

PFS=ECY + SEP

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ABSTRACT

The inability to find a solution – acceptable to sufficient stakeholders to achieve political agreement - to effectively adjust fisheries resources management systems and sector policies lies at the heart of most overexploitation tragedies. For developing countries the application of a technological approach - focusing on rights, maximizing single, economic or biological objectives - is largely irrelevant. To successfully introduce necessary changes in their sector policies and resources management systems, they require operational analysis of politically feasible solutions to create the political critical mass to support adjustment and a roadmap to move the political processes. This paper explains what caused operational ‘politics’ to be ignored in the past, what analytical tools exist and it provides an example of the scope of potential benefits of such political analysis. The paper discusses the Politically Feasible Solution (PFS), the outcome of political processes and decisions – analyzed in advance - that better satisfies a larger number of stakeholders compared to the without analysis scenario. To create multi-stakeholder consensus, such political analysis may use parameters that combine the multiple interests of key stakeholder groups into a single variable. Joining scientific, commercial and public finance objectives, the Effective Commercial Yield (ECY) would enable the fleet to: (a) compete effectively in international markets, and (b) provide a share of the resource rent to the public sector. The Socio-economic and Environmental Program (SEP) combines the multiple objectives of small-scale fishermen for meaningful employment with those of environmental protection and biodiversity interests.

Keywords: political analysis, alternative solutions, tools

Introduction

This paper argues that the analysis of the ‘politics’ and related financial implications of making decisions – including indecision – in fisheries management and sector policy is at least as critical a design component as the scientific assessment of the status of fish resources and complexities of the marine environment, the economics of fisheries, and the constraints imposed by fishing technology and fish marketing. If we are serious about improving the actual performance of fisheries management, we need to study the politics to better prepare for decision-making and implementation, *rather than leaving the political process entirely to ‘chance’, as we do now.*

The second message is that we – in the fisheries management community - need to abandon our scientific obsession with single objective maximization paradigms, and devise different standards by which management effectiveness can be implemented and measured.

The origins of this paper can be traced back to a single sentence uttered by a scientist friend of mine, who should remain anonymous. ...” If it wasn’t for these *&%# idiots in Brussels, there would still be cod in the North Sea”. A curious sentence, because my friend is well acquainted with the Byzantine political processes of decision making in the EU. However, it was heresy to him to include an analysis of these processes, assessments of the interests and relative importance of key stakeholders and a strategy to mold a political feasible solution as an integral part of an assessment of North Sea cod stocks. I hope this paper convinces him of the contrary.

This is of course not the first time the issue of ‘politics’ in fisheries management is raised. Well-known fishery economists did draw attention to the political side of fisheries management over the past decades: H. Scott-Gordonⁱ, Jim Crutchfield, Dr. Hildebrandt - my former mentor at the Landbouw Economisch Instituut (LEI) in the Hague who thought me that; ‘... fisheries management *is* politics’ -; Bjorn Hersougⁱⁱ, Anthony Charlesⁱⁱⁱ, J.W. van der Schans^{iv} and recently Dirk Reyntjens and Clare Coffey in their draft paper for the OECD on obstacles and drivers on sector policy reform^v.

Why analysis of ‘politics’ never really made it

The history of fisheries management is full of examples of bad development resulting from politics gone haywire. Between 1950 and 1980 public and private ‘stakeholders’ could rely on the fish to take the brunt of the political ‘solution’ of public inaction or incompetence. Fish have traditionally been sacrificed as they don’t vote, carry guns, or can pay with plastic to compensate humans suffering financial or social losses as a result of fisheries management actions. The inability to find politically feasible solutions that better satisfied competing stakeholder objectives – including those of the fish - lies at the heart of many if not most overexploitation tragedies in the world. Looking at the EU and some US fisheries today, the political processes have become far more complicated. Still, their ‘chance’ character makes them remarkable effective in diluting or at least postponing critical fisheries management and sector policy decisions.

Research. Scientists and economists have dominated the earliest theories and applications of fish resources management^{vi}; they encouraged the original technological top-down management paradigm that assumed a well-defined but slightly ‘external’ role for research. Their recommendations – even for Total Allowable Catches (TACs) - still aim at maximizing a single objective, mostly for a single or a limited number of fish stocks or fisheries. Scientific recommendations, as Reyntjens and Coffey noted, focused on *the end-points of catch and effort levels or policy reform, rather than on the process of reform itself (my italics)*. The fruits of these research efforts – recommendations defining the biologically or economically optimal level of future exploitation of fish stocks, including time, area, capacity and technology limits, or defining the nature of a market based rights system – would find their way to a ‘fishery manager’ in the fisheries administration who would swing his or her magic wand and declare and enforce implementation. This fairy tale mostly ended badly (it may have been written by the Grimm brothers), but the paradigm has had some staying power.

