

1. Overview of EAFM

Source : http://www.boblme.org/eafm/course_materials.html



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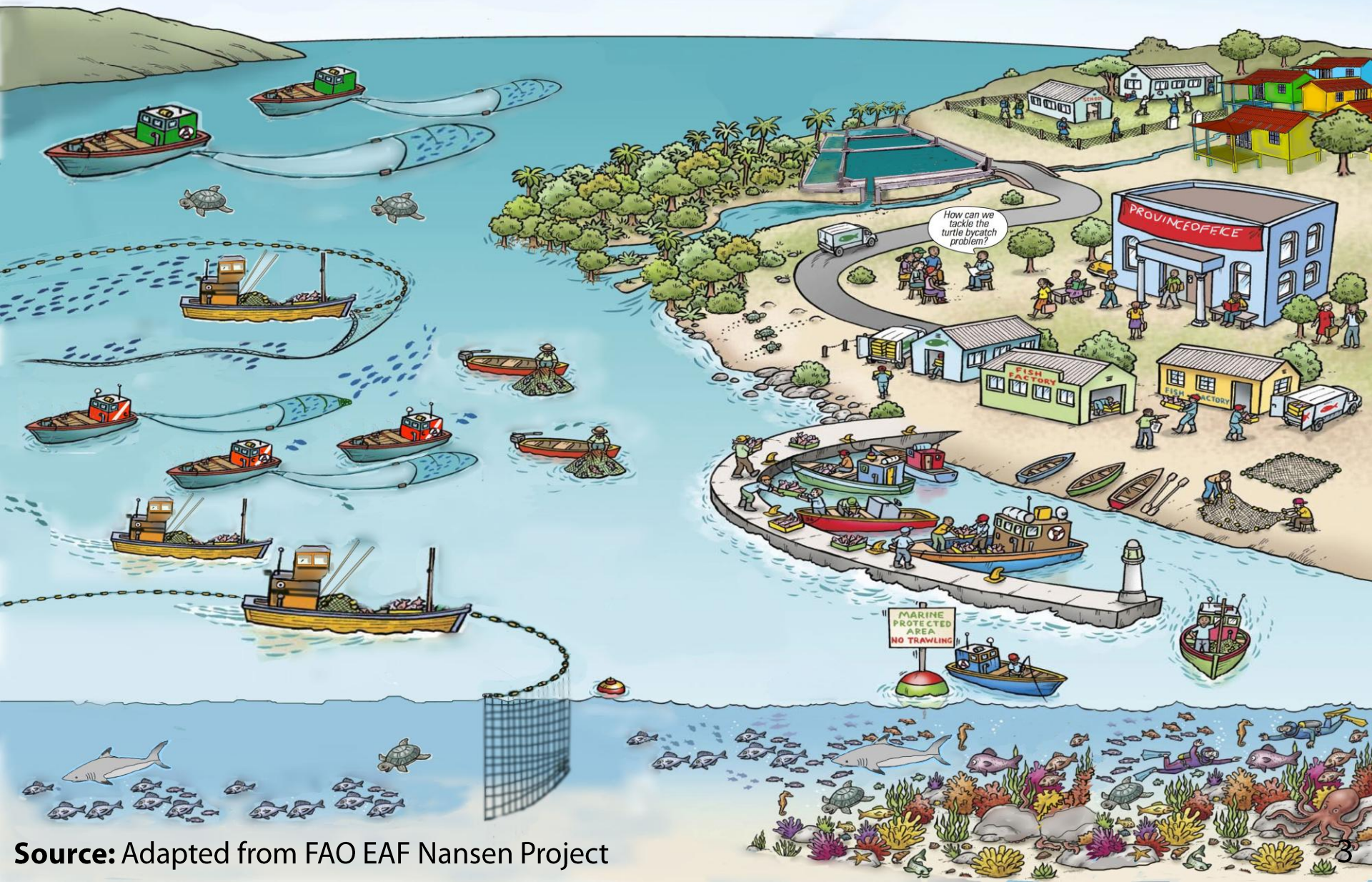
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OVERALL OBJECTIVES

- Understand the concept and the need for an Ecosystem Approach to Fisheries Management (EAFM)
- Learn skills and knowledge to develop, implement an 'EAFM plan

What do you see ?



Source: Adapted from FAO EAF Nansen Project

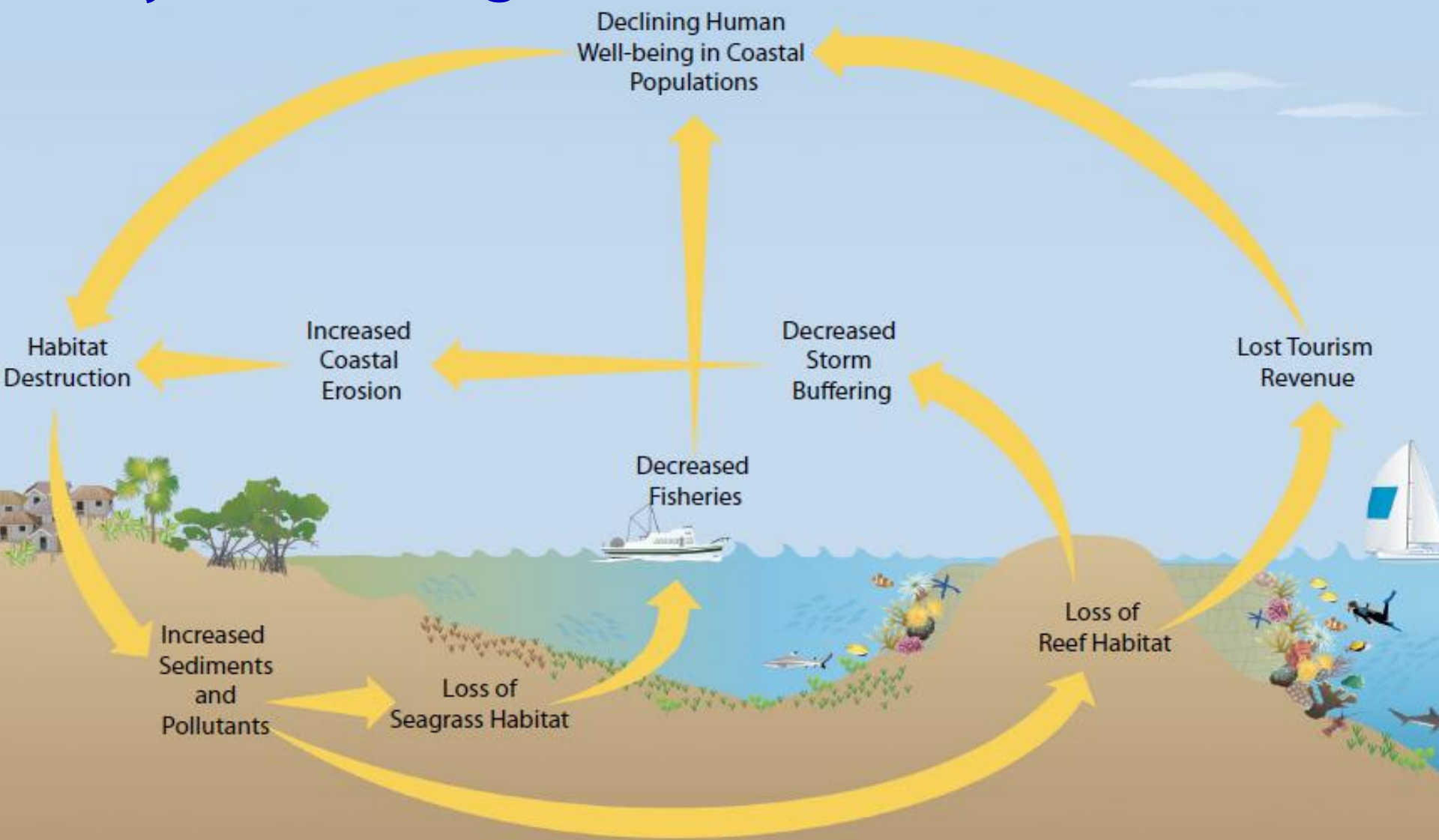


What is an ecosystem?

