



NODE 4

Sustainable marine ecosystems: ESD for the marine State's Fisheries Implementing EBFM



Ecologically
Sustainable Development
Catching Sustainability
FRDC – Subprogram

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CSIRO
MARINE RESEARCH



Australian Government
Fisheries Research and
Development Corporation

AUSTRALIAN INSTITUTE OF MARINE SCIENCE



Department of Fisheries
Government of Western Australia

Outline

- **Background to the Node**
- **Major outcomes expected**
- **Projects currently underway and planned & preliminary findings**
- **Implications for management and policy**
- **Future plans**

Background to Node 4

- Develop the methods and approaches to implement Ecosystem-Based Fisheries Management (EBFM) in Western Australia
- Assist managers of the fisheries resources of Western Australia to meet the principles of ESD

Therefore the research projects in this Node have a very high management focus

What Does EBFM Mean?

- EBFM - one of growing number of strategies to take a comprehensive approach to NRM
- Deals with all ecological impacts of fishing activities— not just the target species, and not just the individual fishery.
- PLUS it deals with the social & economic implications of these activities.
- Adapting an internationally recognised framework which is based on RISK MANAGEMENT principles

Basic Sustainability Process

Risk based process systematically:

- 1. identifies and prioritises issues**
- 2. develops operational objectives**
- 3. determines what indicators need to be measured and**
- 4. Develops the level of management needed to achieve acceptable performance – (adaptive)**

Major outcomes of Node

- Increase the effectiveness, efficiency and public satisfaction with the overall management of marine resources
- Supply the additional information needed to enable the ongoing accreditation of WA's major fisheries
- Provide the means for stronger links between State and C'wealth marine planning processes
- Develop systems that can enable the effective operation of IFM and EBFM
- Improve the collaboration and coordination of activities between research organisations
- Boost the capacity of researchers in areas relevant to EBFM

RESPONSIBILITY & COMPLEXITY

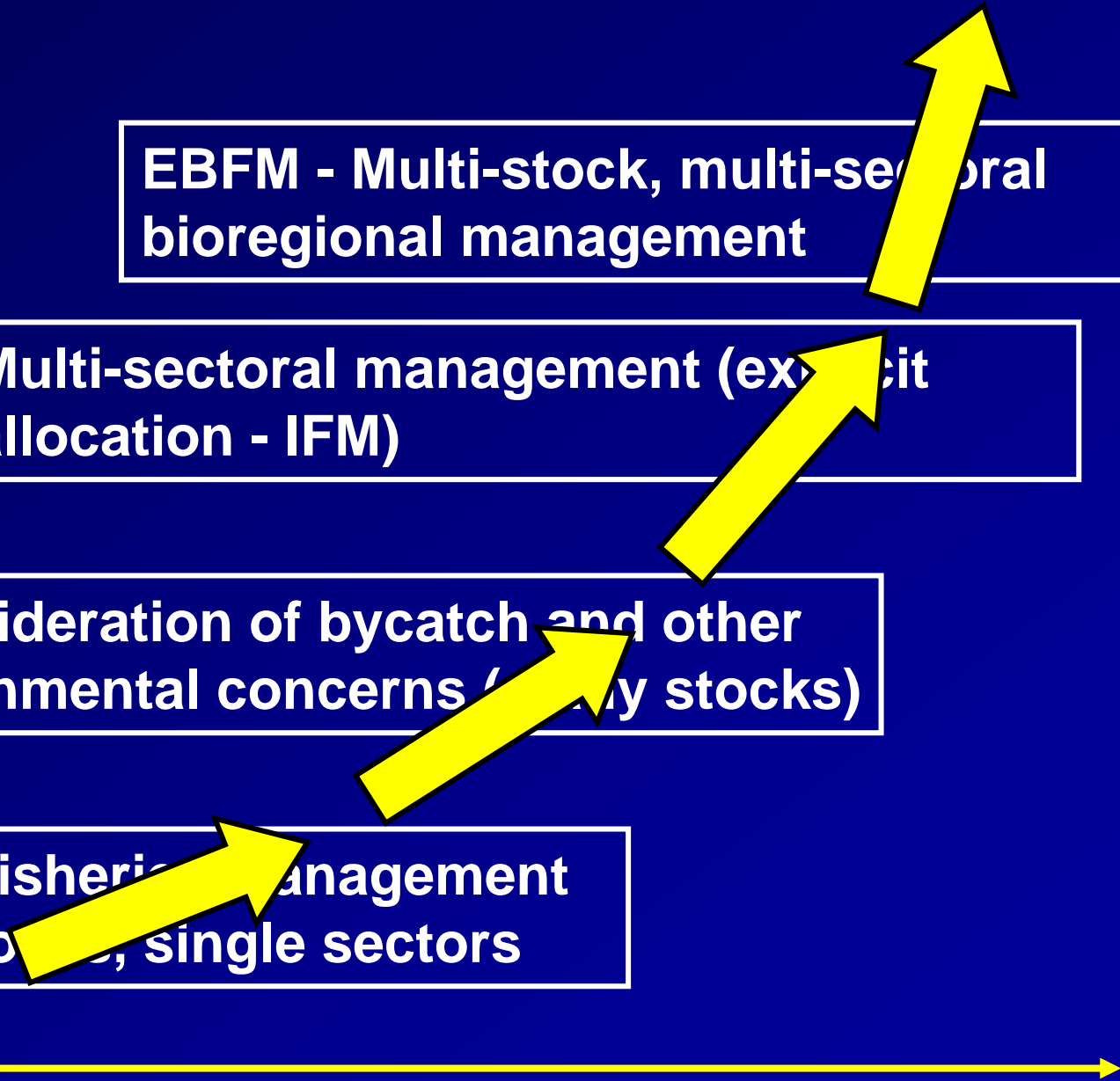
'Historic' Fisheries Management
– single-stock, single sectors

