanswered questions related to both biological and socio-economic uncertainty need to be resolved. These are:

1. recognition of longlining as a permanent but limited feature of the South African fishing industry and that a strong co-management approach is required if the hake resource is to be managed rationally and successfully in future;

2. that sustainable utilization remains a fundamental principle of managing the hake resource;

3. recognition of the need to diversify the hake fishery to allow broader access to more fisherfolk, provided that both immediate access and expansion are carefully controlled

within the constraints of stock size in future;

4. recognition of social, economic and political issues and that management will have to match these closely with resource concerns;

5. that guidance for all above developments should come from within the universally (to South Africa) accepted policy.

THE SOUTH AFRICAN FISHERIES QUANDARY - WHO GETS WHAT, AND WHY, AND HOW IS IT TO BE ACHIEVED?

Considering the case study presented above, the objectives of the policy may not easily be met by the government, nor indeed by the scientists (including government scientists) who are now being asked to advise on the most appropriate manner in which to address them. As Payne and Cochrane (1995) stated, most scientists took a back seat in the policy-development process in an attempt to stay "clean". In retrospect, the assertion of those same two authors that scientists should have played a more dominant role in the process by advising on, *inter alia*, achievability of principles, was spot on. Of course, scientists advised management and the Fisheries Policy Development Committee whenever called upon to do so, but rarely were they asked to participate actively in the debate at the working group or plenary level. Even more rarely were their comments heeded (or in many cases clearly understood).

The problem that now faces all scientists is how to marry all these objectives, to come up with an acceptable management procedure, in a way that will satisfy all constituencies in the policy-development process. It must be remembered too that many of the objectives were drawn up to address some of the expectations created during the political process when South Africa was being democratized. Others were evolved by those already in possession of access rights in an attempt at preserving realism within fisheries. That is why some of the objectives are dependent on others, whereas others may not be achievable. In the next few paragraphs, the hake fishery (current and future) is addressed in terms of the 11 basic objectives/principles outlined in the draft fisheries policy.

(i) The hake fishery, as the most valuable of South Africa's current fisheries, is going to be the gauge against which success or failure of the first objective, to optimize long-term social and economic benefits to the nation, is met. The accent must be on the phrase "long-term", because it is simple to give short-term benefit socially and economically while driving the stock to commercial extinction. "Long-term" also, of course, addresses the belief of the current hake industry that their own conservative measures for two decades should lead to some long-term benefit for themselves. Science has shown that, even biologically, longlining is more beneficial for the resource than trawling, but to simply exclude all trawling activity now is impossible without causing tremendous social and economic suffering among communities that have developed around the hake resource. As stated in the previous section, there will likely be both types of fisheries in future, but the *political* use of the longlining option will have to be opposed or unrealistic expectations may be raised, so countering this objective at source. In summary, the objective is achievable, but with care.

(ii) In terms of replenishment, the hake resource has already been managed conservatively so that maximum yields are more than a pipedream (Payne and Punt 1995). However, it would be easy to undo much of what has been achieved by introducing too much

longlining for hake too fast. The target must surely be to return hake yields to maximum annual levels (perhaps some 40 000 tons more than the current annual take). Therefore, the control mentioned in the previous subsection will be crucial to any management decision associating itself with sustainable utilization. Managers are indeed fortunate to have the range of options for managing the hake resource that they have. Politically inspired pressure to broaden access fast and to expand the longlined portion of the hake *TAC* must be withstood firmly by both scientists and decision-makers, or the socio-economic fabric that ties together many fishing communities dependent on the resource for their very existence could be torn apart permanently. This objective is definitely one that can be met if the access question is addressed in a reasoned manner.

(iii) This objective, to comply with the principles of South Africa's Reconstruction and Development Programme, is very important in terms of the two words "long term". Fisheries in South Africa can contribute to the RDP, but they can only do so within the narrow framework of a fully mature industry. As Payne and Cochrane (1995) point out, the least we must expect is that political decisions on resource utilization be made in the full understanding of their potential impact on sustainability in the long term. We firmly believe that, if cognizance is constantly taken of the need for long-term sustainable management, then this objective can be met. However, political realization of the limitations of the resources must be achieved first. In other words, success with this objective requires that other objectives are also met.

(iv) The fourth objective, to ensure transparency and accountability in resource management, is easily achievable and has, in fact, been promoted in many spheres and for several fisheries (including that for hake) for a number of years. In terms of transparency, the objective presumably seeks greater participation in the various recommendation and decision-making bodies. Provided every party buys into the consensus views of those bodies, then few problems will arise; it will only be when decisions are reached that certain participants cannot agree with that this objective could be compromised. Creation some years ago of an organization representative of all participants in the hake fishery helped meet this demand. Those outside the fishery at the moment may feel that decisions can be made that do not favour them, but the scientific reasoning behind any decision has, at least recently, always been made available for scrutiny. In terms of accountability, all State employees (who are responsible for managing the hake and other fisheries) remain totally accountable for their actions and decisions. This objective is therefore both reasonable and can be met.

