Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and deliberative Policy networks

Funded by the NERC-ESRC-DfID Ecosystem Services and Policy Alleviation Programme (ESPA) [research grant NE/ G008337/1]

First Workshop report

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The purpose of the project is to build capacity amongst a range of scientific, policy and political actors to enable their more effective participation in deliberative policy networks. The project arises from recognition of the existing momentum within South Asian policy organisations and systems to build new and more effective governance solutions for natural resource regimes which are characterised by conflicts. Two relatively new methodological approaches will be brought to bear to achieve this purpose, namely:

1. Interactive governance in which key stakeholders bring together expertise to deliberate upon their different perspectives and different understandings of the policy problem.
2. The notion of human wellbeing that brings a framework for analysing the different wellbeing outcomes that emerge from society and ecosystem service interactions.

There are three inter-connected aims:

1) To develop and strengthen nascent deliberative policy networks (involving local, national and international actors) to consider the trade-offs and hard choices in respect to sustainable fisheries and better wellbeing outcomes for the fishing poor, with a special focus on conflicted fishing communities in South India and Sri Lanka.
2) To build capacity by applying the wellbeing approach to the analysis of poverty in fisheries, and by using the approach to provide a framework for the assessment of effective fisheries governance.
3) To develop the learning capacity of deliberative policy networks, such that they are able to increasingly take ownership over a future research and capacity building strategy.

The project is centred on a series of three workshops by the end of which the following outputs will be completed:

i) To establish deliberative policy networks at the two sites, with secured participation from all key stakeholders and agreement on the mode of proceeding.
ii) To increase capacity within those networks to engage and propagate research and policy debate in fisheries services and poverty alleviation.
iii) A series of articles on the application of wellbeing to fisheries and poverty research, governance, and policy, also to contribute to the debates initiated by the Millennium Ecosystem Assessment.
iv) A series of more specific articles applying wellbeing to South Asia fisheries conflicts.
v) A series of policy briefings to be coordinated and disseminated by regional collaborators (minimum two – but number to be agreed at workshops).
vi) An agreed strategy for further research and capacity building.

This report describes the process and outcomes from the first workshop of the project held at the Institute of Ocean Management, Anna University, Chennai, India between Saturday 4 April and Wednesday 8 April, 2009.
Workshop 1 organization and implementation

A planning meeting for the first workshop was held in Amsterdam on 19 January, 2009. The outcomes from this meeting were:

1. This project is about building capacity to enable more effective participation in deliberative democracy, and to establish an agreed research and development agenda – what do we need to do and know to take this forward?

2. The focus of the first workshop should be to begin creating a group who have commitment to the objective (that there can be a solution that addresses both poverty and ecosystem health), that recognizes that the solution isn’t solely technical.

3. The workshop would be “nourished” by three papers that set the context for the project:
   a. Introduction to workshop – objectives, ESPA, possible end points.
   b. Wellbeing and fisheries.
   c. Interactive Governance and fisheries.

4. A series of papers should be presented that set the context of the Indian situation, and these should be organised as:
   a. Relationship between poverty and fishing in Tamil Nadu – what is the scope of fisheries policy to reduce poverty?
   b. How is coastal policy made? How is it supposed to work, how does it actually work?
   d. Perceived threats to ecosystem health in Tamil Nadu.

5. There should be a special project briefing session where emergent ideas of the workshop can be presented to a wider audience with a focus on those involved in policy formulation and implementation.

On the basis of these outcomes the final participation list and time table was drawn up (Appendix 1). A final planning meeting was held immediately prior to the workshop where final logistics and organization and conduct of the workshop were agreed upon. The conduct of the workshop was organized around a series of presentations that then formed the basis for discussion in break out groups with outputs discussed in plenary (Appendix 2). The presentations made to the workshop and outputs from break out groups are presented in Appendix 3. As the workshop progressed the emphasis moved from discussion around formal presentations to discussion around the issues and themes that emerged from the presentations in the context of the project aims and objectives, and specifically as they might relate to a future research direction – a summary of the discussions can be found at Appendix 4.

Reflection on Workshop 1

The workshop brought together a broad group of people from academic and NGO backgrounds who share a common interest in fisheries and fishers. Although there was a strong focus and bias to Southern India the representation of Sri Lanka and other non-Indian participants maintained a broader perspective to the discussions that kept a focus on the overall goal of the project. At the end of the workshop there was a clear agreement and commitment for continued involvement of participants within the project with an understanding that the level of commitment would not necessarily be equal depending largely on availability to dedicate time to project activities. The outcome of the workshop was the adoption of a working goal that would inform subsequent activity in the project:

   The goal of this project is to improve the wellbeing of poor people in fisheries in South Asia in a way that is positive for ecosystem conservation, through the improvement of systems of governance.
Initial ideas for developing a research direction to address this goal centre around 4 themes based around the notion that social, economic and environmental changes that affect fisheries in South Asia have a context of vulnerabilities that shift as these changes in turn affect the relationship between the ecosystem and fishers:

1. Understanding the systems to be governed (SG) and who is adapting and who isn’t? This involves exploring how does this relate to wellbeing aspirations, and wellbeing strategies (what people are doing to achieve wellbeing), and how these are being met?
2. How does governance take place (Governance System) and who has access to it, how it exerts power and how it has evolved?
3. How is the ‘SG’ influenced [supported or frustrated] by the governance system?
4. Developing a programme of action research to building capacity for a common platform to access data, exchange information, ‘authentication of different understandings’, share knowledge, leading to shared self-learning.

An underpinning outcome for a research agenda should be to develop better ‘conflict’ policy response mechanisms.

The inclusion of a policy oriented session with external invitees that could bring a broader perspective and experience from a more policy oriented domain proved useful.

At the conclusion of the workshop comments were solicited from participants on the workshop process and direction. Although the overall organization of the workshop and the opportunity to participate and contribute was appreciated some areas of improvement that could be taken forward into the second workshop to be held in Sri Lanka were noted that would enable participants to be better prepared and sensitized to the project aims and objectives; these centred on participants been provided with preparatory materials, background papers and clearer instructions on their anticipated contribution to the overall process.

Moving forward to Sri Lanka

Feedback from the first workshop suggests that participants have bought into the concept of the project and the ideas for taking it forward to both meet the specific objectives of this project and to develop the research ideas further into a proposal to address the forthcoming call expected in September, 2009. However, it is clear that the concepts of “interactive governance” and “well-being” need to be developed further within the participants to ensure they have the capacity to utilize these approaches in both the development of a research proposal and implement them in any ensuing research project.

It is suggested, therefore, to focus the second workshop on the specific capacity building objectives stated in the original project proposal. This will also ensure that these project objectives do not get lost and forgotten especially as the third workshop will likely be strongly focused on addressing the detail of the programme call for new proposals. However, it remains important to continue ensuring buy-in to the idea of future developments been centred on notions of shifting vulnerabilities and thinking about specific case study locations that would be used in a research proposal.

It is important to recognise that the second workshop will be populated by some participants who have already attended the first workshop, and, therefore, are sensitised to the ideas and concepts that underpin the project and its development, but also by a new cadre of participants who will need to be brought “up to speed”.

In preparation for the Sri Lanka workshop, the following outcomes from the first workshop are being implemented:

1) The 4 background papers presented on day 2 are being written up as short papers (around 10 pages):
2) A series of papers exploring specific conflicts in Tamil Nadu and Sri Lankan fisheries will be produced:
   a. Paper 1. Mr Vivekanandan – Tamil Nadu fisheries conflict (to be decided)
   b. Paper 2. Sarah Coulthard – (preliminary title) Changing fortunes and shifting vulnerabilities in a South Indian fishery (Pulicat lake) – implications for fisher wellbeing and governance
   c. Paper 3. Dr Oscar Amarasinghe – a Sri Lankan based fisheries conflict (to be decided)

These papers should focus on presenting conflict facing fisheries in each region and present some of the implications for fisher wellbeing, in particular thinking about how their understanding of wellbeing as a concept, holds relevance for the conflict. The same is true for interactive governance – what particular issues does the conflict raise for interactive governance?

3) Preparation of Background papers/presentations for the Sri Lanka workshop. For the Sri Lanka workshop, we need a similar set of presentations (as were given in the 1st workshop) accompanied with follow up short (10 page) papers. The following papers will be presented:
   c. Paper 3 – Oscar Amarasinghe (to coordinate with) Prof. Jayantha Wijeratne (or an alternative) - Paper theme: Ecosystem health in the region and major ecosystem concerns.

Internal evaluator feedback

The workshop benefited from the attendance of Dr Andy Thorpe who is assigned as an internal project evaluator. He attended all sessions and was able to reflect on the discussion and outputs from the workshop specifically mindful of the aims and objectives set out in the project proposal and also in the context of the ESPA programme. His report can be found at Appendix 5. In summary his comments suggest that:

1) It is important to ensure that background materials produced are available and used in a timely fashion to support the workshop objectives.

2) It is important to ensure that participants are clear about the underlying research goal for the planned Project proposal for the next ESPA Call and are comfortable and competent with the tool boxes associated with the two principle research approaches, namely interactive governance and well being.

3) More efficient and effective means to capture the content of discussions taking place during the workshop.

4) The project needs to engage in a wider group of participants – the core group is currently very “social” science focussed and needs to more fully encompass the expertise required to address both ecosystem services and poverty alleviation fields.
Looking forward

A planning meeting is planned for 5 June to be held in the UK to prepare and structure the second workshop. As the deadline for the production of papers both from the first workshop and for the second workshop loom then a close check needs to be made to ensure these are produced on time.
# Appendix 1. Participation list and workshop timetable