“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



Source: UNEP (2011)



Fisheries and the ecosystem

- Fish need healthy ecosystem to survive
- People need fish for food, income, and livelihood
- Managing fisheries with a narrow approach has proven to be relatively ineffective and unsustainable



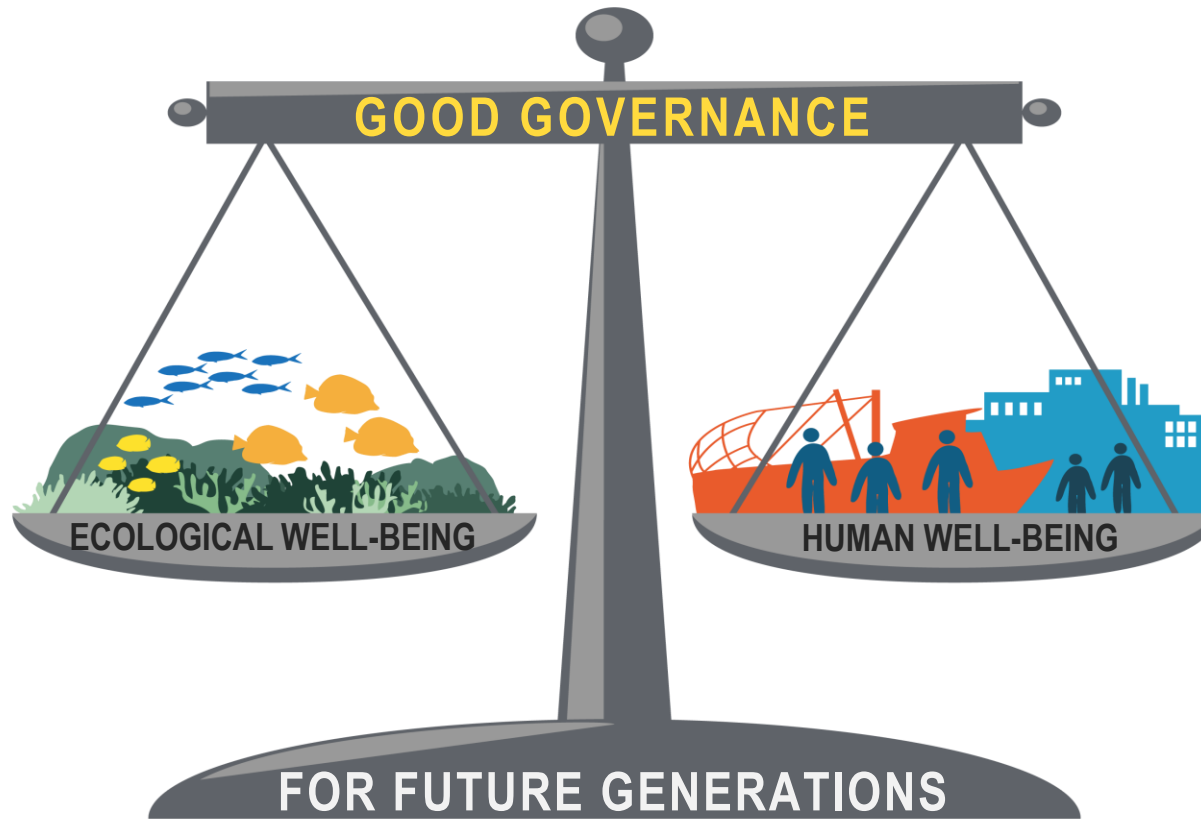
What is EAFM?

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

$$\text{EAFM} = \text{EA} + \text{FM}$$

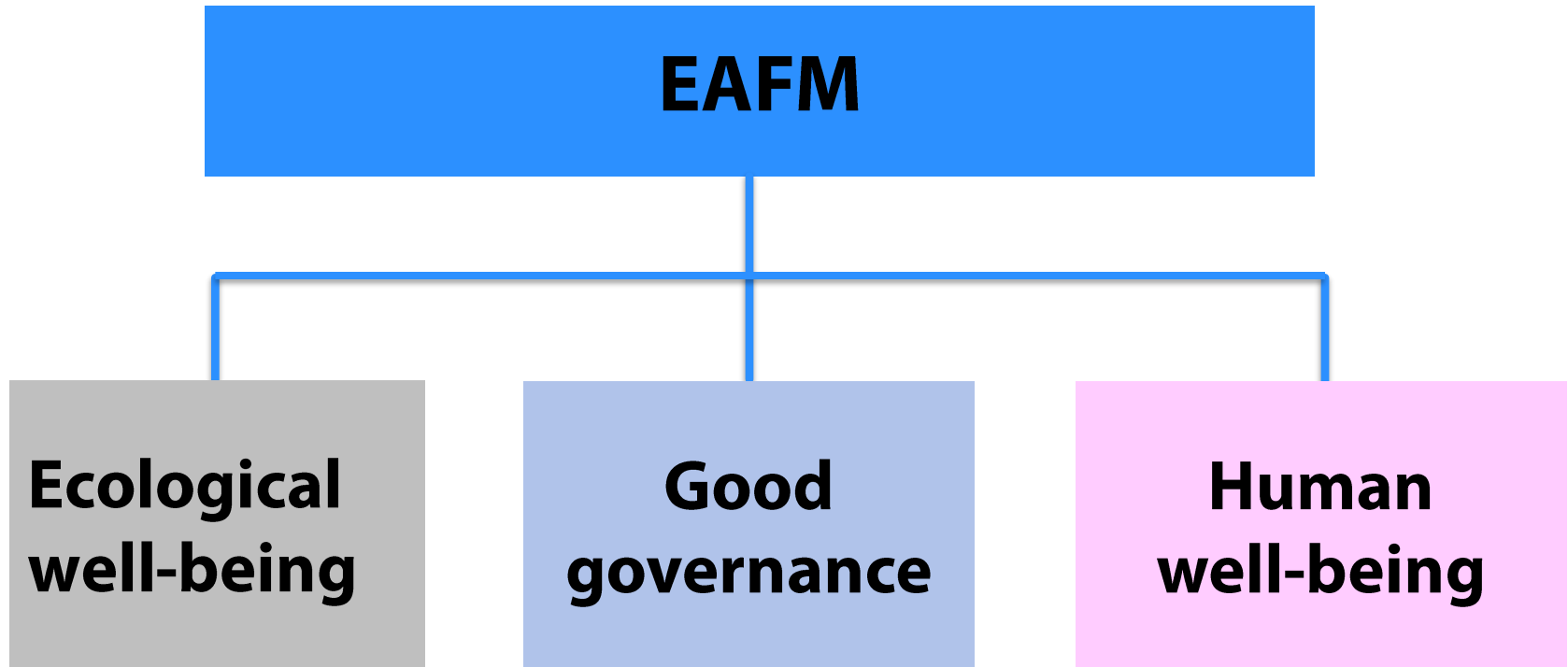
i.e. a practical way to implement sustainable development and sustainably maximize the ecosystem benefits of a fishery system