Maximizing a single objective. In 1981 Peter H. Pearse, Commissioner of the Commission of Pacific Fisheries Policy analyzed the crisis in Canada’s Pacific Fisheries^{vii}. In this highly thoughtful and comprehensive document he lists at least seven requirements of a future fisheries management system and sector policies: resources conservation, economic efficiency, flexibility, security, public revenues, social goals and simplicity (although he then continues that management of fish resources entails only two responsibilities: preservation of habitat and protection of stocks). This appears to be one of the first documents that formally acknowledges the existence of multiple objectives of many stakeholder groups, and assesses parts of a political ‘process’ to achieve political solutions, although the word ‘politics’ is never mentioned. A study conducted in 2003 by CEMARE for the European Union (EU) - following an earlier study by Charles (2001) - explored to model the impact of multiple objectives on policy definition and management decision-making. It starts with the following observation: ...’The challenge of successful management of fisheries is to determine strategies that maintain the sustainability of fish stocks, improve incomes, not increase prices to consumers, and maintain regional communities that depend on fishing. These objectives cannot be fully achieved simultaneously’^{viii}. The paper uses multi-criteria decision and trade-off analysis to investigate how group opinions of 60 stakeholder groups in the English Channel fisheries could influence management decisions. Yet, although a number of other articles have been published since 2003, the single objective has survived in the management system of many fisheries in the world today.

The idea that management should ultimately aim to maximize an objective has had equal staying power. ‘Optimum economic yields’ and ‘efficiency’ feature in many an article about fisheries economics; ‘optimizing’ or ‘maximizing’ is part of virtually any normative framework designed for fisheries management aiming for ‘societal’ benefits. About 10 years ago FAO, in its Code of Conduct for Responsible Fisheries, fundamentally re-defined fisheries management objectives in terms of conservation of aquatic ecosystems^{ix}. However, the holy grail of maximizing survives in far too many fisheries management systems^x.

In most developing countries multiple stakeholder groups have equally complex and conflicting objectives. Any management system that ignores this cornucopia of views and interests and fails to somehow incorporate processes to reconcile these stakeholder objectives towards an acceptable solution is unlikely to achieve much success. Many scientists and economists still believe that a ‘technological’ market based approach (TACs, ITQs, public sector rent collection) will be the solution to address the over-capacity and over-exploitation issues in the sector. Economists felt vindicated for their countless analytical efforts when countries like Iceland, New Zealand, Norway and Australia introduced market-based solutions to the fisheries management problems. While the need for policy adjustment – and political consensus – was acknowledged to enable introduction of market based instruments, many believed that the use of these tools would minimize the need for future public intervention – and politics – in reaching management decisions^{xi}. The real world showed otherwise. These countries demonstrated that neither the political process, the role of key political stakeholders nor the role of institutions involved in the management received anywhere near sufficient attention and analysis *prior to* or even *during* the adjustment process towards a market based rights system. New Zealand not only demonstrated that ‘luck’ played a critical part in creating the first ITQ systems^{xii}, but also that a complete lack of pro-active political analysis caused ever-deepening problems with political processes once the decision to use quota-based management had been taken. Hersoug concluded in 2002 – *twenty* years after the initial introduction of the first quota – that critical political solutions were needed to further improve the performance of the system^{xiii}.

What is Politics?

Sustained scientific abstention from political analysis has not been the only factor that can explain the poor performance of fisheries sector governance in the past. One may reasonably claim that ‘the usual suspects’ are equally responsible, notably in developing countries: poor data or science, institutional and personal incompetence, frequent political personnel changes in public organizations, corruption, a poor legal and regulatory framework, external political pressure, lack of public money for research and MCS, lack of industry organization, conflicts between stakeholders or countries, the complexity of many fisheries; this list is endless. Similar factors constrain governance of large public and private enterprises and public institutions, including cities, coastal areas and countries. Mankind has developed ways to govern in such a complex, far from ideal, environment. Analysis of the political landscape is standard fare for any multinational CEO or Prime Minister interested in job-security; the *Economist* newspaper provides bite-size examples of such analyses every week. Because many of the constraints listed above are part and parcel of the ‘political’ side of fisheries, political analysis would equally benefit those poor souls responsible for management of the world’s fisheries.