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Email</th>
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<tbody>
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<tr>
<td>Date/Time</td>
<td>Saturday 4th April</td>
<td>Sunday 5th April</td>
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<tr>
<td>Morning Theme</td>
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<tr>
<td>09.00 – 09.20</td>
<td>Background papers: Setting the context</td>
<td>What we do not know</td>
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<tr>
<td>09.20 – 09.50</td>
<td>Poverty and Fisheries in TN.</td>
<td>Discussion: Arising challenges, barriers and needs for the future.</td>
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<td>09.50 – 10.10</td>
<td>Ecosystem health in TN.</td>
<td>10.00 – 11.30 Inaugural Ceremony</td>
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<tr>
<td>10.10 – 10.40</td>
<td>Discussion: Arising challenges, barriers and needs for the future.</td>
<td>10.00 – 11.20 Discussion: Arising challenges, barriers and needs for the future.</td>
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<td>10.40 – 11.00</td>
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<td>11.00 – 11.20</td>
<td>Development Trends and Change in TN.</td>
<td>11.30 – 12.30 Participatory work contd.</td>
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<tr>
<td>11.20 – 11.50</td>
<td>Discussion: Arising challenges, barriers and needs for the future.</td>
<td>11.50 – 12.30 Discussion: Emerging themes.</td>
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<tr>
<td>11.50 – 12.30</td>
<td>Discussion: Arising challenges, barriers and needs for the future.</td>
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<tr>
<td>12.30 – 13.30</td>
<td>Lunch</td>
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<td>Afternoon Theme</td>
<td>Introduction to key elements</td>
<td>Mapping concepts to issues</td>
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<tr>
<td>13.30 – 14.00</td>
<td>Welcome &amp; Outline of ESPA. (Martin Le Tissier &amp; Sarah Coulthard)</td>
<td>Existing Fisheries and Coastal Policy and Governance.</td>
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<td>14.00 – 14.30</td>
<td>Discussion: Workshop goals.</td>
<td>Discussion: Arising challenges, barriers and needs for the future.</td>
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<td>14.50 – 15.10</td>
<td>Discussion: Application of a wellbeing approach.</td>
<td>Re-interpretation of issues and themes. How effective are current approaches and methodologies? Can issues be re-framed?</td>
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<tr>
<td>15.10 – 15.30</td>
<td>Tea Break</td>
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<tr>
<td>15.30 – 15.50</td>
<td>Introduction to the Interactive Governance approach. (Maarten Bavinck)</td>
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<td>15.40 – 16.00</td>
<td>Tea Break</td>
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<tr>
<td>15.50 – 16.20</td>
<td>Discussion of Interactive governance approach.</td>
<td>Participatory work contd.</td>
</tr>
<tr>
<td>16.20 – 17.00</td>
<td>Looking forward: Application of approaches to local issues.</td>
<td>Discussion: What is needed to develop new perspectives?</td>
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Appendix 2. Briefing papers presented at Workshop 1

Three briefing papers were presented:

1. Ecosystem Services and Poverty Alleviation (ESPA) and the Social Wellbeing of Fishers: Introduction to the project and the ESPA programme. Sarah Coulthard.
2. Human Wellbeing in Fishing Communities. Allister McGregor
3. Interactive Governance and the Wellbeing of the Coastal Poor. Maarten Bavinck
Ecosystem Services and Poverty Alleviation (ESPA) and the Social Wellbeing of Fishers

Dr. Sarah Coulthard
Ulster University

Paper prepared for ESPA Workshop 1
4th April 2009, Institute for Ocean Management, Chennai, India
Building Sustainable Governance

Summary
The full title of this project is ’Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks’ which has been shortened to ’Building Sustainable Governance’ (BSG). It is a pilot project funded by the ESPA programme managed by the UK NERC (Natural Environment Research Council) and it runs for one year between February 2009 and February 2010. The purpose of the BSG is to bring together a range of scientific, policy and political actors involved in the fisheries sector in South Asia to explore the extent to which they are able, and interested, to participate in deliberative policy networks. It is intended that these networks will seek to generate and direct a future programme of research and capacity building in an effort to advance new forms of policy and management solution in fisheries which accommodate conflicts between ecosystem sustainability and poverty alleviation objectives. The project involves three workshops to explore the feasibility of establishing deliberative policy networks in Sri Lanka and South India. The project draws from two emergent bodies of research experience: work on Wellbeing in developing countries (McGregor 2004, Gough and McGregor 2007) and Interactive Governance in fisheries (Kooiman and Bavinck et al 2005).

Key messages

- The NERC - ESRC - DFID funded Ecosystem Services and Poverty Alleviation (ESPA) programme addresses how to achieve sustainably managed ecosystems, whilst contributing to poverty reduction and wellbeing improvements in developing countries.

- The ESPA programme is supported by 6 regional and sector situation analyses: the Marine and Coastal Situation Analysis includes recommendations for improved use and management of knowledge and identifies several knowledge gaps suggesting priority research topics.

- This project aims to build capacity for deliberative policy networks which will seek to advance new forms of governance, centred on the concept of human wellbeing, to better accommodate the agendas of ecosystem health and poverty alleviation within South Asian fisheries.

- The project will facilitate 3 workshops to be held in South India and Sri Lanka, where conflicts between poverty alleviation and conservation of fisheries are currently evident. Outputs will include an agreed strategy for further research, a complete research proposal for submission to the ESPA programme, and improved capacity to carry out research with high policy impact.
Building Sustainable Governance

Introduction

In 2006 the UK Government set out a strategy for its role in the reduction of world poverty which recognised that “people in the poorest countries are most reliant on environmental resources for their livelihoods. These resources are already under pressure and are likely to be degraded further by climate change.” The Millennium Ecosystem Assessment (MA 2005), which specifically addressed the inter-relationships between ecosystem services and human wellbeing also showed that the loss of services from ecosystems is a significant drawback in our efforts to reduce poverty, hunger and disease. The problem of having to balance ecosystem protection against poverty reduction is widespread throughout the fisheries sector and in the daily lives of the world’s coastal poor. It is now widely understood that global fisheries are in a state of crisis, a situation worsened by the persistent failure of fisheries management to abate overfishing, habitat degradation and more recently, the impacts of climate change on fish distribution and habitat loss. Some scholars have even predicted the collapse of all commercial fish stocks within the next 50 years (Worm et al 2006). And yet, an estimated 26 million poor people currently fish for a living (FAO 2006) the great majority of these in Asia, Africa, and Latin America. Many millions more are dependent on fish as a source of protein rich food security.

Today, the world’s fisheries-dependent poor face an uncertain future. The fisheries crisis, in many parts of the world, already affects the poorest and threatens those who live on the margins of poverty with increased risk and vulnerability. Despite this, the concern of growing poverty and vulnerability in fishing society remains inadequately addressed in current fisheries management, science and policy. Priorities over ecosystem health and fish stock sustainability tend to mean that the wellbeing of fishers and their families is often a secondary concern. As a result, many policies which promote environmental sustainability compete, and conflict, with human development and poverty alleviation considerations. In South Asia, which has the world’s largest, and fastest growing, population of coastal poor, this conflict has the potential to be at its most destructive. Existing policy and management approaches in fisheries have, as yet, been unable to resolve this dilemma.

The UK Environmental and Economic and Social Science research councils (NERC and ESRC), and the UK Department of International Development (DfID), have joined to develop a multi-disciplinary research programme titled Ecosystem Services and Poverty Alleviation [ESPA], which addresses how to achieve sustainably managed ecosystems whilst contributing to poverty reduction and wellbeing improvements in developing countries. The programme is informed by a series of background papers (situation analyses), which have been conducted to provide evidence on key challenges and to propose ways to best address these challenges through research (see Appendix 1). The most relevant analysis for this project is the Marine and Coastal Situation Analysis (Brown et al 2008), which is reviewed in the second part of this paper. This project is one of 12 projects funded in the first phase of ESPA (see Appendix 2) and is titled:

‘Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks’ [shortened to Building Sustainable Governance (BSG)].

Ecosystem Services and Poverty Alleviation in Fisheries
Building Sustainable Governance

The ESPA programme

At the core of the ESPA programme is the challenge of how to achieve sustainably managed ecosystems whilst contributing to poverty reduction and wellbeing improvements in developing countries. ESPA recognizes that addressing this challenge requires an international and multidisciplinary approach, based on equitable partnerships.

Box 1. ESPA Programme Aims (ESPA 2007)

To:

• Create strong, international multi-disciplinary teams that can tackle the complex problems associated with the sustainable use of ecosystems
• Provide a better understanding of the types, value, and potential of ecosystems and the ways society uses them
• Strengthen the capacity of developing countries to perform research and act on the findings
• Influence national policy and find a way to integrate science into development planning
• Provide decision-makers in developing countries with recommendations on ways to achieve sustainable and fair use of ecosystem services that will help reduce poverty.

The formally stated goals of the ESPA programme with regard to the pilot projects are:

• To strengthen capacity to formulate research agendas, design and write successful proposals, manage research projects on the interdisciplinary challenges of sustainable ecosystem management, relevant to national priorities, and use the outputs;

• To develop the tools, datasets and networks needed to improve capacity to assess ecosystem services and their impacts on well-being; and,

• To create a demand for research and improved awareness of ecosystem issues in the wider community in the regions concerned.

(ESPA 2007)

The ESPA programme seeks to promote multidisciplinary approaches and to bring about policy change. A strong emphasis is thus placed on the involvement of „influential constituencies engaged in the generation and/or communication of knowledge, in order to maximise the opportunities of exerting influence on policy makers”

The ESPA Programme Marine and Coastal Situational Analysis

The Marine and Coastal Situational Analysis (Brown et al 2008) has assessed the dynamics of change in marine and coastal ecosystem services and how those services support the livelihoods and wellbeing of the rural and urban poor in developing countries. It specifically focuses on the role of ecosystem services in reducing poverty, and identifies key challenges for research, gaps in knowledge, and capacity-building needs. The analysis identifies that poor people have had minimum impacts overall on changes in ecosystems services, but recognizes that, in particular locations, unsustainable use of ecosystems by those with limited options can be a driver of degradation in ecosystem services. Poor people were also found to prioritize

Ecosystem Services and Poverty Alleviation in Fisheries
Building Sustainable Governance

provisioning services, identifying the most important benefits as being cash, food and employment [see Box 2].

Box 2. Four Categories of Ecosystem Service

The Millennium Ecosystem Assessment (2005) categorized four main types of ecosystem services:

1. **Provisioning services** are those products produced by the ecosystem, such as food (including fish), fuel, and water;
2. **Regulating services** are benefits obtained through the regulation of ecosystems such as air quality, climate regulation, water purification, and erosion control;
3. **Cultural services** are non-material benefits from ecosystems such as spiritual and religious, recreational, sense of place, cultural heritage, aesthetics and educational;
4. **Supporting services** are those necessary for all other ecosystem services, including soil formation and nutrient cycling.

The situational analysis reveals a lack of information about how ecosystem services might contribute to poverty alleviation. For example, ecosystem services are not usually addressed in the poverty reduction strategies of developing countries. Furthermore, there are substantial knowledge gaps about the linkages between ecosystem services and the poor, and how changing services are creating new responses and impacts. The authors critique the poor management of knowledge stemming from a lack of integration of different types of knowledge on ecosystem services and poverty alleviation: “rarely is information on ecosystem series and poverty generated, analysed, stored, or utilised jointly by same institutions”. The analysis concludes by recognizing the fundamental need for better governance:

“In many developing countries, policies on environmental protection are weak or poorly integrated. Decisions on ecosystem use are often not accountable to the poor and corruption and vested interests lead to the needs and desires of marginalized people being ignored at various scales from national scale policy decisions to village level elite capture of benefits” (Brown et al 2008:5).

Fisheries in South Asia illustrate many of the issues raised by the Marine and Coastal Situation Analysis. The question of how marine and coastal ecosystem services can contribute to poverty alleviation requires further understanding, as do the implications of this for sustainability. Building this understanding is blocked by persistent mono-disciplinary approaches which provide narrow, and technical, „quick fix“ fisheries policies, which are incapable of addressing the full range of human dimensions of the fisheries dilemma. Fisheries policy also generally lacks integration with national poverty alleviation agendas, despite clearly indicated opportunities to contribute to poverty reduction (Neiland and Bene 2004). The recently completed DfID /FAO funded Sustainable Fisheries Livelihoods Programme has made some headway towards incorporating fisheries into poverty reduction strategies in West Africa (Thorpe et al 2004) and has conceptually advanced our understanding of the relationships between people and the sea (Neiland and Bene 2004). Most recently, connections between fisheries and human wellbeing have been explored (Coulthard et al forthcoming) which move further than the livelihoods approach by recognising that fishing is often a way of life.

