# Policy Scenario Analysis: A Suggested Approach Including Stakeholder Engagement



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## Policy Scenario Analysis: a suggested approach including stakeholder engagement

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#### **Executive Summary**

The report outlines how a Policy Scenario Analysis (PSA) might be undertaken in a pilot fishery in the OPP – Bay of Bengal project. It builds on the generic discussion of PSA approaches described in Report No.9 of the OPP-Bay of Bengal project.

Key challenges in undertaking PSA in the OPP-BOBP context include:

- non-alignment of the objectives of management authorities and fishers;
- institutional obstacles to effective management, including management mandates and legal frameworks that exclude participation by the fishing industry in decision making and enforcement;
- in South Asia in particular, the diversity of stakeholders involved in fisheries and the wide range of cultural and educational backgrounds from which they are drawn.

The discrete fishery identified for undertaking a pilot PSA process is the longtail tuna fishery in South India and Sri Lanka.

A preliminary stakeholder analysis for the longtail tuna fishery is shown, emphasising that this will need to be refined and developed once consultations are initiated. The importance of an inclusive analysis of stakeholders during the initial phases of the PSA is emphasised in order to ensure that key groups are not excluded and that ownership of the eventual outcomes is maximised. The need to fine-tune the stakeholder analysis for different locations is also highlighted.

A discussion of essential consultations and capacity-building emphasises the importance of preparing the different stakeholder groups engaged in the PSA process through a series of discrete consultations involving representatives of individual stakeholder groups. These consultations will aim to ensure that their participation in later wider meetings is effective and that they are able to contribute fully and have a good grasp of the issues at stake before joining larger fora later in the process. Similarly, institutional actors involved in the PSA need to have their understanding of key management issues strengthened so that they are fully prepared to contribute to the process. Particularly important will be the building of capacity among all stakeholders to understand the underlying principles of bioeconomic modelling of the fishery.

The key considerations for the organisation of a wider forum to undertake the PSA process are then described. A discussion that is focussed around 5 key thematic areas is proposed:

- 1. The bio-ecology of the resource and its environment
- 2. The exploitation system (harvesting)
- 3. The products and markets
- 4. Modelling of the resource and the fishery
- 5. The current legal and management framework for the fishery

The importance of effective facilitation in preparing and implementing this forum is emphasised. Expert inputs to the discussion need to be articulated in ways that are accessible and comprehensible to all participants and creative thinking is required in order to come up with appropriate forms of communication that will ensure participation by all. The work of the facilitation team during the exercise will be key and an adaptive approach which addresses the needs of different participant groups will be essential. The output of this participatory diagnosis meeting will provide the basis for a series of reports on the thematic areas above which will themselves constitute to key inputs to a draft

management plan. An additional forum to validate the finalised versions of these thematic reports will also be essential in order to build stakeholder ownership of the outputs.

Options for establishing a management plan are then discussed. This includes:

- setting objectives for the plan, taking account of international dimensions, mechanisms for determining catch possibilities and the sharing of access, along with procedures for catch allocation, and rules of by-catch and discards;
- an institutional framework for the plan that includes appropriate oversight mechanisms, the
  development of required capacity to provide necessary scientific inputs, an appropriate
  monitoring, control and surveillance system (MCS), data collection mechanisms, and technical
  management measures;
- a pragmatic calendar for implementation.

#### 1.0 Introduction

Project report number 9 presents a generic methodology for Policy Scenario Analysis (PSA). The purpose of this report is to outline how PSA might be undertaken in a pilot fishery in the OPP – Bay of Bengal project.

The report begins in section 2 by giving an overview of the suggested approach. Section 3 discusses the proposed pilot fishery: longtail tuna whilst Section 4 considers the key issues involved in stakeholder identification and analysis. Section 5 outlines the capacity-building that is likely to be required for a PSA process to be successfully although precise requirements will only emerge as the strengths and weaknesses of the participants become apparent. Section 6 discusses how a participatory diagnosis can be undertaken to build an agreed understanding of the trajectory of the fishery under current arrangements and, assuming that this trajectory is not optimal, how a preferred scenario can be developed. Section 7 concludes the paper by outlining how the process set out in sections 3 to 6 can then be used to develop a fishery management plan for the longtail tuna fishery.

