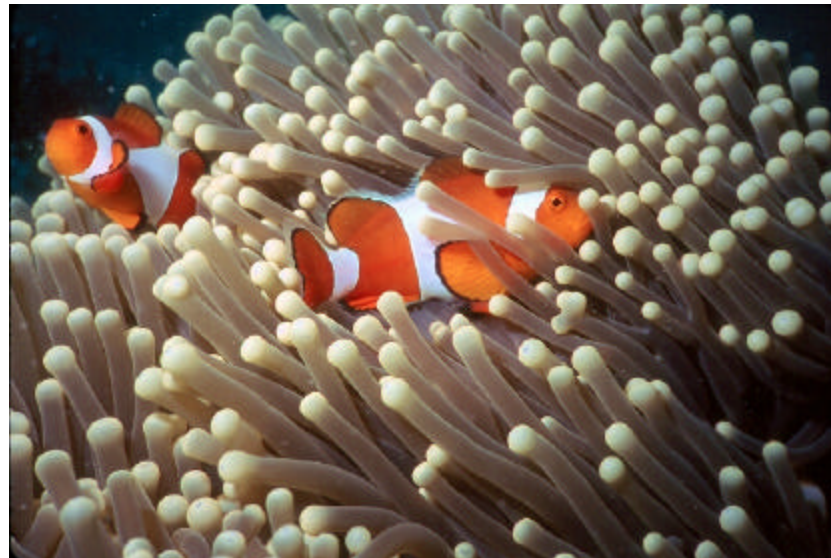


Towards Effective
Coral Reef Conservation and Management
Lessons from International Experience



Lynne Zeitlin Hale

Marine Initiative, The Nature Conservancy

Coral Reef Conservation

1992: Earth Summit

1994: ICRI Call to Action (threats)

- Direct impacts
- Inadequate coastal management
- Adverse impacts of climate change
- Increased population, use, pollution

1995: ICRI Action Plan (41 actions)

- Management
- Capacity Building
- Research and Monitoring
- Review/Adaptation

1998: Reef Risk, Status Reports, Bleaching

- Largest reported bleaching events
- Global status / risk reports published

Reef Status



Coral Reef Conservation

Reef Status

1998: Renewed Call to Action (>100 actions)

- Reaffirmed threats/Action Plan elements
- Identified 11 priority issues

2002: WSSD (Biodiversity/Ecosystem function)

- Implement Jakarta Mandate
- Develop/facilitate diverse approaches/tools (at all levels)
 - Ecosystem approach
 - Eliminate destructive fishing
 - MPA networks
 - Integration of coastal and marine management into key sectors
- Many Type II Partnerships launched

While coral reef health continues to decline, many small conservation successes



Another Look at Progress

Comprehensive Action Plans with few priorities set

Reliance on MPAs as a primary conservation tool

- The number of both large and community-scale MPAs with demonstrated success increasing
- Good practice “models” for typical coral reef situations exist
- “Model” replication success frequently low; conditions for “technology transfer” unknown



Another Look at Progress



Forward progress at sites towards goals often not sustained

- factors at the next scale overwhelm progress (watershed activities, un-supportive national policy, global events like bleaching, etc.)

Approaches to larger scale threats being developed

- Transforming Coral Reef Conservation through creation of resilient MPA networks
- Certification of aquarium fish collectors (MAC)

Integrated Coastal Management

1972: US Coastal Management Act

1992: Earth Summit; Chapter 17

- All coastal nations adopt ICM by 2000

1993- Expansion of ICM Programs

2002: Agreement on ICM principals

- Successful pilot level activities
- Multiple “good practice” models
- Number of national programs increasing
- Increasing capacity

2002: WSSD

- Promote ICM at national level

Goal: improve the quality of life of human communities which depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems.

How? Through a continuous and dynamic process that unites government and the community, sciences and management and sectoral and public interest in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources.