Ecosystem Services and Poverty Alleviation in Fisheries
Conceiving of fishing as “a way of life” highlights the deeper social and cultural dimensions of the management challenge.

Box 3. Marine and Coastal Situation Analysis – Recommendations
(Summarized from Brown et al 2008:p.61)

1. Improvement in the use and management of knowledge, including:
   Democratizing existing knowledge —making it available to those interested in using it; improving dissemination of research with better communication to decision-makers; promoting a culture of knowledge and experience sharing across institutions, including interagency working groups; integrating knowledge across scales and disciplines, including the developing of interdisciplinary research capacity between institutions; and providing incentives for knowledge transfer, by incorporating such requirements into research funding.

2. Identified knowledge gaps suggest the following priority research topics:

Shifting vulnerabilities in a changing world: relating to where people live; how people construct their livelihoods (patterns of diversification and moving in and out of fisheries); processes of globalisation and changing access and exploitation, and how changing patterns of risk impact on the opportunities and ability to alleviate poverty.

Linking environmental change across terrestrial, coastal and marine social-ecological systems: relating to the acknowledgement that drivers of change in the coastal and marine zone often lie outside the boundaries of the coastal zone, and the need to understand interactions of change across coastal, terrestrial and global systems. Priority locations for this research would be at a watershed scale, such as Bangladesh, which is subject to a mix of coastal and watershed processes).

Expanding the benefits from ecosystem services for the poor: with a focus on developing new models of co-management and property regimes in favour of the poor, and to explore a broader set of ecosystem services outside provisioning services, for example, the options for alternative livelihoods and economic benefits from wider ecosystem services; critical examination of tourism as a way out of poverty for the coastal poor.

Exploring opportunities to increase the flow of ecosystem services to the poor: relating to the potential for increasing flows through expansion of fisheries, aquaculture, conservative management, improved market access and adding value to marine products; improvement in regulating services to reduce vulnerability of the coastal poor e.g. coastal protection

Capacity and Training: general measures to build research capacity include regional and international collaborations; support of interdisciplinary research; postgraduate training in ecosystem services and human wellbeing (including provision of funds for training graduates in developing countries); learning from documented experience; linking academic research and practice through training

The changing nature of poverty in fisheries is also in need of renewed attention, particularly in terms of shifting patterns of dependence on ecosystem services; migration and where people live; and how people construct their livelihoods. As noted in the situation analysis, “each of which potentially puts poor people at risk” (p.4) [See box 4]. This aspect links well with ongoing research in South Asia on the changing dynamics of fisheries, following an era of intensive modification and development. Research by Bavinck (2001) and Kurien (2001) into the impacts of South Asia’s “Blue Revolution” provide a useful foundation from Ecosystem Services and Poverty Alleviation in Fisheries
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which to explore changes in fisheries and implications for poverty alleviation, in particular, relating to changing access to ecosystem services. The fast pace of economic development and growth in many South Asian countries provides a further important context of change, where vulnerabilities associated with fisheries and coastal zones can shift over a short time scale, creating new challenges for poverty alleviation and environmental sustainability agendas.

Box 4. Poverty in Coastal South Asia

India and Sri Lanka are in the top 15 countries with the highest densities of poor people living within coastal zones, with India hosting the greatest absolute number of coastal poor at 68 million people (27% of the world’s coastal poor). India also is in the top 10 countries most vulnerable to changes in marine and coastal ecosystem services, influenced by a high reliance on fish, low adaptive capacity (assessed by the population living on less that $1 a day), and high exposure (a high at risk population).

Conclusion

Fisheries research in South Asia, and globally, has been dominated by specialists, often technically oriented, working in or for specialized government institutions. This has resulted in an approach to policy problems that is dominated by sectoral visions, which are only partial in their scope, based, for example, on a particular type of ecosystem, or bounded within regional, national or north-south divisions of interest and scale. The partners in Sri Lanka and India identified here are committed to developing a different approach to policy that is wider-reaching and which more profoundly integrates the poverty alleviation and fisheries services agendas. This project will support this through a 3-tiered approach.

First, it seeks to provide all partners with a means of strengthening their commitment to interdisciplinary approaches, in particular bringing together economics, international development, and natural sciences agendas.

Second, the project recognizes that effective governance is only achievable through the expansion of poverty and ecosystem research beyond the realms of government and academia. It is thus strongly committed to joining-up government and academic research with the wealth of action research in civil society and fishing community circles. This is reflected in the project’s inclusion of participation from a wide range of partners.

Third, it builds on and connects networks of interested members at a regional scale. Currently, fisheries and poverty interests are fragmented across the region and often lack sufficient political and institutional support to connect at regional level. The network created by this project links interests and activities across South India and Sri Lanka – improving the capacity for impact and change at the regional policy level.

The project engages with current momentum in South Asia by seeking to complement it with UK and European research strengths in two newly emerging fields of research: Wellbeing in developing countries (McGregor 2004, Gough and McGregor 2007) and Interactive Governance of fisheries (Bavinck et al 2005, Kooiman and Bavinck 2005). These two research areas are addressed in subsequent workshop papers. Ultimately this is an opportunity to build equitable and sustainable networks and partnerships, regionally, and internationally, in an effort to prepare an agreed research agenda. The project will deliver a joint proposal to a new 5 year

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UK ESPA research programme, details of which are expected to be announced in summer 2009.

The first ESPA workshop has 2 main objectives:

i) Developing partnership and ownership in a common vision on how this project can contribute to addressing poverty alleviation in Tamil Nadu fisheries

ii) To produce a 4 page working concept note to feed into a proposal [this will be a starting document in the 2\textsuperscript{nd} workshop in Sri Lanka]

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Cultures of Fishing Communities: A Key to Fisheries Management and Food Security. *Fisheries Technical Paper 401 FAO*


Ecosystem Services and Poverty Alleviation in Fisheries
Appendix 1. The ESPA Situational Analyses

Available online at www.nerc.ac.uk/research/programmes/espa/resources.asp

Analysis 1. China Ecosystem Services and Poverty Alleviation Situation Analysis and Research Strategy

Main authors: Chinese Academy of Agricultural Sciences (CAAS), CAB International, UNEP World Conservation Monitoring Centre, Stanford University - The Natural Capital Project, Walker Institute for Climate System Research, University of Reading, Ningxia Centre for Environment and Poverty Alleviation, Ningxia Development and Reform Commission.

Analysis 2. Challenges to Managing Ecosystems Sustainably for Poverty Alleviation: Securing Well-Being in the Andes/Amazon

Main authors: Roberto Porro 1,2,3; Jan Börner1,2,4; Andy Jarvis 2,5;
1 Amazon Initiative Consortium, 2 International Center for Tropical Agriculture, 3 World Agroforestry Centre, 4 Centrum für Internationale Migration und Entwicklung (Germany), 5 Biodiversity International.

Analysis 3. Ecosystem services and poverty alleviation in South Asia: a situation analysis for India and the Hindu Kush region

Main authors: Rajendra K Pachauri 1; Leena Srivastava 1; Arabinda Mishra 2 and Michael D. Wood 3.
1 TERI, New Delhi, India , 2 TERI University, New Delhi, India , 3 SWIMMER, Liverpool, UK

Analysis 4. Re-imagining the Rural-Urban Continuum: Understanding the role ecosystem services play in the livelihoods of the poor in desakota regions undergoing rapid change.

Main authors: Institute for Social and Environmental Transition (ISET)-Nepal (ISET-Nepal); King's College London; Centre for Global Change (CGC), Dhaka, Bangladesh; Chinese Academy of Agricultural Sciences (CAAS), Beijing, China; Institute of Agricultural Economics and Development, Beijing, China; Institute of Agricultural Resources and Regional Planning, Beijing, China; Institute for Social and Environmental Transition (ISET-Pakistan); International Centre for Tropical Agriculture (CIAT), Cali, Colombia; Rhodes University, Consortia for Ecosystem Services and Poverty Alleviation in Sub-Saharan Africa, Grahamstown, South Africa; University of Cape Town, Department of Historical Studies, Cape Town, South Africa; and Winrock International India, Delhi, India.

Analysis 5. Ecosystem Services for Poverty Alleviation: Marine & Coastal Situational Analysis

Main authors: Katrina Brown, Tim Daw, Sergio Rosendo, Matthew Bunce and Nia Cherrett, University of East Anglia. Contributions were made by research teams from the following organisations:
Cefas Graham Pilling, Tony Beeching, Nick Dulvy, Joe Scutt Phillips, Andy South, Mathew Staines
CRCP Tim McClanahan, Joseph Maina, Andrew Wamukota, Carol Abunge MCD, Nguyen Thu Hue, Than Thien Hien, Ho Thi Yen Thu, Phan Thi Anh Dao, Nguyen Van Quan
ORI; David Glassom, Louis Celliers, Rudy van der Elst, Tarryn-Lee Winsom, Darryl Colenbrander
WorldFish Robert Pomeroy, Usha Kanagaratnam
Appendix 2

Successfully funded ESPA projects and networks (pilot phase)

1. **BESSA: Building Ecosystem Services Research Capacity in Semi-Arid Africa**
   Principal Investigator: Dr RB Matthews, Macaulay Land Use Research Institute, Human Dimensions Science group.
   Co-Investigator: Dr HIJ Black, Macaulay Land Use Research Institute, Environmental Sciences

2. **Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks**
   Principal Investigator: Dr JA McGregor, Institute of Development Studies, Research Department
   Co-Investigator: Dr S Coulthard, University of Ulster, Sch of Environmental Sciences

3. **CAMARV: Capacity Building for Mangrove Assessment, Restoration and Valuation in East Africa**
   Principal Investigator: Dr M Huxham, Edinburgh Napier University, Life Sciences
   Co-Investigator: Dr M Mencuccini, University of Edinburgh, Sch of Geosciences
   Co-Investigator: Professor C Price, Bangor University, Sch of Environment and Natural Resources
   Co-Investigator: Dr MW Skov, Bangor University, College of Natural Sciences

4. **Capacity building for carbon- and biodiversity-based payments for ecosystem services in the Peruvian Amazon**
   Principal Investigator: Dr T Baker, University of Leeds, Sch of Geography
   Co-Investigator: Dr D Del-Castillo, Research Inst of the Peruvian Amazon, UNLISTED
   Co-Investigator: Dr JR Healey, Bangor University, Sch of Environment and Natural Resources
   Co-Investigator: Dr J Jones, Bangor University, Sch of Environment and Natural Resources

5. **Farmer Innovation System in the Loess Plateau of China: An International Research and Training network**
   Principal Investigator: Dr B Wu, University of Nottingham, Sch of Contemporary Chinese Studies

