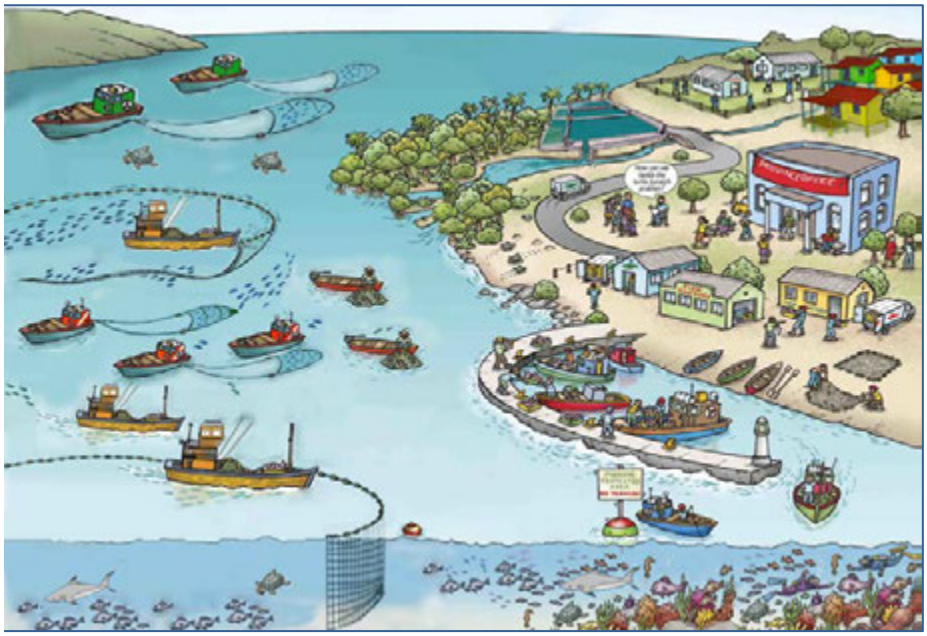
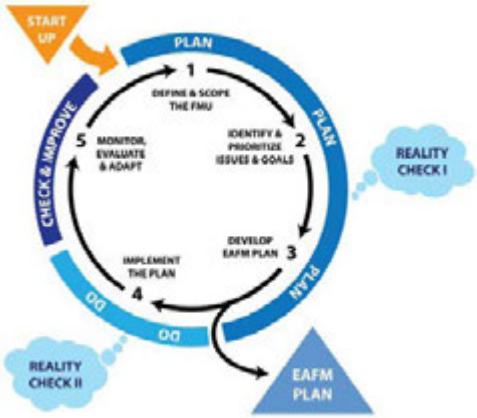
RAP PUBLICATION 2014/13

Essential EAFM. Ecosystem Approach to Fisheries Management Training Course

Volume 3 – Course presentations



The five steps of EAFM



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Essential EAFM.
Ecosystem Approach to
Fisheries Management Training Course

Volume 3 – Course presentations

Derek Staples, Rusty Brainard, Silvia Capezzuoli, Simon Funge-Smith, Chris Grose, Adel Heenan, Rudolf Hermes, Paulo Maurin, Megan Moews, Chris O'Brien & Robert Pomeroy

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Cover image adapted from FAO EAF Nansen Project.

Foreword

For the past twenty years, approaches to fisheries management have been slowly evolving. It is now widely recognized that for the effective management of a fishery, it is not enough to consider only targeted species in isolation of their environment and other influences. An ecosystem approach to fisheries management (EAFM) offers a far greater chance of developing realistic, equitable, and sustainable management plans. This approach pursues sustainability by balancing ecological and human well-being through good governance.

Effective fisheries management has always been a challenge in the complex multi-species, multi-gear fisheries of the Asia-Pacific region. Traditional stock-based approaches have largely been ineffective, with management measures often not taking the other important aspects of the fisheries into account. As many of the region's coastal fisheries have declined over the past 30 years, the need for more effective and equitable management is increasingly evident.

While support for an EAFM has long been in place through a range of global declarations and policy instruments, progress in the implementation of an EAFM at national and regional levels has been slow, partly due to fisheries managers lacking the relevant skills and experience to apply such an integrated and holistic approach. In recognition of the need for capacity development to promote the application of an EAFM in the region, a number of multi-country initiatives were being put in place by U.S. National Oceanic and Atmospheric Administration (NOAA) and the Coral Triangle Support Partnership (CTSP), funded by the U.S. Agency for International Development (USAID), the Bay of Bengal Large Marine Ecosystem (BOBLME) project, the United Nations Food and Agricultural Organization (UN-FAO), and the Asia Pacific Fishery Commission (APFIC).

By 2012, it was clear that harmonization of these training initiatives was necessary to avoid confusing trainees and allow a degree of standardization of EAFM training in the region. A unique partnership was formed between these organizations, bringing in training specialists, IMA International to develop a training course, entitled "Essential Ecosystem Approaches to Fisheries Management" (Essential EAFM). This handbook is based on the Essential EAFM training course.

The Essential EAFM course has been designed for situations typical to the Asia-Pacific region, with an implied focus on the complex, data-poor fisheries with weak management. A practical 'hands-on' approach is used to show how EAFM plans can be developed under the constraints common to the Asia-Pacific region. The course is targeted at mid-level fisheries managers and staff concerned with the social, economic, environmental and planning aspects of fisheries management and conservation, but can also be taught to junior-level officers or students at fisheries research institutes and training colleges.

This Essential EAFM handbook provides an overview of a comprehensive framework for implementing an EAFM. When used as part of the Essential EAFM training package, readers will become equipped with the planning, analytical and people skills to develop and

implement an EAFM Plan, based on more structured and informed management processes. As a result, the Essential EAFM course will assist current and future fisheries managers ensure their approach to fisheries management will be ecologically sound and properly account for human needs while promoting good governance.

The Essential EAFM training course is a long overdue contribution to support fisheries and ecosystem managers in performing their functions. Not only will this book be invaluable for training, but we believe it will also become a standard practitioners' guide for the Asia-Pacific region as well as fisheries institutions around the world. Together with the course, this handbook offers a practical and realistic approach to addressing capacity development for fisheries management and we believe it will make a valuable contribution to improving fisheries management in the future.

Hiroyuki Konuma
Assistant Director-General and Regional Representative for Asia and the Pacific
FAO Regional Office for Asia and the Pacific

Jason S. Link
Senior Scientist for Ecosystem Management
National Oceanic and Atmospheric Administration, National Marine Fisheries Service

Contents

"Essential EAFM. Ecosystem Approach to Fisheries Management Training Course Volume 3 – Course presentations" consists of seventeen training presentations for use by the trainers providing the EEAFM training course.

1. Essential EAFM

Date • Place

Version 1

OVERALL COURSE OBJECTIVE

- Understand the concept and need for an Ecosystem Approach to Fisheries Management (EAFM)
- Acquire skills and knowledge to develop, implement and monitor an 'EAFM plan' to more sustainably manage capture fisheries

This course will equip you to:

- Manage fisheries more holistically
- Better resolve fisheries issues and challenges
- Reduce user group conflicts
- Work cooperatively with other stakeholders
- Help unlock financial resources

	DAY 1 What & why	DAY 2 How	DAY 3 Plan & check	DAY 4 Do & check	DAY 5 Present
Morning 08.30 –10.10	Registration Introductions Course overview 1. Threats and issues in fisheries	5. Moving towards EAFM US case study	10. Step 1: Define & scope the Fishery Management Unit (FMU) 1.1 Define the FMU 1.2 Agree on the vision 1.3 Scope the FMU	13. Step 3: Develop the EAFM plan 3.1 Develop management objectives 3.2 Develop indicators and benchmarks	Quiz review Participant work: refining EAFM plans & preparing presentations
Break					
10.30 – 12.30	2. Fisheries management and the ecosystem approach 3. The what and why of EAFM?	6. EAFM plans: the link between policy and action 7. EAFM process overview 8. Startup A Preparing the ground	11. Step 2: Identify & prioritize issues & goals 2.1 Identify FMU-specific issues 2.2 Prioritize issues 2.3 Define goals 12. Reality check I Constraints and opportunities	14. Step 3: Develop the EAFM plan *…cont'd* 3.3 Agree management actions 3.4 Include financing mechanisms 3.5 Finalize EAFM plan 15. Step 4: Implement the plan 4.1 Formalize, communicate and engage	Participant presentations on EAFM key elements to illustrate learning Feedback on presentations
Lunch					
Afternoon 13.30 –14.45	4. Principles of EAFM	8. Startup A Preparing the ground cont.	12. Reality check I Facilitation skills	16. Reality check II Align to EAFM principles Supporting environment	Course review Individual action planning
Break					
15.05 –16.30. 17.00 wrap up	(4a) How much EAFM are you already doing?	9. Startup B Engaging stakeholders	12. Reality check I Conflict management	17. Step 5: Monitor, evaluate and adapt 5.1 Monitor and evaluate performance 5.2 Review and adapt the plan EAFM QUIZ	Course evaluation Course closure and certification
	Homework: EAFM progress			Homework: Presentation preparation	

Materials and feedback

- Course Handbook, Workbook, Toolkit
- Take-home PowerPoint slides & resources
- Daily monitoring and review
- Course evaluation
- Certificates

Ways of learning

- Learning new skills and elaborating on what you already know
- Reading, seeing, listening and questioning
- Hands-on activities and exercises and relating to your own experience
- Sharing tips and experiences
- Having fun!

Useful resource: EAFNet online Toolkit

http://www.fao.org/fishery/eaf-net/topic/166272/en

Turning your learning into action

- Daily action planning
- Working in groups
- Presentations on day 5

For this course…

Coastal marine ecosystems in Asia

Note: Ecosystem approach can be applied to any other system e.g. inland and offshore ecosystems or aquaculture systems

Group activity

1. Discuss threats and issues relating to your fisheries and the associated ecosystem
2. Write each issue/threat on a SEPARATE card, think of as many as you can
3. Place the cards on the flipchart
4. Move around so you can see other group's work

Note: You will be using these cards again later

Key messages

- Many threats and issues to sustainable fisheries
- You will already be familiar with many of these
- Issues are common across the region and some are trans-boundary
  - Regional cooperation will help address the issues
  - Countries can learn from each other


2. Fisheries management and the Ecosystem approach
Essential EAFM
Date • Place
Version 1
CORAL TRIANGLE INITIATIVE
ON CORAL REEFS, FISHERIES AND FOOD SECURITY
ima
Norad
SWEDEN
Coral Triangle Support Partnership
USAID | ASIA
FROM THE AMERICAN PEOPLE

Session objectives

After this session you will be able to:

- Realize a new management approach is required to address the many threats and issues facing capture fisheries
- Recognize how ecosystems benefit human societies
- Understand the concept of the ecosystem approach (EA)
- Describe some of the benefits of using an EA

Management

The many threats and issues identified in Session 1 require management to:

- minimize their impact and
- improve the benefits to society

Fisheries management: "An integrated process that aims to improve the benefits that society receives from harvesting fish".

Adapted from FAO

Existing fisheries management

Possible characteristics:

- Mainly focused on target species & stock assessment
- Single sector specific (fisheries)
- Mainly control of fishing (e.g. gear restrictions and zones)
- Based on biological objective e.g. maximizing production

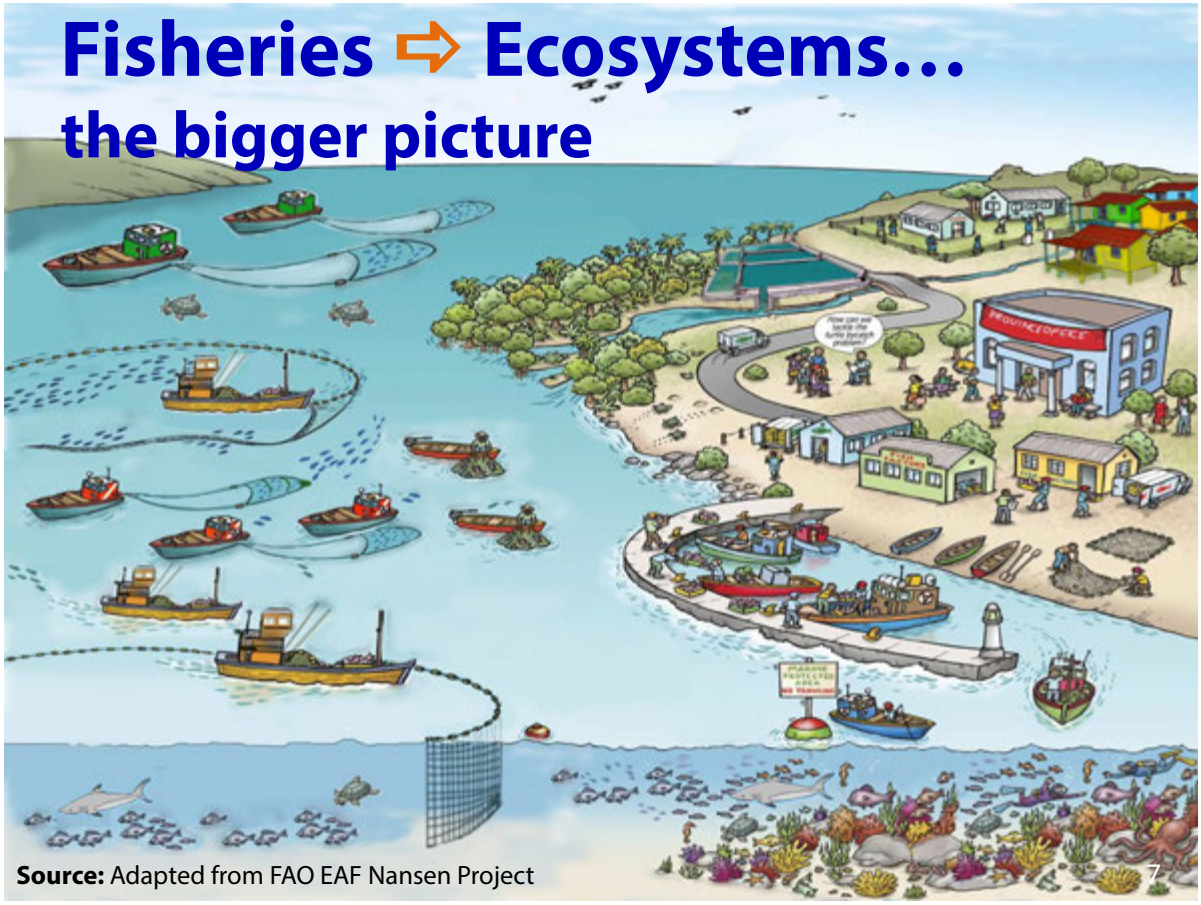
Activity

1. Discuss what you know about existing fisheries management in your country
2. Sort the threats and issues identified earlier into:

- Those that can be addressed by existing fisheries management; and
- Others.

Conclusions: existing fisheries management

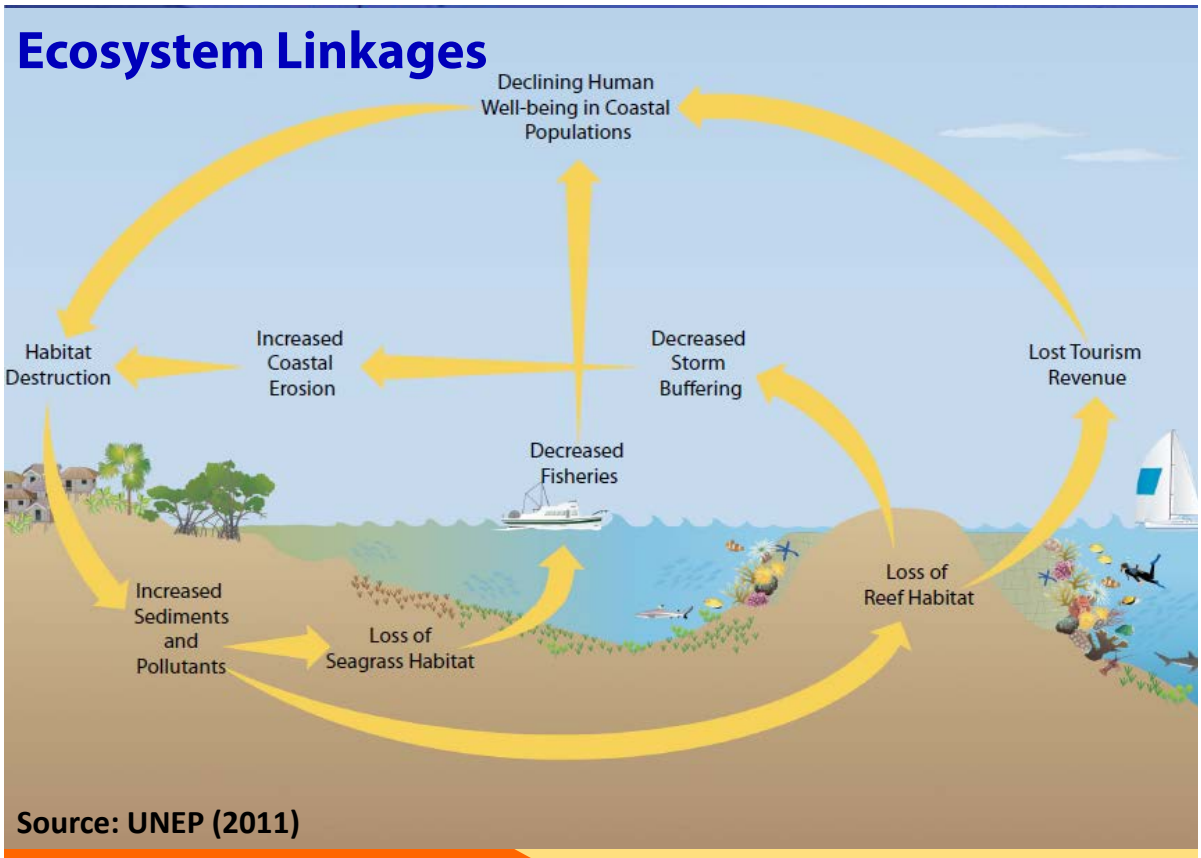
- Fishery resources are seriously degraded in the region with many issues
- Existing fisheries management does not cover all threats and issues and can often fail
- A broader and more inclusive approach is needed that expands on existing management


Fisheries ⇨ Ecosystems…
the bigger picture
Source: Adapted from FAO EAF Nansen Project
7

What is an ecosystem?

"An ecosystem can be defined as a relatively self-contained system that contains plants, animals (**including humans**), micro-organisms and non-living components of the environment as well as the interactions between them."

SPC (2010)


Ecosystem Linkages
Declining Human Well-being in Coastal Populations
Habitat Destruction
Increased Coastal Erosion
Decreased Storm Buffering
Lost Tourism Revenue
Decreased Fisheries
Increased Sediments and Pollutants
Loss of Seagrass Habitat
Loss of Reef Habitat
Source: UNEP (2011)

Ecosystem services & benefits

- **Supporting** – e.g. food webs of plants and animals
- **Provisioning** –e.g. supply of fish for animal and human food
- **Regulating** – e.g. coastal protection and resilience against variability and change, as well as natural disasters
- **Cultural** – e.g. recreation, cultural and traditional heritage values

Ecosystems in a fishery context

- Fish depend upon their surrounding supporting ecosystem (water, habitats) to survive and thrive
- Managing fisheries in isolation from what they affect and are affected by has proven to be relatively ineffective and unsustainable

Ecosystem approach

- **It is a strategy for <u>the integrated management</u> of land, water and living resources that promotes <u>conservation</u> and <u>sustainable use</u> in an equitable way (CBD 2000)**
- **EA is often used interchangeably with ecosystem-based management (EBM)**

The ecosystem approach is the way to implement **sustainable development**.

Sustainable development

"Development which meets the needs of the present without compromising the ability of future generations to meet their own needs."