Definitions. Webster defines *Politics* as: (i) the science and art of political government, (ii) political affairs, (iii) the conducting of or participation in political affairs, often as a profession, (iv) political methods, tactics, and (v) political opinions, principles. Its definition of *Politic* shows the tension between the different meanings: (L. Politicus; Gr. Politicos, relating to a citizen, polites, polis, city) wise, prudent, sagacious in devising and pursuing measures, crafty, shrewd, unscrupulous, cunning and diplomatic.

To paraphrase a well worn quote from von Clausewitz; politics is what comes before and during war, and is performed by different means. After having witnessed an armed raid of rival fishermen groups in South India, and the tactics of the Yemeni Government to protect its fishermen operating in their traditional fishing grounds off Eritrea, the line that separates politics and war remains opaque.

Politics applies in situations in which multiple parties pursue different objectives and interests. It seeks to create sufficient political critical mass to reach a solution, although more radical forms – single or groups of stakeholders forcing their position through subterfuge, deceit or non-existing political power - are not uncommon^{xiv}. In-between these two extremes the history of politics has examples of a virtually endless list of options, as the history of the International Whaling Commission so splendidly demonstrates. This does not mean that in politics ‘anything goes’. Usually most stakeholders have good reasons to operate within a prescribed ‘political’ framework of agreed processes and procedures, upholding standards of personal integrity and behavior, and have various remedies if opposing parties stray from that straight and narrow path. But, as your television news often notices, there are exceptions.

In an analytical sense, what is *politics*? Four aspects define it sufficiently to be operationally relevant. Politics has:

- ✚ One or more *drivers* that push the political process towards a decision and implementation; and
- ✚ A structure comprising *political processes* (for example before, during and after a sector restructuring), *institutions* (that enable stakeholders to participate in those processes) and *stakeholders* (groups, individuals, public and private institutions, with multiple objectives that directly or indirectly have an interest in decisions or the process).

Drivers initiate or give direction and urgency to political processes. There are many drivers, from the President’s desire to be re-elected to pressure from the scientific or NGO community to save coastal biotopes. In developing countries these drivers have a mixed record. The most common include:

- ✚ *Crisis*. A rapidly declining resource biomass and daily catch-rates, or sustained negative operational cash-flow of the fishing fleet have frequently created pressure on the Government to ‘improve’ management - and *de facto* find an administrative *and* a political solution for its implementation. In only about one-third of historic cases did such pressure result in effective action^{xv}, and the effectiveness of crises as single drivers leading to political agreement therefore remains open for discussion.
- ✚ *Macro framework*. Strong electoral mandates, fiscal crisis and changing macro policies have more frequently created political pressure to change resources management. This macro-economic cocktail in combination with a resource crisis did have a forceful driver effect in New Zealand and Iceland, and to a lesser extent in Norway and Chile. In most developing countries prevailing macro-economic conditions frequently constrain political decision-making (Namibia possibly being an exception)^{xvi}.
- ✚ *Transparency*. Improved transparency in defining the explicit beneficiaries of government policies, including public subsidies, has been an effective political driver in developed countries, but less in developing world. Well-connected stakeholders - the main beneficiaries from local public licensing policies or external fisheries agreements – can and do effectively repress such transparency. The State itself - often the main, or at least a major beneficiary from issuing fishing licenses and external financial assistance linked to fisheries agreements – often avoids too much transparency. Still, public disclosure can be effective, as it was during the failed negotiations during the late 1990s of the extension of the fisheries agreement between Morocco and the EU.

- ✚ *International factors.* Production expansion policies of a number of distant water fishing nations have often translated into specific fisheries agreements, and external pressure has been a critical driver pushing political processes towards acceptance of increases in fishing capacity. The EU Common Fisheries Policy – aiming to reduce fishing efforts in European waters in part by moving some fishing capacity and fish production to the EEZ of other countries through a program of fisheries agreements – and bilateral agreements of a number of Asian distant water fishing nations have been prime examples^{xvii}. Eco-labeling and sustainability initiatives such as pursued by the Marine Stewardship Council still play a relatively modest role, but recent trends of large corporations adopting ‘blue’ policies suggest this may change^{xviii}.

In many ways the opposite of political drivers – factors slowing advances of the political process and constraining effective decision-making - have been more common in developing countries. Such factors may include: gradual biomass declines, macro policies reducing the role of the public sector, a small number of influential local investors in the sector, lack of funding for compensation policies, uncertainty about long-term policies and the distribution of gains and losses resulting from management decisions, limited NGO activity and poor organization of small-scale fisheries interests.