6. **Strengthening Capacity to Alleviate Poverty through Ecosystem Services (SCAPES): Putting methodological developments into practice**
   Principal Investigator: Dr P Kumar, University of Liverpool, Geography
   Co-Investigator: C Linstead, University of Liverpool, Institute for Sustainable Water
   Co-Investigator: Mr M D Wood, University of Liverpool, Institute for Sustainable Water

7. **Strengthening research capacity of China and South Africa (SA) in sustainable water resources management with UK and Australian experiences**
   Principal Investigator: Professor RL Ison, Open University, Centre for Complexity & Change
   Co-Investigator: Dr KB Collins, Open University, Systems
   Co-Investigator: Dr Y Wei, University of Melbourne, Face of Engineering

_Ecosystem Services and Poverty Alleviation in Fisheries_
8. The impacts of ecosystem services and environmental governance on human well-being in the Pongola region, South Africa
Principal Investigator: Dr B Lankford, University of East Anglia, Development Studies
Co-Investigator: Dr V Chhotray, University of East Anglia, Development Studies
Co-Investigator: Professor F Ellis, University of East Anglia, Development Studies

9. Transformation and shifts in production landscapes for livelihood improvements in the Sahel: building a partnership in research
Principal Investigator: Dr J Lovett, University of York, Environment
Co-Investigator: Dr J Barron, University of York, Stockholm Environment Institute
Co-Investigator: Mr S Cinderby, University of York, Stockholm Environment Institute

10. Using climate change information in ecosystems services for poverty alleviation research in China
Principal Investigator: Professor T Wheeler, University of Reading, School of Agriculture Policy and Development
Co-Investigator: Professor CJ Garforth, University of Reading, School of Agriculture Policy and Development

11. Using climate change information in ecosystems services for poverty alleviation research in China
Principal Investigator: Dr AJ Challinor, University of Leeds, School of Earth and Environment
Split Award

12. Valuing rainforests as Global Eco-Utilities: a novel mechanism to pay communities for ecosystem services provided by the Amazon
Principal Investigator: Dr P Meir, University of Edinburgh, School of Geosciences

13. Valuing rainforests as Global Eco-Utilities: a novel mechanism to pay communities for ecosystem services provided by the Amazon
Principal Investigator: Dr P Meir, University of Edinburgh, School of Geosciences
Split award
Co-Investigator: Mr A Mitchell, Global Canopy Foundation, Global Canopy Programme
Building Sustainable Governance

Human Wellbeing in Fishing Communities

Dr Allister McGregor
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Paper prepared for ESPA Workshop 1
4th April 2009, Institute for Ocean Management, Chennai, India

Project: Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks
Summary
The full title of this project is ‘Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks’ which has been shortened to ‘Building Sustainable Governance’ (BSG). It is a pilot project funded by the ESPA programme managed by the UK NERC (Natural Environment Research Council) and it runs for one year between February 2009 and February 2010. The purpose of the BSG is to bring together a range of scientific, policy and political actors involved in the fisheries sector in South Asia to explore the extent to which they are able and interested to participate in deliberative policy networks. It is intended that these networks will seek to generate and direct a future programme of research and capacity building in an effort to advance new forms of policy and management solution in fisheries which accommodate conflicts between ecosystem sustainability and poverty alleviation objectives. The project involves three workshops to explore the feasibility of establishing deliberative policy networks in Sri Lanka and South India. The project draws from two emergent bodies of research experience: work on Wellbeing in developing countries (McGregor 2004, Gough and McGregor 2007) and Interactive Governance in fisheries (Bavinck et al 2005, Kooiman and Bavinck 2005).

HUMAN WELLBEING IN FISHING COMMUNITIES

Key Points:

- The pursuit of human wellbeing drives human behaviours and actions including their exploitation of natural resources such as fisheries.

- Human beings differ from each other in what they conceive of as wellbeing and in the strategies that they are able to adopt in their efforts to achieve wellbeing.

- Conflicts in fisheries can be interpreted as being underpinned by conflicts between the wellbeing aspirations and strategies of some people with those of others.

- Effective fisheries governance entails the creation of rules, institutions and policies in societies to moderate conflicting or destructive wellbeing aspirations and strategies.

- An understanding of the motivations for the way and the extent to which people exploit a fishery, as part of their pursuit of wellbeing, provides a basis for formulating effective systems of governance and policy.
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Wellbeing and Human Development

Introduction
The term wellbeing is frequently used in high level development policy statements and in theories of development. The UN Declaration on the Right to Development began by recognizing that,

“...development is a comprehensive economic, social, cultural and political process, which aims at the constant improvement of the well-being of the entire population and of all individuals on the basis of their active, free and meaningful participation in development and in the fair distribution of benefits resulting therefrom.” (1986)

More recently a key Synthesis Report of the Millennium Ecosystem Assessment is titled „Ecosystems and Human Well-being” (2005). It presents a framework for understanding the inter-relationships between ecosystem services and human wellbeing in the following way:

Figure 1 Millennium Ecosystem Assessment: Ecosystem Service and Human Wellbeing Framework.

It is now widely accepted that the promotion of human wellbeing is the ultimate purpose of development. It is also increasingly recognized that the global challenges of environmental degradation and climate change are profoundly linked to the human pursuit of wellbeing. BUT, while the concept of wellbeing has been widely used at a rhetorical level it has not been translated very effectively into policy and practice.

The research from which this initiative arises suggests that it is both possible and useful to develop a practical conception of wellbeing that can be operationalised for
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analysis and empirical study\(^1\). There are **four** main ways that it can contribute at this time:

1. It offers a coherent conceptual framework against which to consider the relationships between the multiple dimensions of poverty.

2. It offers a different perspective on traditional development debates and policy problems.

3. It introduces a new combination of research methods with which to generate evidence for development policy and practice.

4. It provides a means of combining „top-down“ and „bottom-up“ perspectives in our approaches to the major global problems of poverty, conflict and sustainability.

Why Wellbeing Now?

It is appropriate to consider why there is increasing interest in the concept of wellbeing at this time. Broadly speaking it is because there is a strong feeling that the current international development agenda has not delivered the kind of sustainable global development that we aspire to. While the Millennium Declaration has been a powerful policy vehicle for poverty reduction, as we move closer to 2015 governments and international agencies are already searching for ways forward post-2015. The concept of wellbeing presented here is being reviewed by many international agencies in an effort to assess whether it can provide a way of framing a new international agenda in an MDG-friendly way. In particular the wellbeing approach offers a possible means with which to explore the relationships between the three major global concerns: poverty, conflict and environmental sustainability.

Wellbeing is also enjoying considerable political and intellectual support at this time. This is demonstrated by a range of „wellbeing“ initiatives across governments in both developed and developing countries, as well as by adoption of the term (in one form or other) by major global agencies (e.g. OECD”s – Measuring Progress).

Finally, at a time of major economic crisis the focus on wellbeing becomes more real because recession threatens all our wellbeing. Public policy deliberations now more than ever need a framework that allows the better identification of the harder choices and trade-offs between potential courses of public action.

A Practical and Social Conception of Wellbeing.

> “Wellbeing is a state of being with others, where one’s needs are met, where one is able to meaningfully pursue ones’ goals, and where one is able to experience a satisfactory quality of life.”

This conception points to the need for policy to assess both wellbeing **outcomes** and wellbeing **processes**.

\(^1\) [http://www.welldev.org.uk/oldindex.htm](http://www.welldev.org.uk/oldindex.htm)

Human Wellbeing in Fishing Communities
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Wellbeing outcomes can be assessed in three dimensions:

1. Needs met
2. Capacities to act meaningfully in pursuit of self-ratified goals
3. Satisfactions with Quality of Life

No one of the three provides a full and adequate assessment of wellbeing; rather all three dimensions must be taken into account in relation to each other to assess the wellbeing profile of the subject.

The assessment of wellbeing processes involves the exploration of how needs are translated into resources; how those are then used to meet needs; and also how they are translated consciously and unconsciously, through social meanings, into personal and subjective assessments.

Why is it a Practical Conception of Wellbeing?

It is practical in as much as it can be operationalised both for research and for policy deliberations. Other conceptions of wellbeing have a tendency to become overcomplicated, over-philosophised and ultimately they cannot be operationalised.

The aim of this conception is to draw on the rich conceptual and philosophical history of wellbeing but to make it workable in relation to real world problems. From another view of what is meant by practical, it has been argued that it is only by having a conception of wellbeing that we can assess whether we ourselves are experiencing wellbeing and are thus able to engage in public debates over the wellbeing of others.

Why is it a Social Conception of Wellbeing?

- Because it is not an individualistic notion of wellbeing, but one which recognizes the fact that the wellbeing of the person (different persons) is inextricably bound up to the wellbeing of our societies. „Broken societies” have negative wellbeing effects.

- Because it is not a basic needs conception. Basic needs conceptions of wellbeing focus on the human body and physiological sources of harm. A social conception - that focuses on the social human being – recognizes the importance of basic needs but also that social, psychological and cultural needs must be met if humans are to avoid harm.

This definition draws on, combines and then simplifies recent contributions from social policy, social psychology, political science and different strands of recent Development Studies thinking, including the work of Amartya Sen on „freedoms”, Robert Chambers on „participation” and on notions of „livelihoods”.

Wellbeing and Fisheries Policy Analysis

The Importance of Differences

The wellbeing approach highlights the importance of understanding differences between different people. Human beings differ from each other in what they conceive of as wellbeing and in the strategies that they are able to adopt in their efforts to achieve wellbeing. They also differ in their capabilities and the way that those capabilities interplay with societal conditions to produce wellbeing outcomes.
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The recognition of difference is fundamental for a wellbeing focused analysis of communities that are dependent upon fishing. Differences in gear types, rights over fishing spaces, and the available ability of capital for investment are obvious enough and are important, but a policy relevant analysis must also take account of differences in social status; access to social and economic networks, and the position of the individuals and households in the structures of power that operate in fishing communities. These differences are important for any analysis of governance or policy options because they create variations between fishing households in their abilities both to respond to management policies and regimes and to cope and live with the wider changes that they tend to induce.

In the language of the Interactive Governance Framework these differences between people dependent on fisheries (heterogeneity) are a key feature of the fisheries “system-to-be-governed” and must be taken into account in any wellbeing analysis of development and conservation options. A wellbeing analysis of fisheries governance and policy options can provide us with an understanding of the pattern of “winners” and „losers” that arise or are likely to arise from the adoption of any governance or policy regime.

**Box 1. The Interaction of Capabilities and Conditions in the Generation of Wellbeing**

The conception of social wellbeing that is presented here indicates that wellbeing outcomes are achieved (or not) through the interaction of a persons' capabilities and their societal conditions. **Capabilities and conditions** thus represent two ways of thinking about possible proactive roles of policy interventions:

- Policy that is primarily intended to improve the capabilities of a person to pursue wellbeing.
- Policy that is primarily intended to reform the societal conditions within which a person is seeking to achieve wellbeing?