#### 2.0 Overview of the suggested approach

One of the biggest stumbling blocks in fisheries management is the non-alignment of the objectives of the management authorities and the fishers. This non-alignment is yet another of the many paradoxes that affect fisheries and, as is usually the case, its origins lies in the institutional arrangements governing the exploitation of the fish resources. These arrangements typically fail to give fishers in the aggregate an incentive to invest in the fish stock itself and as a result the stocks tend to be overfished. Each individual fisher realises, of course, the importance of healthy fish stocks for his fishing activity but they have no way to integrate this realisation into their fishing plans as they seek to profit from their fishing activity.

The management authorities tend to find themselves in the opposite position. Because they rightly recognise the importance of healthy fish stocks, they tend to adopt fishery management measures aimed at stock conservation without taking into consideration the impact on the profitability of fishing and hence the subsequent impact on fishing effort and the livelihoods of fishers.

Both sides doubtless recognise that the ideal situation is to have healthy fish stocks exploited by a profitable fishing sector but achieving this result has proved elusive around the world. Several key factors can be identified as contributing to the failure to achieve this. From the side of institutions tasked with developing more effective fisheries management, capacity, both in terms of appropriate skills and resources, are often lacking. These short-comings are often exacerbated by the lack of an appropriate legal and institutional framework that would enable effective fisheries management mechanisms to be put in place. Often existing laws give fisheries authorities full responsibility for management actions but they rarely have the resources to monitoring and enforcement of the tasks they are mandated to perform. Similarly, attempts to delegate management responsibilities to lower levels of authority, and to engage the fishing industry itself in management are frequently hampered by the concentration of management authority in the hands of central government.

In South Asian fisheries, these issues are further complicated by the high diversity of fisheries and fisheries stakeholders involved. The important role of small-scale fishers, and the large numbers of people from coastal communities dependent on small-scale fishing for their livelihoods, means that the potential numbers of stakeholders involved is high. Levels of organisation and education among

these diverse stakeholders is also varied, increasing the challenges involved in organising meaningful consultations that are as inclusive as possible of the different sets of interests concerned.

Bearing in mind this context, the approach suggested here is to use PSA in one fishery as a pilot to build understanding of the main issues. Identification of a discrete fishery where this can be undertaken requires careful analysis, but, particularly given the focus of the OPP project on fisheries for tuna and tuna-like species, and the relatively limited involvement of fishers to date in these fisheries, appropriate fisheries with numbers of stakeholders that can be effectively engaged in a process of consultation can be identified. The understanding generated through this process can then feed into the development of fisheries policy in general by demonstrating the change in vision that is needed to achieve the goal of healthy fish stocks profitably exploited on a sustainable basis. Through a PSA approach, the aim will be to develop a participatory management plan for the pilot fishery. In addition to the insights for broad fisheries policy, the process will develop a template that can be used in the development of other fishery management plans, even though it should be recognised at the outset that each fishery will pose particular problems to be addressed, and different sets of stakeholders to be involved, so that although there will be a template, there will be no "one-size-fits-all" solution.

For the approach to be successful, it is important to bring together a wide range of stakeholders including:

- The administration: this includes the fishery (or line) ministry but it is also important to involve other ministries a necessary, in particular Finance because of the need to build understanding of fish resources as natural capital and probably Environment to deal with interactions between fishing and other coastal activities, together with other relevant Ministries
- The fishery sector: in particular fishers and post-harvest users
- The research community: in particular those responsible for fish stock assessment
- Others as appropriate to the particular fishery

#### 3.0 The pilot fishery

The suggestion is to develop a management plan for the longtail tuna fishery as a pilot for the PSA.

Work will be needed initially to define the fishery management unit (FMU). It is important to note that FMUs are dynamic constructs that may, and probably should, evolve over time, for instance because technical changes mean that resources that were previously exploited jointly may be exploited separately.

The general nature of FMUs is discussed in report no 9. Here we will develop a practical application of the notion. The key will be for the project biologists, economists and institutional specialists to work together to define which resources to include (is the longtail tuna exploited individually or must some other resources be considered at the same time?), who is harvesting the resource, where, when and which fishing methods, and what is the scope of the resource.