Sustainable development





3 Components of EAFM

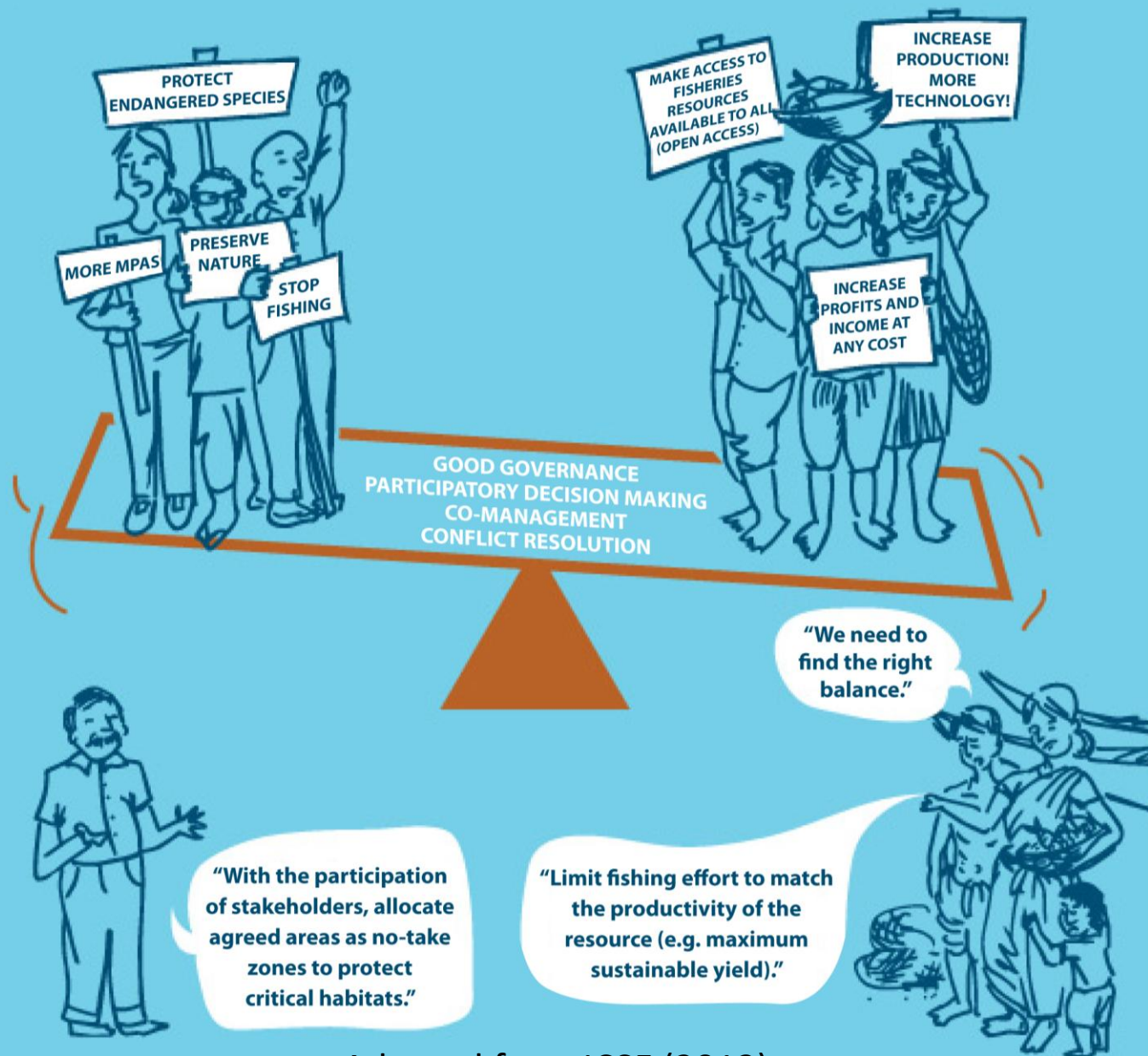




The 3 components

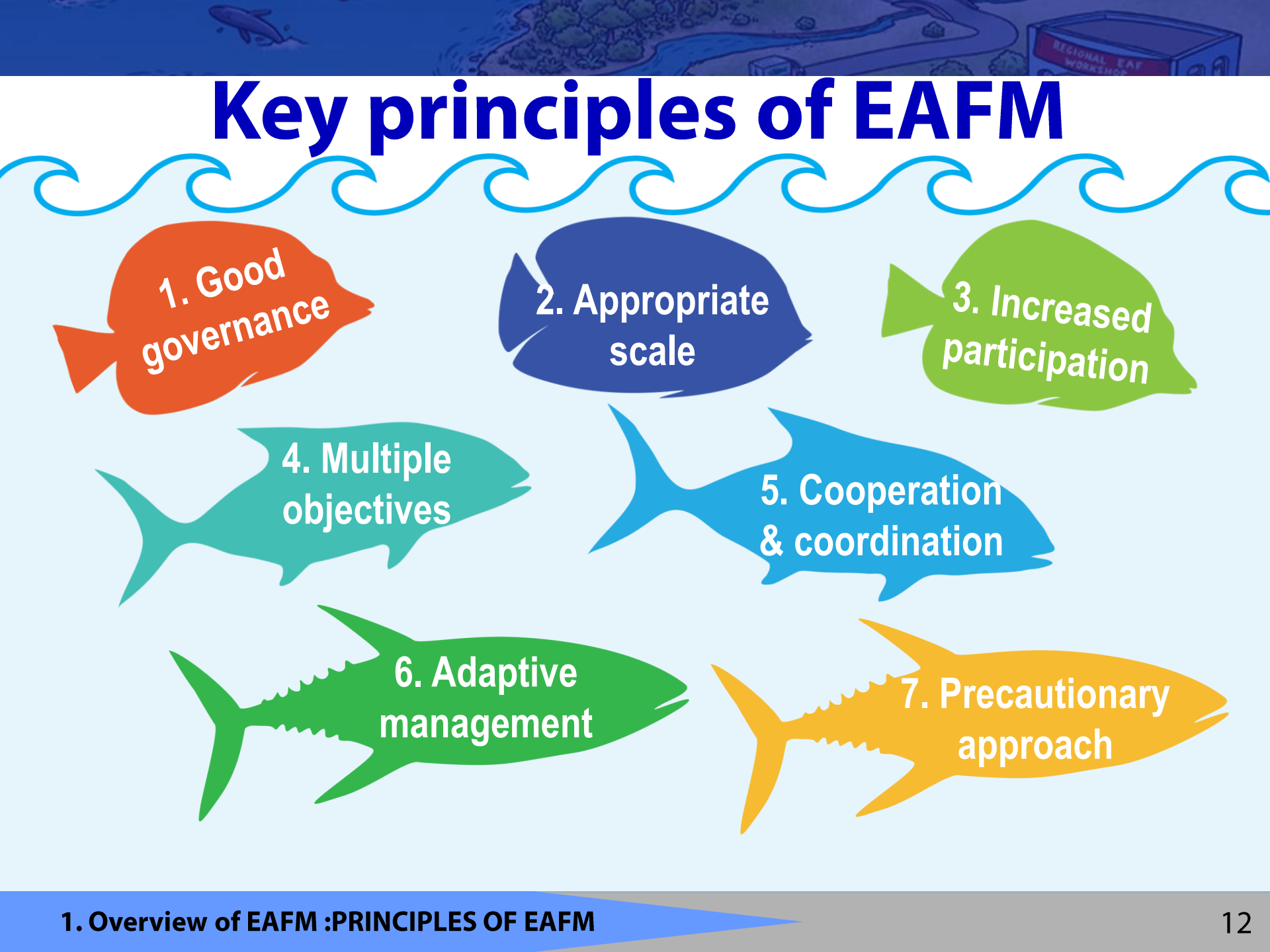
- **Ecological well-being:** *e.g.* healthy habitats, food-webs, and sustainable fishing
- **Human well-being:** *e.g.* increased & equitable wealth, food security and sustainable livelihoods
- **Good governance:** *e.g.* effective institutions and arrangements for setting and implementing rules and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

BALANCING HUMAN WELL-BEING AND ECOLOGICAL WELL-BEING



Adapted from ICSF (2013)

Key principles of EAFM



1. Good governance

2. Appropriate scale

3. Increased participation

4. Multiple objectives

5. Cooperation & coordination

6. Adaptive management

7. Precautionary approach

Good governance

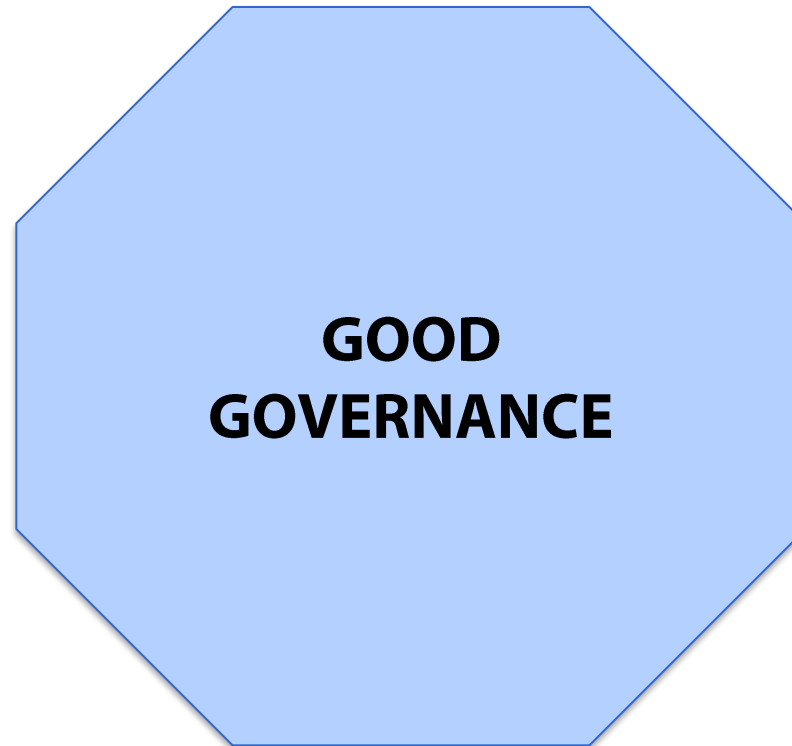
1. Good governance

Consensus

Participatory

Follows the
rule of laws

Effective and
efficient



Accountable

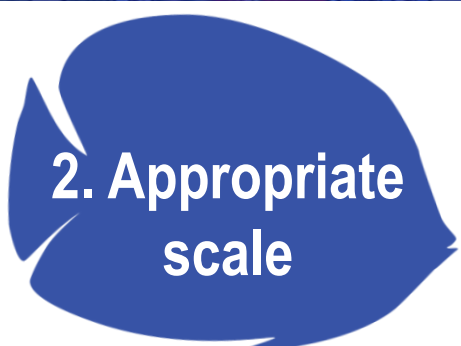
Transparent

Responsive

Equitable and
inclusive

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

Appropriate scales



2. Appropriate scale

1. Ecological

- Single species → multiple species
- Small areas → large areas (e.g. large marine ecosystem)