The wellbeing framework argues that these two cannot be considered in isolation from each other and that policy will normally require action on both capabilities and conditions. In other words we cannot have policy that focuses on improving wellbeing conditions that ignores that fact that all societies contain inequalities in the distribution of capabilities for exploiting those conditions. Nor, conversely, have polices which build capabilities while ignoring the fact that structural institutional aspects of societies enable some to achieve wellbeing and constrain others from doing so regardless of their basic capabilities. Capabilities and conditions are not exclusive and consideration of one policy must incorporate an analysis of the other (i.e. improving a person' capabilities when they are structurally constrained so as to be unable to escape their poverty would be pointless). This way of thinking does however offer a way of framing where the emphasis is to lie in any policy initiative.

**Difference and Conflicts in Fishing Communities**

Since people differ in their wellbeing aspirations and strategies it is then apparent that the wellbeing aspirations and strategies of some people will conflict with those of others. In some cases these conflicts result in the poorest and weakest in society failing to achieve even basic levels of wellbeing - instead they suffer poverty, exclusion and oppression.

Fisheries governance and policy that seeks to address both conservation and poverty alleviation goals must acknowledge that not only are there likely to be differences in the vision and strategy for wellbeing between fishers and conservationists, but also...
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that there are important differences in wellbeing aspirations and strategies between fishers. A failure to recognize the implications of these two dimensions of differentiation within fishing communities represents a critical weakness for many of the current policy approaches in fisheries.

These differences in wellbeing aspirations and strategies represent a basis for conflicts over what management regime is adopted and how that regime is implemented in any community. For example, the response to a conservation management regime by fishing households that aspire to generate enough income from the fishery in order to enable their children to escape from fishing is likely to be quite different from another fishing household that aspires to maintain their fishing as a way of life which they value.

Fishing as a Way of Life

The social wellbeing approach goes beyond the usual livelihoods approach by emphasizing the importance of engaging with the meanings that people have in their lives. Following Sen (1999), Gough, Camfield and McGregor (2007) note that; “it [a livelihood] is not just about what people have, but what their goals and aspirations are; what they are trying to do with what they have and about what choices they make in trying to achieve these goals” (p23). This observation is particularly apposite for the analysis of fishing communities. Fishing, like many other skilled and artisanal activities, is often more than just a livelihood, but for many of the people and communities fishing it is a way of life.

This view that fishing is more than „just a job” but a „way of life” is frequently expressed by fishers, and has been well documented within maritime anthropology. Being a fisher can invoke a strong sense of social identity and importantly establishes a sense of being in the world. As in other types of community where there is a strong relationship between people and their natural environment, the fisheries sector is one that is replete with strong social meanings which cannot be ignored by development or environmental policy makers.

A Broader View of Fisheries Policy

A key role for fisheries policy and governance is to provide or modify the societal structures that make it possible for us to live together without conflict. We can distinguish three levels at which policy can work. It can:

1. Prohibit behaviours that are causing damage to the ecosystem or to others who are dependent on that ecosystem.

2. Change the rules of the systems that govern fishing behaviours so as to make it difficult for people to adopt behaviours that cause damage.

3. Change the beliefs and values that underpin the behaviours that cause damage.

Much current fisheries policy has been focussed only on the first of these three levels. It is about directly prohibiting behaviours and actions.
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The Interactive Governance approach (IG) however provides a framework to engage with the detail of the design institutions of governance at the second level. It addresses issues of the rules and organisational forms that will constitute the governance system.

However, the IG approach also alludes to the need to engage with the third level at which policy can operate, by recognising that interactive governance regimes are ultimately founded in the negotiation between the different value systems that prevail in fishing communities.

The growing awareness of the urgency of climate change has resulted in a global campaign to change our visions of wellbeing from ones that are currently dominated by consumerist values to visions of wellbeing that incorporate the values of environmental sustainability.

Whichever form policy takes in an effort to meet either conservation or poverty alleviation goals it will inevitably impact differently on different people. Grindle and Thomas (1991) argue that to assess the „implementability” of any policy then it is necessary to analyze its „content” and to understand the „context” in which it is expected to work. By „content” they mean analyzing the impact on the key stakeholders affected by the policy and by „context” they mean understanding the relationships between key stakeholders so as to anticipate the ways in which the policy will cause them to change how they act towards each other.

Following this policy analysis logic and combining it with the social wellbeing approach developed here, we argue that more effective fisheries policy and governance depends on better understanding the different possible patterns of impact of policy and management regimes on the wellbeing of those who are expected to accept the regime.

Conclusion

All public policies are political acts and can never be viewed merely as driven by technical solutions. As such a key challenge for reconstructing legitimacy for fisheries policy and governance lies in reconnecting governance regimes with local realities and local perceptions of the problem (McGregor 2006, Bavinck et al 2005).

The pragmatic basis of this view is that effective governance tends to be founded the realities of local relationships and power structures, but it is also founded in a broader ethical concern. The simplistic displacement of fishers from occupations that are the basis for social identity, of cultural heritage and of personal self esteem raises fundamental questions about the trade-offs between conservation, development and the human right to a distinctive and culturally informed way of life.

The approach that is outlined here is founded in a particular view of how we understand policy processes. This corresponds to Majone’s argument that policy processes involve three basic elements: Evidence, Argument, and Persuasion (Majone 1996).

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Policy decisions are in fact made on the basis of (political) persuasion, but

**Persuasion** is informed by scientifically informed arguments
and

**Argument** is supported or refuted by the deployment of evidence
and

**Evidence** can be assembled using a range of credible scientific methodologies.

In order to make more effective fisheries policy and governance, „Evidence“ is required both on what is happening to ecosystems and on the dynamics of the societies and communities dependent of fisheries. The „Arguments“ that have to be made are about the relationships between the different possible objectives of fisheries policies and a rounded assessment of the consequences of each. Finally, „Persuasion“ involves our active participation as both scientists and human beings in the inevitable debates between differing systems of human values.

In respect of this latter point the wellbeing approach encourages to frame the debate over values in form of the basic question:

- **How are we to live well together in ways that are not only environmentally sustainable but are socially and politically sustainable also?**
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Interactive Governance and the Wellbeing of the Coastal Poor

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Paper prepared for ESPA Workshop 1
4th April 2009, Institute for Ocean Management, Chennai, India
Project: Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks
**Building Sustainable Governance**

**Summary**

The full title of this project is ‘Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks’ which has been shortened to ‘Building Sustainable Governance’ (BSG). It is a pilot project funded by the ESPA programme managed by the UK NERC (Natural Environment Research Council) and it runs for one year between February 2009 and February 2010. The purpose of the BSG is to bring together a range of scientific, policy and political actors involved in the fisheries sector in South Asia to explore the extent to which they are able and interested to participate in deliberative policy networks. It is intended that these networks will seek to generate and direct a future programme of research and capacity building in an effort to advance new forms of policy and management solution in fisheries which accommodate conflicts between ecosystem sustainability and poverty alleviation objectives. The project involves three workshops to explore the feasibility of establishing deliberative policy networks in Sri Lanka and South India. The project draws from two emergent bodies of research experience: work on Wellbeing in developing countries (McGregor 2004, Gough and McGregor 2007) and Interactive Governance in fisheries (Bavinck et al 2005, Kooiman and Bavinck 2005).

**INTERACTIVE GOVERNANCE AND THE WELLBEING OF THE COASTAL POOR**

- Governance is crucial for addressing the needs of the coastal poor and the decline of the marine ecosystem. Interactive governance provides a new and theoretically motivated approach for assessing and guiding capture fisheries on the basis of principles, partnership and learning.
- Interactive governance emphasizes the diversity, complexity, and dynamics of fisheries and the varying positions of the coastal poor therein. A policy focus directed to improving the wellbeing of the coastal poor needs to be responsive to these variations.
- Like it or not, there are many governors in fisheries. Proponents of interactive governance view this as an asset, rather than a disadvantage. After all, it is only through interaction that effective governance can come about.
- Governance means a willingness to make hard choices and accept trade-offs. According to interactive governance, hard choices are best navigated on the basis of a debate of principles and values.

*Interactive Governance and the Wellbeing of the Coastal Poor*
Interactive Governance

Introduction
The fact that governance is essential for resolving important societal issues is widely recognized. The ESPA marine and coastal assessment (see Brown et al. 2008:5) thus argues that “governance of ecosystems and of the ecosystem services used by the poor is fundamental to the benefits from, and sustainability of ecosystem services.” In many cases, however, the process of governance is not sufficiently specified. Interactive governance (IG) is an innovative approach for understanding and dealing more adequately with societal problems and opportunities, such as in capture fisheries (Kooiman et al. 2005, Bavinck et al. 2005). This sector is currently facing important challenges particularly with regard to the decline of marine ecosystems and the position of the coastal poor. By enlarging the scope of the governance endeavour and paying systematic attention to the structure of the governing process, IG presents a window for assessing and improving the wellbeing of fisherfolk and other coastal inhabitants in developing and developed countries alike.

Basic notions
IG-theory provides a comprehensive model for studying social issues and providing direction for policy. Similar to all scientific models, it contains a number of assumptions. According to this approach, every societal sector can first of all be divided into two parts: a System-to-be-Governed (SG), and a Governing System (GS) – see figure 1. For a governing effort to be successful these parts need to be compatible; in other words, the GS must take adequate account of the nature of the SG. Where this is ignored, governance fails and society suffers.

Figure 1: Fisheries systems broken down

In respect of capture fisheries the System-to-be-Governed (SG) is often conceived as a „fish chain“ or an interconnected set of „fish chains“. These fish chains consist of relationships connecting the marine ecosystem, to systems of capture, to processing and marketing phases, and to the consumer (see
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Fish chains thus consist of interlinked relationships between humans and their natural environment. Most fisheries in South Asia consist of many parallel fish chains, which differ in respect of products, markets, and actors. Each fish chain has special governance requirements. For example, a sardine fishery operating for consumption in the local market, functions differently from a high-value tuna fishery which produces for export markets.

Figure 2: The system-to-be-governed, or fish chain

The IG-approach highlights three features of SGs that are of crucial importance for governance design: their diversity, complexity, and dynamics. As fish chains vary considerably in these aspects, effective governance systems must be able to respond appropriately. Diverse SGs are argued to require a rich diversity of governance efforts, whereas complex SGs necessitate a sophisticated governance approach. Dynamic SGs mean that policy makers must be flexible and be capable of acting on the basis of learning about the changes continuously taking place.

A second set of assumptions relates to the Governing System (GS). According to interactive governance theory, every societal sector (such as the capture fisheries sector) has many people and organizations involved in the governing process. Some of these people and organizations belong to „government“; others are involved in „the market“ and „civil society“. No one governor – or governing agent - has automatic priority over others. Sometimes the SG is dominated by caste leaders or other community organizations. At other times the Fisheries Department or an export company may predominate. These different governors interact with each other and crucially they interact with the people actively involved in the fish chain. It is these various interactions, and not the written mission statement of any one governor, which shape the effectiveness of the governing effort. The IG-approach recognises that these interactions lie at the heart of de facto governance and goes further to argue that it cannot be otherwise. Proponents of IG therefore stress the importance of partnerships in fisheries. According to this vision, governance by a single governor tends to be unsuccessful, whereas partnerships provide the possibility of harmony and forcefulness to the governance effort. Needless to say, however, effective partnerships are difficult to achieve. They depend on agreement not only about concrete management measures, but about the principles underlying governance.