Sustainable development is about maximizing the ecosystem benefits but at the same time not degrading the systems to the extent that the benefits cannot be sustained.

Sustainable development

Ecological well-being

- Healthy ecosystems that maximize ecosystem services
- Biodiversity that leads to ecosystem resilience
- Supportive ecosystem structure and habitats
- Healthy oceans, coastal areas and watersheds
- Food webs based on diverse sources of primary production

Human well-being

- Material living standards (income, food and wealth)
- Health
- Education
- Food security
- Basic human rights e.g. political voice and influence
- Social connections and relationships
- Living environment (present and future conditions)
- Economic security and human safety

Good governance

The way rules and regulations are set and implemented (both formal and informal).

It includes:

- planning and implementation mechanisms
- processes and institutions through which citizens and governing groups voice interests, mediate differences, exercise legal rights and meet obligations
- compliance and enforcement

Activity

Plenary brainstorm:

What are the benefits of taking an ecosystem approach?

Tip: keep in mind that we are trying to promote sustainable development

Why an Ecosystem Approach?

What are the benefits?

- Integrated approach that allows trade-offs when balancing human and ecological well-being
- Allows adaptive management – leading to more effective planning
- Increased stakeholder participation

Why EA?

What are the benefits? Contd.

- Provides a way to consider large-scale, long-term issues (e.g. climate change)
- Increased political support
- Can help unlock financial resources

Key messages

- Threats and issues to sustainable fisheries are broad in scope
  - a number fall outside existing fisheries management
  - a new approach is needed
- EA is about integrative management across land, water and living resources
- EA is a way of implementing sustainable development that promotes:
  - balancing ecological well-being with human well-being through good governance


3. The what and why of EAFM?
Essential EAFM
Date • Place
Version 1

Session objectives

After this session you will be able to:

- Understand what EAFM is
- Describe the benefits of using an EAFM
- Explain how EAFM complements other approaches
- Understand the complexities of multiple societal objectives

What is EAFM

EAFM is simply the ecosystem approach (EA) applied to fisheries management (FM)

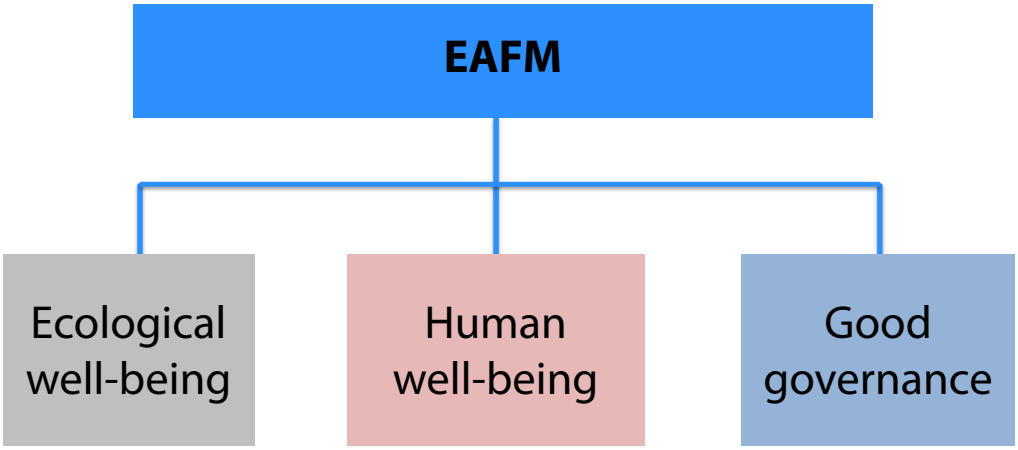
EAFM = EA + FM

i.e. a practical way to implement sustainable development and sustainably maximize the ecosystem benefits of a fishery system

EAFM

for future generations

3 Components of EAFM



The 3 components - in a fishery context

- **Ecological well-being:** e.g. healthy habitats, foodwebs, and sustainable fishing
- **Human well-being:** e.g. Increased & equitable wealth, food security and sustainable livelihoods
- **Good governance:** e.g. effective institutions and arrangements for setting and implementing rules and regulations

EAFM builds on existing fisheries management : "the move towards EAFM"

EXISTING	EAFM	EA/EBM
• target species • fish focused • production driven • managed through control of fishing • government driven	• target and bycatch • considers habitats • fishery impacts on the ecosystem • threats to the fishery from external factors • good governance/ participatory • socio-economic benefits	• integrated management across sectors • multiple use management

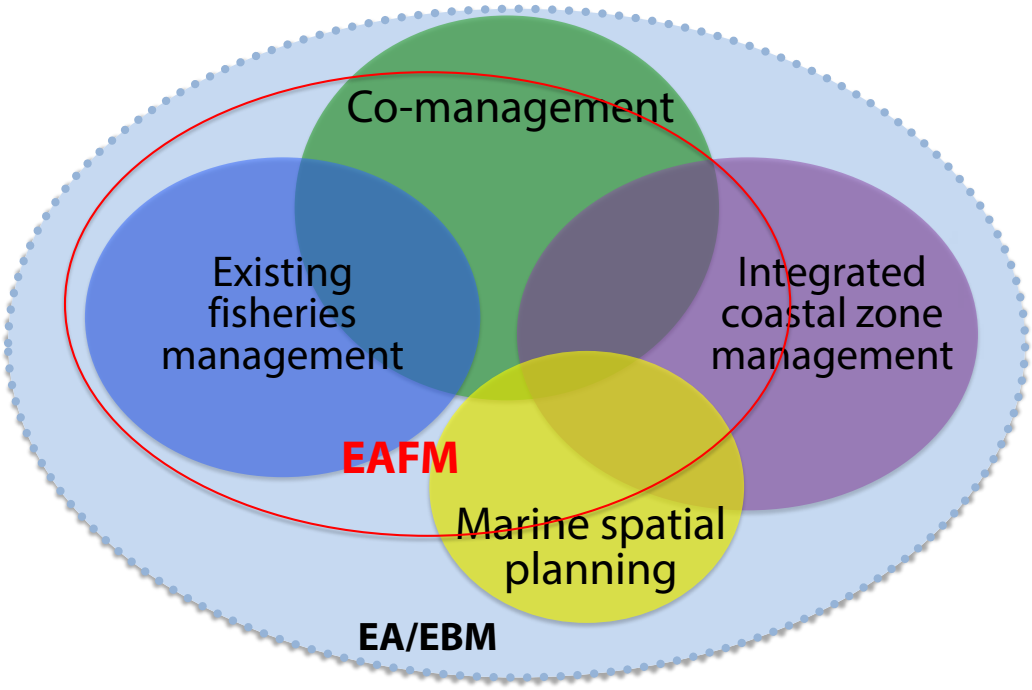
Why EAFM?

- Links fisheries management across jurisdictions and boundaries
- Helps gain political and stakeholder buy in to fisheries
- Increases support for better governance
  - Can lead to better compliance and enforcement
- Reduces conflicts, especially between different fishery sub-sectors

Why EAFM?

- Helps unlock financial resources for fisheries
  - Good planning and momentum fosters support from governments, donors and NGOs
- Helps protect the fishing sector from impacts of other users
- Protects sub-sectors from negative impacts on each other (e.g. large-scale vs small-scale)
- Promotes better communication and trust

EAFM complements other approaches



Other management approaches

Co-management:
- a partnership arrangement between government and users for management (more later)
- forms part of EAFM

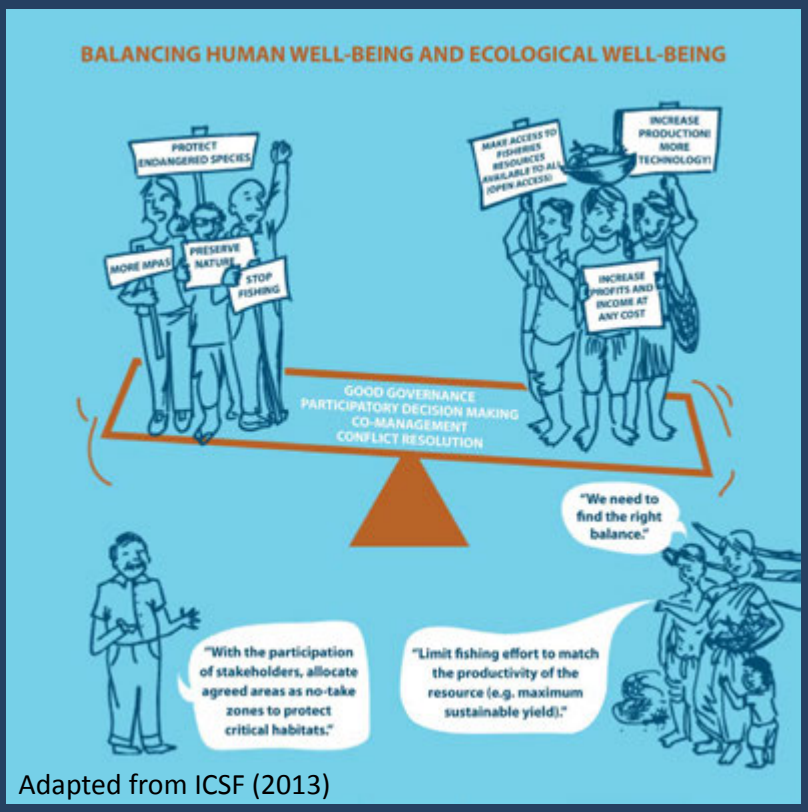
Integrated coastal zone management:
- an ecosystem approach to managing a coastal area
- links with EAFM in the coastal zone.

Other management approaches contd.

Marine spatial planning:
- planning that delineates user access based on the spatial and temporal distribution of human activities
- an important tool for EAFM (zoning)

Marine protected areas:
- a clearly defined area to achieve conservation of nature, with associated ecosystem services and cultural values
- another important tool for EAFM

REMBEMBER EAFM IS FINDING THE BALANCE



Adapted from ICSF (2013)

13

Key messages

- **EAFM** is simply applying **EA** to fisheries management **(FM)** and has 3 components:
  - Ecological well-being
  - Human well-being
  - Good governance
- EAFM is all about finding the balance
- Many benefits of using an EAFM
- Builds on existing management (i.e. we move towards EAFM)
- EAFM compliments and overlaps other forms of integrated resource management (e.g. ICM)

Balancing different societal objectives

1. Read the question(s) on the cards
2. Watch the video clip and discuss the question(s) in your group

http://www.youtube.com/watch?v=Pb2EYUwOk1s

Group Timelines

Horizontal line represent ‘time’

1. Go back in time 20 - 30 years.
   Think of events that have affected or been affected by your fisheries (political, environmental, social etc).
   Events can be from local to national to global

2. Draw/write each event (with dates) on a separate card

3. Plot your cards onto the timeline


4. Principles of
EAFM
Essential EAFM
Date • Place
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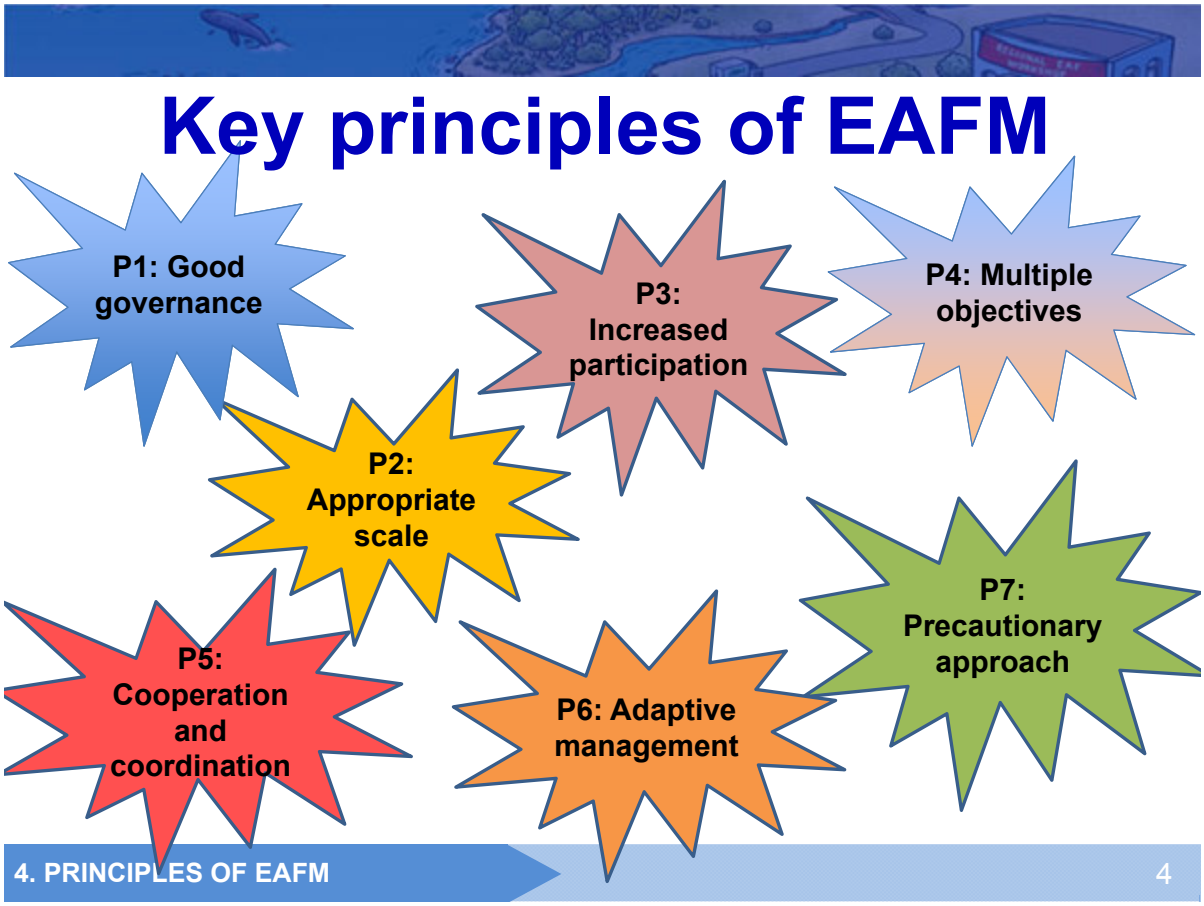
APFIC
BAY OF BENGAL LME
CORAL TRIANGLE INITIATIVE
ON CORAL REEFS, FISHERIES AND FOOD SECURITY
FAO
ima
INTERNATIONAL
NOAA
SEAFDEC
gef
Norad
SWEDEN
CTSP
Coral Triangle Support Partnership
USAID
FROM THE AMERICAN PEOPLE
ASIA

Session objectives

After this session you will be able to:

- Understand the principles of EAFM and their link to the FAO Code of Conduct for Responsible Fisheries (CCRF)


Key principles of EAFM
P1: Good governance
P2: Appropriate scale
P3: Increased participation
P4: Multiple objectives
P5: Cooperation and coordination
P6: Adaptive management
P7: Precautionary approach
4. PRINCIPLES OF EAFM
4

Principles are not new

The principles of EAFM are not new but were set out in the FAO Code of Conduct for Responsible Fisheries (CCRF)

- The CCRF was developed by Food and Agriculture Organization of the United Nations (FAO)
- All FAO Member countries agreed to CCRF in 1995
- Your country is a Member of FAO

P1

Good governance

Consensus

Accountable

Participatory

Transparent

Follows the rule of law

GOOD GOVERNANCE

Responsive

Effective and efficient

Equitable and inclusive

Source: http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp

P2

Appropriate scale

Four dimensions:

1. Ecological scales
2. Socio-economic scales
3. Political/governance scales
4. Temporal scales

Note: These align with the three components of EAFM

Scales – extremes

1. **Ecological**
   Single species ➔ Large Marine Ecosystem
2. **Socio-economic**
   Village ➔ Coastline (rural & urban)
3. **Governance**
   Single jurisdiction ➔ Multiple jurisdictions
4. **Temporal**
   Short-term ➔ Long-term

Realities of scale

- Probably no such thing as a correct scale
- Take a practical approach – begin working with what exists e.g. jurisdictional boundaries

Challenge:

Getting the scale correct for the four dimensions.

This often requires increased cooperation and coordination across jurisdictions, agencies and stakeholders.

Discuss

In many countries, fisheries management has been devolved to the district/municipality level.

In your groups, answer the question:

“Is the district/municipality the correct scale to manage all fisheries?”

P3:

Increased participation

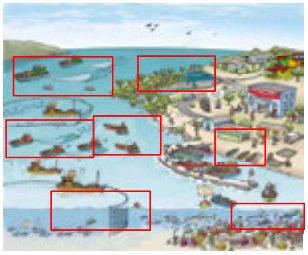
Many stakeholders

1. Fishers and fisher associations
2. Governments (district – national)
3. Fishery related (e.g. boat owners, money lenders)
4. Compliance and enforcement
5. Other users (e.g. tourism, ports)
6. External agents (e.g. NGOs, researchers)

P4:

Multiple objectives

EAFM deals with interactions within the fishery sector and with other users



Each sector and user group probably have their own objectives

- Need to balance these objectives
- Requires stakeholder engagement and negotiation

P5:

Cooperation and coordination

EAFM involves cooperation and coordination among many stakeholders e.g.

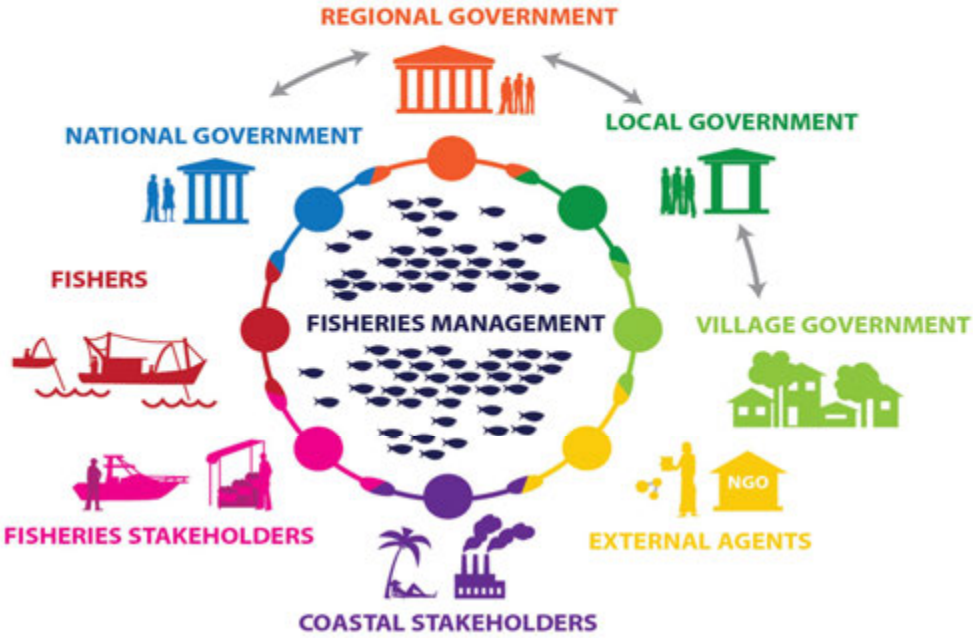
Fishers
Fisher associations

External agents
NGOs, academics, researchers

Government
National/regional/ provincial/state/ municipal/ village

- within agency/institutions
- across institutions, both government and stakeholder and with non-fishery sectors
- from global to national to district levels

The institutions



Institutional cooperation and coordination

How do you achieve this?

1. Talk to others
2. Link in with existing arrangements (e.g. ICM, inter-agency activities)
3. Share information
4. Harmonize work plans/budgets
5. Memorandums of understanding/binding agreements

..... Any other suggestions?