Structure. Political activities can take place anywhere, at any time, a fact well realized by people seeking or keeping political power. In the more distant past most political processes were officially confined to the courts of kings and other leaders. Athens invented democracy when all free male citizens would gather at the *assembly* at Pnyx hill next to the Acropolis, where all major political decisions were made. More recent inventions include the focus groups and scientific polling. All these efforts had the same purpose: maintaining a form of transparency and equity in the political process by channeling most overt political activities through selected political institutions. Those in power also wanted to keep some form of control and the ability to ‘drive’ the political process, but over the ages this has not prevented people from pursuing political activity away from the limelight.

Stakeholders. Developing countries are as diverse as developed economies in terms of stakeholder groups. Small-scale fishermen – by far the largest group of people involved in fisheries in most countries – some 17 to 32 million, depending on their full- or part-time status – have generally been a modest force in most political debates and fisheries management decisions. If organized at all, their organization is often fractioned along tribal, regional or fishery lines. Local fish processors and traders – the *mammies* in West Africa; some Chinese groups in East Asia – are usually better organized, funded and generally are a more potent political force.

Three stakeholder groups - often closely linked – appear most important in the political process:

- ✚ local entrepreneurs, owners of ventures that own or charter industrial fishing vessels and have access to industrial fishing licenses. These are often linked to
- ✚ foreign industrial fishing interests, from any of the major distant water fishing nations. These parties often maintain links to
- ✚ public institutions from distant water fishing nations responsible for negotiating fisheries agreements, and bilateral aid agencies.

The indirect political influence of local and foreign consumers and local service industries is seldom insignificant, but generally difficult to translate in direct political influence.

In theory the traditional responsibilities of the Minister (or Director) of Fisheries should make him the dominant force in policy development and fisheries management. In countries with a small and economically insignificant fishing industry, the Minister can be such a relatively dominant force. In practice, many Ministries (and Ministers) of Fisheries are administratively, and more important,

politically, rather weak. In countries where the sector is more important in terms of employment, exports, public budget support, or is a major recipient of foreign direct investment or donor aid, the Minister's influence *directing* the sector often declines. He increasingly becomes one of the *stakeholders* in political processes within the Government; his limited political power becoming a liability. When fisheries becomes more important, the relative role of the Ministry of Fisheries as conduit of political processes and formal decision making ironically shrinks, while informal political negotiating processes between and inside other Ministries often take over, involving both local and foreign interests groups listed before^{xx}. Research management and policy recommendations become just one input in a complex political policy and decision influencing and making process in which they have to compete with national and local financial, social and political (election votes) objectives.

In those countries where foreign fisheries agreements or license fees from local and foreign industrial fishing vessels generate a sizeable percentage of public budgets^{xx}, the Ministry of Finance (and/or Planning and Economic Affairs) frequently plays a dominant role in *de facto* political decision-making in the sector, often outside formal channels. The President or Prime Minister sometimes has been an – often short-term – political factor, notably prior to national elections, or prior to and during negotiations for a foreign fisheries agreement.

Institutions. In theory the Ministry of Fisheries *is* the only institution where policy is being defined and most sector and resources management decisions officially are being made. As explained above, real life is different. The Ministry is also not politically monolithic. It usually has a set of *advisors* or *directors*, who frequently form an unofficial conduit for and become part of external political pressures and policy making, a semi-independent *research institute* pursuing its scientific and financial interests, and one or more *public corporations* responsible for developmental, marketing, infrastructure and/or MCS activities, which often have their own political agendas. While in theory only the political top of the ministry, the Minister and his Deputy, are allowed to perform 'political' functions and make political decisions, in practice at least three informal political stakeholder groups operate within and outside an average ministry, representing research, sector corporations and advisors.

Some countries have moved towards devolution of resources management responsibility, introduced some form of co-management and created national or local Fisheries Boards, or Area Councils where local stakeholders can discuss resources management and sector policy. These bodies, specifically created to increase stakeholder participation, often fail because of a poorly defined legal status, ineffective administrative and reporting regulations, stacked membership arrangements and/or lack of money and technical support. Many are ineffective pushing recommendations, once made, through the political processes within the Ministry of Fisheries. The history of co-management is littered with examples of devolution that have been ineffective because of political interference.

Processes. A political process aims to influence other people's views or actions, engage other parties in the process, or influence the outcome of parallel or even non-related political processes. Any exchange of views by stakeholders can be part of a political process; whether this takes place at the dinner table or in a Fisheries Board may have implications for the transparency of the process, but not necessarily for its effectiveness. Political processes are the most ephemeral of theoretical concepts, because they are so widespread and fluid.