Interactive Governance theory adds to understanding also by distinguishing three levels at which governors can operate.
**Building Sustainable Governance**

- 1st level - Governors can operate at the day-to-day level of immediate problem-solving and decision-making.
- 2nd Level – Governors can fashion or refashion the rules and also change the structures of organizations.
- 3rd Level - Governors can operate at the level of shaping principles and values, by which organisations and particular decisions are then guided. This can be called the level of meta-governance.

Interactive Governance theory then also indicates **three modes** of governance:

- Top-down governance - often associated with government;
- Self-governance - often held to be the prerogative of communities; and
- Co-governance - otherwise known as co-management, in which government collaborates systematically with other governing agents.

Contrary to many writings on fisheries, proponents of IG do not consider any single mode of governance to automatically produce better outcomes. Instead, it argues that each situation requires its own diagnosis and then the selection of the most relevant mode. This may involve making hard choices. After all, fisheries present a range of difficult problems and possible trade-offs, many of have serious consequences both for the humans involved and for the ecosystem with which they live. IG-theory argues that in order to make such hard choices it is necessary for affected actors to debate and reach accommodation on the concerns and principles underlying the governance system.

**Concerns and principles**

Up to this point we have presented governance as a neutral activity, devoid of specific concerns or value orientations. The IG-approach, however, argues that in real life governance efforts are never, can never and should never be without value choices. The discussions about fisheries world-wide reflect a set of interlinked concerns regarding: ecosystem health, social justice, livelihoods and employment, and food security (including food safety). All of these concerns are intimately connected with aspects of human wellbeing, both for people here in the present as well as for future generations. Each specific situation will generate its own debate on how these different concerns should be prioritised. For South Asia, as well as for many other parts of the world, the wellbeing of the fishing poor here and now is clearly a major consideration.

Human behaviour, which includes governance activity, is underpinned by moral principles. Proponents of IG argue that some principles are more relevant than others. The inherent dignity and fundamental equality of human beings, as expressed in the Declaration of Human Rights (1948), underlie many governing efforts to wellbeing, also for the fishing poor. Needless to say there are other principles too, for example, the conservation of biodiversity, with which the above needs to be balanced.

**Moving forward**

In order to develop Interactive Governance to address the challenges of reconciling Poverty Reduction and Ecosystem Health Objectives (see figure 3) a number of steps are required:

**Interactive Governance and the Wellbeing of the Coastal Poor**
Building Sustainable Governance

- Interactively identify within the bundle of fish chains where the poor are located, and what circumstances negatively impact their wellbeing.

- Interactively place this knowledge in the context of the overall nature – diversity, complexity and dynamics – of the SG in question, and the other concerns and principles relevant for governance.

- Interactively identify the governors relevant for fishing, and their potential contribution.

- Interactively investigate and develop opportunities for partnership between governors, on the basis of shared principles and values, and linked institutions.

- Interactively base institutions in a practice of learning, in response to continuous changes taking place in SG and GS.

- Interactively take account of the environment of the fisheries system in question, in order to identify external factors that affect the circumstances of the coastal poor.

Further reading:


Building Sustainable Governance


Interactive Governance and the Wellbeing of the Coastal Poor
Appendix 3. Presentations made at Workshop 1

Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and deliberative Policy networks (BSG)

Presentations

1. Project background
2. Human wellbeing
3. Interactive governance
4. Poverty and fisheries
5. Ecosystems of Tamil Nadu
6. Challenges, barriers, needs – 1
7. Challenges, barriers, needs - 2
8. Existing policy
9. Research questions – 1 & 2
10. The way forward
The Ecosystem Services and Poverty Alleviation programme (ESPA) and the Social Wellbeing of Fishers

Workshop 1 – April 2009, Chennai
Dr Sarah Coulthard
Ulster University UK

Talk Structure
1. Project summary
2. The UK ESPA programme - background and objectives
3. ESPA marine and coastal situational analysis (background paper)
4. Aims of this workshop

1. Project summary

Building Capacity for Sustainable Governance in South Asian Fisheries: Poverty, Wellbeing and Deliberative Policy Networks

Shortened title Building Sustainable Governance (BSG).

- It is a pilot project funded by the ESPA programme (NERC-ESRC-DfID) UK
- Its purpose - to bring together a range of actors involved in the fisheries sector in South Asia to explore the extent to which they are able and interested to participate in deliberative policy networks.

Deliberative policy networks – a network of people who are able to participate in democratic processes to discuss and influence policy

A different way of thinking about policy which is not led by just one actor – but by free debate, negotiation, and identifying common ground (governance)

2. The UK ESPA programme - background and objectives

Why ecosystem services and poverty alleviation?

- The Millennium Ecosystem Assessment (MA 2005) showed that loss of ecosystem services is a significant drawback in our efforts to reduce poverty, hunger and disease.

Provisioning services are those products produced by the ecosystem, such as food (including fish), fuel, and water;

Regulating services are benefits obtained through the regulation of ecosystems such as air quality, climate regulation, water purification, and erosion control;

Cultural services are non-material benefits from ecosystems such as spiritual and religious, recreational, sense of place, cultural heritage, aesthetics and educational;

Supporting services are those necessary for all other ecosystem services, including soil formation and nutrient cycling.


“Eliminating world poverty: making governance work for the poor”

“people in the poorest countries are most reliant on environmental resources for their livelihoods. These resources are already under pressure and are likely to be degraded further by climate change.”

Ecosystem Services and Poverty Alleviation (ESPA) Programme - addresses how to achieve sustainably managed ecosystems whilst contributing to poverty reduction and wellbeing improvements in developing countries

Three funding organizations:
NERC, the Economic & Social Research Council (ESRC) and the Department for International Development (DfID)
**ESPA Programme Aims (ESPA 2007)**

To:
- Create strong, international multi-disciplinary teams that can tackle the complex problems associated with the sustainable use of ecosystems
- Provide a better understanding of the types, value, and potential of ecosystems and the ways society uses them
- Strengthen the capacity of developing countries to perform research and act on the findings
- Influence national policy and find a way to integrate science into development planning
- Provide decision-makers in developing countries with recommendations on ways to achieve sustainable and fair use of ecosystem services that will help reduce poverty.

**ESPA Pilot project aims**

- To strengthen capacity to formulate research agendas, design and write successful proposals, manage research projects on the interdisciplinary challenges of sustainable ecosystem management, relevant to national priorities, and use the outputs,
- To develop the tools, datasets and networks needed to improve capacity to assess ecosystem services and their impacts on well-being and,
- To create a demand for research and improved awareness of ecosystem issues in the wider community in the regions concerned.

A strong emphasis on high impact research that will bring about policy change

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**The ESPA situation analyses (background papers)**

- Completed by international consortia in 2008 to:
  1. inform the ESPA programme design
  2. assess the major challenges to ecosystem services across the following regions and contexts:
     - Sub-Saharan Africa
     - China
     - India-Hindu Kush-Himalayas
     - Amazon basin
     - Andean catchment
     - Marine and Coastal
     - Desakota Environment

For the purposes of this project, the Marine and Coastal Situational Analysis (MCSA) (Brown et al 2008) holds most relevance

**The Marine and Coastal Situational Analysis**

- assessed the dynamics of change in marine and coastal ecosystem services and how those services support the livelihoods and wellbeing of the rural and urban poor in developing countries.
- A specific focuses on the role of ecosystem services in reducing poverty
- Identified key challenges for research, gaps in knowledge, and capacity-building needs.

**The Marine and Coastal Situational Analysis**

**Identified knowledge gaps suggest the following priority research topics:**

- **Shifting vulnerabilities in a changing world** – where people live, diversification, globalization, changing risks
- **Expanding the benefits from ecosystem services for the poor** – co-management in favour of the poor, options for alternative livelihoods and economic benefits from wider ecosystem services
- **Exploring opportunities to increase the flow of ecosystem services to the poor** – e.g. expansion of fisheries, aquaculture, adding value to marine protects, coastal protection
- **Capacity and Training** – general measures to build research capacity, linking research to practice

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**The Marine and Coastal Situational Analysis**

**Some recommendations**

**Improvement in the use and management of knowledge, including:**

- democratizing existing knowledge –making it available to those interested in using it;
- improving dissemination of research with better communication to decision-makers;
- promoting a culture of knowledge and experience sharing across institutions, including interagency working groups;
- integrating knowledge across scales and disciplines, including the developing of interdisciplinary research capacity between institutions;
- and providing incentives for knowledge transfer, by incorporating such requirements into research funding.
This network – comes together under a joint concern about poverty in fisheries, and a commitment to developing different approaches to policy that better integrates the poverty alleviation and fisheries services agendas.

3 tiered approach

First, it seeks to provide all partners with a means of strengthening their commitment to interdisciplinary approaches

Second, it is committed to joining up government and academic research with the wealth of action research in civil society and fishing community circles.

Third, it builds on and connects networks of interested members at a regional scale – improving the capacity for impact and change at the regional policy level.

Workshop structure:

Drawing from two methodologies: Wellbeing and Interactive governance

How do these apply at a regional and national scale?

Workshop 1 – India [Tamil Nadu]
Workshop 2 – Sri Lanka
Workshop 3 – South Asia (Regional level)

The first ESPA workshop has 2 main objectives:

- Developing partnership and ownership in a common vision on how this project can contribute to addressing poverty alleviation in South Asia fisheries
- To produce a 4 page working concept note to feed into a proposal [this will be a starting document in the 2nd workshop in Sri Lanka]

Question:

What are your expectations for this workshop and can we craft a common vision?
Building Sustainable Governance

**Human Wellbeing in Fishing Communities**

Dr Allister McGregor
Institute of Development Studies
University of Sussex

Paper presented for ESPA Workshop 1
4th April 2009, Institute for Ocean Management, Chennai, India

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**Why Wellbeing Now?**
- It is a concept that has been used extensively in international development discourse
- It has been used rhetorically but not effectively operationalised
- There is renewed usage of it and interest in it
- There are a range of different international initiatives working to make it operational

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**Why Social?**
- Because it is not an individualistic notion of wellbeing.
  The wellbeing of the person is inextricably bound up to the wellbeing of our societies.
- Because it is not a basic needs conception.
  Recognizes the importance of basic needs but also that there are social, psychological and cultural needs which must be met if humans are to avoid harm.

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**A Social Conception of Wellbeing**
- "Wellbeing is a state of being with others,
  where one’s needs are met
  where one is able to meaningfully pursue ones’ goals
  where one is able to experience a satisfactory quality of life."