P6:

Adaptive management

Learning while doing

Evaluate
Improve
Discard

→ Work →

Evaluate
Improve
Discard

→ Work →

Evaluate
Improve
Discard

More uncertainty → Less uncertainty

TIME

P7:

The precautionary approach

“ where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation” (UNCED, 1992)

Lack of information should not be used as reason for lack of action

Where there is uncertainty, management actions should be less risky

THE PRECAUTIONARY APPROACH

Source: Adapted from ICSF (2013)

19

Key messages

- EAFM principles are not new – based on the FAO Code of Conduct for Fisheries (to which your country is a member)

- EAFM has seven principles
  - These can be used to track EAFM implementation


4 (Activity). How much EAFM are you already doing?
Essential EAFM
Date• Place
Version 1

Activity 1

1. Revisit threats and issues from this morning.
   Do any more need to be added?

2. Now working as a group - start to group the threats & issues into the
   three EAFM components:

Ecological well-being

Human well-being

Good governance

Activity 2

1. Analyze your current fisheries management approaches and practices
2. Identify which EAFM elements you are already doing
3. Identify the gaps in your EAFM practices and suggest ways to address these
4. Share these in your groups. Keep notes (you will need these for rest of course)

Homework

1. Refer to your Workbook.
   This shows a continuum with 0 = none through to 5 = excellent

2. Think about **your fishery**.
   For each of the 7 EAFM principles listed, plot the extent to which each principle is being applied in your fishery

3. We will build on this work tomorrow


5. Moving towards
EAFM
Essential EAFM
Date • Place
Version 1

Session objectives

After this session you will be able to:

- Learn how an example national government has moved towards EAFM over time
- Appreciate that the process of moving toward EAFM can consist of a progression of simple actions over many years
- Understand there is no set form or shape for EAFM because it is country, context and culture specific
- Determine where your country is at in moving towards EAFM
- Identify challenges your country faces in moving towards EAFM

Shift towards EAFM in USA 1976-2013

1950s-1970s Overfishing → **Collapsing fisheries** (e.g. New England)

1976 Magnuson-Stevens Fishery Conservation & Management Act

1980's Single fisheries Fishery Management Plans (FMPs)

1996 Sustainable Fisheries Act → **Essential Fish Habitat**

2004 Coral Reef **Ecosystem FMP**

2006 Amended Fishery Management Act → Annual Catch Limits

2010 Archipelagic **Fishery Ecosystem Plans (FEPs)**

2012 End of 'overfishing' for all USA fishery stocks

P6: Adaptive management

Magnuson-Stevens Fishery Conservation & Management Act (Federal Law) 1976

Established 8 Regional Fishery Management Councils to:

- Advise government (NOAA) on fisheries management issues
- Develop/adapt FMPs to maintain fishing opportunities at sustainable levels, while conserving marine resources and habitats

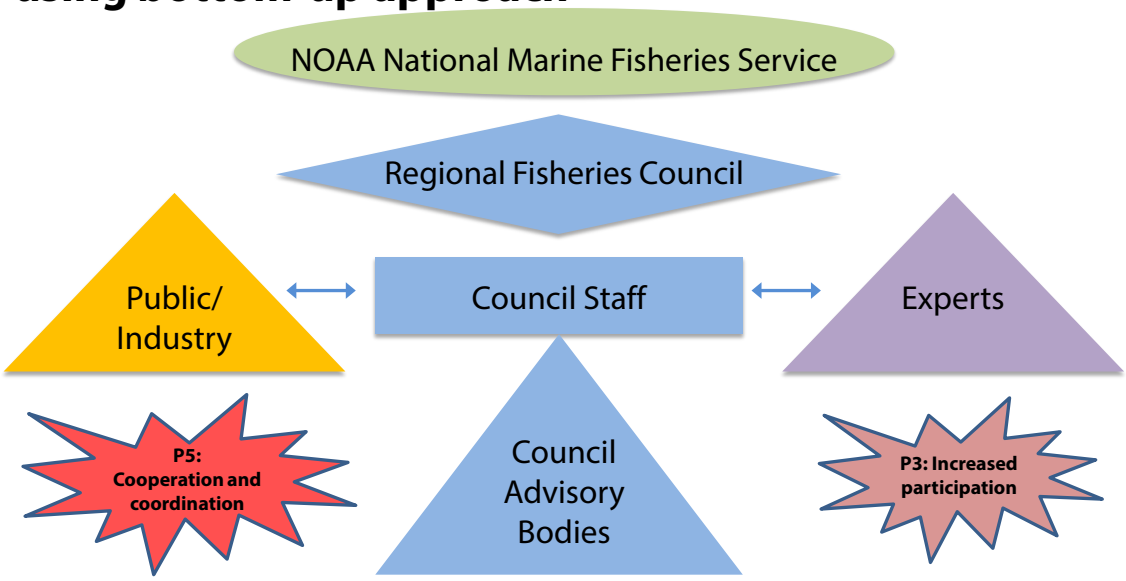
Council Members:

- Federal Agencies (NOAA Fisheries, U.S. Fish & Wildlife Service, US Coast Guard, State Department)
- State Fishery Agencies (local gov.)
- Fishermen* (commercial, recreational)
- Other concerned users/stakeholders* (seafood owners, conservationists, researchers, educators)

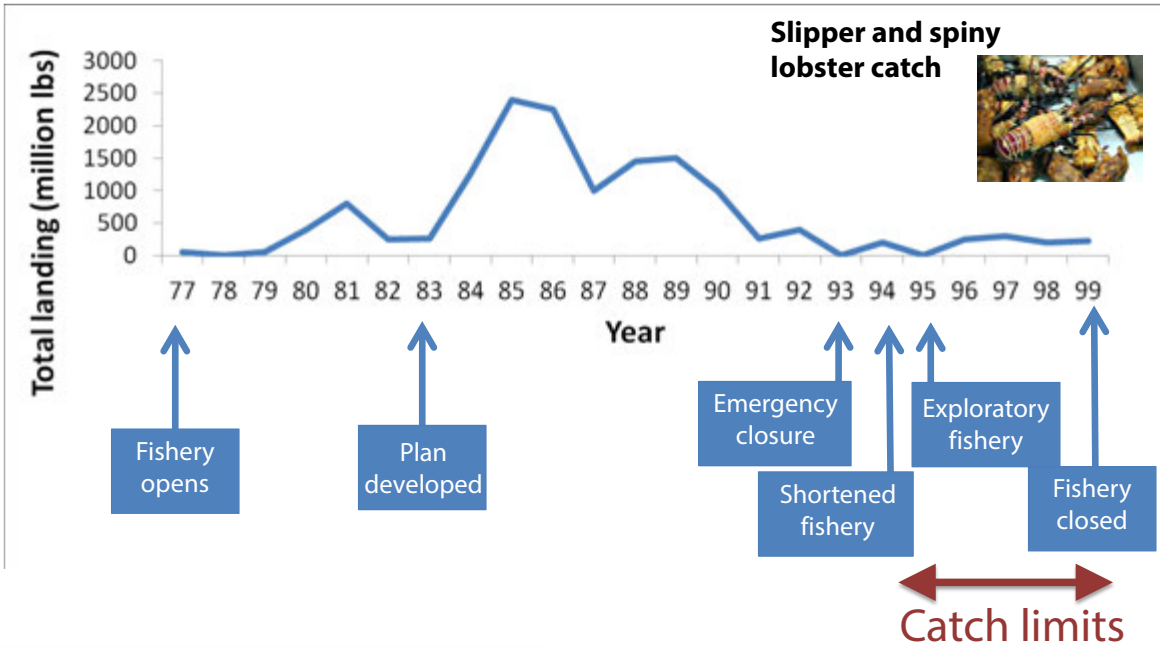
**Nominated by respective State's Governors*

Case Study: USA moving toward EAFM

Council implementing EAFM at a regional scale using bottom-up approach



Case Study: Northwest Hawaiian Lobster fishery



Case Study: Northwest Hawaiian Lobster fishery cont.

Stock assessments based on incorrect assumptions:

- A single archipelagic wide population was assumed
- Maximum sustainable yield (MSY) estimates based on highly productive banks
- Consistent recruitment despite changes in productivity

Result:

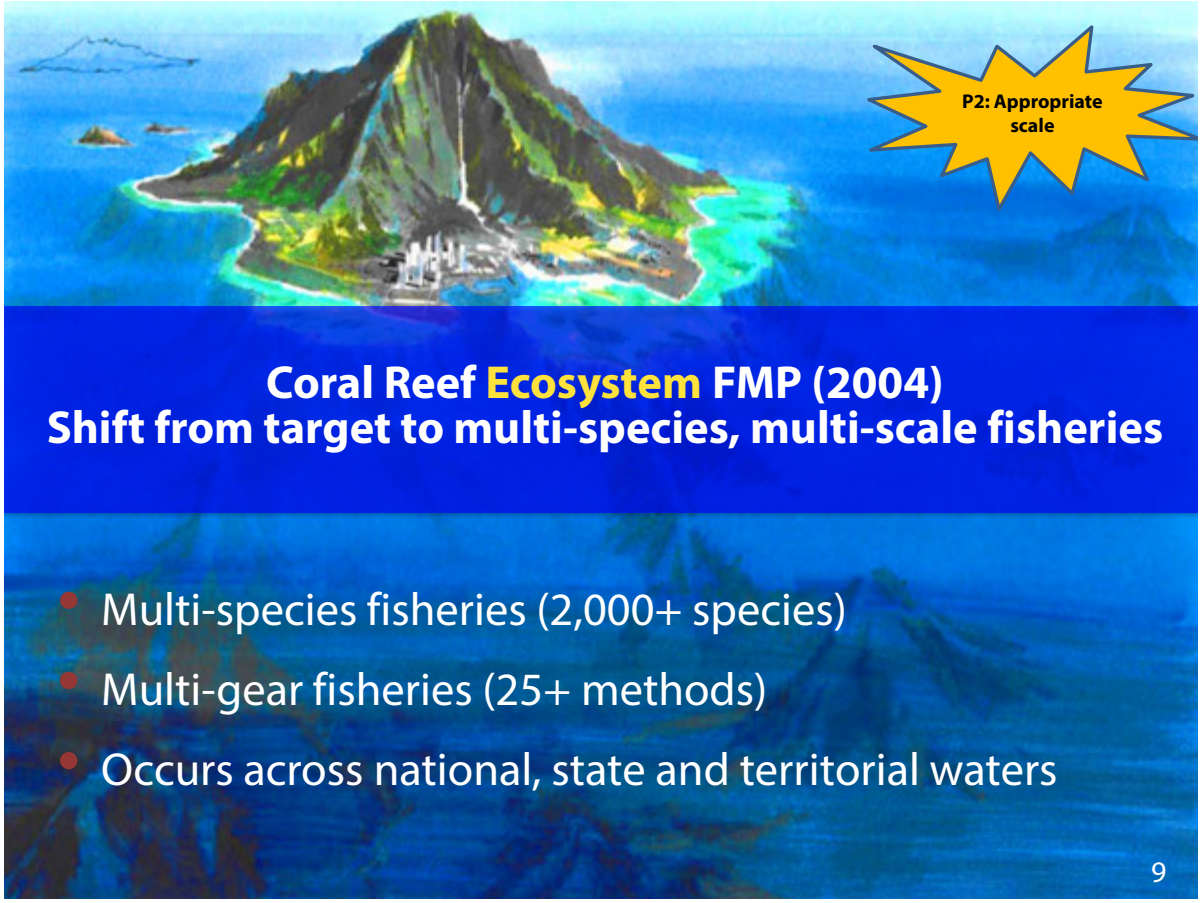
Still not recovered due to loss of ecosystem function:

- Fewer apex predators and lower trophic levels
- Conventional management tools (fishery closures) have not led to recovered populations!

Case Study: USA moving toward EAFM

1996: The US Sustainable Fisheries Act

- An important legislative shift towards EAFM as it requires the protection of essential fish habitats in all USA waters
- Demonstrates Adaptive Management


P2: Appropriate scale
Coral Reef Ecosystem FMP (2004)
Shift from target to multi-species, multi-scale fisheries
Multi-species fisheries (2,000+ species)
Multi-gear fisheries (25+ methods)
Occurs across national, state and territorial waters
9

Coral Reef Ecosystem Fisheries Management Plan

Goal:

Maintain sustainable reef fisheries in the US Pacific Islands region without impacting stocks, habitat, protected species, or the ecosystem

P1: Good governance

Coral Reef Ecosystem FMP Objectives

P7: Precautionary approach

- Precautionary, ecologically, culturally sensitive sustainable use

P6: Adaptive management

- Apply adaptive management
- Establish research, monitoring, data collection and permits to improve management decisions

Coral Reef Ecosystem FMP Objectives contd.

P4: Multiple objectives

- **Ecological well-being objectives:**
  - restore reef fisheries, resources, habitats
  - maximum, sustainable long-term catch
- **Human well-being objectives:**
  - generate revenue and livelihoods
  - improve public awareness of reef ecosystems and their vulnerability
- **Governance objectives:**
  - promote improved surveillance and enforcement
  - collaborate with other agencies to share data and resources

P1: Good governance

FMP management actions

- Network of areas with seasonal closures
- Established permit and reporting requirements
- Only selective, non-destructive fishing gears permitted
- Prohibited harvest of protected species
  Exception: limited harvest under permit for scientific research
- Regulated potential bio-prospecting threat

Lessons learned

Objectives:

- Maximum sustainable yield alone insufficient; need to also consider environment, habitat, ecosystem linkages
- Need to use precautionary approach

P7: Precautionary approach

Scope of management:

- Too limited to protect fishery productivity
- Ignored small-scale fishers and their impacts
- Assumed fish stock productivity is only a function of population characteristics

P3: Increased participation

Lessons learned contd.

Stakeholders:

- Limited involvement →increased conflict, resource decline, management action failure
- Not holistic enough to address ecological or social conditions → decline in fisheries

Public engagement:

- Need EAFM outreach into educational system

Shift towards EAFM in USA 1976-2013

1950s-1970s Overfishing → **Collapsing fisheries** (e.g. New England)

1976 Magnuson-Stevens Fishery Conservation & Management Act

1980's Single fisheries Fishery Management Plans (FMPs)

1996 Sustainable Fisheries Act → **Essential Fish Habitat**

2004 Coral Reef **Ecosystem FMP**

2006 Amended Fishery Management Act → Annual Catch Limits

2010 Archipelagic **Fishery Ecosystem Plans (FEPs)**

2012 End of 'overfishing' for all USA fishery stocks

Summary: moving towards EAFM

- It's an evolving process
- Only beginning to address other ecological factors such as habitat impacts, bycatch and protected species interactions (seabirds and sea turtles)
- Expands upon conventional fisheries management:

  - increasing stakeholder engagement
  - broadening scale of management
  - increasing data and information needs

Key messages

- These case studies demonstrate that implementing EAFM takes time
- EAFM is an iterative process; lessons learned along the way
- Many fisheries are doing EAFM in part; moving towards EAFM does not require drastic change but many small steps through time

Activity 1:

1. Individually, review your day 1 homework: Plotting your fishery on Moving towards EAFM continuum (Workbook p.3).

2. In groups, discuss and jointly plot either:

a) your LOCAL (communal) fishery (in this case individual continuums are compared and an agreed communal one is developed)

b) your COUNTRY fishery

Use the table on p 4 of your Workbook

Activity 2: in groups

1. Identify the **challenges** your country might face in moving towards EAFM
2. Write each challenge on a card. (**ONE** challenge per card)
3. Now identify **opportunities** your country may have in moving towards EAFM (and in meeting the above challenges).
4. Write each opportunity on a separate card


6. EAFM plans
the link between policy
and action
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Session objective

After this session you will be able to:

- Recognize the need for effective planning and plans to translate policies into actions

Why plan?

- Plans are needed to implement policies
- Promote resource use efficiency
  - provides more certainty on the roles and responsibilities of the different players
- Facilitates resources (people and money) mobilization
- Encourages participation and ownership in the management process

Management involves:

Linking policy to action

Example:

Healthy environment → **Policy**

↓

Restore and protect seagrass → **EAFM Plan**

↓

Allocate a no-take area to prevent fishing in selected seagrass areas → **Management actions**

Good planning

- Provides a clear sense of direction
- Promotes transparency
- Considers alternative courses of action
- Is based on the best information available (uncertainty reduces through time)

Outputs from planning

Often a set of nested plans:

- National five-year plan
- Agency Strategic plan
- EAFM plan
- Work plans

Key messages

- High level principles and policies can not be implemented as they stand
- EAFM plans provide a link between higher level policy (e.g. National fisheries policy) and management actions on the ground
- In this way, management actions in EAFM will promote the implementation of the high level policies over time


7. EAFM
process overview
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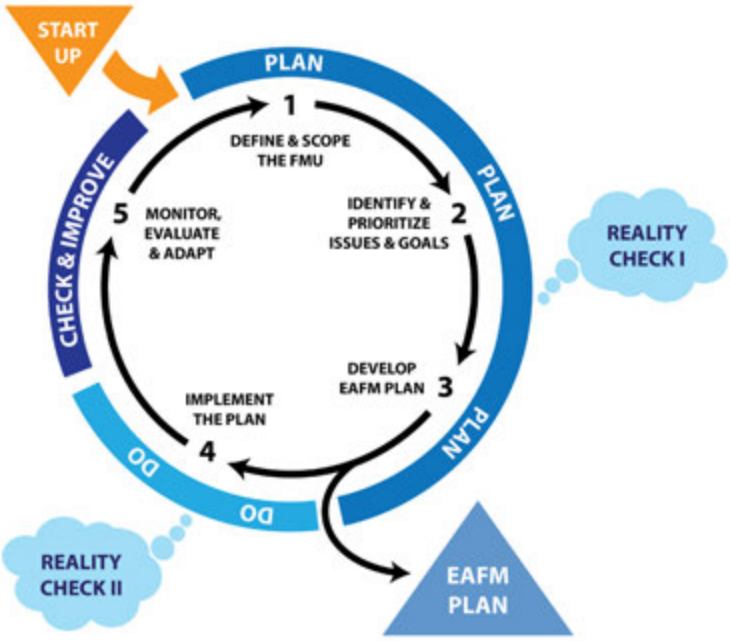
Session objectives

After this session you will be able to:

- Describe the key steps of the EAFM process and how to plan, implement and monitor EAFM
- Identify the planning steps in EAFM process
- Familiarize yourselves with an EAFM plan

The 5 steps of EAFM



Startup A

A. Prepare the ground

- Identify who should be involved
- What is planned to happen (plan for the process)
- Decide on the general location

Startup B

B. Stakeholder engagement

Engage stakeholders for:

- Participatory planning
- Co-management

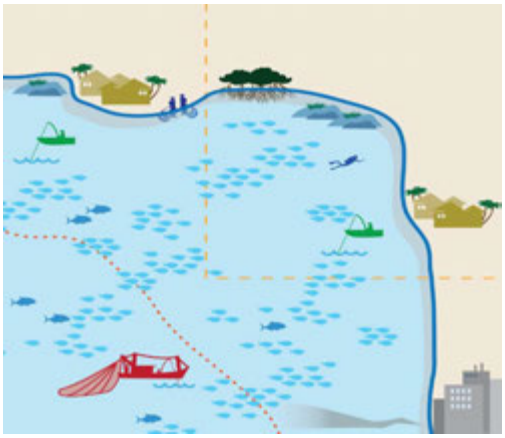
Step 1

Define and scope the Fisheries Management Unit (FMU)

1.1 Define the FMU

1.2 Agree the FMU vision

1.3 Scope the FMU



Provides background information and a vision

Step 2
Identify & prioritize issues & goals

Identifies the high priority issues and sets goals

2.1 Identify threats & issues

2.2 Prioritize issues

2.3 Define goals for EAFM plan

Reality check I

Are the goals achievable?