2. Socio-economic

Village → Coastline (rural & urban)

3. Political/Governance

Single jurisdiction → Multiple jurisdictions

4. Temporal

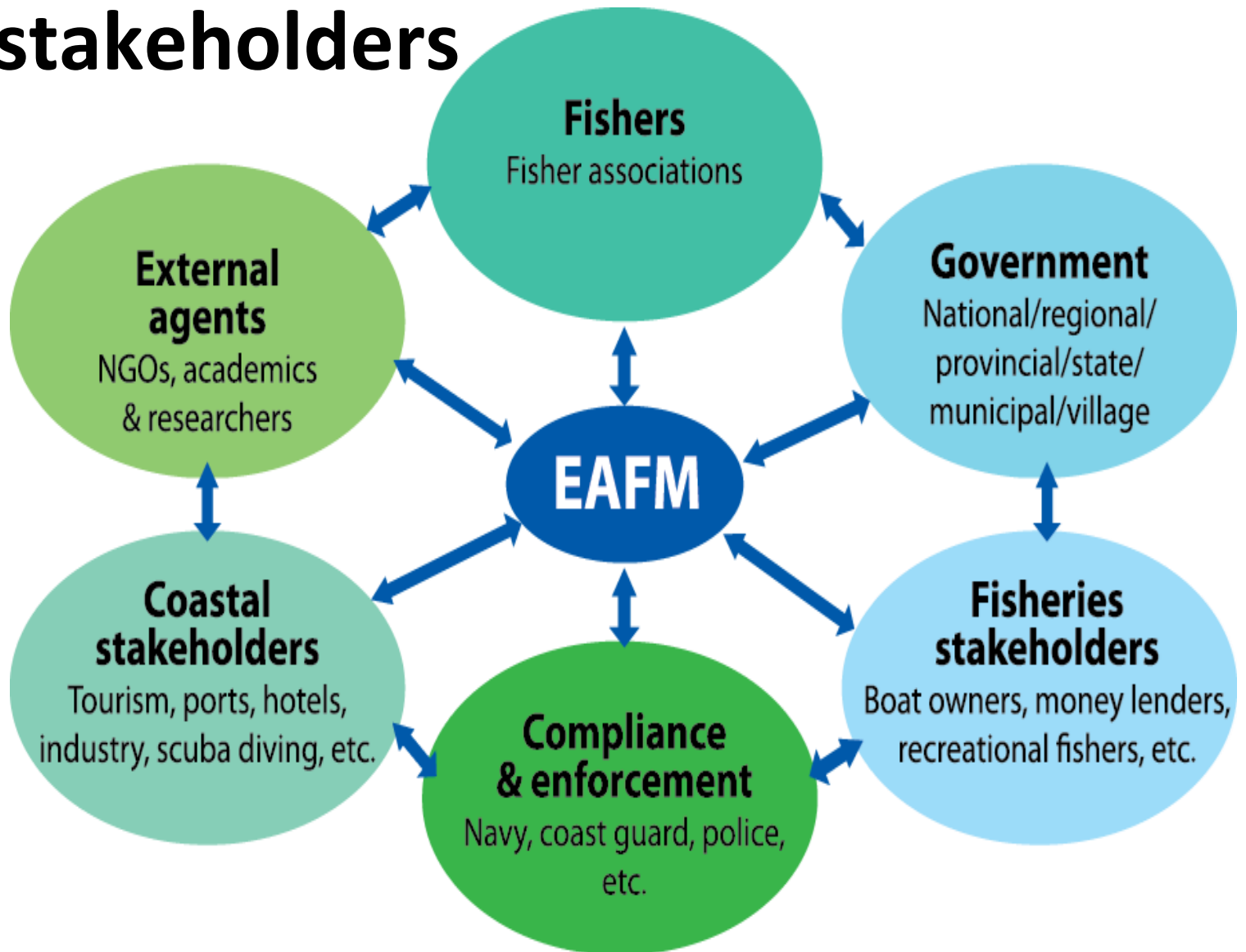
Short-term → Long-term

3. Increased participation

Increased participation



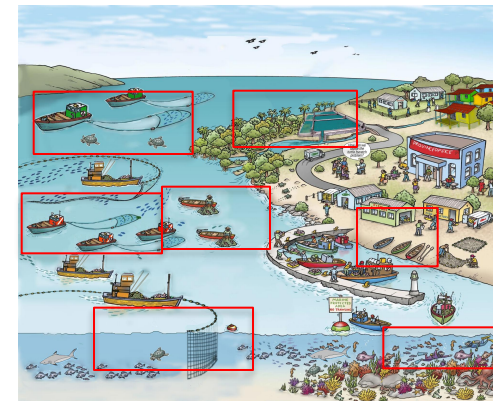
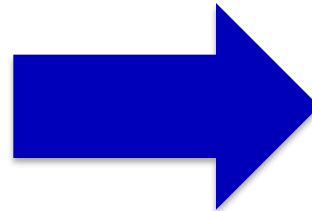
Many stakeholders



4. Multiple objectives

Multiple objectives

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



Each sector and user group probably has its own objectives

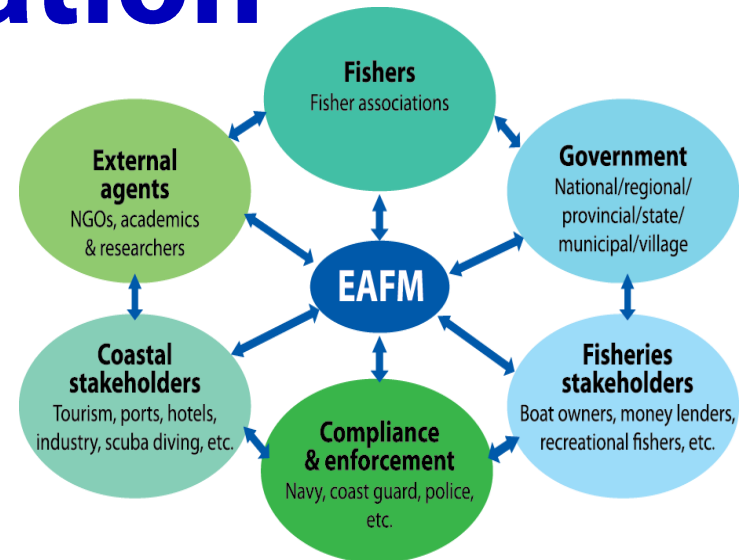
- Need to balance these objectives
- Requires stakeholder engagement and negotiation

5. Cooperation & coordination

Cooperation and coordination

EAFM involves cooperation and coordination among many stakeholders

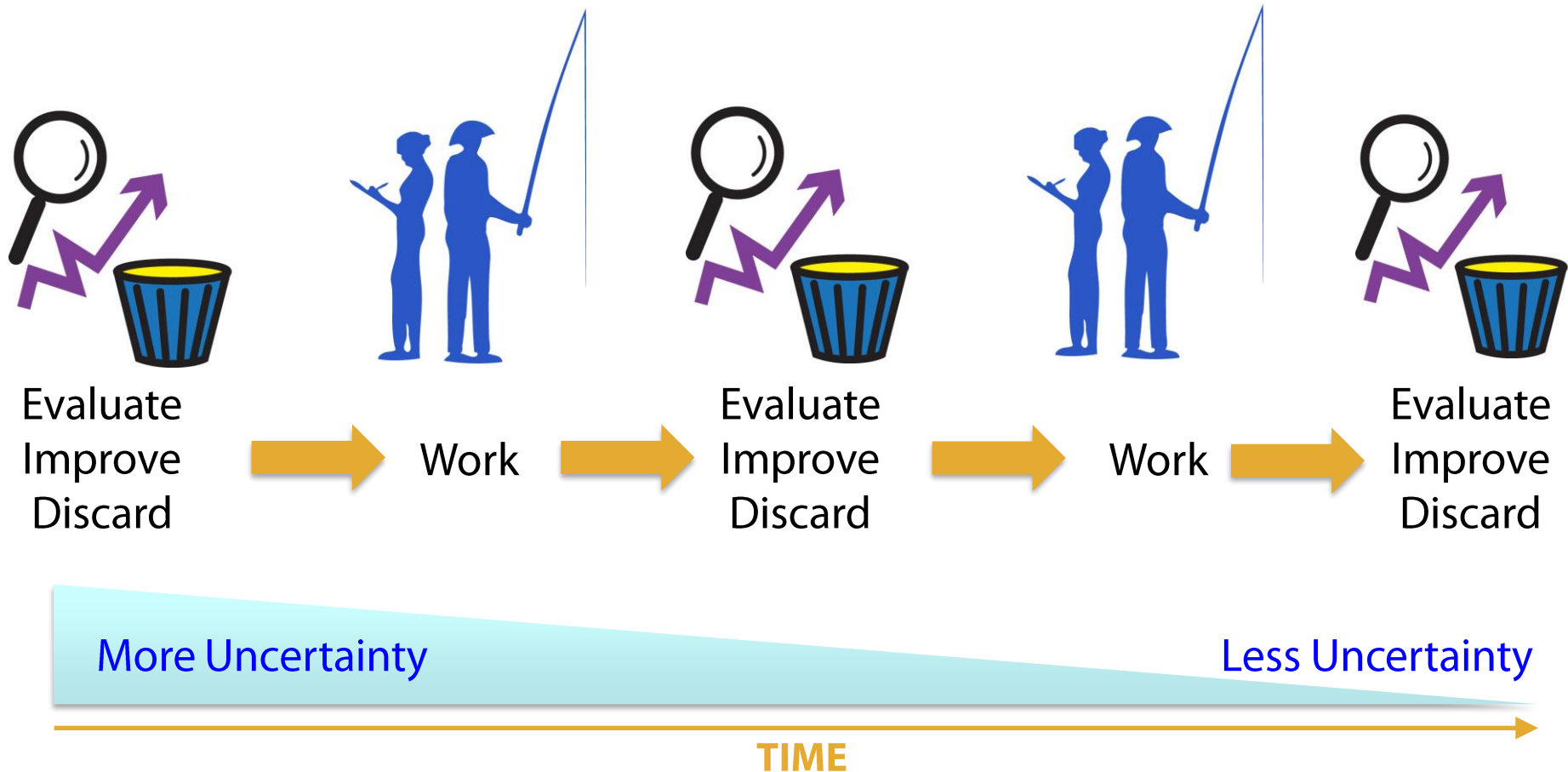
- within agency/institutions
- across institutions, both government and stakeholder and with non-fishery sectors
- from global to national to district levels



