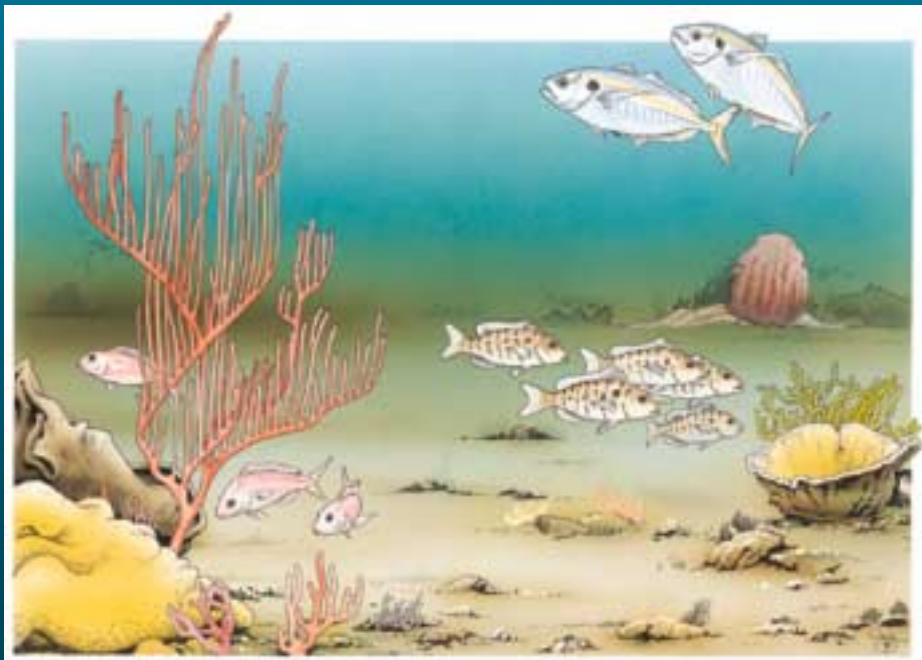


# Ecosystem Based Fisheries Management: a systems approach

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# Outline

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- Introduction
- Why a systems approach
- Background to EBFM
- A systems approach: who might use it and how might it help - with some examples
- What I am trying to achieve
- Australia's response to EBFM - a case Study
- Conclusion

# Introduction

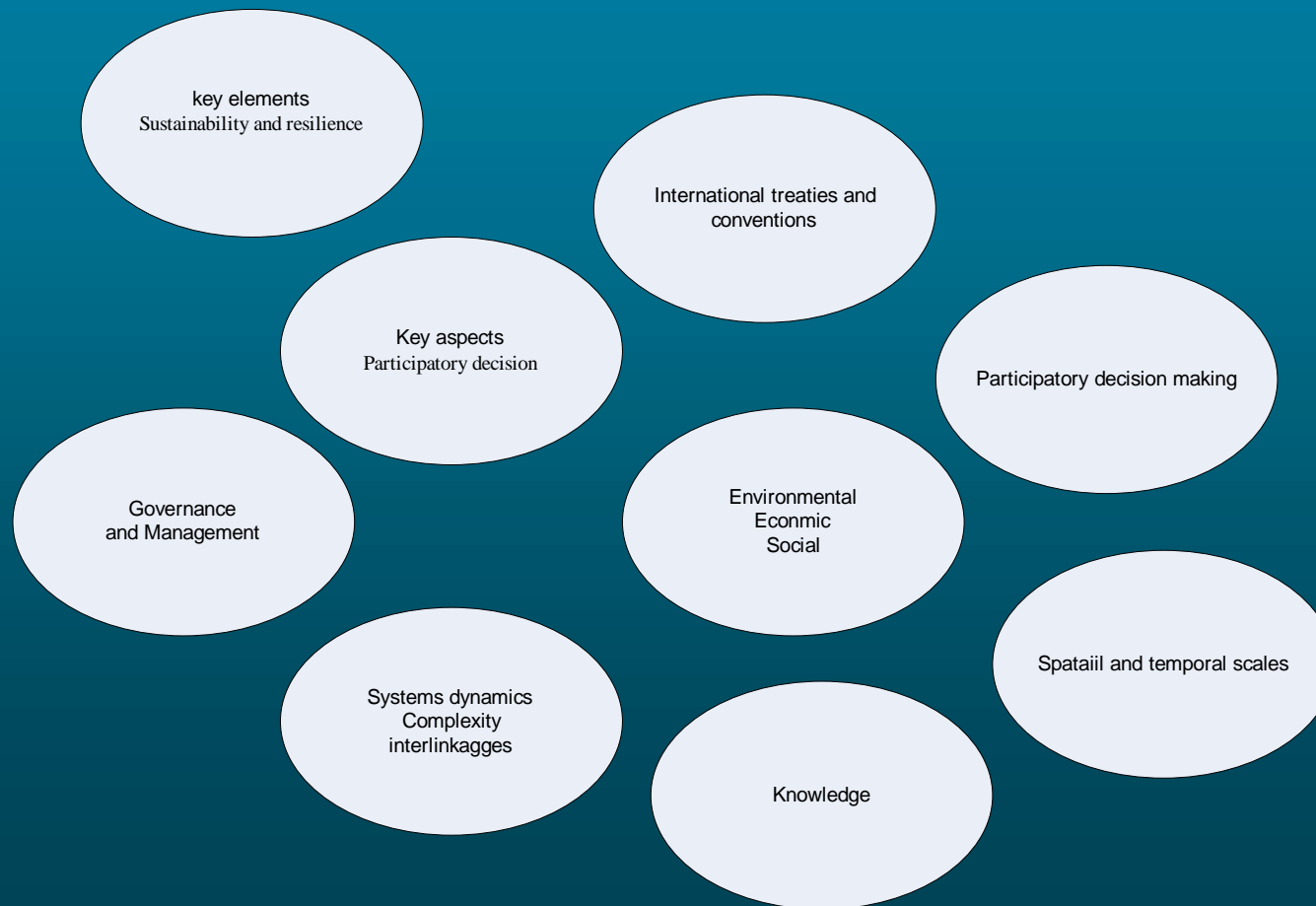
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- EBFM is complex and one needs to understand the big picture in order to understand the parts
- This talk is an outcome of part one of my PhD thesis
- There is now a large literature on EBFM, but much less on implementation and no general agreed framework for assessing EBFM
- A systems approach is one way to deal with the above difficulties and will provide a framework for reviewing and assessing Australia's implementation of EBFM (which is part two of my thesis)
- Given the scope of EBFM the focus of this talk can only address a small part of the body of the work undertaken