Reality check I
-Constraints & opportunities
-Facilitation / skills
-Conflict management

Step 3
Developing the EAFM plan

3.1 Develop operational objectives

3.2 Develop indicators & benchmarks

3.3 Management actions & compliance

3.4 Identify sustainable financing

3.5 Finalize the EAFM plan

Develops the management framework

Step 4 Implement

4.1 Formalize, communicate and engage

Implements the plan through formalizing and communicating it

Reality check II

Checks whether the governance and supporting structures are in place

Step 5
Monitor, evaluate, adapt

5.1 Monitor & evaluate (M&E) performance of management actions

5.2 Adapt the plan based on M&E

Completes the EAFM cycle with M&E and adapts the plan to start a new cycle

EAFM cycle

Planning – Steps 1-3

1. Define & scope
2. Issues & goals
3. Objectives, indicators, management actions & compliance, financing

Doing - Step 4

4. Implement

Checking & improving - Step 5

5. Monitor, evaluate and adapt

EAFM Plan outline

EAFM Management Plan for FMU XX

1. Vision (Step 1)
2. Background (Step 1)
3. Major threats and issues (Step 2)
4. Goals (Step 2)
5. Objectives, indicators and benchmarks (Step 3)
6. Management actions (Step 3)
7. Compliance (Step 3)
8. Data and info needs – source of data, etc (Step 3)
9. Financing (Step 3)
10. Communication – link to communication strategy (Step 4)
11. Review of the plan – link to frequency of reviews (Step 5)

Key messages

- The EAFM process cycle has 5 steps
- Before the first step in the cycle, get organized in the Start-up
- The EAFM plan comes from the outputs of Steps 1-3
- In Step 4 the plan is implemented
- In Step 5 the plan is evaluated and adapted for the next cycle

Activity:
The EAFM steps

Move to the large circle and follow instructions

Form working groups

1. Form **working groups** (may be based on shared fishery/ shared geographical area)
2. You will work in these groups for much of the rest of the course, developing parts of the EAFM plan as you go through Steps 1–3
3. On Day 5, each group will present their draft EAFM plan and receive feedback


8. EAFM Startup A:
Preparing the ground
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Session objectives

After this session you will be able to:

- Define startup tasks needed to initiate the EAFM process and co-management
- Learn how to identify stakeholders

To prepare the ground there are 8 tasks that need to be done

i. Form an EAFM team and facilitators
ii. Identify your broad geographic area
iii. Develop startup work plan
iv. EAFM introduction
v. Coordination with other agencies and government levels
vi. Identify stakeholders and organizations
vii. Establish a key stakeholder group
viii. Determine legal basis for EAFM

Baking a cake: a start-up analogy

Start up tasks are used to prepare the ground to do EAFM, an analogy is baking a cake.

Before baking a cake, the cook must decide:

Who will bake the cake (EAFM team)

What recipe will we use (startup workplan)

Where will the cake will be cooked (Broad geographic area)

Who will eat the cake (stakeholders)

Who will oversee the cooking and distribution of the cake to others (key stakeholder group)

Identify the EAFM team and develop a startup work plan

Lead agency is often the Fisheries Agency

- Establish a team to guide the EAFM startup - ideally to include key agencies

- identify a Team Leader to lead the process

- Agree on what area the EAFM will focus on
- The team develops a startup work plan to guide the rest of the startup tasks. This identifies:

- what by whom, by when and with what budget

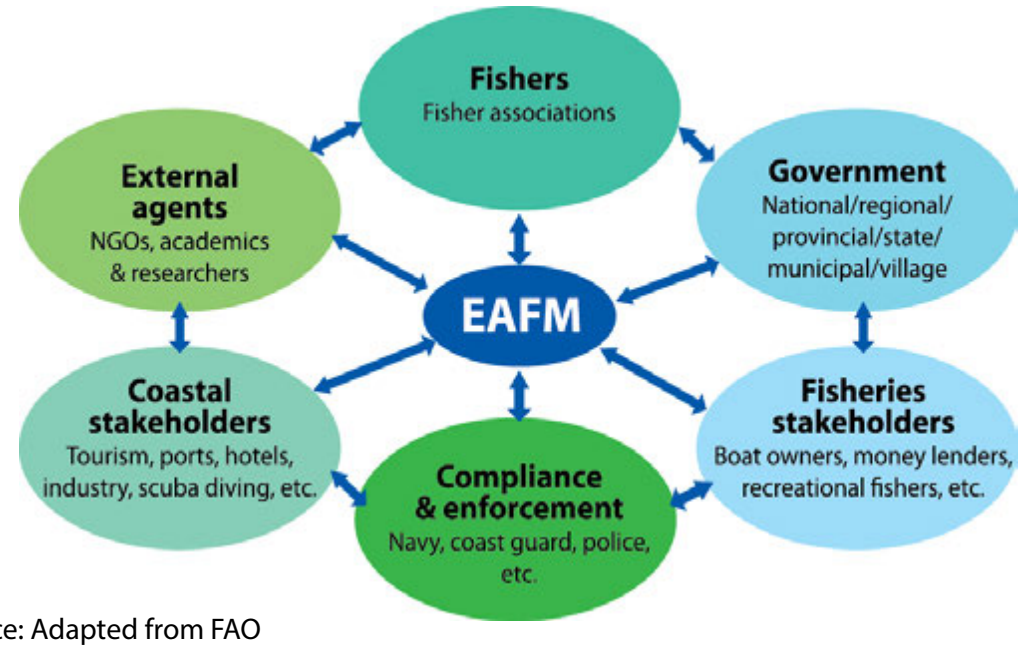
Identify stakeholders and organizations

- Identify ALL stakeholders to begin
- This is an **initial** identification of potential stakeholders and will be revisited

Who are your stakeholders?

"A stakeholder is any individual, group or organisation who has an interest in or who can affect or is affected, positively or negatively, by the EAFM process"

Possible stakeholders



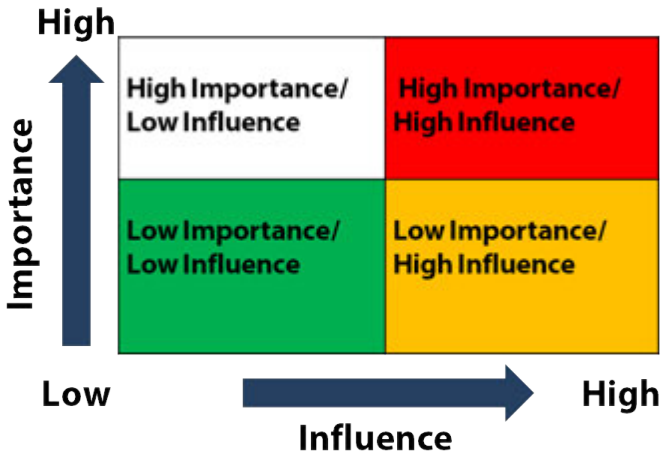
Source: Adapted from FAO

Stakeholder Analysis

Importance: how important a stakeholder is for EAFM process

Influence: how much influence (power) a stakeholder has over EAFM process

2x2 matrix



In your groups

1. List ALL possible FMU stakeholders. Write each stakeholder on a different card
2. Draw a 2 x 2 matrix with “Importance” on the Y axis and “Influence” on the X axis
3. Plot each stakeholder card onto one of the 4 boxes. You can move cards as you discuss

Based on *how important* each stakeholder is for the EAFM process and *how much influence (power)* each has over/in the EAFM process

Prioritizing stakeholders

High Importance/Low Influence	High Importance/High Influence
Need to be represented	Key stakeholders for EAFM Need to be included in the key stakeholder group
Not interested	Need to get them to 'buy in' into EAFM process,'
Low Importance/Low Influence	**Low Importance/High Influence**

Venn Diagram

Useful for describing relationships as part of institutional analysis

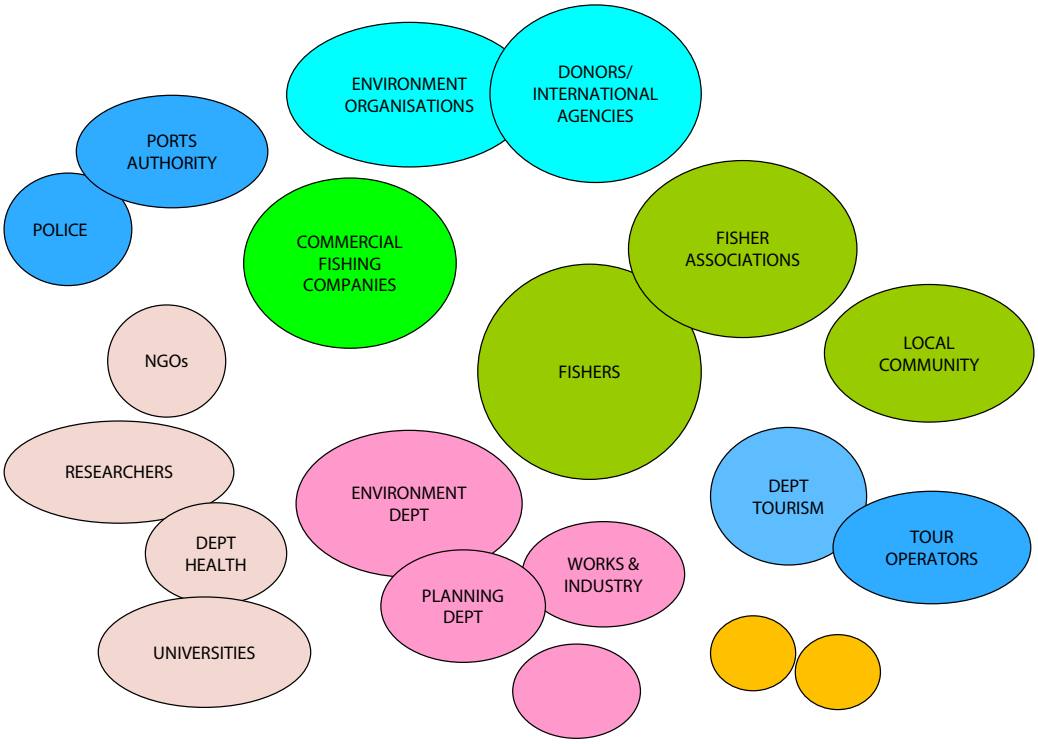
- Dimension 1 = Size of circle (importance)
- Dimension 2 = Proximity of circle (frequency of contact)

  Separate circles = no contact

  Touching circles = information passes between institutions

  Small overlap = some cooperation in decision-making

  Large overlap = considerable cooperation in decision-making



8. EAFM START UP A 13

In your groups

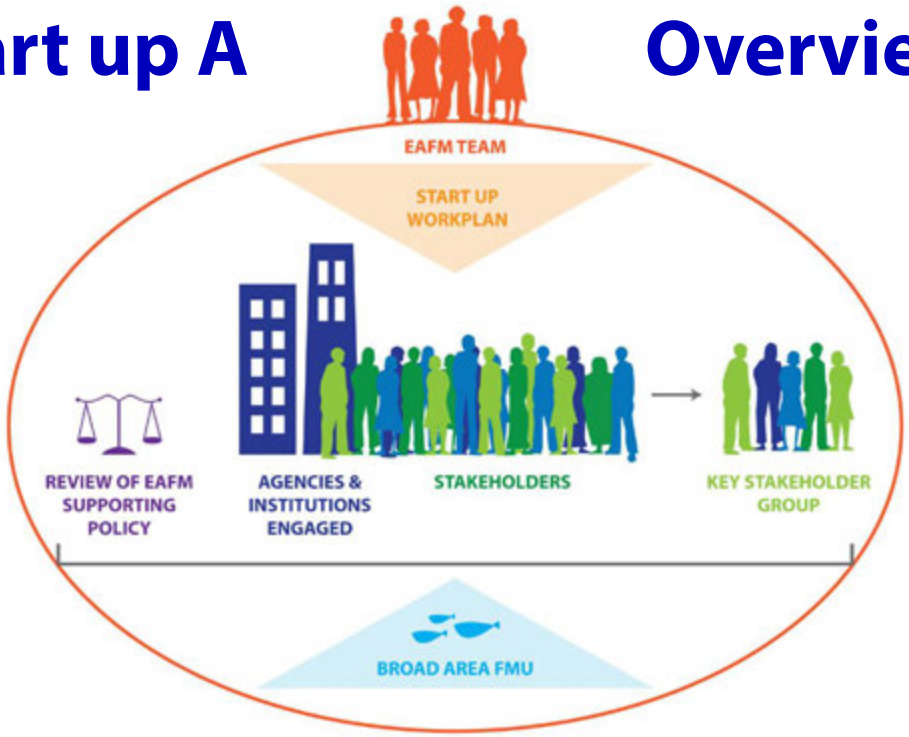
1. Plot the fishery agency and other stakeholders using Venn diagram technique
2. Identify the interrelationships and linkages between agencies and institutions
3. What could strengthen linkages and coordination?

Establish a Key stakeholder group

After the start up, representatives from the key identified stakeholders should form a core group. They are responsible for:

- Develop dialogue and stimulate EAFM discussion
- Facilitate community organisation
- Help stakeholders understand EAFM
- Identify problems, issues and opportunities
- Assist throughout EAFM process

Start up A Overview



Key messages

Before embarking on the EAFM cycle there is some initial organization to be done by the EAFM team to:

1. Get organized; and
2. Initiate stakeholder engagement


9. EAFM Startup B:
Engage Stakeholders
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Session objectives

After this session you will be able to:

- Define participatory approaches to stakeholder engagement
- Understand how to organize and hold stakeholder meetings
- Understand the basic concepts of co-management

Engaging stakeholders

- Important to engage stakeholders throughout the EAFM process
- Need to have them onboard from the beginning and maintain their interest
- People skills are needed for this

Participation

The active participation of people is at the heart of EAFM

So what do we mean by participation?

Key principles of participation

Letting go of your own perceived ideas and viewpoints

Don't control

Respect of local customs, languages and experience

Process learning, change and action

Believing in people and their abilities

Listening and building rapport

Equality. All people heard

Working with groups

Be flexible

Aim of participatory approaches

Equality (all voices heard)

Empowerment

Ownership

Group cohesion

Identifying opportunities for development

Facilitating stakeholder input

Meetings →	Large coverage
Workshops →	Medium coverage
Focus group discussions →	Small, focus on specific issues
Semi-structured interviews →	In-depth views
Questionnaires/ surveys →	Widely dispersed/large numbers

In groups

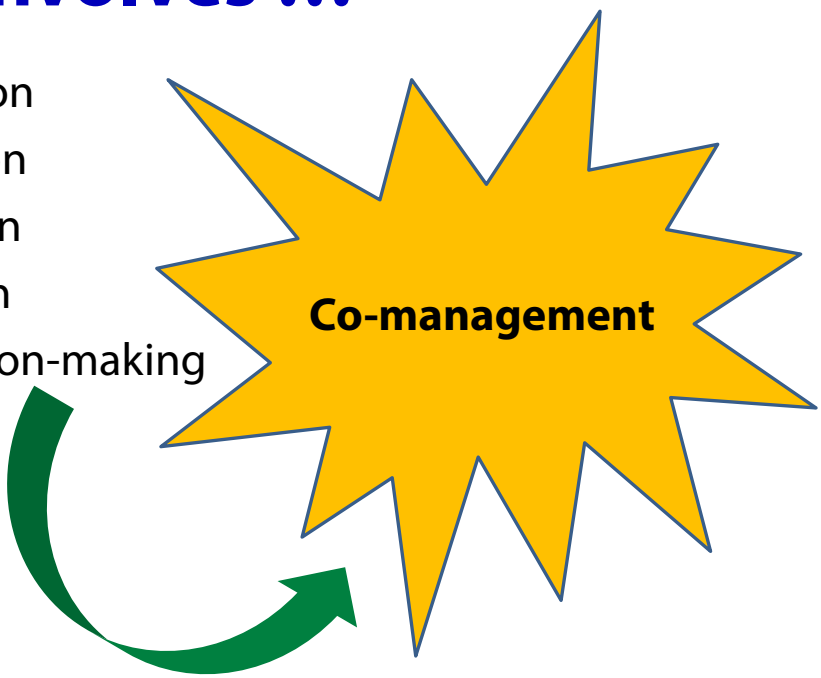
Group A: draw a very **GOOD** facilitator!

Group B: draw a very **BAD** facilitator!

No words or writing allowed!

EAFM involves …

- Coordination
- Consultation
- Cooperation
- Negotiation
- Joint decision-making



Co-management …

Partnership arrangements in which stakeholders share the responsibility and authority for the management of the fishery, with various degrees of power sharing

Degrees of power sharing

More

Less

Community control

Partnership

Advisory

Communicative

Cooperative

Consultative

Informative

Key elements of co-management involve:

- Working together – power sharing
- Better dialogue and communication
- Reducing conflicts
- Learning together
- Sharing costs and benefits
- Sharing successes and failures

Example: Klong Mauri, Phang Nga province Thailand

- Conflict between oyster farmers and clam fishers
- Public workshop was held to bring stakeholders together and discuss issues and identify potential solutions
- Co-management arrangement now in place between the two fisher groups

Preparing stakeholders to actively engage:

Awareness raising

- Knowledge empowers people and improves their ability to take part (awareness of environmental, social/governance issues)

- Methods can include:
  - training, focus group discussions, media campaigns, stories and policy briefs

Preparing stakeholders to actively engage contd.:

Community mobilization

- Stakeholders get organized to arrive at consensus on interests and concerns

- Methods can include:
  - environmental education, building alliances and networks and human capacity development

Assess stakeholder interest and commitment

Stakeholders will have different levels of interest in the process

	Some awareness of problems with fisheries	Concern about these problems	Willingness and ability to take action to solve these problems	Action needed
Stakeholder 1				
Stakeholder 2				

Key messages

- Stakeholder engagement is initiated in the Start-up but continues through the whole EAFM process
- EAFM involves developing co-management arrangements, so stakeholders are involved in planning, implementing, as well as evaluating and adapting
- Stakeholder engagement requires people skills and there are a number of tools that can be used

Active listening in threes

1. Two of you discuss examples of co-management that you are familiar with/ have experienced/ know of (think about topics we have just discussed)

2. The 3rd person observes (can take notes) then feeds back. Rotate so you all get a chance to speak and observe

Practice active listening:

☺ ***Paraphrasing***

☺ ***Clarifying***

☺ ***Eye contact***

☺ ***Body language***


10. Step 1: Define and scope the FMU
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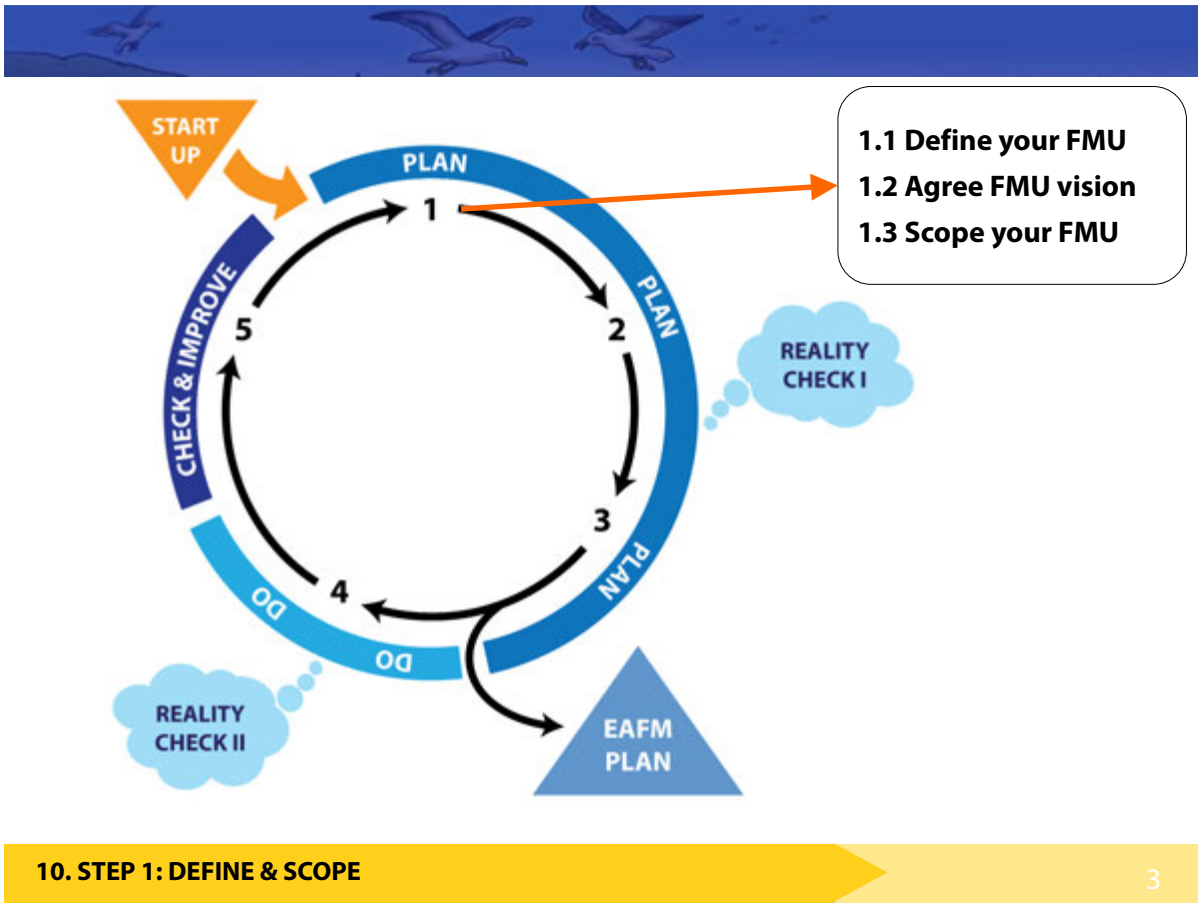
Session objectives

After this session you will be able to:

- Understand and practice FMU defining and scoping
- Understand visioning and be able to agree on a vision


START UP
PLAN
1
2
3
4
5
PLAN
PLAN
DO
DO
CHECK & IMPROVE
REALITY CHECK I
REALITY CHECK II
EAFM PLAN
1.1 Define your FMU
1.2 Agree FMU vision
1.3 Scope your FMU
10. STEP 1: DEFINE & SCOPE
3

Remember

The startup tasks (Startup A & B) prepared the ground for the 5 EAFM steps:

- Initiate stakeholder engagement
- Facilitate co-management
- Engage stakeholders

Note that this dialogue was initiated in the start up but it continues throughout the whole process

Tools to facilitate scoping

- Meetings for awareness raising, information giving and gathering
- Workshops for dialogue, learning, negotiating, joint decision making

Process:

- Outline the objectives and mode of working for the workshop
- Present the 5 EAFM steps for effective planning process (preparatory work done in Startup A)
- Engage stakeholders in defining and scoping the FMU

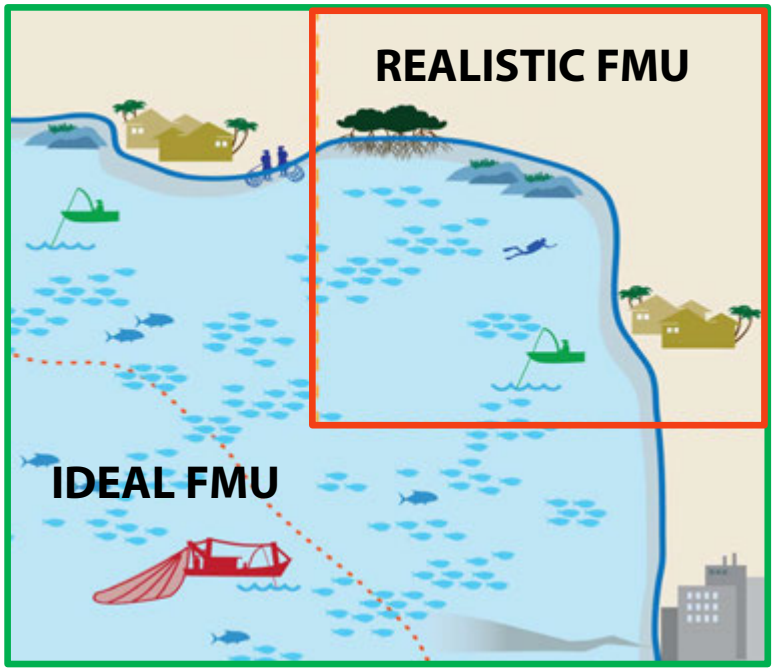
1.1 Define your FMU

Define your fisheries management unit (FMU) i.e. the fishery and area you will manage.

The FMU could be:

- Species-based e.g. tuna fishery
- Gear-based e.g. trawl fishery
- Area-based e.g. south coast of xxxxx
- Combination of all of these

FMU: ideal vs. reality



Reality – dealing with what is not included

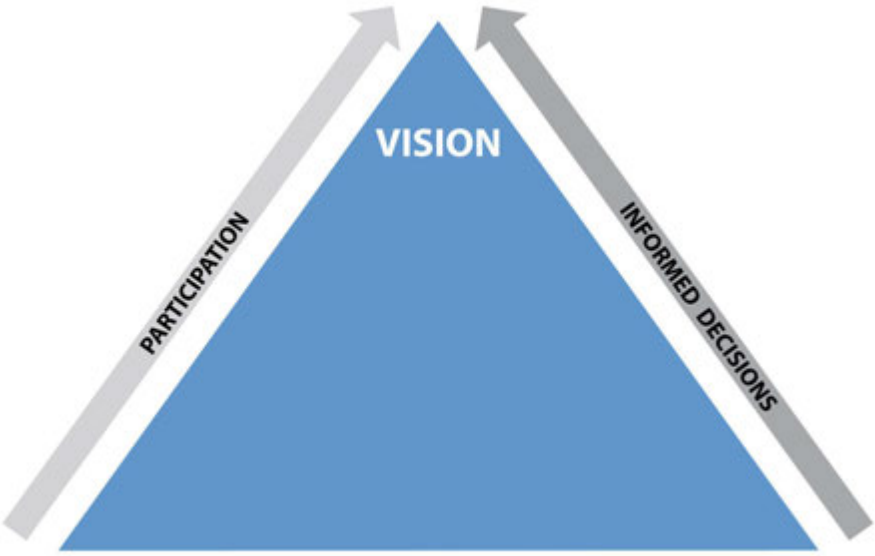
- Acknowledge lack of complete coverage of the FMU and consider this in the planning
- Engage "outsiders" in planning process, especially:
  - a stock(s) shared by two districts/ provinces/ countries
  - both small-scale and large-scale fishers harvest the same stock(s)
- Look for more appropriate scales later on in the process (e.g. joint management over 6 districts).

In Groups

Create a map of your FMU area. Include:

- Ecological boundaries
- Social boundaries (e.g. communities, fishing ports, etc.)
- Habitat areas
- Political jurisdictional boundaries (including national/province/district jurisdictions)

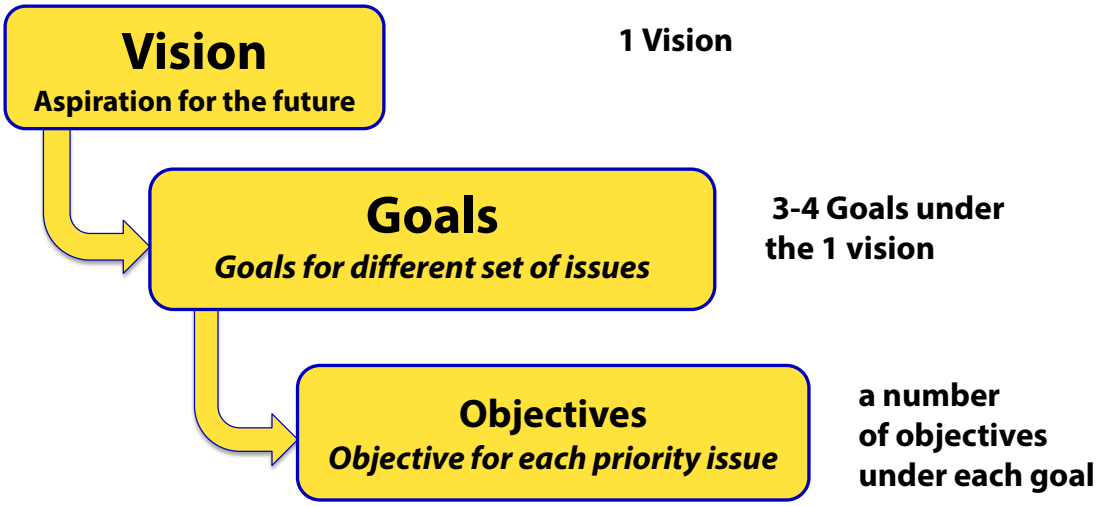
Building the EAFM plan



Vision, goals and objectives

- **Vision:** long-term aspiration (20-30 years) of what you would like the FMU to be like
- **Goal:** Shorter-term view (5-10 years) of what you are aiming for in terms of a set of issues (theme)
- **Objective:** What you are trying to achieve in terms of a specific issue

The hierarchy



1.2 Agree on FMU vision

What should FMU look like in 20-30 years (desired outcome of management)?

May include:

- Increased benefits to stakeholders
- Sustainable use of the resources
- Increased ecosystem services

Activity:
Agree on broad management vision for your FMU

1.3 Scope the FMU

You have defined the FMU and have a vision.

Now, the FMU needs to be scoped for relevant and useable information to serve as:

- Basis for planning and management activities (as included in the EAFM plan)
- Baseline for future monitoring and evaluation (M&E)

Scoping includes

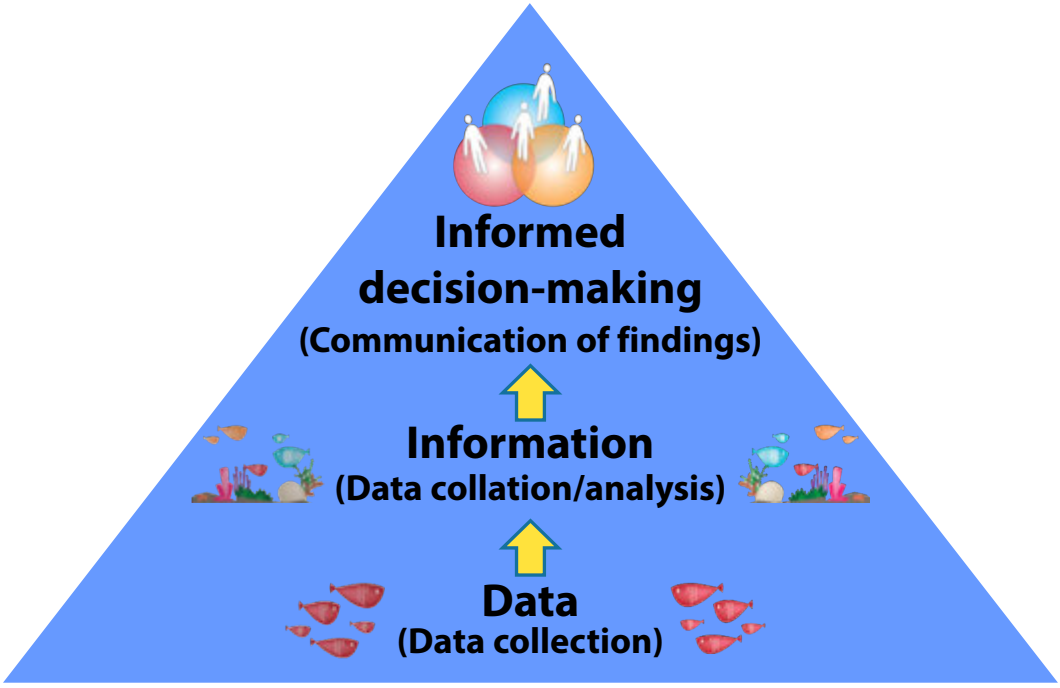
1. Collection of data

   - both existing and new

2. Analysis of data to provide information

3. Communicating the information to facilitate informed decision making

From data to informed decision making



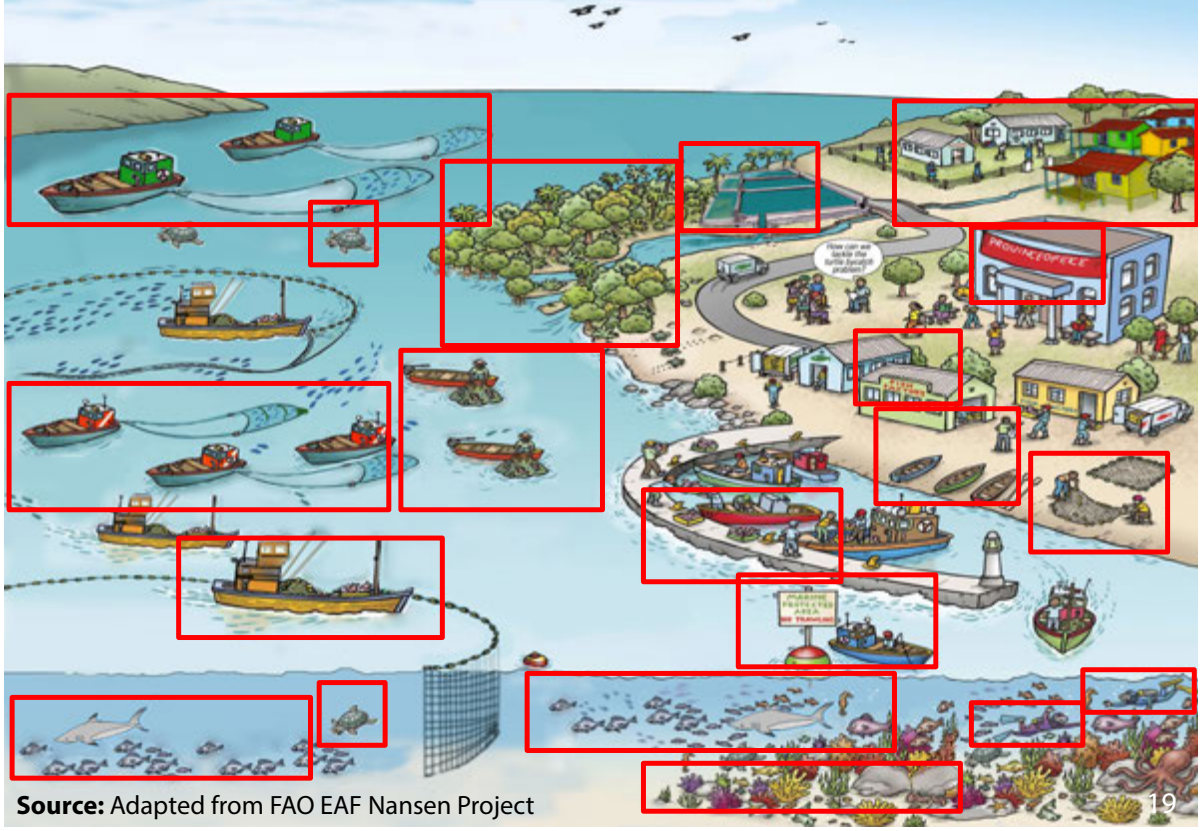
Types of data

Qualitative data (informal)	**Quantitative data** (formal)
Analyze "how and why" e.g. free and guided interviews (includes focus group); surveys using open-ended questions; participatory methods; observation; interpretation of documents	**Numerically measure "who, what, when, where, how much, how many, how often"** e.g. standardized interviews; biophysical surveys; surveys using closed questions

Information needed for the three components

- Ecological (including the fish)
- Human (including socio-economic)
- Governance (including legal and institutional)

Information needs



Source: Adapted from FAO EAF Nansen Project

19

Existing and new information

Large amount of data and information already collected; need to know where to find it:

- **Fishery data –** catch, effort, stock assessment, economics
- **Ecosystems –** biological/ecological, habitat, environment
- **Resource use activities –** who and how people use the resource and how they benefit
- **Governance –** what the current governance arrangements are

May have to collect some new data

After scoping...

1. Share and check the findings (see next 2 slides)

Remember this is not final and should be reviewed and added to periodically as more information is generated

Data and information sharing

- Little incentive to share data and information
  (exception: published scientific journals)
- Some sharing through obligations to regional bodies
  (e.g. SEAFDEC, FAO, etc.)
- Where sharing has occurred (e.g. joint research cruises), there are major benefits
- User pays schemes foster better sharing
  - E.g. Fishers paying for research from license fees
- Participatory EAFM should foster better sharing of information

Sharing information with stakeholders

Present information on the FMU and stakeholders based on the startup work → ***Seek agreement on the FMU and the major stakeholders***

Present findings on fishery background → ***Discuss the background information, asking stakeholders to identify mistakes and gaps***

Present vision → ***Discuss the broad vision and adjust if necessary***

Now finished Step 1.
We can insert the results into the EAFM plan

EAFM Management Plan for FMU X

1. **Vision (Step 1)**
2. **Background (Step 1)**

Possible subheadings for 2:

- The fisheries management unit
- History of fishing and management
- Current status of the fishery
- Existing management arrangements
- Socio-economic benefits
- Special environmental considerations
- Institutional aspects

Key messages

In Step 1:

- The fishery and boundaries of the unit to be managed are agreed (FMU)
- A common vision for the FMU is developed with stakeholders
- Background information on the existing ecological and human aspects and governance arrangements of the FMU is shared

In your groups

Identify:

1. Types of information you would collect for scoping

   Tip: Look at the different headings of the EAFM plan background

2. What methods might you use?

3. What sources of information would you use?

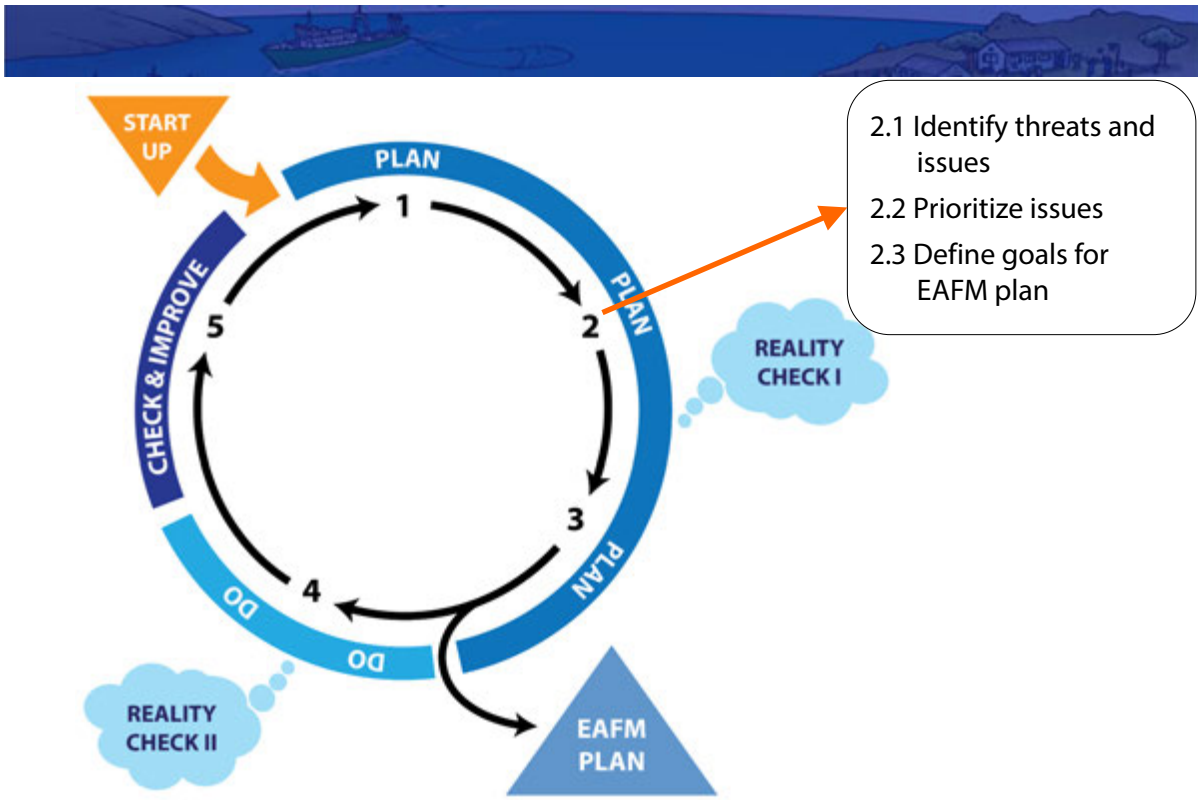
4. Record your outputs on a flipchart


11. Steps 2.1 – 2.3
Identify and prioritize issues and goals
Essential EAFM
Date • Place
Version 1
APFIC
BAY OF BENGAL LME
CORAL TRIANGLE INITIATIVE
ON CORAL REEFS, FISHERIES AND FOOD SECURITY
FAO
ima
NOAA
SEAFDEC
gef
Norad
SWEDEN
CTSP
Coral Triangle Support Partnership
USAID
FROM THE AMERICAN PEOPLE
ASIA