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1. The pursuit of human wellbeing drives human behaviours and actions including their exploitation of natural resources such as fisheries.
   - People fish for all sorts of different reasons, with all sorts of different objectives
   - People fish in all sorts of different ways

2. Human beings differ from each other in what they conceive of as wellbeing and in the strategies that they are able to adopt in their efforts to achieve wellbeing.
   - People have different aspirations
   - They have differing views of what is right and wrong in how they pursue those aspirations
   - They are differently able to act in pursuit of their aspirations
   - The differences in what they are able to conceive of as wellbeing and their actions to pursue it are produced through their interactions with others in society
3. Conflicts in fisheries can be interpreted as being underpinned by conflicts between the wellbeing aspirations and strategies of some people with those of others.

- The ways that some people fish can have negative consequences for the ways that other people want to fish.
- The governance and management of fisheries can either exacerbate or alleviate these conflicts.
- These conflicts arise because the wellbeing goals and strategies that some people have sometimes conflict with the wellbeing goals and strategies of others.
- Poor fishers are usually those who are unable to assert their own visions of wellbeing and defend their own strategies for pursuing it.
- They usually lose out.

4. Effective fisheries governance entails the creation of rules, institutions and policies in societies to moderate conflicting or destructive wellbeing aspirations and strategies.

- The ways that people fish can have harmful consequences for other people (the poor, future generations).
- The ways that can be harmful for the fisheries ecosystem (this is harmful to those people that value the conservation of bio-diversity).
- The general purpose of governance is to establish rules, norms, social contracts (and the organizations that enforce these rules) that allow us to live peacefully together.

5. An understanding of the motivations for the way and the extent to which people exploit a fishery, as part of their pursuit of wellbeing, provides a basis for formulating effective systems of governance and policy.

- Fisheries policies that do not take account of the motivations of all participants in the fishery run the risk of underestimating the extent to which people are both unable and unwilling to accept the restrictions placed upon them.
- If they are made in ignorance of peoples’ motivations and their strongly held value positions they will lose legitimacy and either be very expensive to implement or simply fail.
- In this context the only workable solution for producing effective governance is to engage in negotiated outcomes involving top-down and bottom-up interests.
INTERACTIVE GOVERNANCE  
- applied to capture fisheries -

Maarten Bavinck (April 4, 2009)  
ESPA Workshop, Chennai, India

SET UP

• Introduction
• System-to-be-governed
• Governing system
• Well-being and interactive governance

INTRODUCTION

Governance

• Gubernare (Latin) = Act of steering
• Analytical vs normative view
• Long-term & broad perspective
• Process, not a state
• Recognition of many governors
• Role of principles
• Interactive governance

CROSS-SECTION OF A FISHERIES SYSTEM

PRINCIPLES/VALUES

INSTITUTIONS

TOOLS/INSTRUMENTS

HUMAN SYSTEM

NATURAL SYSTEM

Governing system

System-to-be-governed (=fish chain)
THE SYSTEM-TO-BE-GOVERNED (or ‘fish chain fan’)

Fish Chain

Fish Chain Fan

Where are the Poor?

Territorial unit
GOVERNANCE AND THE GOVERNING SYSTEM

‘Orders’ of governance

- 1st order – problem-solving
- 2nd order – institution-building
- 3rd order – values and principles

1st Order of governance:
- What managers generally do
- Problem-solving
- Opportunity-creation
- Basic principle: Effectiveness

2nd Order of governance:
- Building or shaping governing institutions (rules/organizations)
- Basic principle: Legitimacy
3rd or meta-order of governance:

- Guiding governance with principles and values
- Basic principle: Moral responsibility

Modes (styles) of governance

- Hierarchical governance
- Self-governance
- Co-governance

- Which style used depends on issue

Elements of governance

- Images (vision/perspective)
- Instruments (laws, incentives, sanctions, etc)
- Action

WELL-BEING AND INTERACTIVE GOVERNANCE

Well-being as a ‘concern’

- 4 concerns in fisheries:
  - Ecosystem health
  - Social justice
  - Livelihoods and employment
  - Food security and food safety

Moving forward

- Identify within the fish chain fan where the poor are located;
- Place this knowledge in the context of the overall nature of the SG in question, and the other concerns and principles relevant for governance;
- Identify the governors relevant for fishing, and their potential contribution;
Highlighting Principles

- Procedural
- Basic
- Benefits of discussion and agreement:
  - Shift from management to governance
  - Provide structure to governance
  - Help negotiate hard choices
  - Facilitate genuine partnership

Inclusiveness & Partnership

- Benefits:
  - Increases knowledge
  - Better problem definition & implementation capacity
  - More legitimacy
  - Increased effectiveness.
- How to proceed:
  - Stakeholder analysis
  - Capacity building
  - Communication and partnership building

Learning systems

- Learning from experience
- Learning from surroundings
- Benefits:
  - Uncertainty/unpredictability of fish chain necessitates frequent feedback
  - Enhances flexibility
  - Profit from experiences of others
  - Increases effectiveness and efficiency

THE END
Thank you for your attention
Stories on Poverty and Fisheries
V. Vivekanandan

Fishing Communities of TN
- 1074 km coastline
- Four Seas—Coromandel coast, Palk Bay, Gulf of Mannar, Arabian Sea
- Three historical communities—Pattinavars, Paravars and Mukkuvars
- Marine fishing communities marginal socially and politically—as in most of India
- Economically weak—low productivity, high dependence on 3 Ms, seasonality of income
- Backwardness—lagging behind most communities on education
- Congestion and issues of quality of life
- Social homogeneity and self governance—"Panchayats" and Parishes

Poverty—Group vs. Individual
- First and foremost a group level affair
- Then only an individual affair
- Group—can be at different levels
- Broad occupational category—marine fishing
- Caste
- Geographical location
- Sub-sector of fisheries: mechanised, motorised, non motorised
- Owner or worker (esp. mech sector)

As a group
- Market factors—local, distant, export
- Market infrastructure: roads, transport
- Historical development of markets
- Technology and adaptation to technology
- Ability to compete with other groups: mech vs motorised
- Women's livelihood opportunities
- General development in state and area: education, health, Public Distribution System
- Welfare schemes for fishermen—insurance, housing, etc.

As an individual
- Skills in fishing (or fish vending)
- Family factors
- Personality factors
- Chance factors
- Opportunity outside fishing
Case 1

Break up of shore seine economy of Kanyakumari

Shore seine economy of Kanyakumari

- Shore seine was the pre-dominant fishing method in Kanyakumari till 1940s
- Low level of exploitation of fish resources, fish shoals abundant near shore
- Shore seines required large labour force for operation and maintenance
- Shore seines owned by few; most fishermen just labourers with a feudal relationship to owners
- Stratified society dominated by shore seine owners with vast majority desperately poor
- Boat seines, another large production system also prevalent as a seasonal alternative

The Kattumaram option

- Kattumaram fishing with nets or hooks was the other option
- Limitations of materials used
  - Kattumaram made of silk cotton tree or bombax logs—high water absorption, low durability, two or three sets needed
  - Nets made of natural fibre, lines made of natural fibres and hooks made by local blacksmiths—low productivity, huge inconveniences
- Market: low price for fish due to abundance and lack of transport and post harvest infrastructure
- Kattumaram fishing synonymous with poverty; conditions in favour of large production systems

Changes in the 1940s

- New materials become available
  - Albizia planted as shade trees in Sri Lankan tea plantations
  - Imported as logs and found ideal for kattumarams—low water absorption and more durable
- Introduction of “German roll”—nylon lines—and Mustad hooks
- Improved market—better transport, better purchasing power—provided better price for table fish
- Catching a few large fishes with hand lines more valuable than share on shore seine

The transformation

- Rapid expansion of Kattumaram sector at cost of shore seines
- Kattumarams proliferate and become dominant—wide range of operations develop—small gill nets, large drift nets, hand lines, long lines, traps, etc.
- Break up of large production system to small scale decentralised production systems
- Technology change in turn leads to social transformation—more egalitarian and democratic village society
Some Lessons

- Triumph of small over big possible under certain conditions!
- Changes in both input and output markets played a vital role making small units profitable
- Social system strongly linked to scale and technology of production
- Stage of fisheries development—under utilised resources—provided opportunities for expansion of small scale sector

Other stories

- Tarangambadi—Fishermen and Dalits
- Anjengo—Fishing and education
- Tellicherry—Salt act and women

Tarangambadi

- Large fishing village of 1000 households

Post Harvest: Social organisation before technology

- Most technologies that succeed are based on adoption by individuals who see the benefit or private firms that see the advantage
- However, most post harvest initiatives at community level fail
- Imperative of collective action for technology change—need for consensus to change and new systems and attitudes
- Technologies languish for lack of application

Concluding thoughts

Thanks
• Fishing technologies can have dramatic social impacts, positive and negative
• Impacts depend on initial conditions that include status of natural resource, level of technology, scale & investment, social systems, etc.
• Some technologies are suitable for limited application, some cannot be contained and will be adopted by all
• Under open access, new technology or improvements to technology may not bring intended benefits

• Need for multi-disciplinary intervention taking social and economic aspects into consideration
• Social organisation, markets and technologies go together, ignoring one for the other will lead to failure
• Question to be asked: Not “will it succeed?”, but “what will happen if it succeeds?”
• Huge responsibility for those in technology development and promotion: easy to do harm
• Current structure of research and development in the country is unsuitable for interventions that simultaneously act on social aspects, markets and technology.
Wellbeing of Marine Ecosystems in Tamilnadu

H.M. Kasim
Principal Scientist
Madras Research Centre
of Central Marine Fisheries Research Institute
Chennai
E-mail: hmkasim@hotmail.com

Introduction

• TN is an age old fishing maritime state with highly skilled, dare devil fishermen who venture far and wide and adopt new technology and conservation measures

• All the 3 ecosystems are characteristically different and their need to regulate and conserve should be addressed with regional specificity

• The impact of controlled and uncontrolled factors should be dealt in detail with specific requirement of the factors

• Regulation of the different fishery sectors should be taken up with involvement of all the stakeholders

• Livelihood prospects have to be addressed in terms of resource utilization and benefit sharing

PROFILE MARINE FISHERIES OF INDIA

BIOLOGICAL

- Potential yield in EEZ 3.9 mt
- Potential yield in inshore 2.2 mt
- Marine Fish production 3.2 mt
- Production inshore area 2.2 mt
- Scope for further increase 0.7 mt

PERCENTAGE COMPOSITION OF DIFFERENT RESOURCES

- Crustaceans 17%
- Molluscs 5%
- Demersal finishes 24%
- Pelagic finishes 54%

COMPOSITION OF DIFFERENT PELAGIC RESOURCES

- Anchovies 8%
- Hilsa shad 3%
- Other Clupeids 3%
- Others 6%
- Oil sardines 30%
- Tunnies 4%
- Seerfishes 4%
- Carangids 9%
- Ribbonfish 11%
- Mack Souls 8%
- Bombay duck 9%

COMPOSITION OF DEMERSAL FISHERIES RESOURCES

- Goatfishes 2%
- Threadfin 2%
- Croakers 28%
- Big-jawed jumper 11%
- Croakers 20%
- Bombay duck 2%
- Lizard fishes 8%
- Elasmobranchs 5%
- Calithes 9%
- Flatfishes 6%
- Cero 2%
**CHARACTERISTICS OF ECOSYSTEMS**