(Source: GESAMP, 1991)

Potential Contributions of ICM to Coral Reef Conservation

Strengthen government at all levels:

- Management and enforcement

Promote enabling environment for MPAs:

- Decentralized governance, co-management
- Coastal land and marine zoning/ tenure

Address threats external to MPAs

- Land-based sources of pollution
- Management of activities that affect coral reefs located outside MPAs

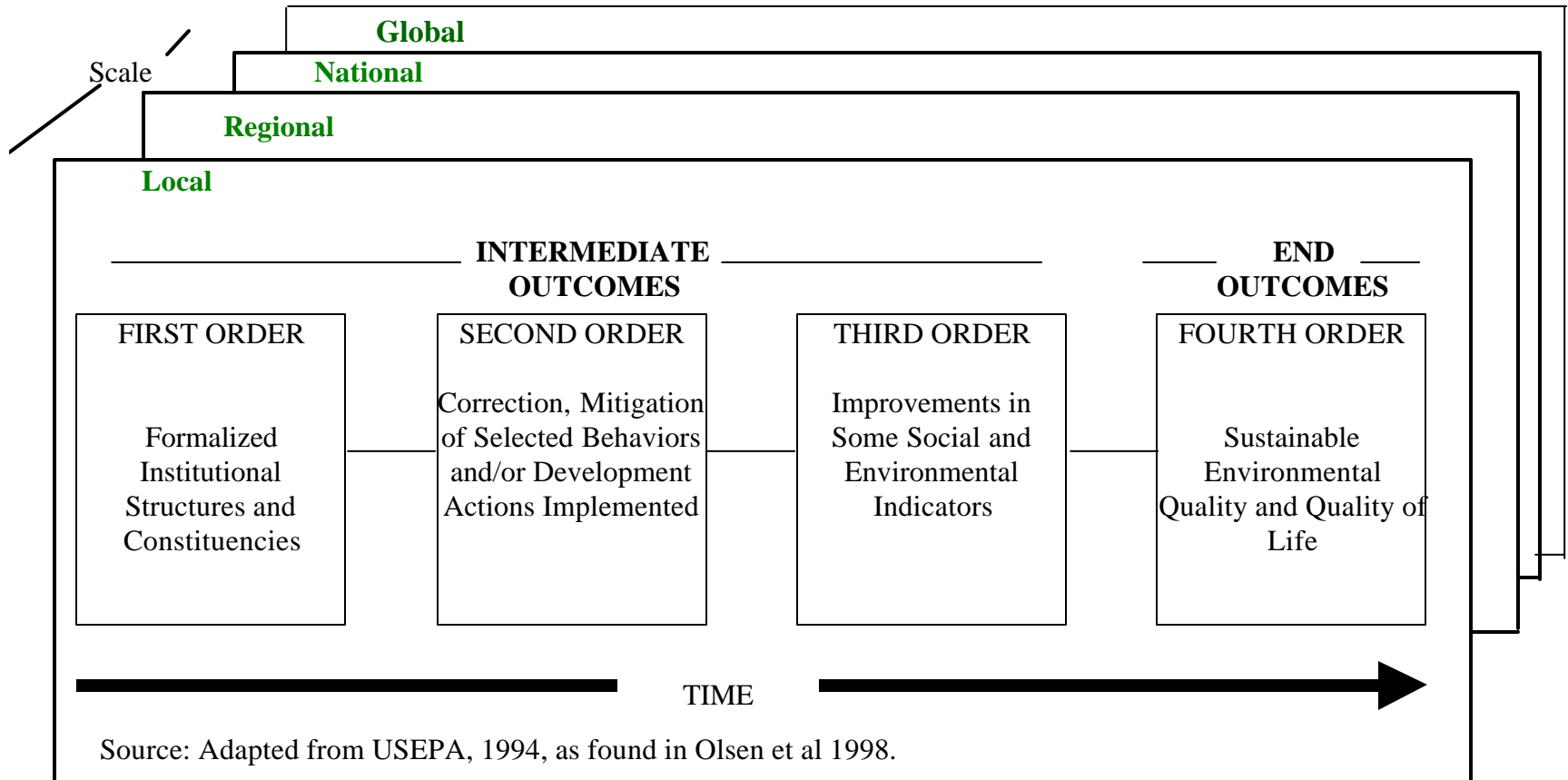
Reduce human pressures on MPAs, resources