# Why a systems approach

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- Lots of concepts, aspects and elements, but how are these linked



## Why a systems approach

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- A systems approach potentially provides order, ability to ask right questions, ability to evaluate performance, and improve design for management strategies
- To assess management strategies in the context of the overall “fisheries system” that links the marine ecosystem, users, scientists, government agencies and other stakeholders, it is helpful to begin to get a sense of what such a system might look like
- This approach has benefits in terms of improved governance and management as well as supporting the implementation and assessment of EBFM

## Background the EBFM approach- what is required

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- There is general agreement on the EBFM concepts and principles, but there is no general agreement on how it can be implemented
- The essence of EBFM shifts the focus from just target species to the broader environmental considerations to included, non target species, habitats, communities and ecosystems
- As a consequence EBFM has broadened the view and practical operation of governance and management to include both government and non government institutions and organisations, and the participation of a broader group of stakeholders both public and private with shared interests

# Background EBFM - what it means for the nation state

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- The FAO guidelines provide the principles and parameters for EBFM, but it is at the regional, bilateral and national levels that these high end statements have to be applied and implemented
- International EBFM guidelines has implications for the nation state in terms of changes to its traditional authority. Nation states maintain authority nationally, but are required to collaborate and cooperate with other nations within bi-lateral, regional and global forums, with regard to the broad governance and management principles and this may mean changes to nation states governance and management regimes
- This represents a wide range of roles and responsibilities for Nation States, as they must meet obligations under international, regional and bilateral agreements, as well as working independently within their own Exclusive Economic Zone (EEZ) at national, state, sub national and local levels

## The big picture

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- There is general agreement on key issues facing fisheries such as overfishing, overcapacity (and the related issue of government subsidies), and illegal and unregulated fishing. What will be different are the specific issues of each nation such as environmental, economic and social conditions; styles of governance and management and their objectives and priorities; stakeholder values and interests; capability and capacity, leading to different approaches to implementing EBFM
- The issue is one of consistency and flexibility as to how these concepts are to be interpreted and defined, and the relationship to other similar approaches that may already in place