It appears that the longtail tuna fishery may be exploited by both Indian and Sri Lankan fishers, in which case we will be dealing with an internationally-shared resource which will be useful since it will have some features of the highly migratory problem but, hopefully, in a more tractable environment. In defining the FMU thought will have to be given whether it is feasible to define a single unit covering

the entire scope of the resource, which would be the ideal result, or whether two or more units may have to be defined to cope with the political reality of exploitation of the resource.

#### 4.0 Stakeholder analysis

A key first step for undertaking the PSA will be development of a detailed analysis of the different stakeholders involved in the longtail tuna fishery in both South India and Sri Lanka. While identifying those groups with direct and indirect interest in the fishery should be relatively straightforward, for the purposes of undertaking an effective PSA process it will be important to differentiate within these stakeholder groups the relative capacity of different sub-groups of stakeholders to participate and contribute to the PSA consultations. It is to be expected that, for example, owners of fish processing plants or fish exporters will have different levels of confidence and capacity to articulate their concerns compared to representatives of fishing crews or small-scale fish sellers and processors. As described below in the section on Essential Capacity Building, the PSA process cannot simply put these groups with different capacities together and expect them to effectively interact without appropriate preparation.

Experience during the World Bank supported FIMSUL (Fisheries Management for Sustainable Livelihoods) Project in Tamil Nadu and Puducherry States in South India illustrated how a systematic process of consultation and guided discussion with small groups representing different sets of interests in coastal fisheries can facilitate participation in higher level forums where different groups of stakeholders are brought together (FIMSUL 2011a, FIMSUL 2011b, FIMSUL 2011c). The process undertaken during this project was on a relatively large-scale as the scope of the project included all fisheries along the coasts of these two states. In the context of the OPP, the focus on one specific fishery would enable a more contained and streamlined engagement with key stakeholders concerned with this specific fishery.

Figure 1 shows a preliminary identification of stakeholder groups who are likely to play a role in the PSA process relating to the longtail tuna fishery. This analysis will require careful refinement and can be expected to become more complex as the process develops and the OPP project learns progressively more about the specific fishery concerned. It can also be expected that this analysis may look quite different in different locations within both South India and Sri Lanka.

This initial process of consultation and analysis undertaken with small groups of specific stakeholders, assisted by trained facilitators, would aim to give different, location-specific stakeholder groups a chance to raise concerns, identify key issues in the fishery, understand how it interacts with other fisheries in different locations, and gain an preliminary understanding of the issues at stake in relation to fisheries management for this fishery. These consultations would also help to refine the overall stakeholder analysis, the degree of engagement in the fishery of different groups, and possible representatives for interested groups who might participate in wider meetings as the PSA process develops.

Particular care would be required to ensure that participation by women, who are likely to play an important role in the post-harvest sector, is addressed and this is likely to require separate consultations with female stakeholders in some cases.

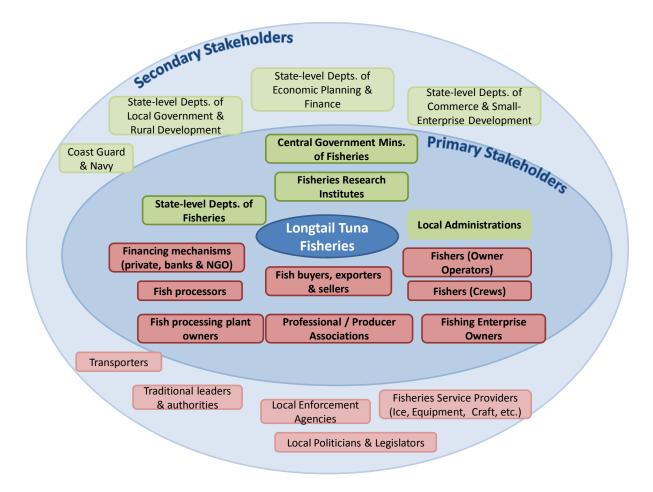


Figure 1: Longtail Tuna Fisheries - Preliminary Stakeholder Analysis

It should be noted that the identification of particular groups of stakeholders in Figure 1 above as "primary" or "secondary" is also provisional and will need to be refined once consultations on the PSA have been initiated. For example, the role of traditional leaders and authorities in discussions regarding future management scenarios may well be crucial in some contexts and they could well be regarded as "primary" stakeholders.