- Harmonize social well-being and quality of life outside

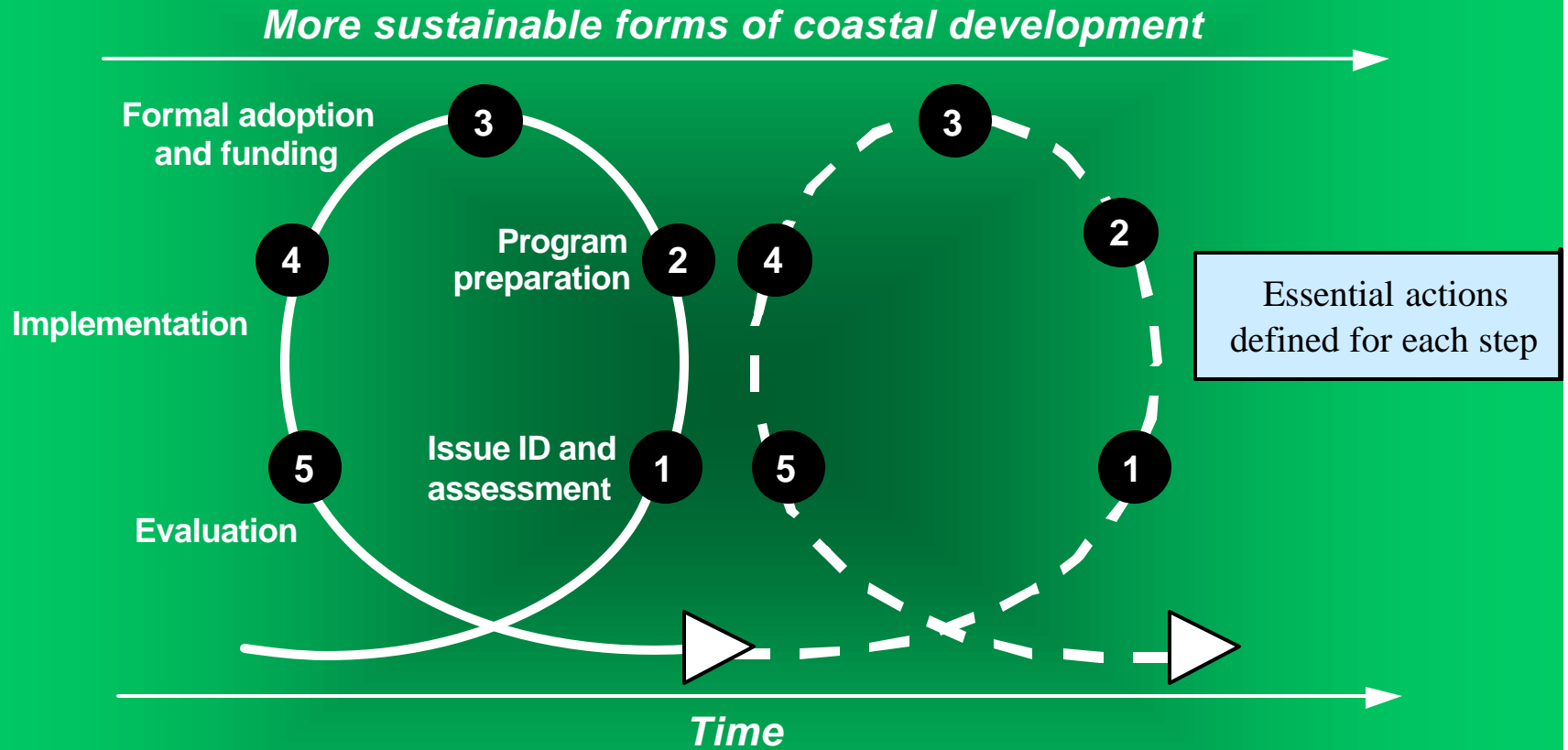
Enable scaling-up

- Catalyze establishment of national MPA networks

A critical path for Integrated Coastal Management (ICM)