(v) This objective poses the greatest challenge to the hake fishery. The whole process of democratization of South Africa has called into question whether current allocations are "fair and equitable" (Payne and Cochrane 1995). To address this question, it will be necessary to ensure that current disparities in access to the resource are addressed fairly, considering current investments and infrastructure as well as the many aspirations that have been created during the process of political emancipation. The objective refers also to the need for sustainable utilization (ii above), so it may be inferred that fairness cannot be achieved by correcting current disparities through granting access to a too-high proportion of the resource for longlining, at least not without scientific determination of the impact of such allocations. Discretion in addressing this objective is critical, or some of the other objectives will not be met.

(vi) The objective of placing management decisions on a sound scientific footing is gratifying to those involved in researching the hake resource and particularly to those who are currently grappling with the vexing problem of what proportion of the *TAC* should be allocated to longlining interests without negatively affecting the sustainability of the resource. However, this objective should not be viewed as just referring to natural (here biological and mathematical) science. Decision-makers will be expected also to take appropriate cognizance of social and economic issues and, to date in all South African fisheries, such participation in the decision-making process has not been of as rigorous a nature as the biological input. The experimentation currently underway on socio-economic issues referred to in the case study above should show the way such input must be used. Further, clear guidelines should be obtained from the results of that study to ensure that the revised operational management procedure currently being developed in consultation with all stakeholders will accord appropriate weight to socio-economic issues. All participants, including prospective ones, can then be assured that only up-to-date and rigorously reviewed scientific information will be employed in the management of the resource. This objective is definitely one for which all scientists will argue.

(vii) A holistic approach to the hake fishery in terms of the goals listed in the emerging policy is of merit, but will again lead to conflicting interests. Articulated goals that apply to the hake fishery are:

- Increasing the long-term contribution of the fishery to the GDP - this can only be achieved by continuing the rebuilding process commenced in 1978. It cannot be achieved by affording access to vast numbers of newcomers, be they longliners or trawlermen.

- Increasing employment opportunities - again, this can be achieved realistically only through continuation of the rebuilding process; any attempt to increase employment opportunities in the longlining sector will automatically have a negative effect on employment in the trawling sector.

- Addressing historical imbalances - this issue has been addressed in (v) above.

Two other goals listed in the policy, namely the development of new markets and the sustaining of an internationally competitive industry, can only be addressed realistically in the long term by the present participants in the industry, so they can be taken as read.

(viii) The objective of participation in resource management is closely linked with objective (iv) above, but it is certainly warranted. Up to now, the management of fisheries in South Africa has been conducted totally by the State, other than recommendations made by independent (and generally representative) bodies established and mandated by the responsible Minister (Payne and Punt 1995). This objective clearly wishes to place management issues in the hands of a broader cross section of society. In the case of hake, the objective seeks participation by affected communities, labour organizations and scientists (presumably both natural and socio-economic scientists) in managing the resource. Currently, natural scientists researching the resource make input and independent scientists and resource users make recommendations on management issues. Therefore, the objective can easily be met without negatively

impacting effectiveness.

(ix) The objective of provision of acceptable conditions of employment can be met by both longlining and trawling sectors, whatever proportion of the *TAC* they command. Already, labour organizations have a major say in the utilization of the resource by the trawling sector.

(x) The hake resource knows no boundaries in terms of South Africa's provinces with a coastline. One of the most vexing problems facing administrators currently is whether to devolve more responsibility for fisheries management to a provincial level, some provinces flexing their muscles significantly over this issue although it is questionable if they have the infrastructure, funding and therefore capability to take up the responsibility. In the hake fishery, the present national responsibility has to be retained because of the spread of the resource around the whole coastline (although most catches are made off one province only) and its two-species nature (Payne 1989). Dominance by each of the two species varies around the coast, but spawning areas are not so widespread (Botha 1980, Payne 1989). The *status quo* must be retained if the future of the hake resource is to be assured.

(xi) Fortunately for South Africa, the various Acts and Regulations set for fisheries have been developed and changed iteratively. However, this situation has not applied always to some of the modelling exercises on which the resources are based. The hake fishery is generally free from such criticism, largely because of the consultative manner in which it has been managed for many years. However, with two parties (trawling and longlining) now vying for shares of the cake, that situation may not be so achievable in future. Nevertheless, current administrators are sympathetic to the objective and so will not easily compromise it.

FINAL COMMENTS

South Africa's hake fishery is currently a strong one, with room for some growth towards higher sustainable levels (Payne and Punt 1995). That some change in the philosophies behind fisheries management, particularly in the hake fishery, are essential is unquestioned. However, we are firmly of the opinion that, provided the changes are made slowly, there will be room to accommodate both the traditional hake fishermen and *some* of the aspirant newcomers without compromising the sustainability of the resource. No doubt some mistakes will be made in the process, but the Cape hakes are a robust resource and can probably withstand pressures so caused.

South Africa has now entered a new era of fisheries management and there is optimism that the trust developed through the fisheries policy development process can see its hake and other fisheries through to an optimistic future. Decision-making politicians too seem to be sensitive to the need for caution in their decisions and have not simply bowed to the pressure to broaden access to the hake fishery by allowing too much longlining too fast. The question that scientists are now asking is, however, whether they were hiding behind the incompleteness of the fisheries policy development process or whether they genuinely believed the scientists in their calls for care in making their decisions. Only time will tell which of these two options applies in the case of South Africa's hake fishery!

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