Politically Feasible Solutions (PFSs) and other concepts

Few papers ever needed to make the case for scientific research as a necessary precursor for the design and implementation of major decisions or changes in fisheries sector policy and the structure of the

fisheries management system. It is more than a little ironic that a paper needs to make the case for such political analysis being critical to achieving a better outcome compared to the without political analysis scenario.

What is a PFS? A PFS in fisheries management or sector policy design is the outcome of political processes and political decisions – analyzed in advance - that better satisfies a larger number of stakeholders compared to the outcome without such analysis^{xxi}. ‘Better’ is briefly discussed below. A PFS may particularly focus on:

- ✦ Part 1. ***The desired outcomes of the original proposals.*** An assessment of outcomes and risks, as perceived by the framers of the proposal, evaluated from a scientific, administrative and financial point of view.
- ✦ Part 2. ***The structure of political decision making, the ‘without analysis’ scenario:*** (i) the major political drivers behind the proposals, and their likely effectiveness, (ii) key stakeholders, (iii) the nature of the formal and informal decision making processes likely to lead to a decision, (iv) the objectives and other considerations of major decision makers (including stakeholders), and (v) the likelihood of a broad acceptance of the proposals. Part 2 would particularly assess what would happen if the decision would be made now, without further political action and analysis. It would also define the likelihood of a ‘without’ decision outcome – approval, rejection by key stakeholders, or postponement.
- ✦ Part 3. ***Other options to reach a feasible political solution.*** This section would assess what options, tactics and approaches may be feasible to create sufficient political support for a (modified) decision and its implementation. Analysts would: a) assess what additional policies or actions could be defined to create broader political support^{xxii}, b) define the major objectives of all stakeholders, including potential trade-offs, and what pro-decision stakeholders and those opposing the decision may put on the table to negotiate a more positive outcome, c) evaluate what institutions (and their membership) or other process channels may be used as venues to negotiate such outcome, the timeframe of various processes, and the nature of the public and private financial support that would be required to reach a negotiated consensus. d) program each of the steps and processes that would lead to one or more politically feasible solutions, e) estimate biological, bio-diversity, financial and political benefits and costs that potentially may result from applying the PFS, f) assess the forms of compensation that may be considered in the political processes, and g) the nature of the risks involved in pursuing the PFS.

The analysis leading to a PFS needs to be designed to suit the circumstances and the nature of the proposals. Uncertainty about the reliability of scientific assessments and financial projections suggest that outcomes be preferably defined in stochastic terms. Each PFS analysis should include an assessment of risks, define the likelihood of certain outcomes or stakeholder decisions, highlight high-risk processes and define the risks of possible alternatives. It should also define how the processes described in it should be monitored, and analyzed.

When is a PFS ‘better?’ When will the complex of biological, social, financial and political gains and losses of many stakeholders resulting from a PFS supported decision be ‘better’ than would occur without PFS analysis. This requires a comparison of ‘apples’ and ‘oranges’, all in a future timeframe: the improvements in biomass and bio-diversity, the distribution of net financial gains and losses, the macro-economic benefits, socio-economic implications, political gains etc. A well-explored solution would be to express all net PFS gains and losses – biological, political, financial, environmental, social – in monetary terms. The experience of environmental accounting suggests this may be exceedingly complex, time consuming and not well suited to one-off analyses. Another solution would be to define for each PFS analysis which broad ‘macro’ objectives – political, social, financial, environmental, or biological – should be given priority in measuring success, and evaluating net gains and losses for each of these objectives, *without* trying to define a single combined parameter to measure ‘better’. A third option would

be to consider any decision beneficial if the alternative would have been inaction. *Clearly, the theory of fisheries management requires a different standard in assessing success compared to the historic biological and economic single objective 'goals', or even the multiple objectives of economic models. Further development of political theory to address this question will be required.*

Who should order a PFS analysis, prepare one and who should pay? Ideally, several important stakeholder groups, including public stakeholders, should support a PFS request. Preparation of a PFS analysis requires local knowledge of the political landscape. In addition it requires professionals with experience in at least four skills: marine science, political science, finance and negotiations. In selected cases people with a background in international finance, fisheries agreements or fisheries technologies may also be needed. To prepare a truly independent PFS, these professionals should not be materially or professionally linked to any of the major stakeholders^{xxiii}. Preparation and monitoring and evaluation of the implementation of a PFS may in some cases be time consuming and – when external professionals are engaged - costly. Hence it would only be appropriate in situations in which fundamental policy or management system changes are planned. A 10% adjustment in an annual TAC does not qualify for a PFS analysis. A PFS analysis is meant to assist all stakeholders in preparing for a politically feasible solution; the analysis should be available to all interested stakeholder groups. Given the sensitive nature of its contents, major stakeholders may decide not to make it a public document, and alternative distribution should be defined.