+ consideration of bycatch and other environmental concerns (by stocks)

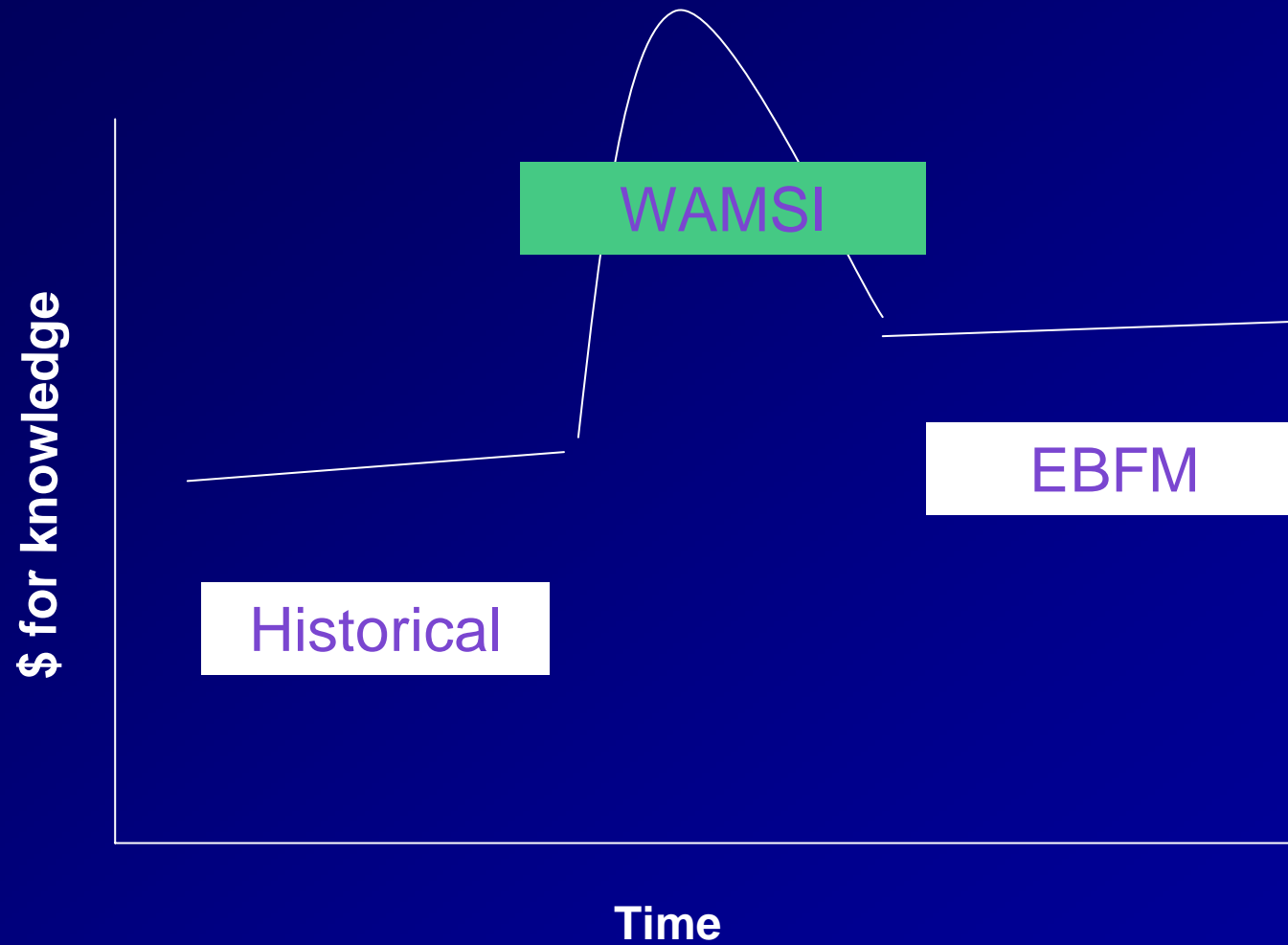
Multi-sectoral management (explicit allocation - IFM)