Similar discussions would be undertaken with associations of producers and processors, as well as with the key institutional actors with a direct mandate and interest in the longtail tuna fishery. Particular care in this respect would need to be given to addressing the important issue of different levels of institutions (local, district, state and national) in order to ensure that their different concerns are clearly incorporated into the preparation of wider discussions around the PSA.

The process of identification of stakeholders in a particular fishery needs to aim, initially, at being as inclusive as possible. The risks associated with excluding from the PSA process any groups who feel that their interests are likely to be affected by future management arrangements is high. Thus even where there may be doubts regarding the potential role of a particular stakeholder group, it is better in principle to engage with them initially, and then, as the process develops, determine, in consultation with the stakeholders themselves, who is likely to be able to play an effective role in the more specific discussions regarding future management and policy scenarios.

#### 5.0 Essential consultations and capacity building

Once a set of stakeholders who might potentially be involved in the PSA process has been identified, consultations need to be arranged with the different stakeholder groups with three key objectives in mind.

- 1. To facilitate stakeholders to reflect on the issues they face in relation to the fishery in question and articulate those issues;
- 2. To help stakeholders to think through the key issues relating to the potential for future management;
- 3. To develop stakeholders' capacity to participate in wider for with other stakeholders to discuss future policy and management scenarios.

Stakeholder meetings need to be carefully prepared with a well-trained facilitation team who are capable of taking participants through the process and ensuring that these objectives are achieved in each case. Considerable flexibility in the approaches used is likely to be required in order to accommodate the different levels of education and background of different stakeholder groups and the time required for these consultations may well vary from group to group. While the focus in meetings will be to achieve the objectives set above, leaving time for wider ranging discussion of issues faced by particular groups may well be valuable, particularly where their contact with outside agencies is limited and there may be a widespread desire to use the opportunity to air more general grievances and concerns prior to focussing on fisheries management issues.

The main tool that will be used for the PSA is the development of a bioeconomic model of the fishery that will enable quantitative estimates to be made of the key variables. The construction of this model will necessarily require the intervention of appropriate experts in the field but its development can be used as a means of building understanding of the main issues involved. IDDRA has had experience of developing these models participatively in a number of fisheries, principally in West Africa. This experience has shown two important results: first, that participants can understand the output of such models even if they do not necessarily understand the intricacies of their construction and second, that as they see the models develop and understand the implications they become progressively more motivated to provide the modellers with genuine economic data so that they can better understand their fishery and its potential.

At the institutional level, a set of meetings or seminars should be organised with the administration to build understanding of the bioeconomics of resource exploitation. It is important that such seminars should include not only the Ministry with responsibility for the fisheries sector but also the Finance and other relevant ministries in order to explore the economic possibilities offered by fish resources in general. The Government as a whole may or may not decide to alter its stance with respect to the exploitation of these resources but at least decisions will be made with a full understanding of the likely consequences. At present, fisheries policy measures are often taken in the expectation that they will achieve something that is in fact impossible within the system as it currently exists – for instance, many countries have implemented closed seasons in an attempt to reduce fishing pressure which instead is simply transferred to other times of the year with the result that the closed season tends to become longer and longer.

Finally, even if research capacity appears to be quite strong, it may nonetheless be useful to undertake some seminars, first to bring economic issues more firmly into play and secondly, to move stock assessment towards forecasting approaches that are needed to set total allowable catches.

The seminar process will also identify other capacity-building needs – for instance, the process often reveals data weaknesses especially where economic data are concerned.