As a new, unproven, tool to enhance fisheries management effectiveness and sector policy, a PFS analysis is unlikely to immediately attract eager financiers. The necessary independence of professionals preparing a PFS analysis creates other funding constraints. No single major stakeholder in the subject of the proposed PFS should provide funding, to avoid any impression of political bias. This excludes most fisheries administrations of developing countries. Ideally funding should come from a number of public and private national stakeholder groups, each funding a minor share of the total costs. Alternatively local or foreign universities, independent foundations, or international or bilateral donors could provide funding.

West Africa is probably one of the best areas to demonstrate the advantages of a PFS. Few have taken the time and effort needed to better understand the political aspects of decision-making, and how important the impact of politics has been on current policy, resources management practices and negotiations of fisheries agreements. Box 1 describes an un-official attempt to assess the costs of this failure, and the potential benefits of finding politically feasible solutions^{xxiv}.

Box 1: West Africa Fishing Sector Value-added Analysis^{xxv}

In 2006 a brief sector analysis was prepared of the main financial parameters of West African fisheries. Although the analysis has not been published, and was only used as background for the World Bank, it highlights key financial and national parameters that dominate political processes and the interests of key stakeholders. Using FAO and CEEFAC regional catch and local financial data, and estimates from specialists working on the area, the analysis compares aggregate macro-data of the fishing sectors from Morocco to Gabon in 2002 with an imaginary future scenario, which would be based on a politically feasible solution in each country and the region. The latter assumes the various stakeholders in the area are able to reach agreement on management measures to effectively reduce overall catch levels and over time increase the biomass of key stocks to 60-75% of B_0 , reduce industrial fishing and the role of foreign fleets (fishing legally and illegally), while increasing the role of small-scale fisheries, with financial assistance of external donor support.

In 2002 the total net value added (VA^{xxvi}) created by all the industrial and the small-scale fishing operations in the area was about the same, some \$320 million. About 70% of the total VA created by the industrial fleet was taken abroad (illicit fish catches directly taken abroad, legal catches not landed locally). In 2002 the total value of financial compensation received by these West African countries from their fisheries agreements with the EU and other countries was about \$70 million, hence their net VA (in foreign exchange) outflow was of the order of \$160 million annually. The VA generated by local processing and marketing of fish and other sector services linked to small-scale fisheries in 2002 was over 15 times the VA of locally processed industrially caught fish, and about double the VA of small-scale fishing activities.

In the politically feasible solution scenario, the overall annual catch in the area would decline by 32%. The VA of the total industrial catch (legal and illicit) would decline by 8% (as CPUE would increase), and the VA taken abroad decline by 20%. The VA of small-scale fisheries would increase by about 65%, as would the VA of local processing of the small-scale catch. Finally, total domestic VA generated by the sector would increase by 35% to some \$1.75 billion annually.

Other concepts to support a PFS. When preparing a PFS, analysts will need new tools that can be directly used in political negotiations and processes. Single objective serving single interest groups are – and have never been – an effective target of management or policy; policy and management tools that combine multiple objectives of several stakeholder groups could be more effective.

Effective Commercial Yield (ECY). One of those concepts, combining scientific with commercial and public finance objectives, would be the Effective Commercial Yield (ECY). It appears particularly useful in the current global high energy cost environment. When analyzing management measures for fish resources targeted for export with exclusive access by a commercial fishing fleet – type and origin of vessels to be well defined - the ECY would define the level of bio-mass and fishing effort able to give the fleet seasonal or average catch rates that would allow them to: (a) produce for and compete effectively in international markets, and (b) provide a share of the resource rent to the public sector^{xxvii}. Introduction of an ECY would have many benefits, requiring monitoring of relatively simple scientific parameters, reducing over-exploitation risks for local and foreign investors, and providing the Ministries of Finance and Fisheries with a more predictable source of income^{xxviii}. As a tool in a PFS analysis, it would merge private local and foreign industrial interests with those of the public sector, notably the Ministry of Finance^{xxix}.

Socio-economic and Environmental Program (SEP). Although few television reporters have made the explicit link between Senegalese fishing boats full of employment seeking African people being intercepted near the Canary Islands and poor fisheries management in Senegal, such link exists, as a recent BBC radio program explained. Small-scale fisheries – and that includes for simplicity sake the large pirogues used in West Africa to catch small-pelagics – is an income generating form of employment, and their objectives include both higher income and employment security. Resources management concepts should better reflect these prime objectives of fishermen in designing management systems.