EBFM - Multi-stock, multi-sectoral bioregional management

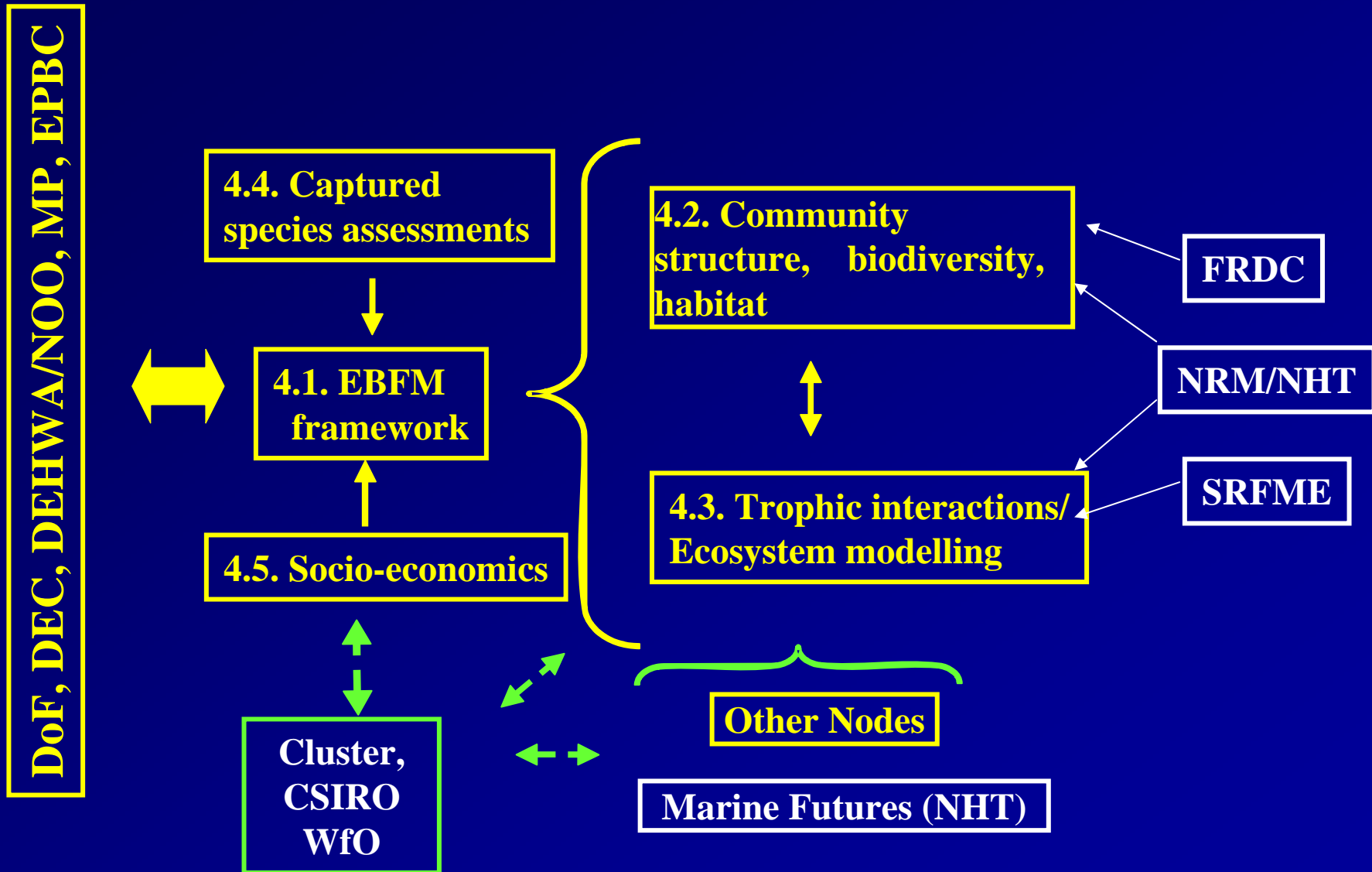
TIME



What is the key task?