**Coramandal Coast** is an open sea
- Having rocky northern coast, middle sandy even terrain with deep canyon like ridge running parallel to the shore and deltaic mangrove forest, with estuaries of major and minor rivers
- Fishing area is wide and fishery resource are more.
- With ample scope for deep sea fishing for resources like Oceanic tuna, pelagic sharks, squids, prawns and lobsters.
- Mechanised trawlers of Chennai always migrate north into AP, Orissa and West Bengal waters.
- Recent days traditional fishermen and the mechanised trawl operators by converting the wooden trawlers for long lining venture into deep sea for yellowfin tuna and other deep sea resources

**CHARACTERISTICS OF ECOSYSTEMS... Contd**

**Gulf of Mannar** has both a lengthy east and a small portion of rocky west coast in Kanyakumari District
- A highly sensitive biosphere with unique biological resources like corals, sea cow, gorgonids, prominent perch fishery, balistids, sea cucumbers, lots of ornamental fishes, pearl oysters, sacred chanks, turtles, mammals etc.
- The highest conservation activities are in force

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**DIFFERENTIAL ECOSYSTEMS**

**Coramandal Coast**:
- North coast from Arangankuppam to Nagapattinam in Bay of Bengal. Open sea, surf beaten, most of the time rough, exposed to cyclone and tsunami

**Palk Bay**:
- Middle portion of the coast between Nagapattinam and Rameswaram. Almost closed, with 2 openings, one on the north into Bay of Bengal and another in the south into GOM. Calm, quiet, shallow, like a sprawling lake, divided by an International Boundary Line (IBL) between Tamil Nadu and Sri Lanka.

**Gulf of Mannar**:
- Southern coast from Rameswaram to Kanyakumari, Bioreserve, National Marine Park, with 21 coral islands between Rameswaram and Tuticorin, with a highly productive Wedge Bank, with opening into Palk Bay, Indian Ocean and Arabian Sea.

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**MARINE FISH CATCH IN TAMIL NADU (TONNES)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Coramandal coast</th>
<th>Palk Bay</th>
<th>Gulf of Mannar</th>
<th>Total Tamil Nadu</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>128429</td>
<td>113680</td>
<td>130773</td>
<td>372881</td>
</tr>
<tr>
<td>2005</td>
<td>73283</td>
<td>99788</td>
<td>108197</td>
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<tr>
<td>2006</td>
<td>124872</td>
<td>110531</td>
<td>127151</td>
<td>362554</td>
</tr>
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<td>2007</td>
<td>146022</td>
<td>129252</td>
<td>148688</td>
<td>423963</td>
</tr>
<tr>
<td>2008</td>
<td>147945</td>
<td>130954</td>
<td>150645</td>
<td>429544</td>
</tr>
</tbody>
</table>
Fishing Crafts in Tamil Nadu

- **Mechanized**: 3420
- **Motorized**: 2238
- **Non-Motorized**: 2423
- **Total**: 8081

Total Marine Fish Landings - Tamil Nadu

- **1986-2006**

**Mechanized Motorised Non-Motorized Total**

- **Nos (t)**
  - 0-10000
  - 10000-20000
  - 20000-30000
  - 30000-40000
  - 40000-50000

**Year**

- **1986-2006**

**Catch (x 000 t)**

- **0-500000**

**Effort (x 000 t)**

- **0-70000**

**Trawl fisheries**

- **Landings**
  - **Trend in Trawl landings in Tamilnadu**
  - **0-150 (x 000 t)**

- **Effort**
  - **Trend in Trawl Effort (Unit days and actual fish hours) in Tamilnadu**
  - **0-9000**

**Non-motorised**

- **Landings**
  - **Trend in the catch rate of Non-motorized in Tamilnadu**
  - **0-50.0**

- **Effort**
  - **Trend in the catch rate of Non-motorized in Tamilnadu**
  - **0-5.0**

**Motorised**

- **Landings**
  - **Trend in the catch rate of Motorized in Tamilnadu**
  - **0-100.0**

- **Effort**
  - **Trend in Motorized Catch and Effort in Tamilnadu**
  - **0-120**

**FACTORS AFFECTING BIOLOGICAL RESOURCE**

- **FISHING** – Has comparatively moderate adverse effect
- **OTHER ANTHROPOGENIC ACTIVITIES** – Depends on the type of activities, moderate
- **CHANGE IN THE ENVIRONMENT** – Has profound effect
- **DEGRADATION OF ECOSYSTEMS** – is of major concern
**STATUS OF MARINE FISHERIES**

- Marine fish production continued to increase from 0.38 million t in 1950 to 3.2 million t in 2008.
- Adjudged to suffer due to over capacity
- 90% of the fishing fleet are operating in inshore waters
- No scope to increase production from inshore waters
- Further increase can be had only from oceanic waters.
- The Oceanic resources can be exploited by mechanised deep sea fishing vessels and modified traditional vessels

**Challenges in Traditional Fisheries**

- 90% of the total effort is spent within the shallow inshore waters
- Keen competition among the different fishery sectors in harvesting the limited resources
- Traditional units are forced to operate only in shallow inshore waters
- Infringement of trawlers into shallow waters of traditional fishing units

**Challenges in Traditional ...Contd.**

- Ever increasing traditional units are forced to share the available dwindling resources
- No scope for further increase in catch
- Increase of commercially less important resources in traditional fisheries
- Intensive fishing has led to a phenomenon called fishing down the food web, wherein the large predators have been systematically fished out leading to an increase in the abundance of less valuable small sized species

**CHANGES IN THE FISHERY**

- Sustained fishing and environmental changes have lead to decline of certain fishery resources and emergence of different other resource.
- Long living, predatory large species with slow growth rate, occupying the top slot in food web and with low fecundity have either dwindled or vanished. Ex: sharks, larger sciaenids, rays, larger perchers, catfish etc.
- Conversely smaller, short lived species with faster growth rate and prolific breeding and high fecundity have started emerging as dominant fishery. Example: oil sardine
- Absence of top level predators has lead to the proliferation of the prey resources resulting in the increase of commercially less valuable fishery resources like oil sardine.
- Constant sweeping of the sea bed by trawlers and traditional “thallumadi” (bag net) the benthic fauna have been severely affected and there was no sufficient scope for the proper revival of the bottom fauna. Consequently some of the demersal fishery resources have declined in due course of time
- Inappropriate fishing like pair trawling and ring seine operations have lead to reduction in the benefit sharing of the fishery resources, as only a very few fishermen were benefited more and many were deprived of the resource

**Tropical Environment**

- Diversity of the species are more
- Faster growth rate
- Short life span
- High fecundity
- More than one spawning in a year/prolific breeding
- Short time for biomass recovery

**Interventions**

- Biological Resource Scarcity – Conservation – Resource Enhancement
- Benefit Sharing of the Resources – Evolve better utilization
- Infringing on other stakeholders interest-
- Interference with proactive interventions- Counseling – Arbitration
- Dormant Acts and Rules – Not exercised/observed
**VIOLATION**

- 45 Days Fishing Ban – Trawlers observe strictly –Traditional units are allowed to operate
- 5km or 3 nautical miles ban from shore for trawlers – Always violated – Not effectively controlled
- Mesh size regulation – not implemented
- Ban on Pair Trawling & Ring Seining – Not strictly implemented

**PROACTIVE INTERVENTIONS**

- Tsunami Recovery Activities
  - Over supply – Adverse impact on sources
  - Housing & basic amenities – Positive effect
  - Technology transfer – Mariculture practices
    - Sea weed, crab, mussel culture

**INAPPROPRIATE & ILLEGAL ACTIVITIES**

- Pair trawling
- Purse seining / Ring seining
- Dynamite fishing
- Juvenile fishing by trawl and thallumadi
- Lime / Coral stone mining in GOM
- Illegal fishing on Banned resources –
  - Sharks 8 species – Not possible to adopt
  - All species of sea cucumber – only in India – Loss of livelihoods – Captive breeding – Culture for Export
- Sea horse & pipe fishes

**ECOSYSTEM SPECIFIC ACTIVITIES**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Coramandal coast</th>
<th>Palk Bay</th>
<th>Gulf of Mannar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fishing neighbor water</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Fishing in inshore</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Traditional vs Trawler</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Conflicts</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pair trawling</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ring seining</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Juvenile fishing</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dynamite fishing</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Industrial &amp; urban sewage</td>
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<td>Less</td>
<td>Moderate</td>
</tr>
<tr>
<td>pollution</td>
<td></td>
<td></td>
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<tr>
<td>Sharing fishing days</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Fishing banned</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Mariculture**

- Mussel Culture
- Edible Oyster Culture
- Pearl Oyster Culture
- Finfish Culture
- Seaweed Culture

**Mariculture …..Contd.**

- Prawn Culture
- Crab Culture
  - Crab & Lobster fattening
- Ornamental fish breeding & culture
- Formulated feed manufacture
- Backyard hatchery
VALUE ADDITION

- Ready to cook fish fillets
- Ready to eat fish curry pouches
- Prawn/Fish pickles, pappads etc
- Fish protein concentrate
  - Agar production
- Marketing cold chain
- Promote new food fishes

Marketing options

- Traditional fishermen are fully exhausted when they return from fishing and wish to dispose off the catch at the earliest even for low return
- This prohibits them undertaking marketing after returning from the sea.
- Small scale marketing is mostly attended to by the fisherwomen
- Institution building is very essential for undertaking marketing by fishermen
- Unemployed youth, fishermen who retired from active fishing and educated women may be encouraged to undertake marketing through appropriate training in assessing the demand in the area concerned, infrastructure development, finance management, establishment of supply and cold chain, value addition, development of branded items etc.

MANAGEMENT OPTIONS

1. Totally ban or regulate with stringent measures all activities adverse to the ecosystem
2. Assess all kinds of pollutant including Agricultural and Industrial wastes/effluents and regulate with stringent measures. Polluting Agencies should bear the bill for ecosystem restoration similar to that of “Ecology Loss Authority” for farmers.
3. The nursery and feeding grounds like mangrove ecosystems, river mouths, estuaries, and adjacent waters may be banned for fishing.
4. Destructive gears, which exploit exclusively or more juveniles both in mechanised and traditional sectors should be properly regulated and phased out.
5. The coastal waters upto 5 or 10 km in the continental shelf may be declared closed for mechanised fishing and other destructive and illegal fishing.

MANAGEMENT OPTIONS Contd......

6. Unsustainable activities in traditional sector like juvenile fishery and wild seed collection may be discouraged and weaned out by providing appropriate alternative income generating activities.
7. Conservation and improvement of the marine fishery resources through Co-management by Community Government, Finance Institutions, Research Organisations and Facilitating Institutions (NGOs)
8. Promotion of coastal mariculture practices of different resources through self help groups
9. Promotion of new and economically less valuable resources and increase their demand
10. Value addition of commercially less valuable fishes
11. Development of strong marketing capabilities

THANK YOU