#### 6.0 Participatory diagnosis

Once the various stakeholder groups have been identified and their capacity built up as necessary, a wider participatory diagnostic exercise can be undertaken for the fishery. Typically, such an exercise will be based on 5 major themes:

- 1. The bio-ecology of the resource and its environment
- 2. The exploitation system (harvesting)
- 3. The products and markets
- 4. Modelling of the resource and the fishery
- 5. The current legal and management framework for the fishery

Reports should be prepared by expert authors on each of these themes, but particular care should be given to thinking through how the content of these reports can be effectively communicated to a wide and varied audience of stakeholders. Once again, experience with the FIMSUL project in Tamil Nadu and Puducherry States in India illustrated how creative thinking about forms of communication and activities to engage a diverse stakeholder group in analysis of fisheries-related issues can produce important dividends in terms of people's ownership of the eventual outcomes (FIMSUL 2011a).

With this in mind, particular attention should be paid to preparing the presentations of these thematic areas. The terms of reference drawn up for each theme should include the requirement to sit with the facilitation team and discuss how best to communicate the core concepts within each theme and prepare a set of presentations and/or activities to ensure that they are fully understood by the participants in the PSA workshop.

Broadly-speaking, the reports and presentations concerning each theme would cover the following issues.

- The bio-ecology theme would identify the key biological parameters of the main resource or resources in the FMU, including things such as stock structure, migratory patterns, growth parameters, environmental issues and so on.
- The exploitation system would describe the segments involved in harvesting the resource pulling together data on catch history, catch per unit of effort, catch structure, and other relevant factors for the management plan.
- The products and markets theme would identify the key markets for the resource with a historical analysis of the evolution of these markets and an outlook for likely future development.
- The modelling section will require the most work because it will pull together the previous three themes to produce a bio-economic analysis of the current state of the fishery and the resources on which it depends.
- Finally, the legal and management framework section will set out the way in which the fishery is currently being managed focussing on the key issue of requirements for access to the resource (e.g. conditions for obtaining a licence) together with an analysis of the technical control measures that may exist in the fishery. In the case of this latter, the presentation should show the objectives that these measures are intended to achieve together with any analysis available of their performance.

The discussion of each of these thematic areas during the PSA workshop should be carefully documented taking into full account the inputs received from different stakeholder groups. Where any particular groups are having difficulty in grasping core ideas or articulating their inputs to the discussion, the facilitation team needs to be prepared to assist them as much as possible in order to ensure that the eventual outputs of the discussion properly reflect all stakeholder groups' concerns.

It should be made clear at the start of the discussion that the final outputs, in report or other formats, will reflect the discussions held in the workshop rather than purely the expert inputs.

The objective by the end of this workshop would be to have developed the basis for a series of reports of some 20 to 30 pages to document the discussions around each thematic area. Taken together these will provide the underpinning for the future management plan.

A second PSA workshop should then be organised to present these reports and discuss them with the stakeholder groups who will then validate the conclusions of the diagnosis.

Once agreement has been reached on the analysis of where the fishery currently finds itself and on its likely trajectory under current management arrangements, the PSA can be used to explore with the stakeholders different possible exploitation scenarios.

The most important part of the process will be to identify the potential benefits from exploitation of the longtail tuna resource under different arrangements. The hypothesis is that current arrangements are not maximising potential benefits (and indeed that the range of such benefits is not well understood) and therefore that some preferred scenario will be identified which will be different from the current arrangements.

Once there is agreement on the diagnosis and preferred scenario, the next stage will be to identify and discuss the management options requirements if this scenario is to be achieved.

Such options would include:

- Developing reliable advice on the catch possibilities in a forward-looking assessment i.e. developing effective short-term to medium-term forecasting approaches.
- Considering the management instruments available to bring fishing effort into line with these catch possibilities AND to ensure that India/Sri Lanka obtain maximum benefits from exploitation of the resource.
- Identifying the supporting measures needed: data collection including catch and fishing capacity registers, MCS arrangements, research needs.
- Where necessary, modify the legal arrangements.

#### 7.0 Fishery management plan

On the basis of the various elements above, a management plan for the longtail tuna fshery will be developed. Depending on the findings, this plan can either be developed as a single plan covering the entire resource or as two separate plans for the Indian and Sri Lankan components of the fishery. In the latter case, careful consideration will have to be given to the interaction between the two.

The precise structure of the plan would have to be agreed, ensuring that it is in line with any requirements set out in the legislation and/or that this legislation is modified where appropriate.