Project Linkages



NODE 4 Projects

4.1 Developing the EBFM Framework for West Coast (DoF + Murdoch + CSIRO).

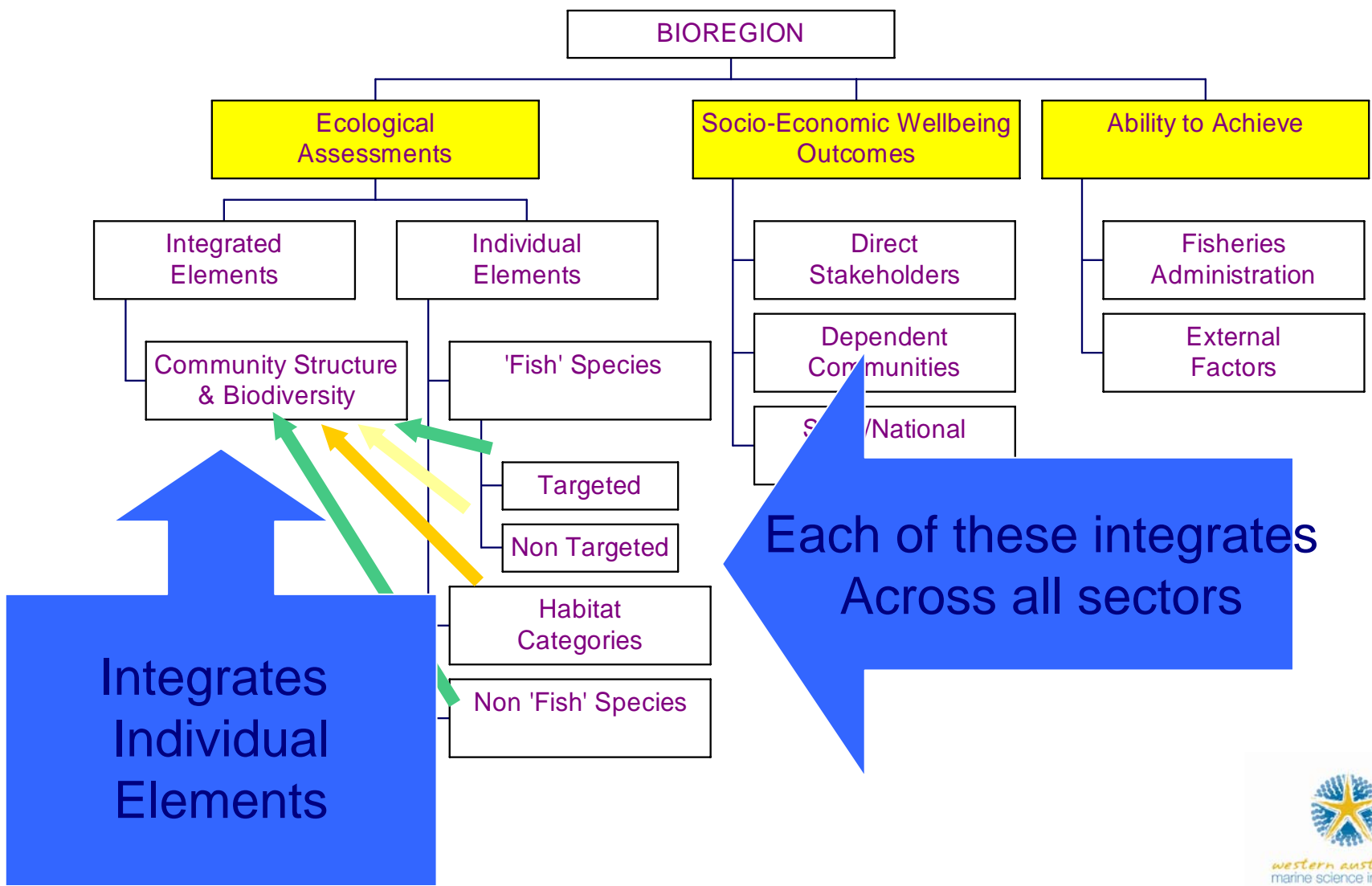
Status

- Initial EBFM framework for WC outlined
- Internal & Stakeholder meetings held
- Agreement with IDC on what are the ecosystems
- Qualitative modeller employed