6. Adaptive management

Adaptive management

Learning while doing





7. Precautionary approach

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 to delay action

Where there is uncertainty, management actions should be more careful

THE PRECAUTIONARY APPROACH

IF THERE IS POSSIBILITY OF HARM, BE CAREFUL
(PRECAUTIONARY APPROACH)

"We have observed that the fish catch reduces in areas where you fish. You also catch a lot of small fish."

"But there is no evidence or study to say that the gear we use is destructive."

- LACK OF DATA AND INFORMATION SHOULD NOT BE USED AS AN EXCUSE FOR NOT TAKING ACTION

- WHERE THERE IS UNCERTAINTY, MANAGEMENT ACTIONS SHOULD BE LESS RISKY

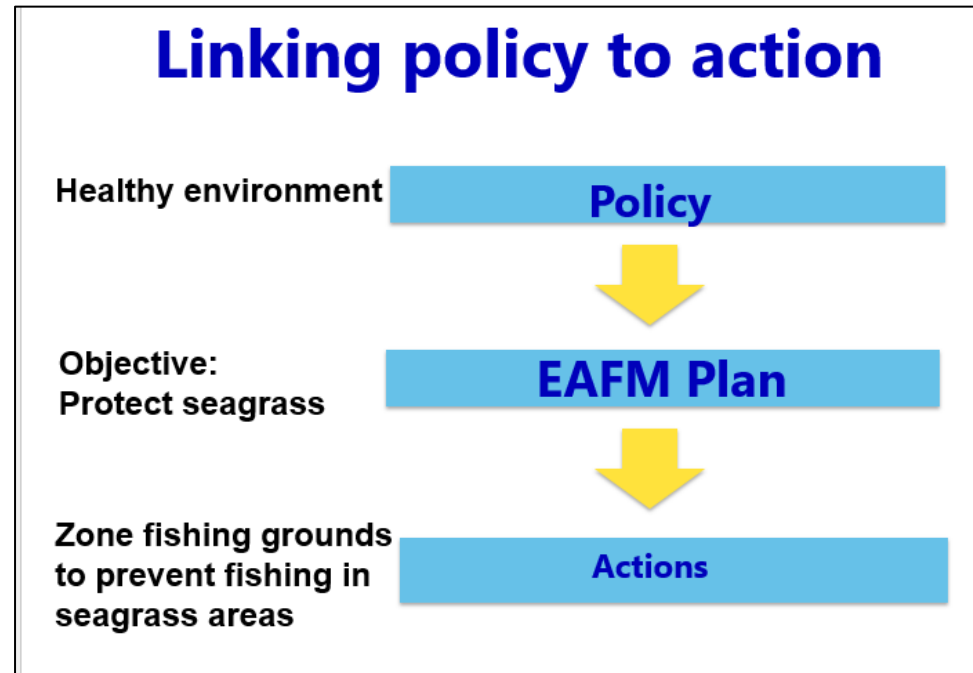
"And that is the precautionary approach."

"We have seen all the small fish you are catching – you should stop using this gear or at least use a net with a much bigger mesh until you can prove that it is not harmful. Better to be safe than sorry."

Source: Adapted from ICSF (2013)

EAFM Plan: Why plan?

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





Good planning

Some characteristics of good planning are that it:

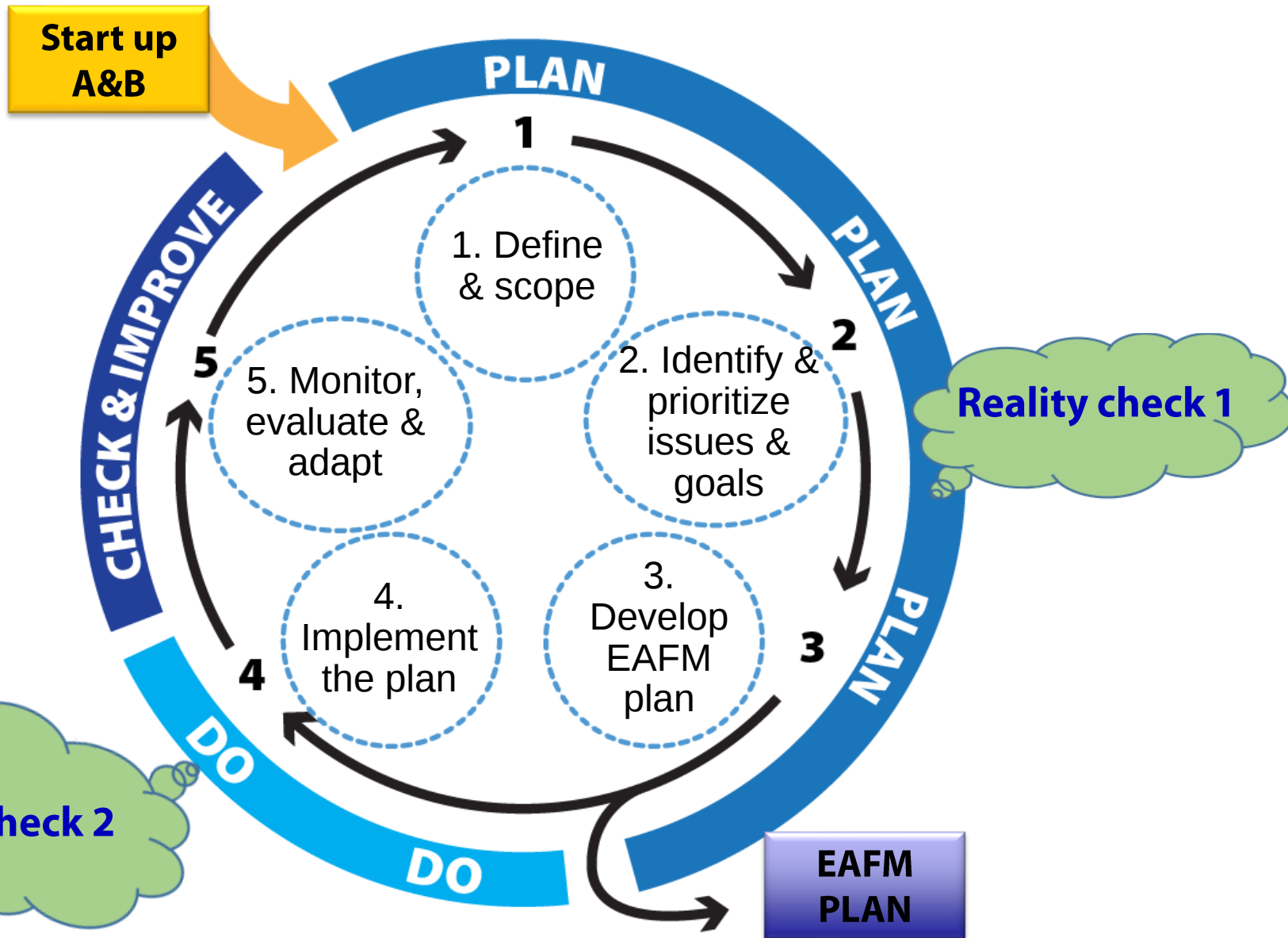
- Provides a clear sense of direction
- Promotes transparency
- Considers alternative option to achieve the goals
- Is based on the best information available (require improvement over time)