Broadly however the plan would comprise the following elements:

- A discussion of the objectives for the plan. In developing these objectives, a key element will be to bring the notion of resource rent to the fore since this is a key driver both in the exploitation of the fishery and in the payoff to its improved management
- A summary of the key elements in the diagnosis setting out the expected trajectory for the fishery if nothing is changed and a comparison of this outcome with the objectives of the plan
- A discussion of the international dimension of the plan together with the measures that are required at this level (for instance, the establishment of a joint commission that would monitor catch possibilities for the two States)
- The establishment of the system that will be used to calculate catch possibilities for the stock on a
  forecasting basis covering the appropriate period (probably the coming year but possibly a
  different period if biological circumstances require it). This system would develop appropriate
  indicators such as limit reference points for the fish stock.
- Where appropriate, the determination of methods to share the catch possibilities between different segments exploiting the fishery. This will depend of course on the precise stance taken in the plan on the harvesting structure (for instance, a decision may be made that one segment will be preferred for some reason).
- The allocation of the segment catch possibilities either to individual fishers or fishing enterprises, or to groups of fishers (e.g. producer organisations, cooperatives and so on). It is at this level that rules will be developed concerning the possibility for the transfer of catch possibilities between fishers. And also that systems will be developed to ensure compliance with the allocated catches.
- Where appropriate, the plan will determine times and places where fishing is authorised, although
  the underlying principle should be to allow the fishers maximum flexibility to organise their fishing
  activities in the most profitable manner.
- The plan will establish rules concerning by-catch and discarding. It will be very important to collect reliable information on such activities because if they occur on too large a scale then there is probably a problem with the FMU definition that may need to be revised.

There will be a need for an institutional framework for the implementation of the plan. This framework can either be developed separately or as a part of the plan. The main requirements will be:

- An oversight team established in the line Ministry to monitor and report on plan implementation. The members of this team will need to interact regularly with both the fishers and the different services responsible for administering the various parts of the plan (for instance, the services responsible for maintaining the licensing registry or the catch registry). A key role for the oversight team will be to monitor the economic performance of the fishery against the plan's objectives and where necessary to propose solutions to improve this performance.
- A "science" function. The determination of future catch possibilities will be a key part of any fishery management plan. A decision will need to be made on how to deliver this service within the plan. It may make sense to use existing institutions and processes but it is important to realise that this function of the plan could also be tendered to outside organisations if necessary. One alternative that has been adopted in some fisheries has been to contract with an experienced organisation to deliver appropriate advice over some period (say 3 to 5 years) and during that time to build capacity in a local organisation that can eventually take over the recurrent role.
- Develop an appropriate monitoring, control and surveillance (MCS) system for the fishery.
   Although the emphasis of the plan will be to develop institutional structures that give fishers a compliance incentive, all fishery management plans require MCS at some level. The system for this

- fishery will have to be discussed and agreed with the appropriate national and regional MCS authorities.
- Improved data. A key part of fisheries management planning is to identify crucial data sets and how to improve them. The development of reliable catch data will be one key set and work may be needed to improve this.
- Technical management measures. At the beginning of a fishery management planning process, most management measures tend to be of a technical nature (closed seasons, closed areas, mesh size restrictions and the like). These measures often have a distorting effect in the fishery and their removal may improve performance PROVIDED THAT appropriate incentive structures are in place at the harvesting level. As the plan progresses therefore it will be important to review such measures to identify which, if any, remain pertinent.

Finally there will be a need, again either as a separate document or as part of the plan, for an indicative framework for its implementation. This plan would need to begin by identifying the potential payoff to the plan in terms of the resource rent potential of the well-managed fishery.

A calendar for the requirements to implement the plan can then be developed and costed. There will always be a variety of ways and levels at which a plan can be implemented and it will be important to develop a proposal at an appropriate scale. There would seem to be little point for example in developing a plan that will cost US\$1million per annum to implement if the maximum resource rent is only US\$100,000.

The fishery management plan will form the basis of a business investment case since it will identify the payoff to the scenario and the requirements (investment) needed to achieve it with an indication of timescale.

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