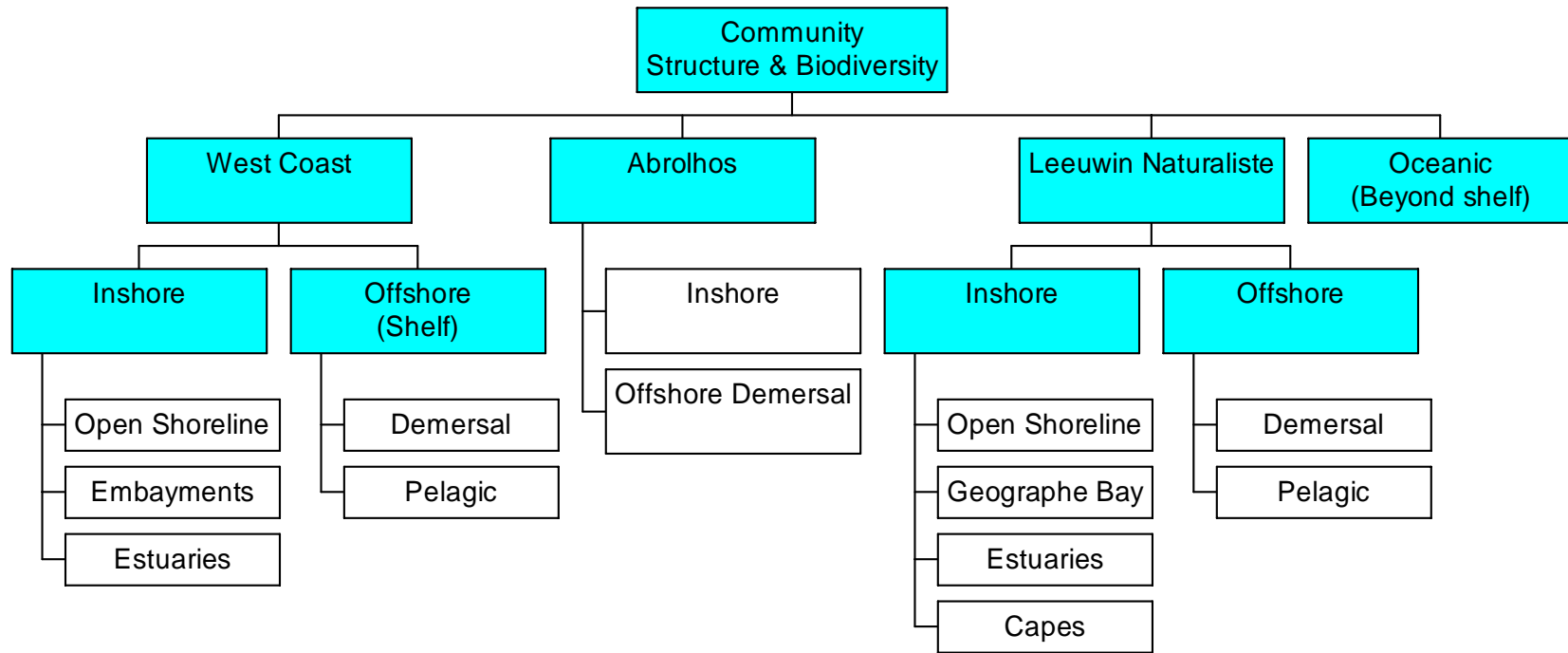
To Come

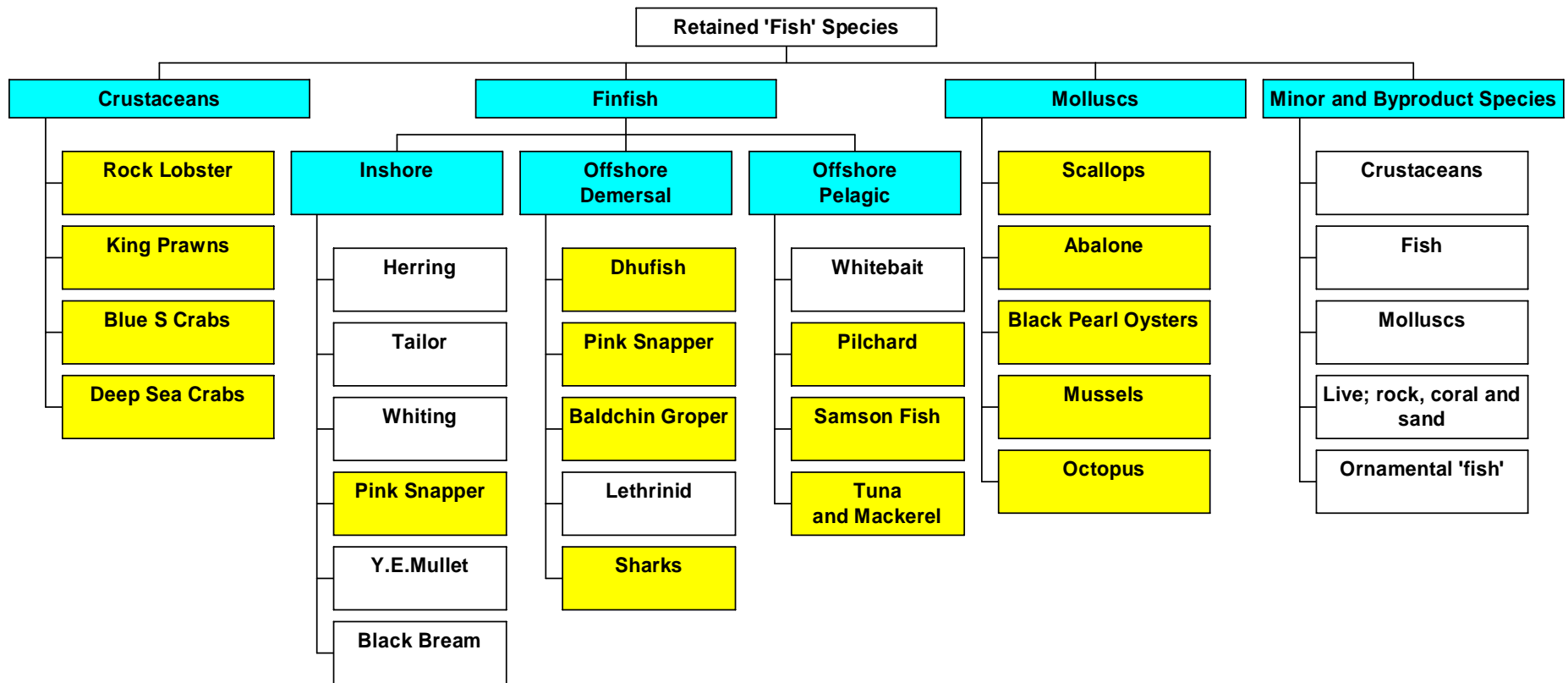
- Risk Assessment on each of the elements (ecological, social and economic)
- Initial qualitative models - linkages