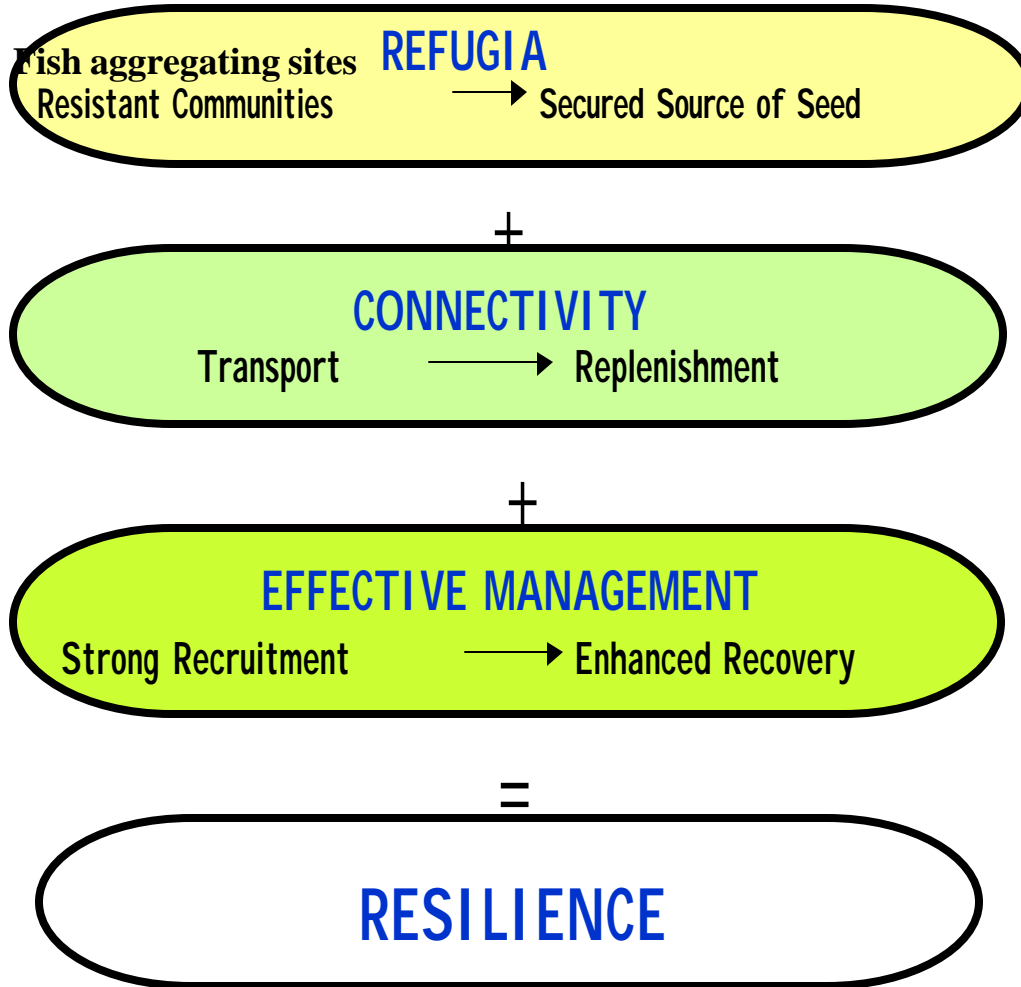
Progressing along the critical path



Progressively larger cycle loops indicate growth in project scope

Coral Reef Conservation and Global Change

TCRC's Developing Model



Networks of mutually replenishing MPAs

Designed to survive into the next millenium

Managed to last

Connected like strings of pearls across the ocean planet

(From Salm, 2002)