Session objectives

After this session you will be able to:

- Identify your FMU-specific issues
- Discuss how to prioritize issues through risk assessment
- Develop goals for the EAFM plan



11. STEP 2: IDENTIFY & PRIORITIZE ISSUES & GOALS 3

2.1 Identify threats and issues for the FMU

- What are the threats and issues for your FMU?
- Cover all 3 EAFM components
- Guided by high level policy goals – international, regional and national policy

Causes and effects

- There is a wide variety of threats and issues

  - some are very broad (e.g. climate change, pollution)

  - some are very specific (e.g. bombing reefs)

- Causal chain analysis is one way to think about these differences

Causal chain analysis

DRIVER	**GROWTH IN POPULATION NUMBER AND WEALTH (DEMAND FOR SEAFOOD)**
ROOT CAUSE	**"OPEN ACCESS" POLICY**
PROXIMATE CAUSE	**TOO MANY BOATS & NON-SELECTIVE FISHING GEARS**
ISSUE	**DECLINING FISH STOCKS**

Causal chain analysis

DRIVER	**INCREASING WEALTH IN ASIA (demand for high price live fish)**
ROOT CAUSE	**ILLEGAL FISHING (lack of enforcement)**
PROXIMATE CAUSE	**DESTRUCTIVE FISHING PRACTICES Bombing and cyanide**
ISSUE	**DEPLETED FISH STOCKS & DEGRADED CORAL REEFS**

In your groups

1. Day 1: you brainstormed all threats and issues related to fisheries and associated ecosystem
2. Day 1: you also grouped them under each of the 3 EAFM components
3. Now: revisit the issues and modify them to be relevant to your FMU at a level that can be addressed by management (remove drivers and look for root and proximate causes)

2.2 Prioritizing issues

- Stakeholders will generate a long list of issues
- Need to prioritize issues as they cannot all be managed at once

To prioritize them:

1. Set aside any that can NOT be addressed by management
2. Use a tool to sort them, for example:
   - Simple ranking
   - Risk assessment

Risk assessment

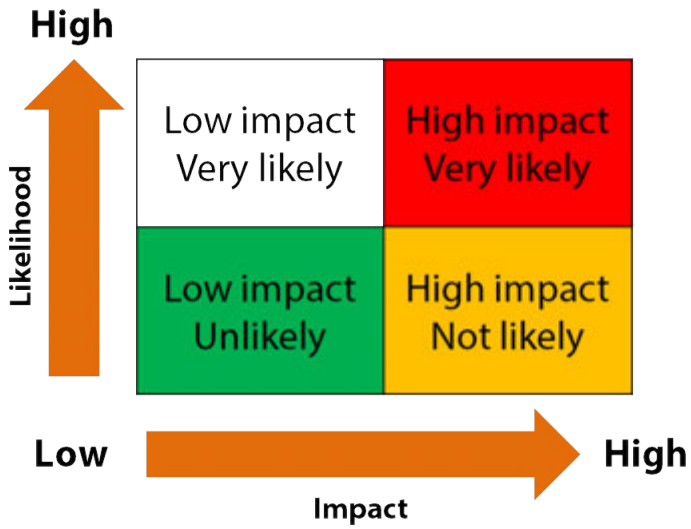
- How likely is it to go wrong? (likelihood)
- What would be the consequences of it going wrong? (impact)
- Qualitative (ranking) to quantitative (risk analysis)

RISK = LIKELIHOOD x IMPACT

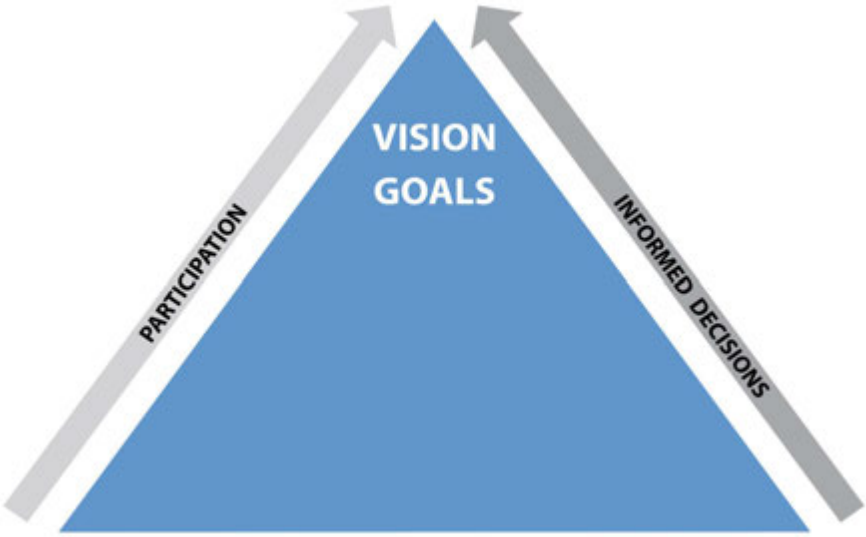
Prioritization based on risk

Impact
-how much change would occur

Likelihood
-probability of it occurring



Building the EAFM plan



2.3 Goals

Goals can now be developed for a set of issues.

A goal paints a picture of what it you want the FMU to look like in the future

For example:

Theme: Fishery and ecological issues

"Restored and sustainably managed fisheries and other living marine resources"

Theme: Habitat issues

"Restored and conserved vulnerable and critical marine habitats"

Theme: Livelihood issues

"All communities that depend on the fisheries resources are restored to and maintained above the poverty level"

EAFM Plan outline

Now finished Step 2.
We can insert the results into the EAFM plan

EAFM Management Plan for FMU XX

3. Major threats and issues (Step 2)

Possible subheadings for 3

- **Fishery resource issues**
- **Other ecological issues**
- **Socio-economic issues**
- **Governance issues**

4. Goals (Step 2)

3-4 based on themes

Key messages

In Step 2:

- Issues are prioritized so that only the most important are addressed initially in the EAFM plan
- Based on themes for prioritized issues, goals are agreed for each theme

In your groups

1. Take your issues, plot them on a 2x2 matrix and then identify the high risk issues.

   Impact vs. likelihood (Hi/hi – Lo/lo)

2. Take the Hi/hi risks and group them up under 3-5 themes (set of issues). *Possibly the 3 EAFM components*
3. Identify a goal for each theme

Output: FMU high level risk issues grouped under themes and a goal for each theme

12. Reality check I

Essential EAFM

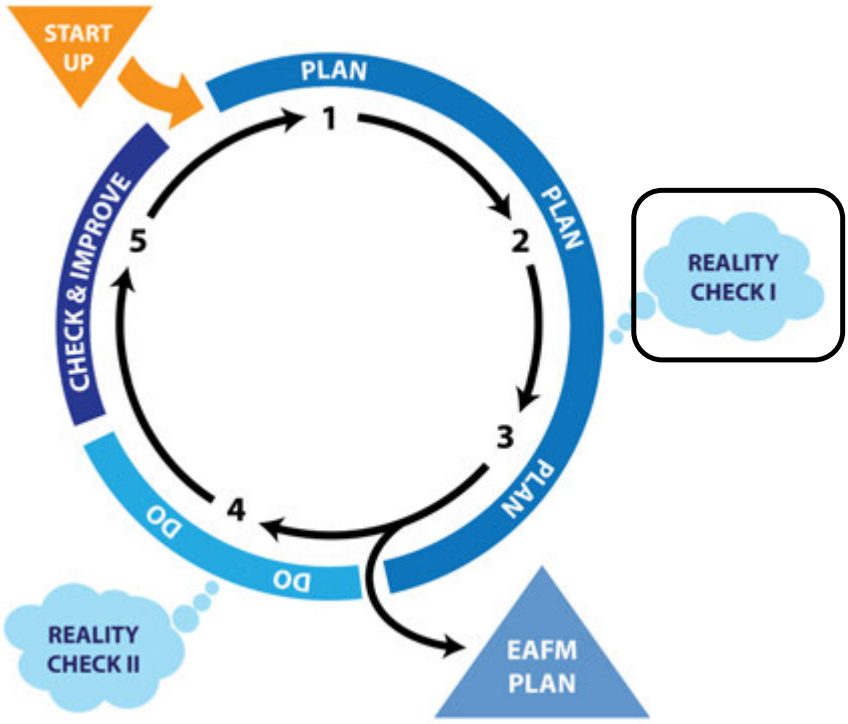
Date • Place

Version 1

Session objectives

After this session you will be able to:

- Identify the constraints and opportunities in meeting your FMU goals
- Use facilitation skills with co-management partners in focus group discussions (FGDs)
- Understand the need for conflict management in EAFM and practice a range of techniques



12. REALITY CHECK 1 3

Constraints and opportunities to meeting the goals

- For each goal you identified in step 2.3 there will be constraints and opportunities to achieving it
- These may include:
  - cost
  - lack of political, stakeholder and institutional support
  - lack of human capacity/skills
  - insufficient time
  - Lack of data and information
- Some of these may have already arisen as governance issues

In your groups

Identify the constraints and opportunities to achieving your FMU goals

Output:

-constraints on green cards

-opportunities on yellow cards

In your groups

Revisit your FMU maps and plot areas where conflicts are likely to occur and who the players are

Focus group discussions (FGD)

- A tool to work with stakeholders to reduce conflict and harness opportunities
- Role of the facilitator:
  - Raise issues identified in a discussion guide
  - Stimulate discussion, in-depth reflection and solution finding
- Participants frame questions, concepts and develop their own priorities

Facilitator expected to…

- Guide each session
- Not be too intrusive
- Be structured in their approach
- Allow the discussion to flow freely
- Guide discussion through a few general questions
- Refocus the discussion as necessary
- If participants do not raise important issues, intervene
- Build rapport (use active listening)
- Allow everyone to be heard and understood

Activity

Hold a FGD on one topic from next slide. Feedback for all to learn from.

Process:

- Form groups each with 1 facilitator, 1 observer, others = respondents
- Pick one topic (in 30 seconds) then prepare silently for 3 minutes individually
- Facilitator to initiate the FG discussion for the given time
- Observer to silently monitor the process and capture the key points
- Feedback from observer, facilitator, trainer & others

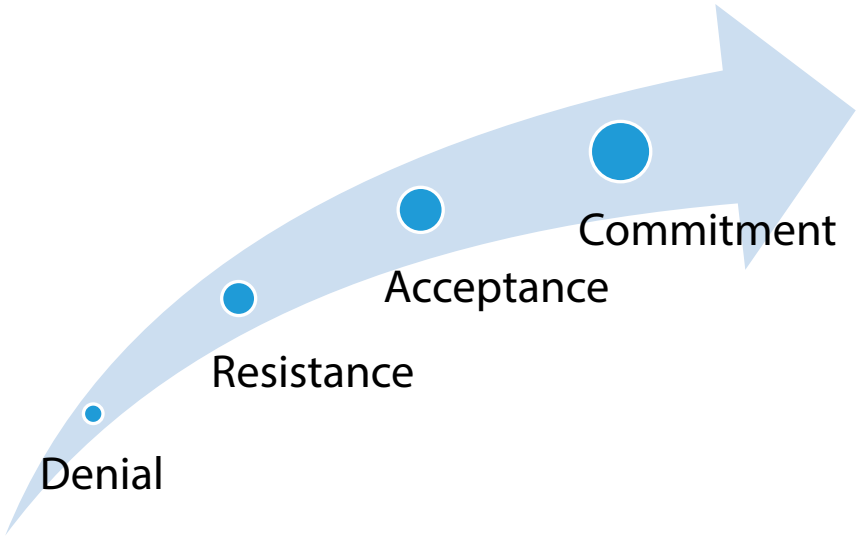
FGD topic options

1. EAFM plan exists but there is little political will; government lacks interest; it has not delivered on promises. Suggestions?
2. The government, police and navy should enforce compliance – do they?
3. Rules and regulations have been set as a result of the EAFM Plan but one group of stakeholders is not doing what it is supposed to do. Suggestions?

Conflict in EAFM

- Many of the constraints and opportunities may involve conflict:
  - in views and opinions; and
  - of a more physical nature
- Where is conflict likely to occur in the EAFM process?
- Is conflict always bad?
- People tend to resist change; conflict needs to be seen as part of change

Conflict as change process



Conflict management

WHAT? A form of facilitated negotiation

HOW? Apply skills that help people express differences and solve problems for a WIN-WIN outcome

Negotiating

Questioning

Listening

Mediating

Negotiation strategy

- Understand the conflict
  - who, what, why, etc.
- Act as the facilitator
- Move towards a win-win outcome
  1. Prepare & analyse
  2. Discuss the options
  3. Propose and seek solutions
  4. Bargain

Powerful questioning

Ask lots of questions and listen actively to the answers!!

1. Questions to challenge assumptions
2. Questions to get out of stalemates
3. Questions to stimulate thinking or convey a vision
4. Questions to float an idea

Negotiation

http://www.youtube.com/watch?v=1FeM6kp9Q80

Key messages

- In Reality Check I, the constraints and opportunities to achieving the EAFM goals are assessed
- Facilitated focus group discussions and conflict resolution can help resolve many constraints

Win-win solutions role play

In groups:

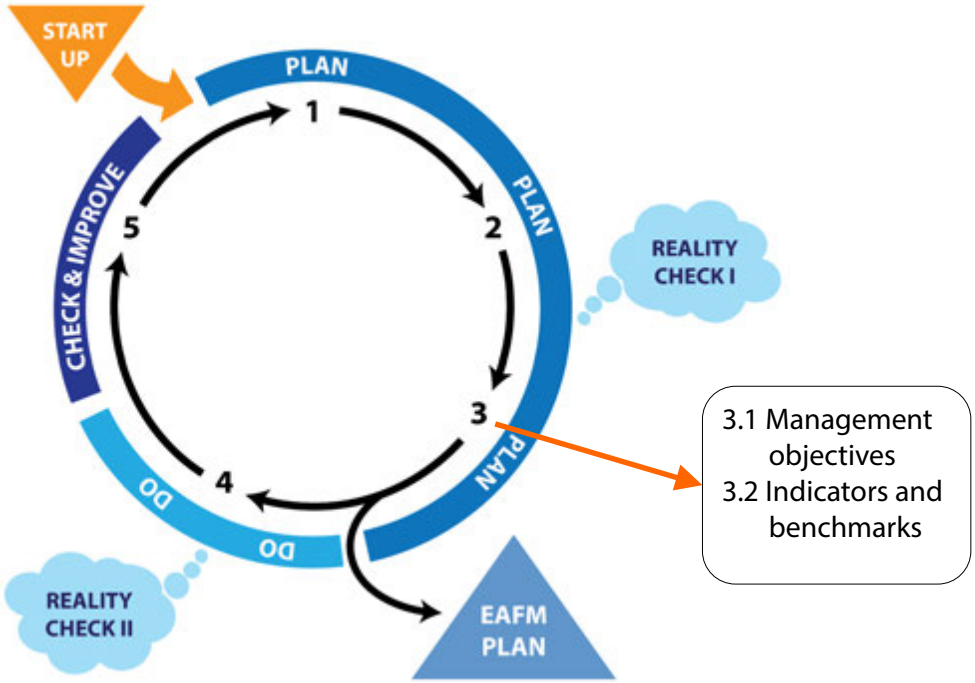
1. Read your conflict scenario and decide which role you each will play
2. Prepare your role (arguments / character) for 5 minutes
3. Role play the scene
4. Provide feedback


13. Steps 3.1 & 3.2
Develop objectives, indicators and benchmarks
Essential EAFM
Date • Place
Version 1

Session objectives

After this session you will be able to:

- Develop management objectives
- Develop indicators and benchmarks related to the objectives



13. STEP 3. DEVELOP OBJECTIVES, INDICATORS & BENCHMARKS 3

Building the EAFM plan

3.1 Developing objectives

Priority threat/issue → **Management** objective

Ask:
What specifically for this issue do you want to achieve?

Objectives

What you want to achieve!

Management objective

Achievable through management actions

👍 management objective = To reduce the % of juvenile fish caught

👎 management objective = Improve the health of the ecosystem

3.2 What is an indicator?

- It measures the current status at one point in time (e.g. temperature, number of fish, area of mangroves)
- When compared with an benchmark, the **indicator provides a measure** of how well you are meeting the objective

An indicator must be linked to the objective

Fishery resources example

Goal	**Maximum sustainable yield for fishery**
Objective	Reduce the % of juvenile fish caught in the fishery
Indicator	% of juvenile fish at sample sites

Ecological example

Goal	Minimized impacts on vulnerable and endangered species
Objective	Minimize the number of turtles caught in the fishery
Indicator	Number of turtles caught (based on sample)

Social example

Goal	Maximum social benefits for the fishery
Objective	Increase/maintain employment in the harvest and post-harvest sectors
Indicator	Number employed in the harvest/post-harvest

Governance example

Goal	**Improve compliance and enforcement**
Objective	Strengthen compliance and enforcement cooperation amongst different agencies
Indicator	Coordination group formed, multi-agency compliance plans formulated & groups meeting regularly with agreed minutes

Indicators must be "SMART"…

- **S**pecific (in terms of quantity, quality and time)
- **M**easurable (easy to measure with acceptable cost)
- **A**vailable (from existing sources or with reasonable extra effort)
- **R**elevant (to objectives and sensitive to change)
- **T**imely (to ensure usefulness to managers)

What is a benchmark?