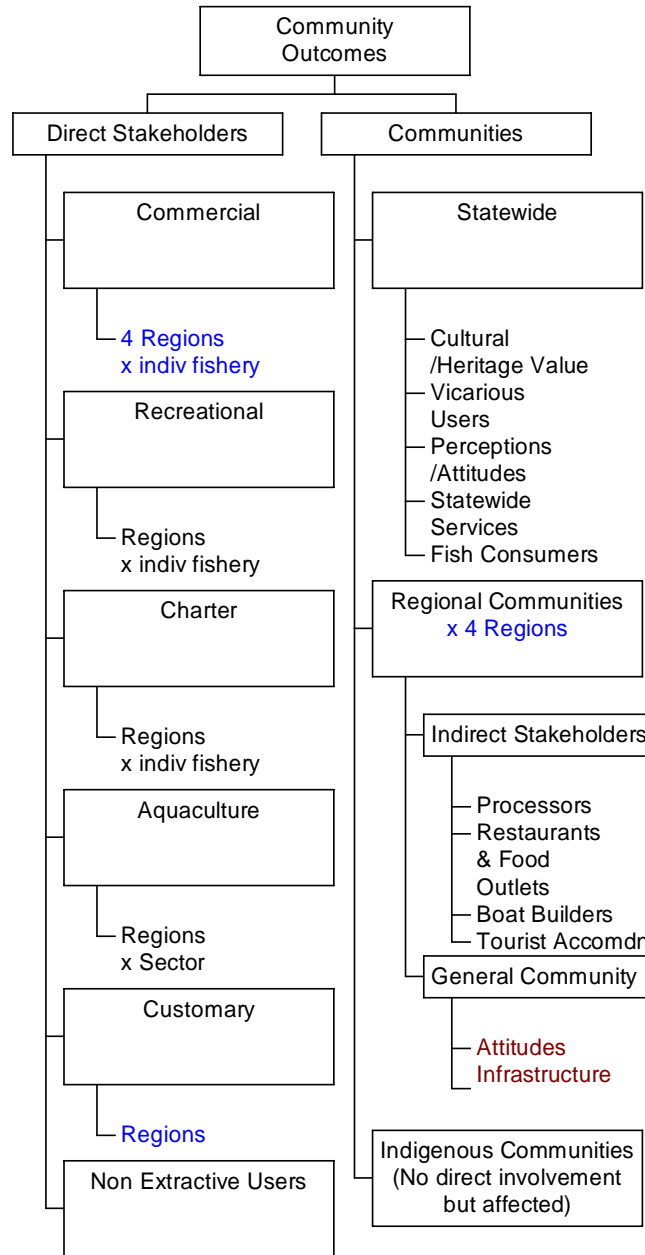
EBFM Framework



13 ECOSYSTEMS in WEST COAST REGION

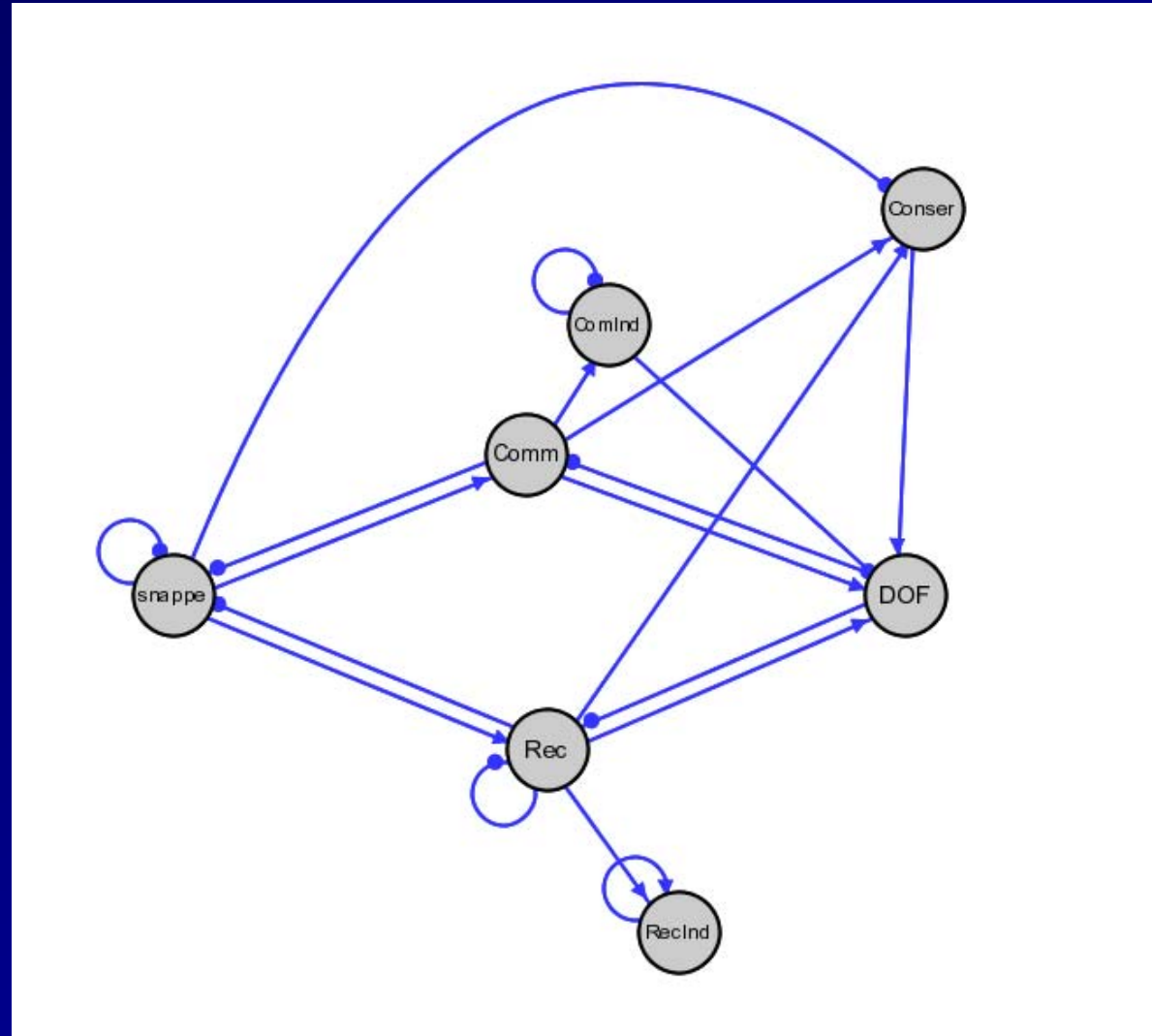






Trialling Qualitative Modelling to explore linkages between ecological, economic and social elements

It looks for **stability** and **ambiguity** among perceived relationships, so can be used to **clarify** relationships by identifying misconceptions, and hence weaknesses, in our understanding of systems.



WAMSI 4.2

4.2 Biodiversity and Community Structure assessment monitoring (UWA + DoF + ECU + Murdoch + Curtin)

Purpose: develop cost effective, quantitative methods to assess the status of the community structure, biodiversity and key habitats.

Status

- Just begun
- Building on Marine Futures etc

WAMSI 4.3

4.3 Ecosystem Modelling and Trophic dynamics (Murdoch + DoF + ECU)

Purpose:

- (1) Develop a greater understanding of trophic interactions; and
- (2) develop ecosystem models of high risk or priority regions

Status

- Just beginning
- Building on SRFME and other projects
- FRDC application on WRL deep water impact submitted



WAMSI 4.4

4.4 Capture Species Assessments (DoF Murdoch CSIRO)

Purpose:

- Assessment and monitoring methods for bycatch species.
- Implications of mobility and stock structure of species for management approaches.
- Development of cost-effective methods for monitoring the catch of the non-commercial sector

Status

- Just beginning

Upcoming

- Spatial Dynamics of dhufish and snapper in WC
- Assist with comparisons of methods to estimate recreational catch and effort.



WAMSI 4.5

4.5 Socio-Economic Project (Murdoch Uni. UWA DoF Curtin)

Purpose:

Develop methods to include social and economic issues within the fisheries management context.

Status

- Just beginning
- Review of methods nearly completed.