Management involves:



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The 5 steps of EAFM





Key messages

- **EAFM** is simply applying **EA** to **FM**
- **EAFM** has 3 components: Ecological well-being, Human well-being, Good governance
- **EAFM** is all about finding the balance
- **7 principles of EAFM** are important for implementing EAFM
- **EAFM plans** provide a link between higher level policy (e.g. National fisheries policy) and management actions on the ground
- **EAFM process** cycle has 5 steps

2. EAFM Start up A: Preparing for EAFM

Source : http://www.boblme.org/eafm/course_materials.html



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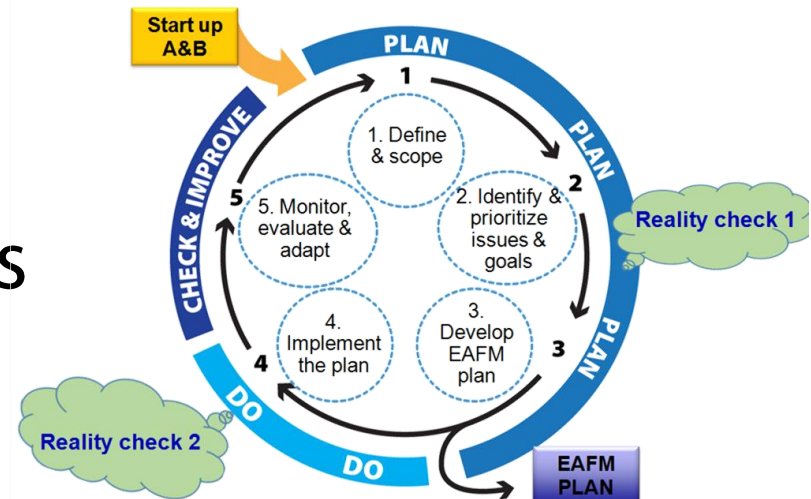
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Session objectives

After this session you will be able to:

- Identify stakeholders
- Prioritize stakeholders



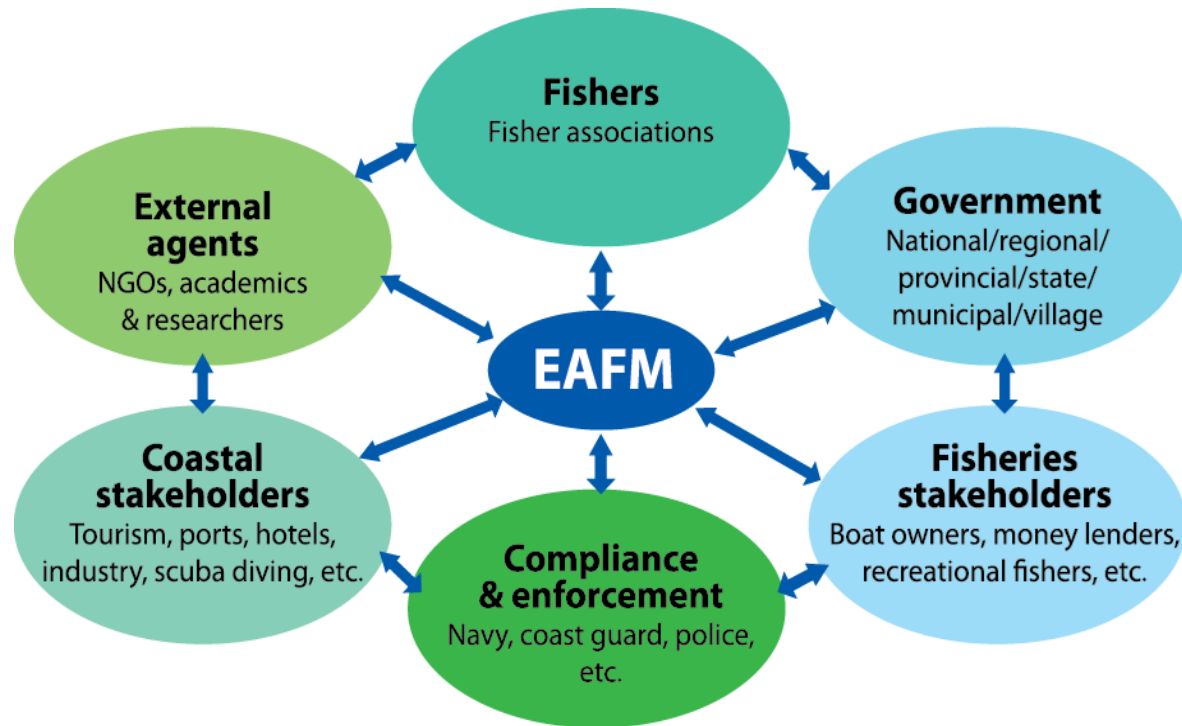


Identify the EAFM team and Stakeholder

- i. **Establish a core team** to guide the EAFM start up
- ii. Agree on **what area the EAFM** will focus on
- iii. The team develops a start up **work plan** to guide the rest of the start up tasks. This identifies:
 - what by whom, by when and with what budget
- iv. **Identify and prioritize stakeholders**

Who are your stakeholders?