Approaches to Coral Reef Conservation



Tanzania

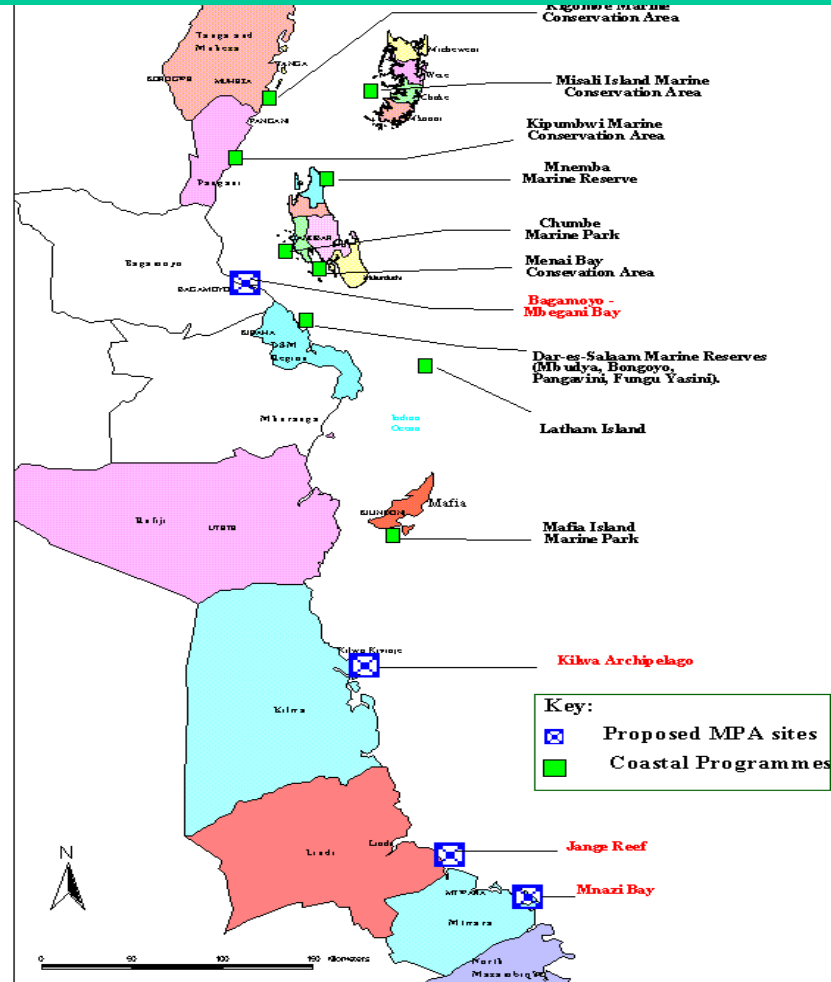
- 1300 km of coast
- focus of developing economy
- resource dependent-villages
- stable government; limited capacity



Indonesia

- center of marine biodiversity
- 95,181 km of coast
- 51,020 sq.km of reef
- rapidly changing governance context; limited capacity

MARINE AND COASTAL PROGRAMMES IN TANZANIA



Tanzania

Local level “models” well established, documented and achieving 1st, 2nd and 3rd order outcomes in Tanga, second order outcomes in Mafia

- Small, fishing-dependent villages used action planning, co-management to protect coral, enhance fisheries
- Mafia Marine Park uses multi-use management approach; work on-going to build national MPA system

Regional scale is de-emphasized but this level important for providing support / capacity to local level

National Coastal Strategy explicitly builds from local experience, endeavors to re-enforce local initiatives, and balance local/national interests; calls for creation of national MPA system

National Support for Local Action

District level ICM planning

- guidelines, incentives, support for local planning that incorporate Tanzania's *lived* experience
- learning/exchange mechanisms established

Guidelines for major economic uses issues which address critical habitat

- mariculture, tourism, natural gas

Critical habitat conservation policy

- national MPA system

Research/monitoring for management

- Science & Technology Advisory Committee
- State of the Coasts reports

Capacity building/participation

THE UNITED REPUBLIC OF
TANZANIA



NATIONAL INTEGRATED COASTAL ENVIRONMENT MANAGEMENT STRATEGY

Vice President's Office
Dar es Salaam
December 2002

Coral Reef Management: Tanzania

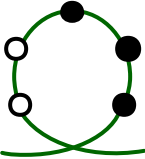
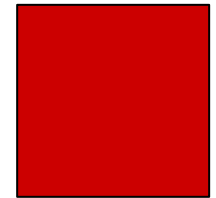
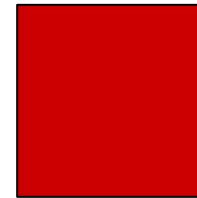
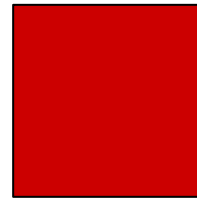
(Mainland)