Upcoming

- 2 PhDs and Research Fellow

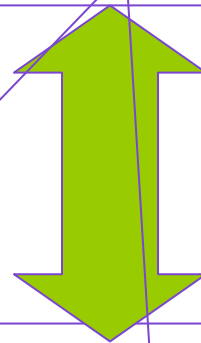
This could include the objectives and performance measures for the entire bioregion on target and non target species plus ecosystems and habitats

This may require changes to one or more of the individual fisheries to meet these objectives

Total take of each major species

Total Area trawled or disturbed

REGIONAL FISHERIES PLAN/REPORT (EBFM)



Commercial Fishery 2
MAN. PLAN

Commercial Fishery 2
MAN. PLAN

RECREATIONAL
FISHING PLAN

AQUACULTURE.
& HABITAT PLANS

ESD REPORT

ESD Report

ESD Report

ESD Reports

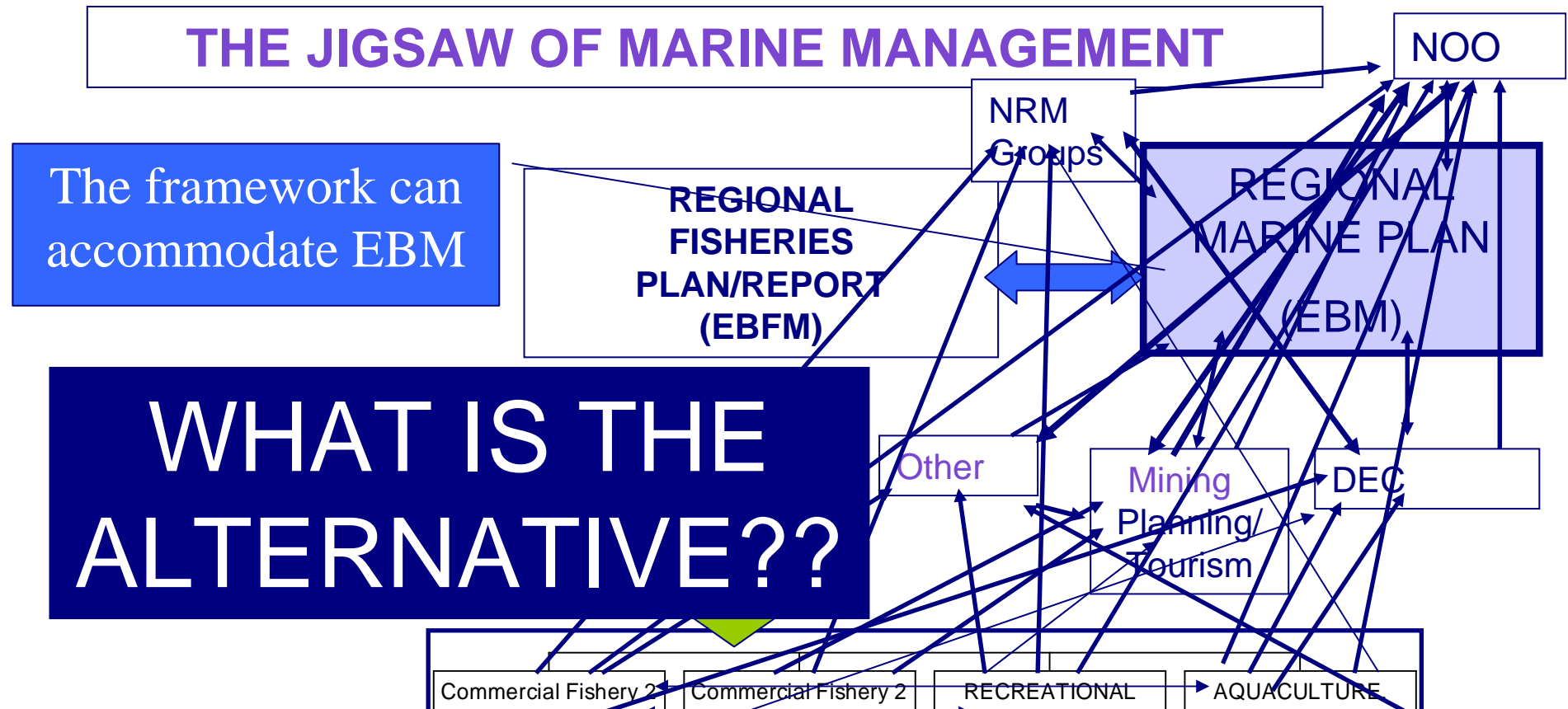
ANNUAL REPORT

ANNUAL REPORT

Sector Allocations –
Community Benefits

Total
area of
no -take

THE JIGSAW OF MARINE MANAGEMENT



The framework can accommodate EBM

WHAT IS THE ALTERNATIVE??

- MULTIPLE PROCESSES, DUPLICATION,
- LACK OF INVOLVEMENT, OVERLOADING REPRESENTATIVES
- Currently 9 Overlapping processes in SW region alone
- CHAOS THEORY IN ACTION!!

Future Plans

- All project plans are now either approved or submitted for approval.
- Completing the basic framework for West Coast by end of 2008.
- Planning for application of concept to other regions of the State
- Liaising to get concept adopted for planning all activities.



QUESTIONS??