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

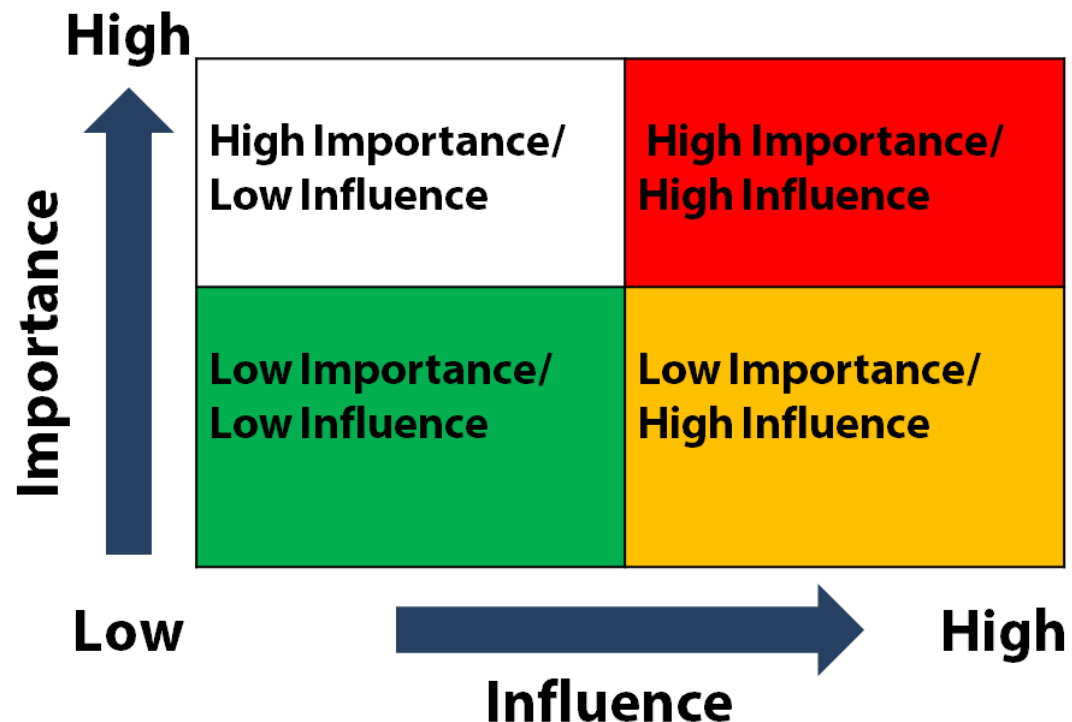


Stakeholder Analysis

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

20 MINUTES!

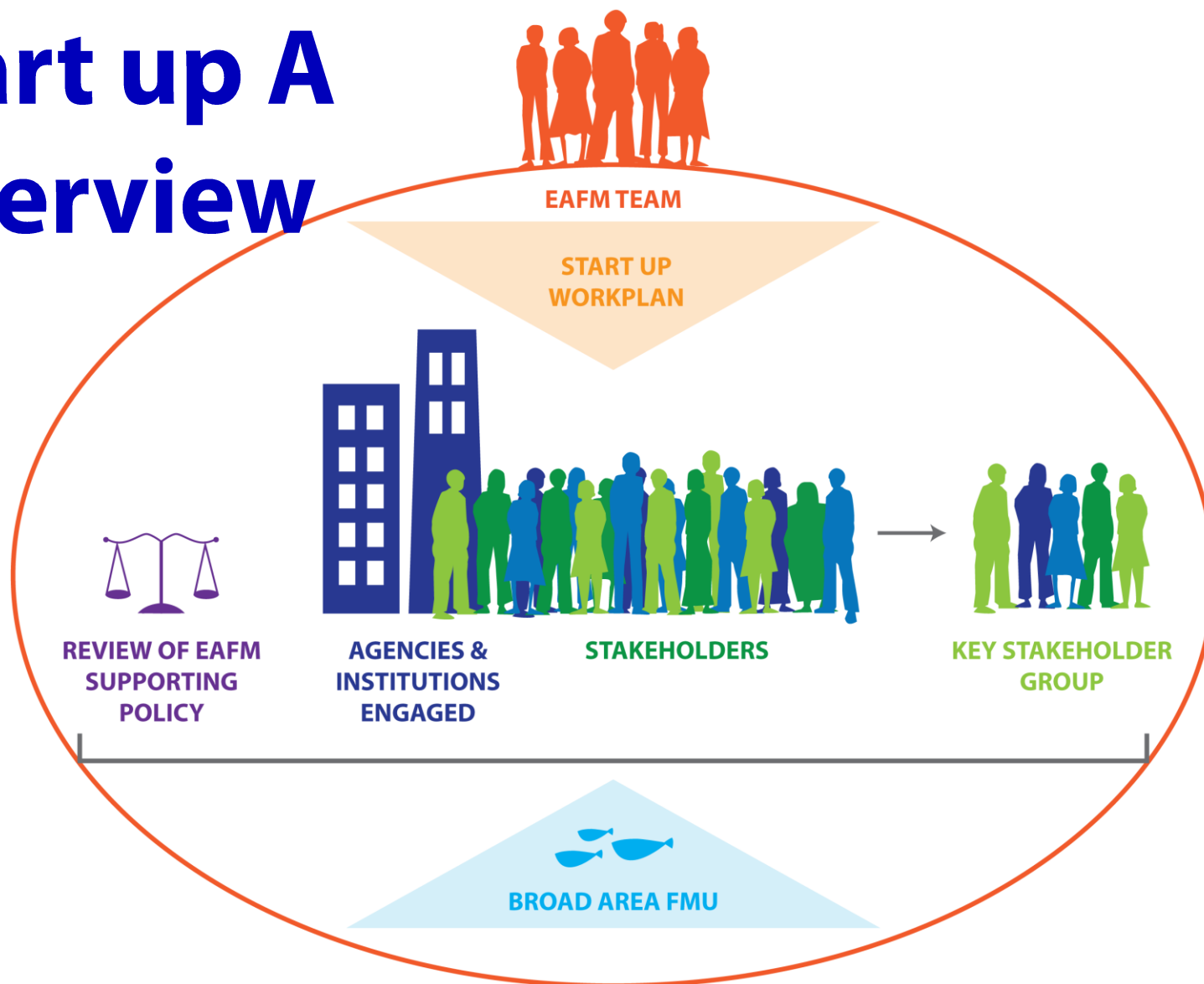
- 1. Read the case study in your group**
- 2. List ALL possible stakeholders. Write each stakeholder on a different card**
- 3. Draw a 2 x 2 matrix with “Importance” on the Y axis and “Influence” on the X axis**
- 4. Plot each stakeholder card onto one of the 4 boxes. You can move cards as you discuss**



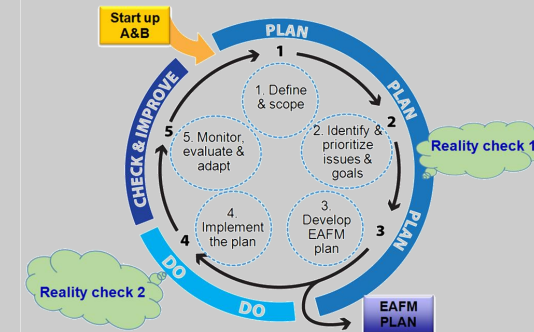
Prioritizing stakeholders

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 <i>(keep them informed and involved)</i>	Need to get them to 'buy in' into EAFM process <i>(could use their influence to support EAFM process)</i>
Low Importance/Low Influence	Low Importance/High Influence

Start up A Overview



Key messages



Before starting on the EAFM cycle there is some initial tasks to be done by the EAFM team to:

1. Establish EAFM team and general location of EAFM area
2. Develop workplan for the team
3. Identify & prioritize key stakeholder

3. EAFM Start up B: Engage Stakeholders

Source : http://www.boblme.org/eafm/course_materials.html



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Session objectives

After this session you will be able to:

- **Understand how to use participatory approaches for 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 to maintain their interest
- EAFM team need people skills (*e.g.* facilitation, conflict management, etc.)

Key principles of participation

The active participation of people is at the heart of EAFM

Let go of your own ideas and viewpoints

Don't dominate

Respect of local customs, languages and experience

Promote a process of learning, changing and action

Believe in people and their abilities

Listen and build rapport and trust

Allow all people to be heard



Work with stakeholders

Be flexible

Aim of participatory approaches



Identify trade offs

Agree on issues and solution



Empowerment
Awareness raising
Ownership
Group trust



Facilitating stakeholder input

Meetings → Input from 2 or more people coming together

Workshops → Input from a smaller group working towards resolving an issue

Focus group discussions → Input from a small facilitated group discussing a specific topic

Interviews → Views of selected people with specialized knowledge in certain topics

Questionnaires/surveys → Views of a large number of people representing the population



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

Community control

Partnership

Advisory

Cooperative

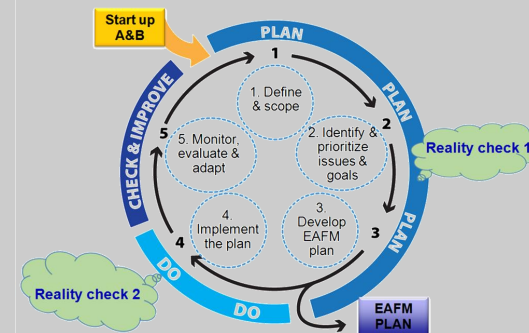
Consultative

Communicative

Less

Informative

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

4. Step 1: Define and scope the Fisheries Management Unit (FMU)

Source : http://www.boblme.org/eafm/course_materials.html



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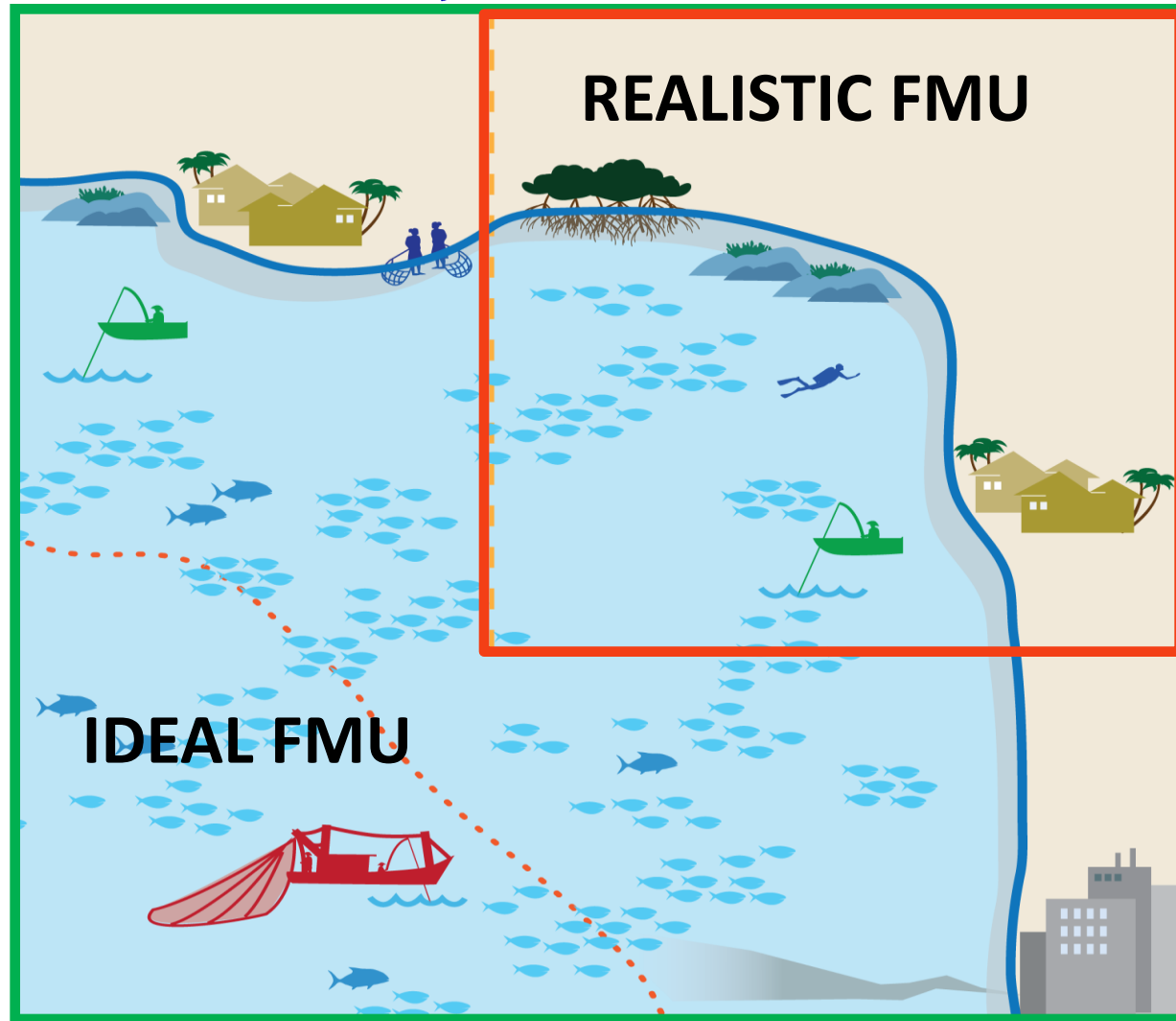