Scale

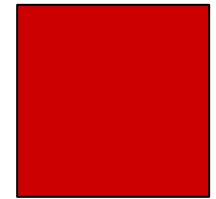
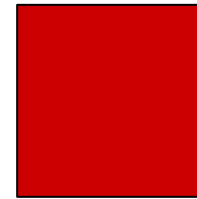
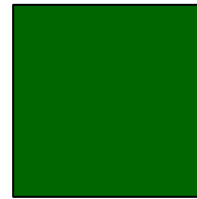
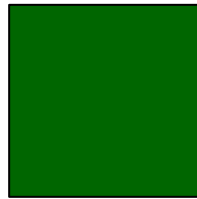
intermediate outcomes

end outcomes

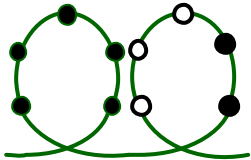
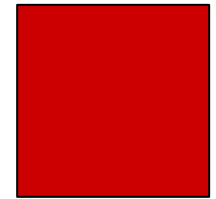
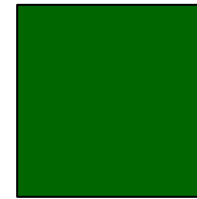
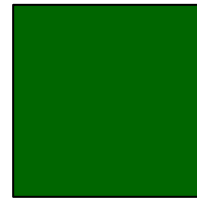
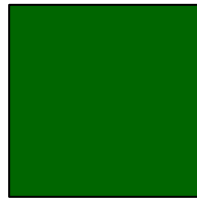
National Coastal Strategy

Regional (dynamite fishing)
Matwara
Tanga Region

Local
Tanga
Mafia

Local Level: Village MPAs

North Sulawesi (Proyek Pesisir)

1st Order Outcomes

- No-take zones formally established
- Village committees
- Village ICM plans adopted
- Strong village, regency, national constituency for village-level MPAs

2rd Order Outcomes

- No fishing in no take zones
- Changed knowledge/perceptions
- Participation in monitoring/patrolling

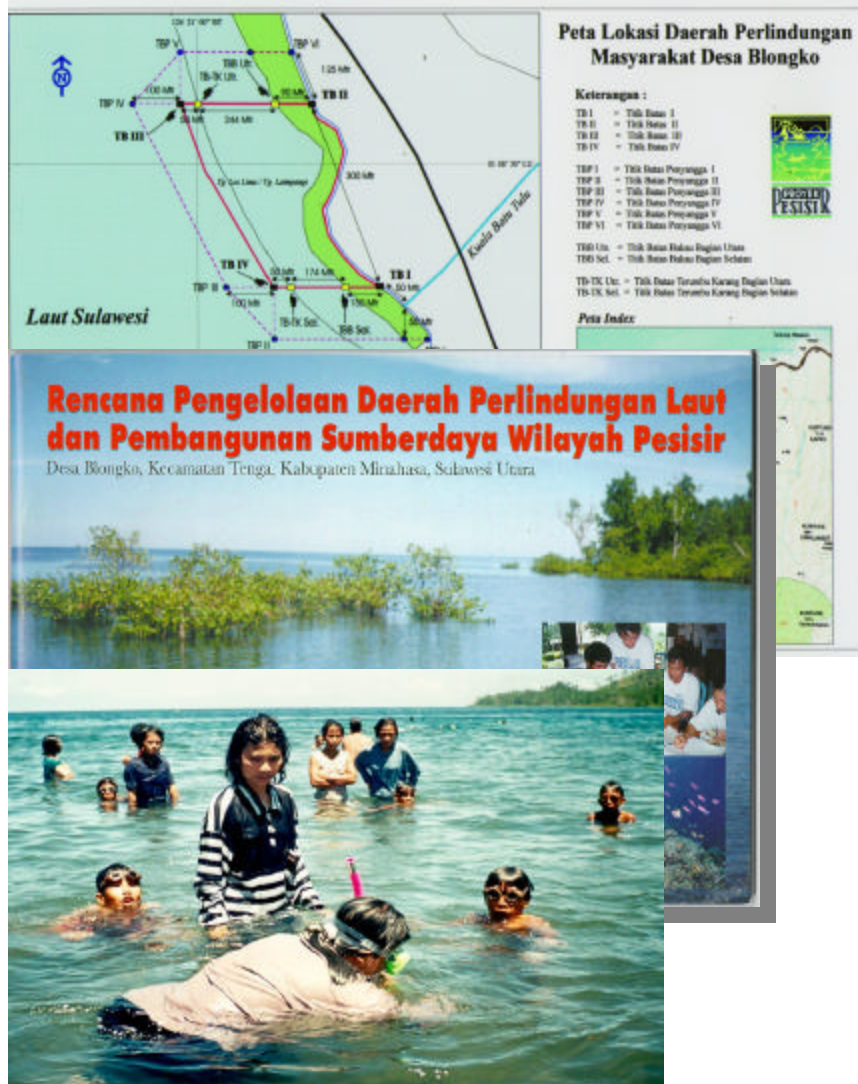
3rd Order Outcomes

- Greater coral cover than in control sites
- Increased fish catch



(from Crawford, 2002)