# Understanding the environmental, economic and social context

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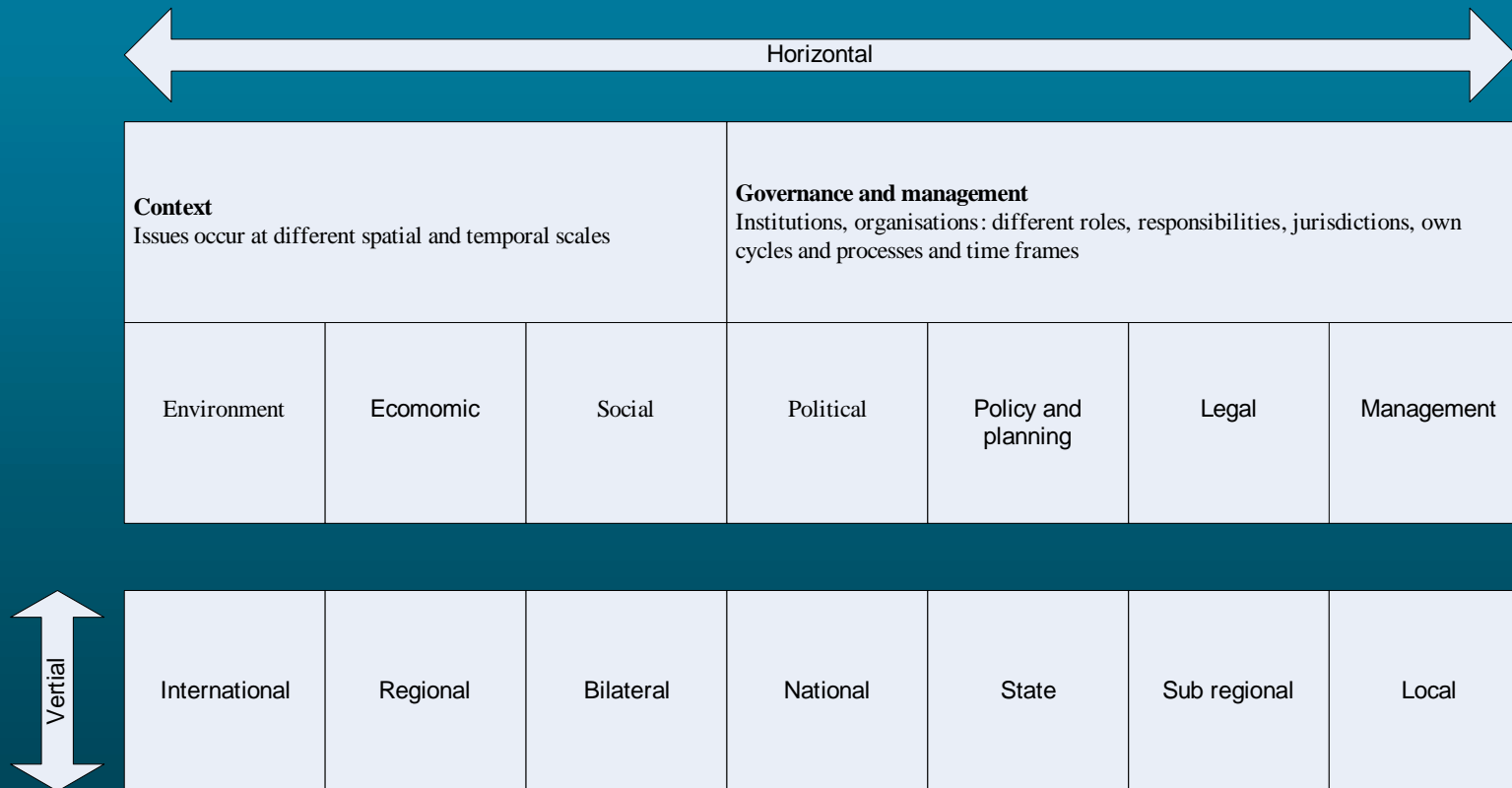
- A key aspect of EBFM is the integrations of the environmental, economic, and social aspects. Achievement of this is a challenge for governance and management. To achieve this, it requires governance and management to consider each as equally important, and implement policy directions, a legal framework and management actions that facilitate a balance across all these components simultaneously
- An understanding of the environmental components, characteristics, drivers and key issues are necessary so that governance arrangements and management actions can be developed and adopted to effectively mitigate and manage human activities that affect marine biodiversity and ecosystems
- It is equally important to understand the economic and social components, characteristics, drivers and key issues, so that any proposed governance and management actions, whilst dealing with a particular problem do not cause other problems elsewhere in the system