- A target, limit, or baseline that provides a reference for comparing the indicator

  Target = where you want to be

  Limit = where you do not want to be

  Baseline = where you have come from

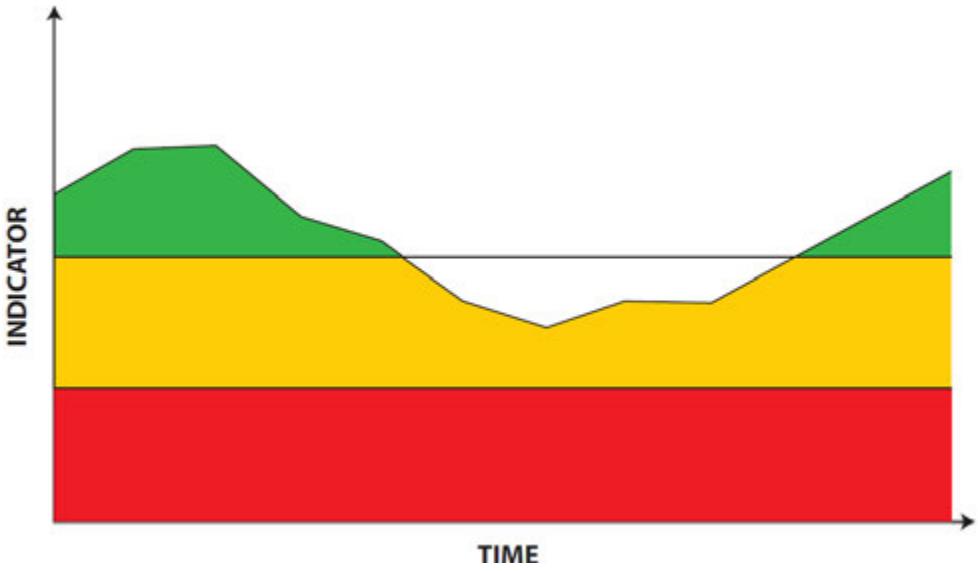
(e.g. Target: Increase the area of mangroves by xx% by 2020)

Remember: when the indicator is compared to benchmark it tells you how well you are meeting the objective

Simple example

- Objective:
  - Reduce the fever of a sick patient
- Indicator:
  - The patient's body temperature
- Benchmark:
  - 37 degrees Celsius in 2 days (target)

Indicators and benchmarks



Data & information for the indicators and benchmarks

- Data and information are needed for the indicators and benchmarks
- Use existing data
- Collect new data, if necessary
- Use participatory approaches, if possible

Note: Data & information is a cross-cutting theme. It was needed for scoping to set the background and now for indicators and benchmarks

Key indicator questions

- What: what needs to be measured?
- Who: who will measure them?
- Where: where will the data come from?

Participatory M&E

- Stakeholders are involved in:
  - developing the indicators and benchmarks
  - collecting data
  - deciding on the methods to use

- Indicators developed locally have more relevance

Key messages

In Step 3.1-3.2:

- Management objectives are developed. This involves agreeing on what is to be achieved for each high-priority issue
- Objectives are paired with indicators and benchmarks to be able to assess whether the objective is being achieved

In your groups

1. Choose at least 4 issues that were categorized as hi/hi (2 ecological (1 fish & 1 environmental)); (1 human & 1 governance).
2. Develop a management objective for each issue
3. Select indicator(s) and benchmark(s) for each management objective

Outputs- Goal:

Issue:

Objective:

Indicator:

Benchmark:


14. Step 3.3–3.5
Management actions, compliance, finance & finalize EAFM plan
Essential EAFM
Date • Place
Version 1
CORAL TRIANGLE INITIATIVE
ON CORAL REEFS, FISHERIES AND FOOD SECURITY
ima
gef
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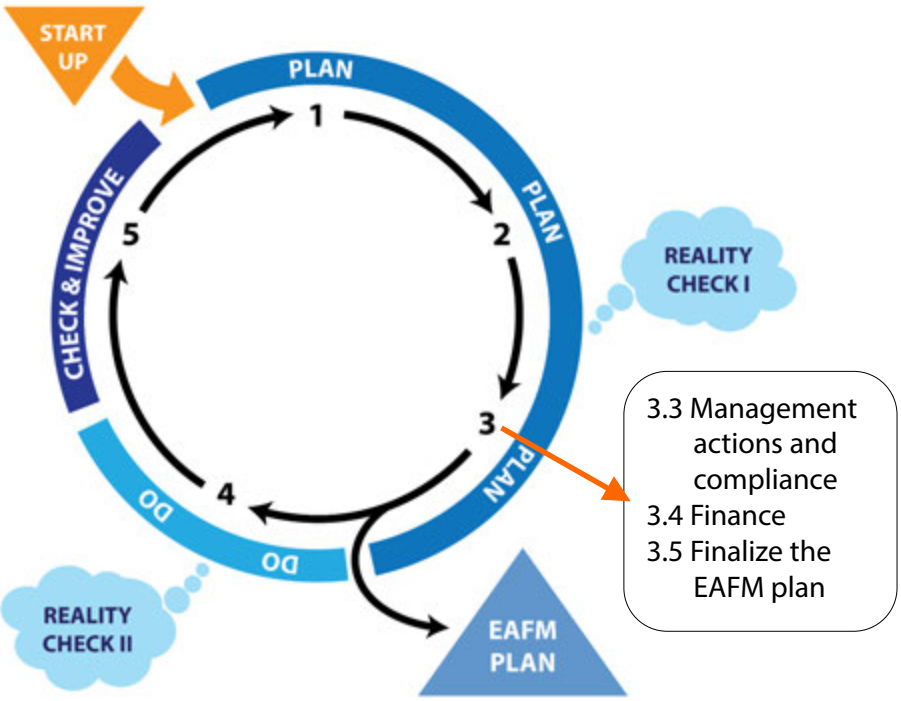
SWEDEN
Coral Triangle Support Partnership
USAID | ASIA
FROM THE AMERICAN PEOPLE

Session objectives

After this session you will be able to:

- Agree on management actions and how stakeholders will comply with these
- Include financing mechanisms in the plan
- Bring it all together – finalize the EAFM plan



14. STEP 3: ACTIONS, COMPLIANCE, FINANCE & FINALIZE 3

NB: Actions will link across objectives

3.3 Management actions

An action that will help meet the objective

Management actions could include:

- Technical measures
  - Catch and effort controls (e.g. gear, limited entry)
  - Spatial and temporal controls (e.g. MPAs, seasonal closures)
- Ecosystem manipulation
  - Habitat restorations (e.g. plant mangroves)
- Community-based
  - Income diversification (e.g. alternative livelihoods skills)

Management actions contd.

- Human capacity
  - Fishery management skills
- Strengthen institutions
  - Increase coordination (e.g. interagency task forces)
- Work with others to achieve objectives outside your mandate
  - ICM, MSP, Environment Agency, etc.

Rules and regulations

- In the EAFM Plan
  - Management actions should be generic
    e.g. limit the mesh size of the cod end

- In the Rules and regulations
  - Should be specific
    e.g. minimum mesh size = 2.5cm

- Rules and regulations can be formal or informal
  e.g. government regulations or informal e.g. community rules

Note: EAFM plans are longer-lived than rules & regulations, which is why the actions in the EAFM plan should be more generic. Rules and regulations are more easy to change

Grouping management actions

- The same management action (e.g. no-take MPA) may be linked to several objectives and have the same indicator and benchmark

- Duplicate management actions can be deleted, as long as the link to the specific management objective is not lost

Compliance & enforcement

When rules and regulations are developed how to ensure they are complied with?

Range of compliance methods available:

- For fisheries we use the term monitoring, control and surveillance (MCS)
  - Monitoring - data/information gathering for compliance
  - Control - rules/controls applied to the fishery
  - Surveillance - patrolling/enforcement

Monitoring, control, and surveillance

MCS needs:

- Cooperation and coordination across several agencies and stakeholder “buy-in”
- Training & resourcing
- Education and awareness raising
- Policing, prosecuting & sentencing

Top–down

Government MCS:
Fishery patrols enforcement

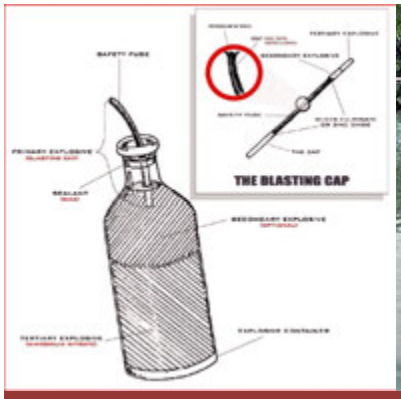
Limited capacity

Corruption issues?

Bottom-up

Local MCS:

Co-management fish wardens and "eyes on the water" improves safety!



Top-down vs. bottom-up

- Often a combination of both is needed
- Developing the EAFM Plan with full stakeholder participation increases “buy-in”
- Stakeholder “buy-in” reduces the need for enforcement i.e. it generates self-compliance

Port monitoring – catches/landings and gear

Example: Monitoring fishing zones

VMS to track larger vessel compliance
GPS for small boats

Visual systems wheelhouse markings

3.4 Financing

- **Budget**
  - How much?
  - Where from? (Existing? New?)
  - Existing budget and budget cycles
  - Need to consider who will/can pay, equity, impacts
- **Sources of financing**
  - Government (part of the normal budget cycle)
  - Government (special grant)
  - Donors (may cover startup costs but not ongoing)
  - Grants from NGOs
  - Fishing levies (e.g. licenses, penalties)
  - Stakeholders (share the costs)

In your groups

1. Produce a set of management actions for the four objectives you identified earlier
2. For each action that requires rules and regulations, identify the appropriate compliance and enforcement actions, taking practicalities and costs into account
3. Agree on financing mechanisms to support the management

Output: Add these to your FMU work

Now almost finished Step 3
We can insert the results into the EAFM Plan

EAFM Management Plan for FMU XX

5. Objectives, indicators and benchmarks (Step 3)
6. Management actions (Step 3)
7. Compliance (Step 3)
8. Data and info needs – source of data, etc (Step 3)
9. Financing (Step 3)

3.5 Finalizing the EAFM plan

- You have now completed Section 1 – 9 of the EAFM Plan
- The last sections, simply link to elements that will be developed in Step 4 and 5
  - How the plan is to be communicated (e.g. link to a communication plan)
  - Frequency of reviews (e.g. link to M&E)

EAFM plan is complete

EAFM Management Plan for FMU XX

1. Vision (Step 1)
2. Background (Step1)
3. Major threats and issues (Step 2)
4. Goals (Step 2)
5. Objectives, indicators and benchmarks (Step 3)
6. Management actions (Step 3)
7. Compliance (Step 3)
8. Data and info needs – source of data, etc. (Step 3)
9. Financing (Step 3)
10. Communication – link to communication strategy (Step 4)
11. Review of the plan – link to M&E (Step 5)

Key messages

In Step 3.3 – 3.5:

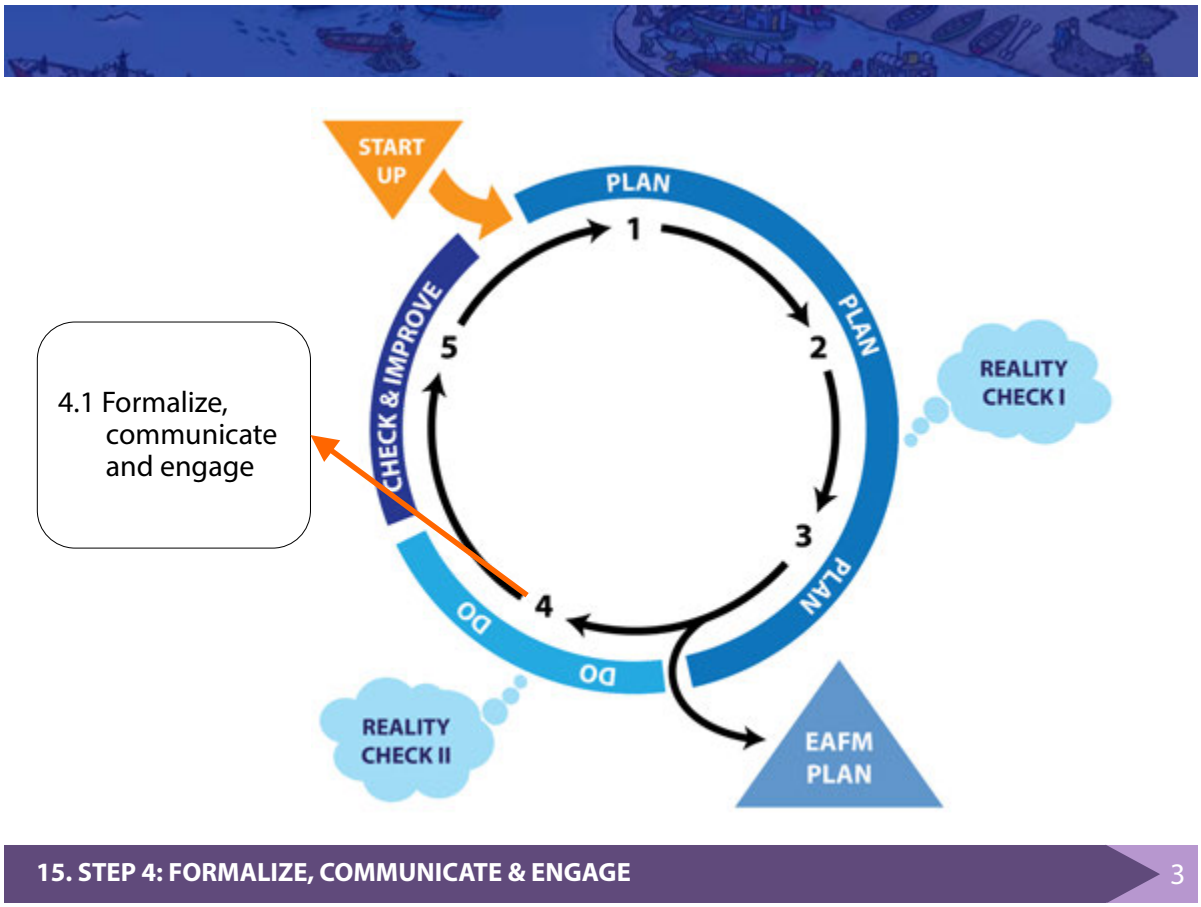
- Management actions are decided for each objective
  - Compliance with the management actions is also considered
- Duplicate actions are removed
  - One management action can often address several objectives
- The outputs from the preceding steps are used to create the EAFM plan
  - Included in the plan are details on finance and references to communication and review


15. Step 4.1
Formalize, communicate & engage
Essential EAFM
Date • Place
Version 1

Session objectives

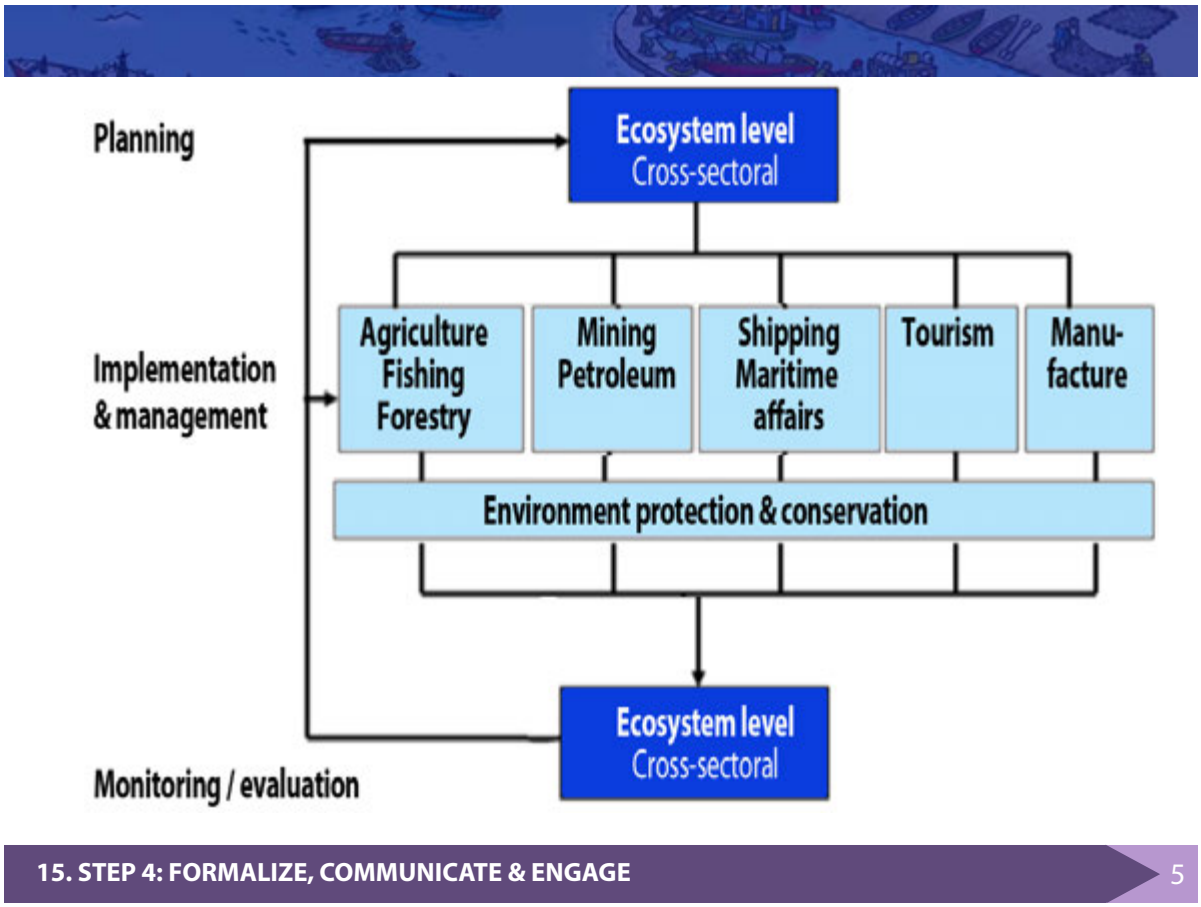
After this session you will be able to:

- Develop an implementation work plan
- Summarize what is meant by formal adoption of the EAFM plan
- Develop a communication strategy


START UP
PLAN
1
2
3
4
5
PLAN
PLAN
DO
DO
CHECK & IMPROVE
REALITY CHECK I
REALITY CHECK II
EAFM PLAN
4.1 Formalize, communicate and engage

Implementing the EAFM plan

- Governments, by and large, are organised into sectors (e.g. mining, transport, agriculture)
- Implementation will require working with other sector agencies
- Each agency should have a clearly defined role and responsibility
- Implementation at the grass roots level (e.g. fishing communities) will be less sectoral, but will still require coordination and cooperation across agencies


Planning
Ecosystem level
Cross-sectoral
Implementation
& management
Agriculture
Fishing
Forestry
Mining
Petroleum
Shipping
Maritime
affairs
Tourism
Manu-
facture
Environment protection & conservation
Ecosystem level
Cross-sectoral
Monitoring / evaluation

Plans into action

EAFM plan + Implementation work plan =

ACTION

Implementation work plan

- Necessary to move ahead with implementing EAFM plan
- Most effective if mainstreamed into annual budget cycles and plans, but this may take time

- **WHAT** tasks need to be done?
- **WHO** does them?
- **WHEN** will they be done?

NEED TO WORK WITH OTHER AGENCIES

Formalizing the EAFM plan

Legitimizing the plan

- Validation and “buy-in” by stakeholders
- Endorsement and adoption of the plan
- Plan is legally and socially enforceable by the relevant authority or groups

Formalizing the EAFM plan

Formalization will be country-specific

- Decree
- Ordinance
- Proclamation
- Local government acts

Important to link to existing legislation

e.g. Fishery Act

Communication Strategy

Purpose → Sharing the EAFM plan and results with target audiences

How?

→ Identify target audiences

→ Develop approaches for communicating with each

→ Develop key messages

→ Timing

Other considerations
Depending on target audience

- What is your budget for communication?
- What media will be suitable and effective?
- What languages?
- Timing and location?
- How will you know how well your message has been interpreted and understood?