Scaling up from Local Demonstrations



Regency/Provincial Levels

- Implementation of good practice CB-CRM models : plans, marine sanctuaries, management committees, village ordinances; process documented; guidebook prepared
- District CB-CRM law passed; CRM Council established-capacity built
- Scaling-up in 24 villages to adapt models to a broader scale at costs affordable by local government

National Level

- Under development
- biodiversity value, constituency value

National Parks Protecting Coral Reefs



Ambitious rhetorical goals set; multiple (34) MPAs designated

Only a few moving towards effective management (e.g. Komodo, Bunaken)

Scaling-up strategies

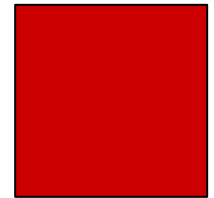
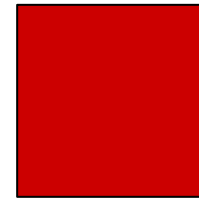
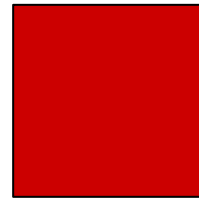
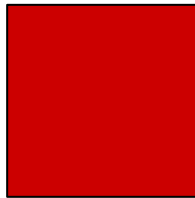
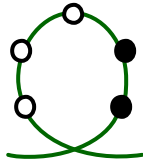
- applying lessons/resources from demonstration sites
- linked network of resilient MPAs

Coral Reef Management: Indonesia

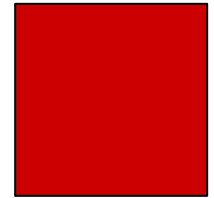
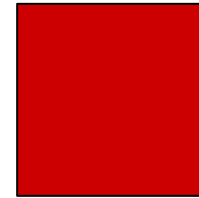
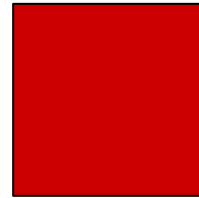
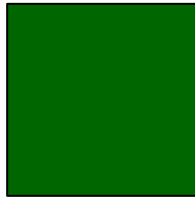
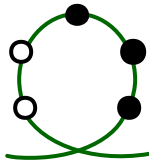
Scale

intermediate outcomes | end outcomes

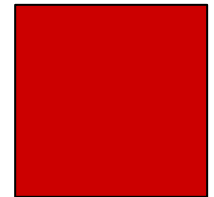
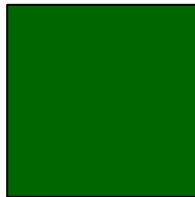
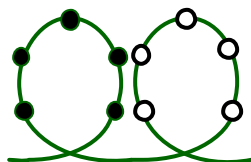
National
Policy



Regency
N. Sulawesi



Local
Village ICM
National Parks



Yet...replication, conservation at a large scale will be a great challenge

Governance context rapidly changing

- National Ministry of Marine Affairs and Fisheries presents unique opportunity; national coastal law under development
- Decentralization is occurring; nested supportive systems untested

Meaningful synergies among Indonesia's donor-funded projects hard to achieve

- Inter-project learning mechanisms weak, but foundation in place
- IPB learning team, National Journal, National Conference, University network

Strategies for conservation synergies between village-based MPAs and National Parks not developed

Research and management connections weak

How to accelerate progress?

Refine “comprehensive action menus” to focused strategies, developed in recognition of actual on-site capacities

Develop/learn from/adapt “good practice” models

- Core sites producing tangible results key
- Encourage learning networks
- Typologies of coral reef management situations would allow more efficient/effective cross-project learning
- Link monitoring to management effectiveness



How to accelerate progress?



Invest in developing scaling up strategies that will endure

- develop threats-based solutions regionally/globally that can be applied locally
- identify incentives (policy/financial) to re-enforce nested governance systems
 - better link ICM and MPA efforts
- further develop and apply and apply resilience principles

Building Blocks for Effective Coral Reef Conservation and Management