The PFS toolbox should include a multi-objective target that combines meaningful small-scale fishermen employment, a decent income, and better control over local fish resources and link these to environmental protection and biodiversity interests and other income generation activities. The principle of engaging fishermen in activities to support Marine Protected Areas is not new, it has been applied in projects in East Asia, Africa and Latin America. *What is new is that the management target defined by this concept*

consists of a program of activities, that the program would only apply to a specific, well-defined group of fishermen and their crew^{xxx}, and that the legal status of the allocation of coastal fish resources to small-scale fishermen groups would be directly linked to the requirements of such locally defined program.

The SEP would define the responsibility for and exploitation of most coastal resources explicitly allocated to local communities of fishermen, with multiple, locally agreed program objectives: (i) communities would assume a key role – with other public and private parties - in pursuing targeted local levels of employment and income *for their community^{xxxi}*, (ii) they would assume sole responsibility – or joint responsibility with the national government through some form of co-management – for management of the coastal marine environment, including fish culture, and (iii) they would explicitly be involved in management and implementation of local or regional marine protected areas in accordance with objectives and criteria agreed with the national government.

Successful implementation of such concept requires major external financial and technical support to create the institutions and develop the local ability and culture to manage such program. This concept also requires the national Government's political willingness to actively support devolution of management responsibilities *and* to accept a re-allocation of available fish resources between industrial and small-scale fisheries based on future small-scale community income requirements – and not based on grandfather rights of industrial fisheries or some other traditionally used allocation principle.

V. Conclusion

Scientists and economists have made great advances in developing theoretical concepts to better manage renewable natural resources. Unfortunately, their interest in analyzing the political process that follows the submission of their management recommendations or administration proposals for major changes of the fishery management system or sector policies has been modest at best. Around the world, the random outcome of this political review and decision-making process is mostly left to chance, with well known consequences.

By analyzing in what way the proposal may be adjusted to better benefit from political drivers, better reflect more stakeholder objectives and interests, and better program the political review and decision making processes, initial rejection may be avoided, and a superior and more effective politically feasible solution may be found.

Operational political analysis is nothing new; it systematically supports decision making of large corporations and public institutions. Given the highly political nature of fisheries sector management it is high time it becomes a standard feature of recommendations for adjustment of the management system and sector policies.

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ENDNOTES

- ⁱ Scott Gordon tried to partly finesse the political question by suggesting single ownership of fish stocks would no longer require public intervention in the management process and would economically be more efficient in the long run. However, as New Zealand and Norway have convincingly demonstrated, even the consideration of a single ownership system still does require lots of 'politics'.
- ⁱⁱ Bjorn Hersoug, 2002, 2005.
- ⁱⁱⁱ Anthony T. Charles, 2001.
- ^{iv} J.W. van der Schans, 2001.
- ^v Dirk Reyntjens and Clare Coffey, 2006.
- ^{vi} Ricker, Beverton and Holt, Scheaffer and Gulland represented a first generation of professional scientists and mathematicians who tried to provide a scientific basis to decide once and for all who were right: (i) those who believed in in-exhaustible fish resources -preached by Huxley and Macintosh during the 19th century - or (ii) those that were convinced that stocks can be over-exploited – Baranoff, Pedersen - who dominated discussions in the period between the two world wars.
- ^{vii} Peter H. Pearse, 1981.
- ^{viii} Simon Mardle (Coordinator), 2003.
- ^{ix} FAO, 1995.
- ^x While many scientists have moved away from the more simple MSY concepts towards TACs and ITQs, it is telling that even the 2002 World Summit on Sustainable Development (WSSD) called on all nations to maintain or restore their fish stocks to sustainable (MSY) levels by 2015, a target that is as simplistic as it is impossible to achieve. In New Zealand, the country with the 'exemplary' ITQ system, B_{MSY} is still cast in legal stone.
- ^{xi} Some developed countries have taken this belief even further, and currently officially aim for a reduction of the costs of fisheries management, research, MCS and administration while governance levels are still very modest.
- ^{xii} Bjorn Hersoug; 2002(b); pp. 210-211. He noted that the preconditions for establishing an ITQ-system were extremely favorable in the case of New Zealand. It had a remote EEZ, few shared resources, foreign fishing could be easily phased out. Fishing was a marginal economic activity, the industry was young, with little political cloud and entrenched practices. The political structure of the country enabled bold solutions; the country had a strong unitary base and a two-party system, and a new administration strongly favoring market based solutions. Finally the industry faced an immediate crisis, necessitating a bold solution.
- ^{xiii} Bjorn Hersoug (2002(b), pp188-192. In 2002 he questioned the feasibility of managing various fisheries and aquaculture activities through a single formula. With six large stakeholder groups each having very different objectives – commercial fisheries, Maoris, aquaculture, environment, sport fisheries, the Government – New Zealand needs to pursue a political solution that can... 'create a framework that is accepted by most stakeholders, if not by all'.
- ^{xiv} A theoretical model that involves demand and supply curves for policy concessions is described by Reyntjens and Coffey, 2006. They also list practical tactics to reach a political feasible outcome, such as: (i) the use of 'complementarity' in policies, whereby the existence of one policy creates support for another; (ii) the use of 'confrontation' weakening the incumbent's bargaining power; (iii) the use of 'inclusion' to extend membership of political and decision making institutions to a greater extent to internalize outsider interests; (iv) sequencing of reforms through a 'wedge' strategy, whereby reforms are introduced that initially target the stakeholder groups with