## Understanding the environmental, economic and social context

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- Whilst it is important to understand the individual environmental, economic and social dimensions, it is also important to understand the dynamic relationships and interlinkages within each and between them
- These relationships may be represented in a biosocioeconomic model (conceptually or formally). A key biosocioeconomic point that needs to be understood and described is how the different spatial (local, sub regional, state, national, bi-lateral, regional, international) and temporal scales operate within and between the environment, economic and social dimensions

# EBFM multi level and multi dimensional governance and management: the vertical and horizontal interplay



# Vertical and horizontal interplay and problems of fit an example - highly migratory species

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- Effective governance and management is an issue across jurisdictional boundaries. By this I mean the scope and the authority of the institutions and organisations involved at a particular level for a particular issue, but also between levels or across dimensions in terms of geographic scope and membership
- This will require a collective governance and management response at the national, state and local levels, as well as from fishers and fishing companies who have an interest in and access to the resource
- At regional and international levels nation states will need to work cooperatively together. This might prove difficult for a number of reasons such as the different governance and management regimes, responses and priorities or goals and objectives of each participating nation state. Also there may be nations within the geographic area that have an interest and access to shared resources that are either denied membership or choose not to participate in regional governance and management forums

## **EBFM multi dimensional and multi level governance and management the dimensions an example – the international legal dimension**

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International conventions and institutional processes embody common perceptions of problems, and how to deal with them as well as providing a forum or review. However, there are some major problems and constraints:

- the fragmentation and lack of coordination and harmonisation of international agreements
- the lack of appropriate compliance and enforcement mechanisms for international conventions
- the complexity of the governance systems, emerging from this pattern of institutionalisation
- some treaties and conventions are legally binding others are non binding, some have been ratified and other have not
- many States are not party to the instruments and this limits the extent of their application, and implementation varies at the regional and national levels

## EBFM multi dimensional and multi level governance and management the dimensions an example – the national legal dimension

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- Australia also has its own particular issues with regard to the adoption and implementation of international instruments
- In Australia there are three levels of government the Commonwealth, States and Territories, and Local, and there are many differences in legislative provisions and administrative arrangements between each of them
- An outcome of Australia's governance arrangements has led to fragmentation and inconsistencies between instruments
- Despite State government attempts to legislative reform, coastal zone management remains affected by sectoral based legislation, which has contributed to fragmented and dispersed management arrangements

## EBFM multi dimensional and multi level governance and management - the stakeholders and participatory decision making

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- EBFM poses new challenges to the ways we define problems, identify solutions and implement actions. This may confront decision makers with dilemmas that require hard choices. This situation requires the development of mechanisms and forums for participatory decision making, which recognises and deals effectively with:
  - the different values and interests of stakeholders and goals and objectives of institutions, organisations, these may not be easily reconciled and may lead to tensions and conflicts
  - complexity, uncertainty, risk and consequences

## What I am trying to achieve – the key building blocks for a systems approach

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- A conceptual basis for EBFM
- A comprehensive and consistent framework for identifying the key documents and outlining what is required
- A comprehensive and consistent framework for describing and documenting the EBFM dimensions
- A comprehensive and consistent framework that outlines the necessary steps for implementation
- Development of key enabling processes, measures and actions to be used to support EBFM implementation
- Outline the key challenges for EBFM
- A criteria for reporting and assessment

## Australia's response to EBFM - a case Study

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- Australia is party to many of the international agreements
- 1992 Australia introduced the National strategy for Ecologically Sustainable development (NESD). The goal of NESD is development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends
- 1994 under UNCLOS Australia became responsible for one of the largest ocean territories (EEZ). Australia's EEZ extends from the Antarctic to the tropics, and contains a large portion of the southern hemisphere's marine biological diversity. It has international and national significance.
- 1998 released *Australia's Ocean Policy* which is based on the principles of integrated ecosystem based oceans planning and management
- 1999 EPBC Act its aim is to provide an effective framework for environmental protection and conservation of biodiversity
- AFMF has signed onto EBFM

## Australia's response to EBFM - a case Study

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- The next stage will be a review of Australia's response to EBFM
- I intend to apply my proposed systems approach by using it as a framework for undertaking the review and presenting the results
- I consider the proposed systems approach as a work in progress and this review will test how easy it is to apply, how useful it and for whom
- No doubt the proposed systems approach will require amendment and is likely to be an incremental and adaptive (learning by doing) process

## Conclusion

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- EBFM is complex, one way to both embrace the complexity and simplify it, is by developing a systems approach
- Overtime this will help streamline governance and management for Nations states
- Make negotiations at the bilateral and regional levels much easier
- At the international level provide a mechanism for evaluating the success or not of the EBFM approach