Communication Strategy

Target audience	Communication method (how & where)	Key messages	Timing

Key messages

In Step 4:

- An implementation workplan is needed to put the plan into action
- The plan is formalized (to avoid being just another document on someone's desk)
- The EAFM plan needs to be communicated widely through a communication strategy

16. Reality check II

Essential EAFM

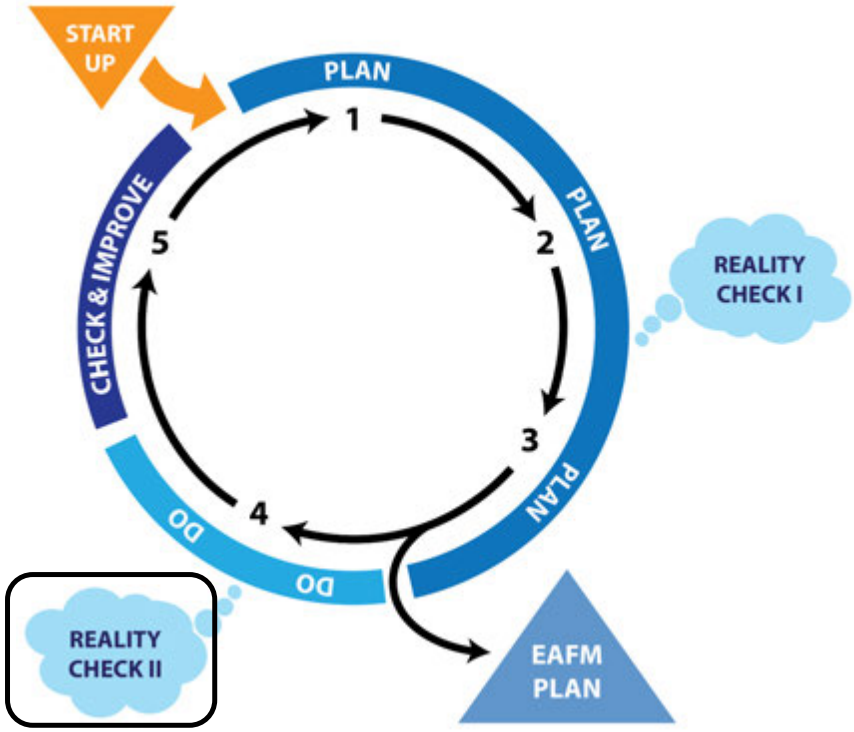
Date • Place

Version 1

Session objectives

After this session you will be able to:

- Check on the status of the EAFM plan implementation
- Consider whether implementation is in line with the principles of EAFM
- Check on the practicalities – is the supporting environment in place?
- Re-visit constraints and opportunities in meeting your FMU goals



16. REALITY CHECK II 3

Reality Check II

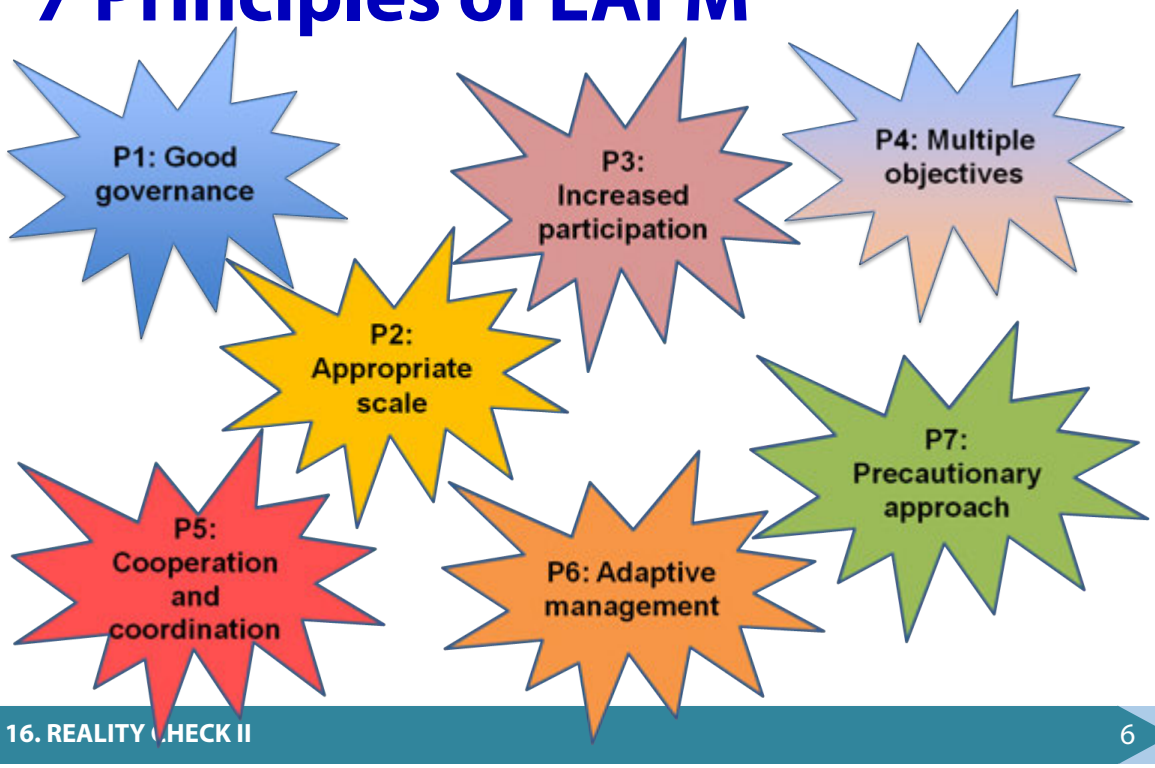
Where are we now in the EAFM cycle?

Check on whether the main mechanisms, processes, resources and institutions for EAFM implementation are in place

Activity: In your groups

1. There are 7 principles (on white paper)
2. There are a number of questions (on blue paper)
3. Match the questions to the principles

7 Principles of EAFM



Key success factors

- Good governance with effective compliance
- Co-management with empowered stakeholders
- Adaptive management

Also need: a supporting environment

1. Adequate resources (personnel, equipment, training) for EAFM?
2. Adequate financing?
3. Adequate data and information to support management?
4. Effective communication strategy?
5. Effective monitoring and evaluation (M&E)?

Activity: As a large group

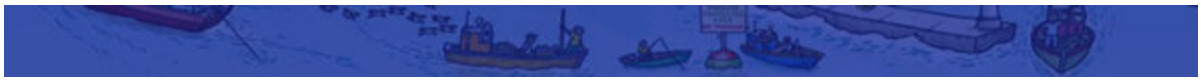
1. Take the "constraints" (challenges) and "opportunities" you developed earlier
2. Place the opportunities on the floor inside the circle and the constraints outside the circle
3. Discuss how valid these still are for achieving your FMU goals. Amend as appropriate.

Key messages

In Reality Check II:

- Check whether everything is in order before putting to much of the EAFM plan into action
- Consider whether the EAFM principles are being met
- Check whether the practical arrangements are in place (the supporting environment)

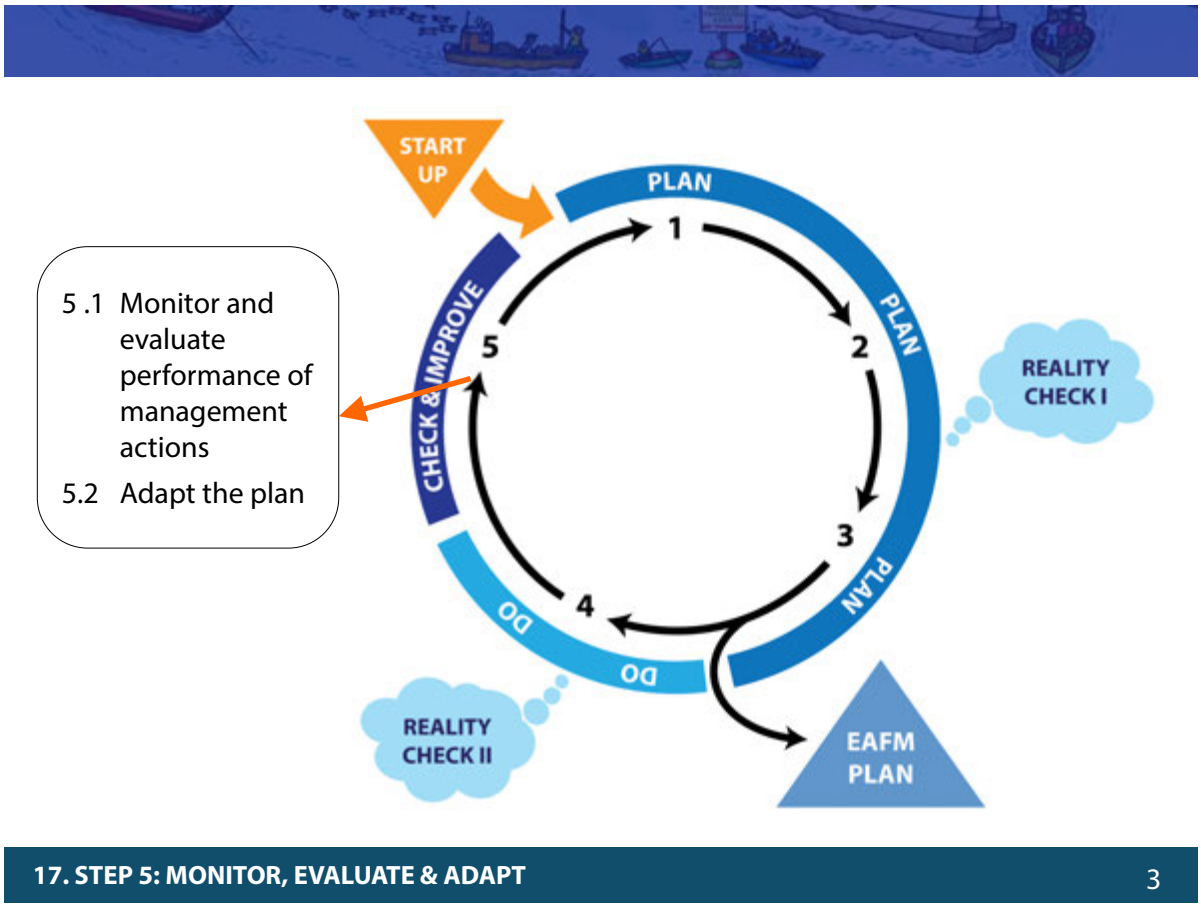

17. Steps 5.1 & 5.2
Monitor, evaluate & adapt
Essential EAFM
Date • Place
Version 1



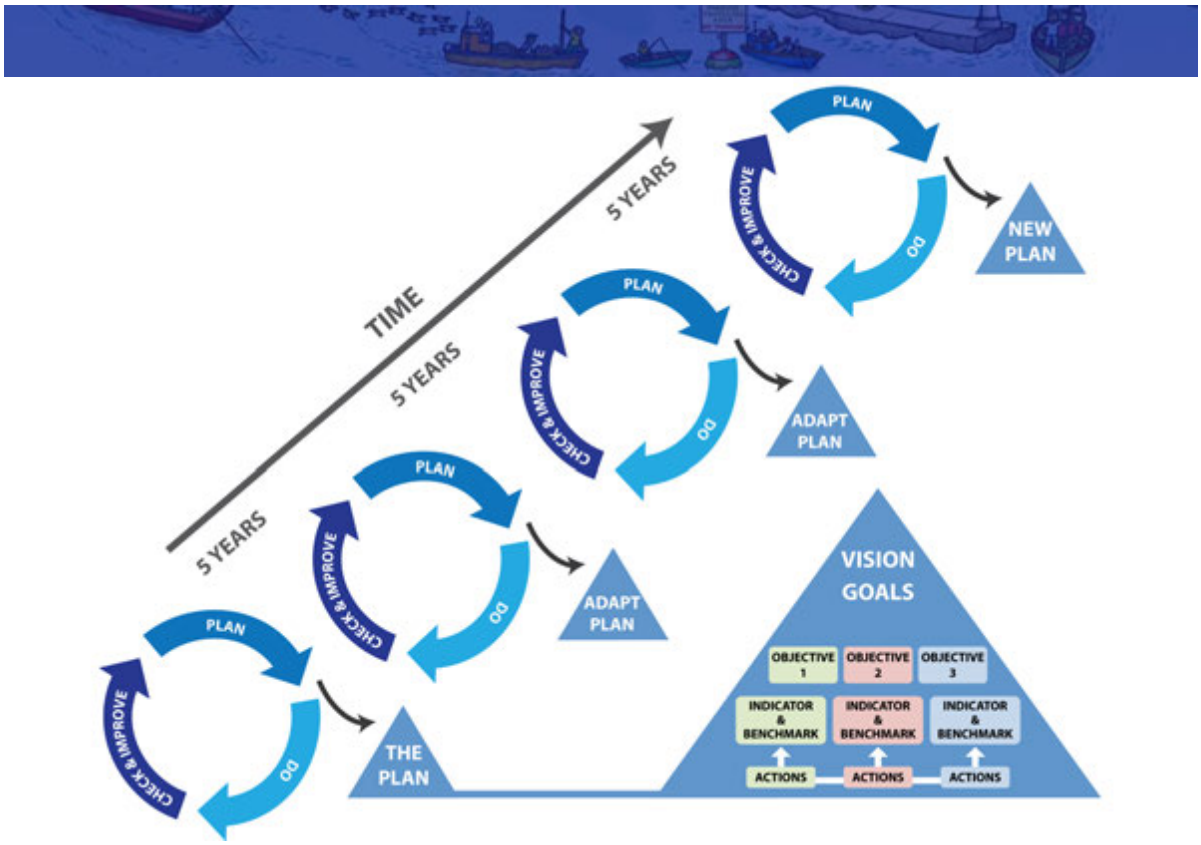
Session objectives

After this session you will be able to:

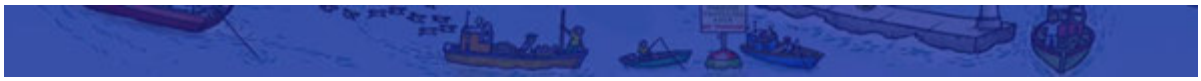
- Monitor how well management actions are meeting goals and objectives
- Understand what has to be monitored, why, when, how and by whom
- Evaluate monitoring information and report on performance
- Review and adapt the plan



17. STEP 5: MONITOR, EVALUATE & ADAPT 3



17. STEP 5: MONITOR, EVALUATE & ADAPT 4



Step 5 is a critical step in the management cycle

- Regular monitoring and reviews of management actions are required to assess progress towards achieving objectives
- Monitoring and evaluation (M&E) provides the critical information for adaptive management

NOTE: DO NOT GET CONFUSED WITH "MONITORING" IN MCS (which means monitoring for compliance and enforcement, not the broader monitoring needed here)

The sub-steps

5.1 M&E

- Monitor: Collect data (focus on indicators)
- Evaluate: Collate results of monitoring and evaluate management performance against benchmarks, and report

5.2 Review and adapt the EAFM plan

- Review: Regular reviews of the plan
- Adapt: Adapt the plan as required

Monitor

- Collect data for each indicator

  Avoid unfocussed data collection but do not ignore relevant information (e.g. fishermen observations, environmental change)

- Monitoring continues throughout the life of the plan
- Frequency of monitoring depends on the indicator
  - Some indicators will require monthly, some seasonal and some annual sampling

Evaluate management performance

Assess each indicator against its benchmark to measure the efficacy of each management action. Example:

Objective: 50% increase mangrove habitat by 2020

Indicator: Hectare of mangroves

Benchmark (baseline): 10,000 ha

Benchmark (target): 20,000 ha

Indicator after management action: 5,000 ha

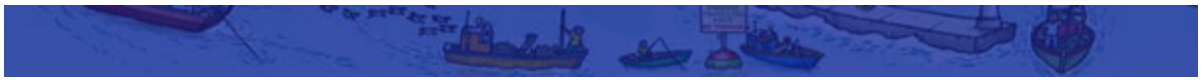
Performance: Mangroves have reduced by 5000 ha

Ineffective action!!!

Evaluate performance contd.

- Evaluate all indicators
- Collate, analyze and describe the overall performance of management actions

Assess other sources of information that confirm or refute the indicator evaluation
e.g. cross-validate with stakeholder observations

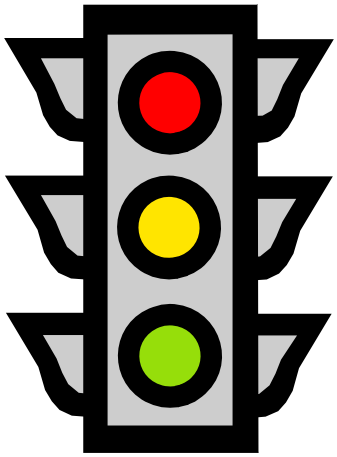


Communicating and reporting

- The evaluation needs to be communicated
- Different users will require different reporting styles
  - Brief and hard-hitting for policy makers
  - Simple and easy to understand for community stakeholders

Traffic light system

An example of a simple reporting system



Red
performance is well below benchmark

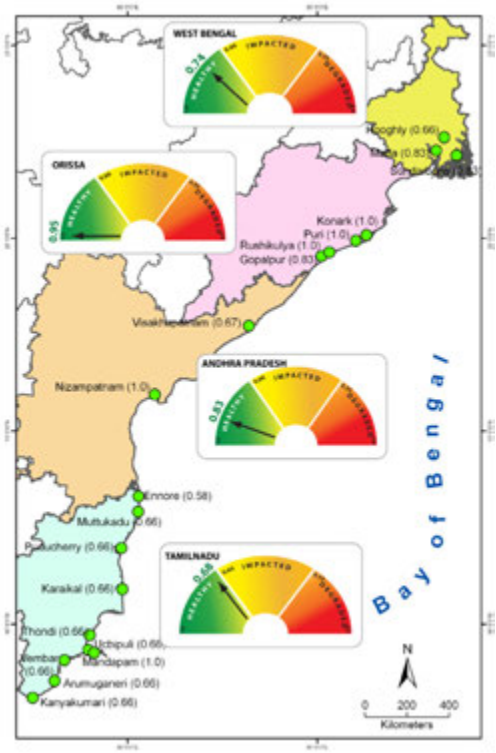
Orange
performance is close to benchmark

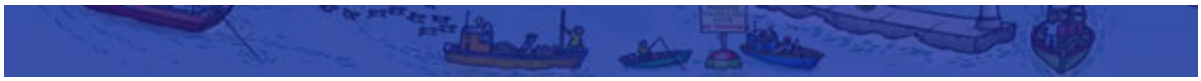
Green
performance is at or above benchmark

Instrument panel

Another example of a simple reporting system

Bay of Bengal Ecosystem health





5.2 Review and adapt

- The evaluation report provides the basis for the participatory review of the plan

- Reviews
  - Short-term (annual evaluation)
  - Long-term (3-5 years evaluation)

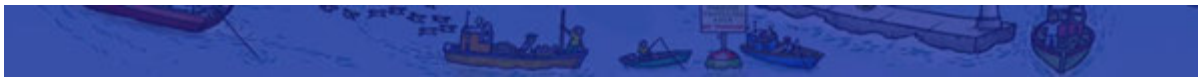
Short-term reviews

- If the plan is working, celebrate!!
- If not, establish why
- Adapt plan:
  - Management actions
  - Compliance
  - Governance arrangements

Longer-term reviews

Carry out a comprehensive review every 3-5 years. May be necessary to:

- Reconsider goals, objectives, indicators, etc.
- May need to rethink the whole plan and management system
- Often carried out by independent auditor



Monitoring

1 YEAR

Short-term reviews
- Evaluate and adapt
- Management actions
- Compliance arrangements
- Governance arrangements

3-5 YEAR

Long-term reviews
- Evaluate and adapt
- Reconsider goals, issues and linked objectives, actions and indicators

Key messages

In Step 5:

- Monitor, evaluate and adapt completes the EAFM cycle ready to enter the next cycle
- Yearly review: are you meeting objectives? (if not, adapt the management actions and compliance arrangements)
- 5-yearly review: are you meeting objectives and goals? (if not, may be necessary to also revisit issues and goals as well)

EAFM QUIZ!

☺

Home work: preparing presentations for day 5

- EAFM plans
- No PowerPoints
- Use flipcharts, cards…..be creative!
- Trainers need to see learning and applying EAFM concepts and tools
- Everyone participates
- Supportive environment – constructive feedback

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