the weakest bargaining power; and (v) sequencing of strategies targeting different parts of the value chain. Other approaches have been successfully tried in the past: (vi) excluding selected parties from key processes; (vii) undermining consensus building to postpone or avoid decisions; (viii) manipulating the definition of the issue or the implications of decisions; (ix) restructuring the political processes, or the institutions involved; (x) confusing the issues by bringing not directly relevant aspects into the discussion, or (xi) attacking people personally.

^{xv} For a more detailed analysis of factors inhibiting change, see: Dirk Reyntjens and Clare Coffey, 2006.

^{xvi} Factors that may cause decision-makers to reject severe sector restructuring measures include: public budget dependency on financial transfers from foreign fishing fleets, corruption, the political weakness of fisheries administrations, the long-term benefit/short-term pain scenario of most restructuring efforts and the lack of funds to finance compensation of the losers of such restructuring.

^{xvii} Renewal of international tuna agreements has for a long time been driving the political discussions of the nature of the management process of tuna resources in the Pacific.

^{xviii} Ironically in some cases representatives from the EU and other distant water fishing nations - their fleets facing declining catches and revenues and increasing competition in areas covered by international fisheries agreements - started to push for improvements in resource management and MCS, claiming their licensed vessels were at a disadvantage compared to illegally operating fleets.

^{xix} Sometimes such informal processes culminate in formal decision-making in the Council of Ministers, or directly by the President. In other instances, the process remains opaque, and transparent formal decisions may not be taken, not unlike some EU decision-making.

^{xx} In some West African countries between 10 and 45% of the national public budget is funded from fishing license fees and financial transfers related to foreign fisheries agreements.

^{xxi} A typical example: a Ministry of Fisheries proposal to substantially reduce fishing effort faces major opposition within the administration and in the fishermen community. Political rejection by the council of Ministers appears certain; circumvention of parts of the proposal - if introduced by administrative means - is a foregone conclusion. A PFS analysis could assess what options exist to get a political majority to advance the proposal, and what adjustments of the proposal and political processes may be pursued.

^{xxii} Including: compensation; possibilities to weaken objector's bargaining power; possibilities to internalize outsider interests; sequencing of decisions; and sequencing of strategies targeting different parts of the industry.

^{xxiii} One can reasonably argue that the team preparing a PFS will become a stakeholder itself, as it evaluates political moves to achieve a decision. Clearly, team management should be acutely aware of this danger, and ensure strict independence.

^{xxiv} While this analysis did not have the benefit of an in-depth political analysis, it reflected the recent experience of several specialists working in the area.

^{xxv} Although the area is quite diverse - industrial fisheries dominate in Morocco and Mauritania, small-scale fisheries in most other countries - and data and estimates need independent confirmation, the order of magnitude of the key data and main conclusions appears reasonable.

^{xxvi} I. Price Gittinger: 1982. *Value Added* represents the pool of income generated by production that is distributed to the factors of production (labor, capital, management) attached to the firm or economic activity, including income taxes (net VA) and depreciation (gross VA).

^{xxvii} This concept would be particularly useful in countries facing serious resource declines and highly competitive world markets, as well as a high level of public budget dependency on fisheries agreements and foreign exchange earnings from fish exports.

^{xxviii} Madagascar is experimenting with this concept for its industrial shrimp fishery.

^{xxix} The calculation method of the resource rent would be defined in advance, and the percentage of the rent to be transferred to the public sector may be linked to world market price fluctuations and actual catch rates.

^{xxx} This requirement is critical to control the current practice of unemployed agricultural laborers and school leavers seeking employment in small-scale fisheries.

^{xxxi} This implies that local communities would be allowed to determine who could fish sedentary species in the marine area under their control, and who can exploit less sedentary resources jointly managed by coastal communities within a region.