Session objectives

After this session you will be able to:

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

1.1 Define your FMU



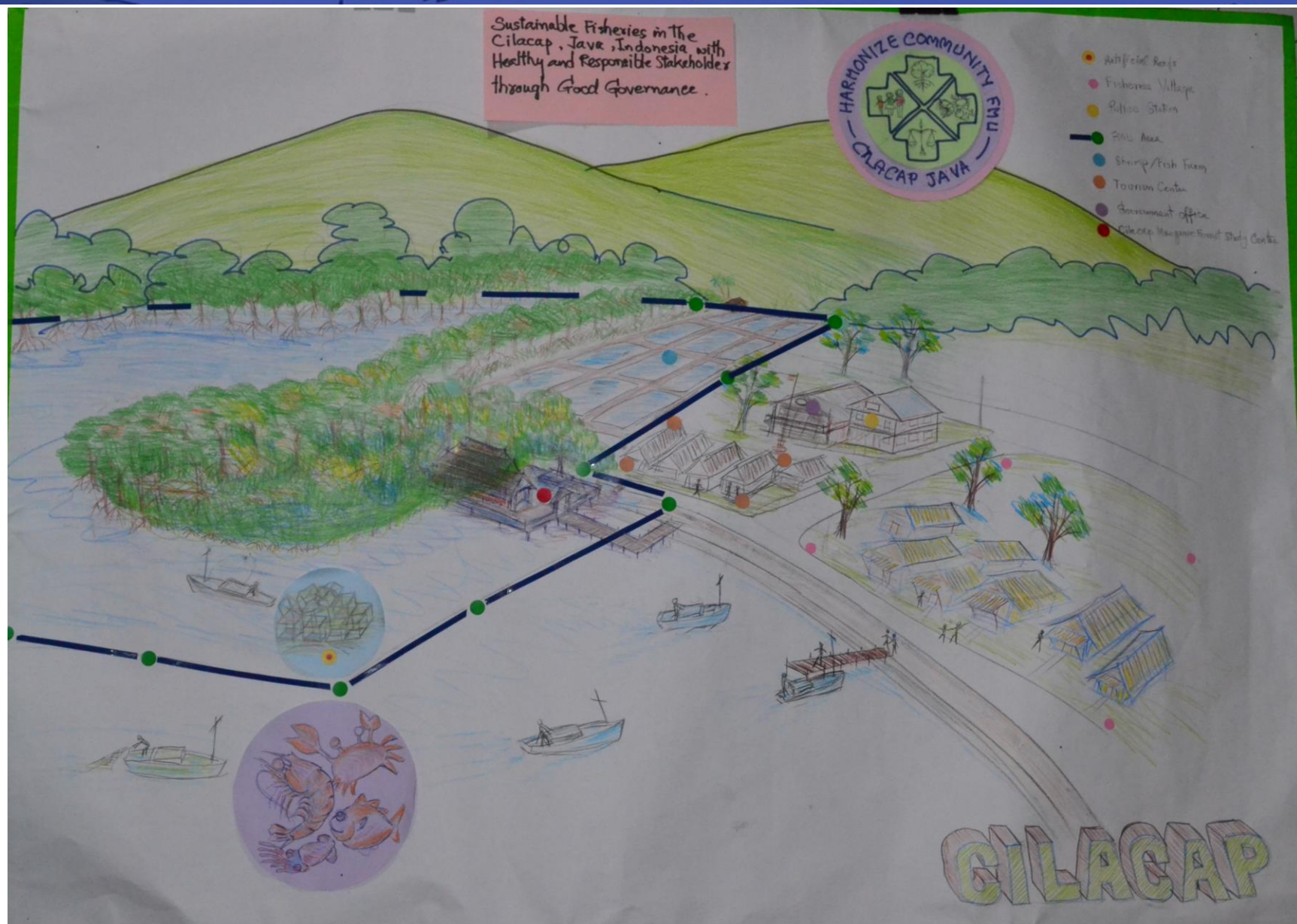
In Groups

15 mins!

Create a map of your FMU area, includes:

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







Vision, goals, and objectives

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

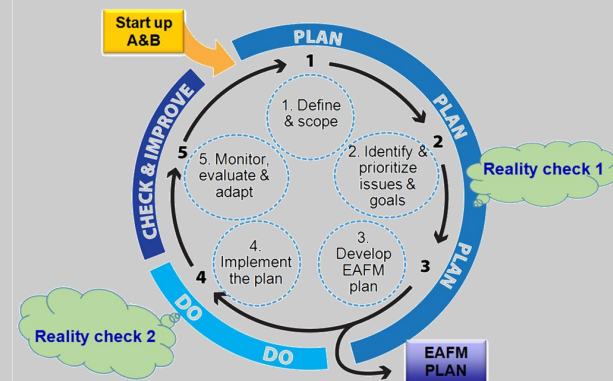
Information needed for 3 components

- Ecological (+ fish)
- Human (+ socioeconomic)
- Governance (+legal & institutional)



Key messages

In Step 1:



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

5. Step 2 Identify & prioritize issues and goals

Source : http://www.boblme.org/eafm/course_materials.html



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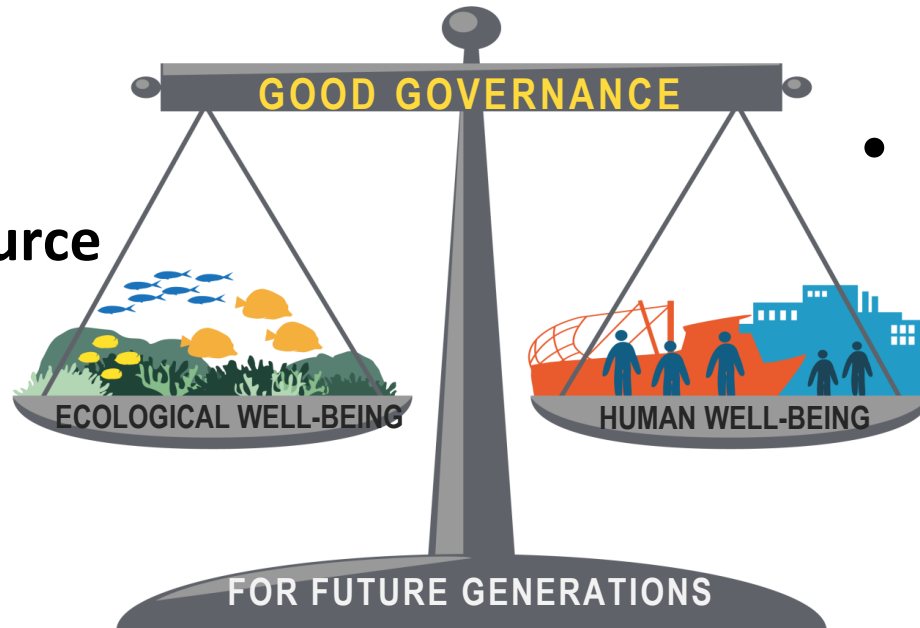
Session objectives

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**

2.1 Identify threats and issues

- What are the specific threats and issues for the FMU?
- Cover all 3 EAFM components



- **Ecological issues**

- Fisheries resource
- Environment

- **Human issues**

- Social
- Economic

- **Governance issues**

- Enforcement & compliance
- Working together



In your groups

10 mins!

- Identify the specific **problems/issues** for your FMU?
- Write one on each card

Be sure to include all 3 EAFM components

(Ecological, Governance, Human)

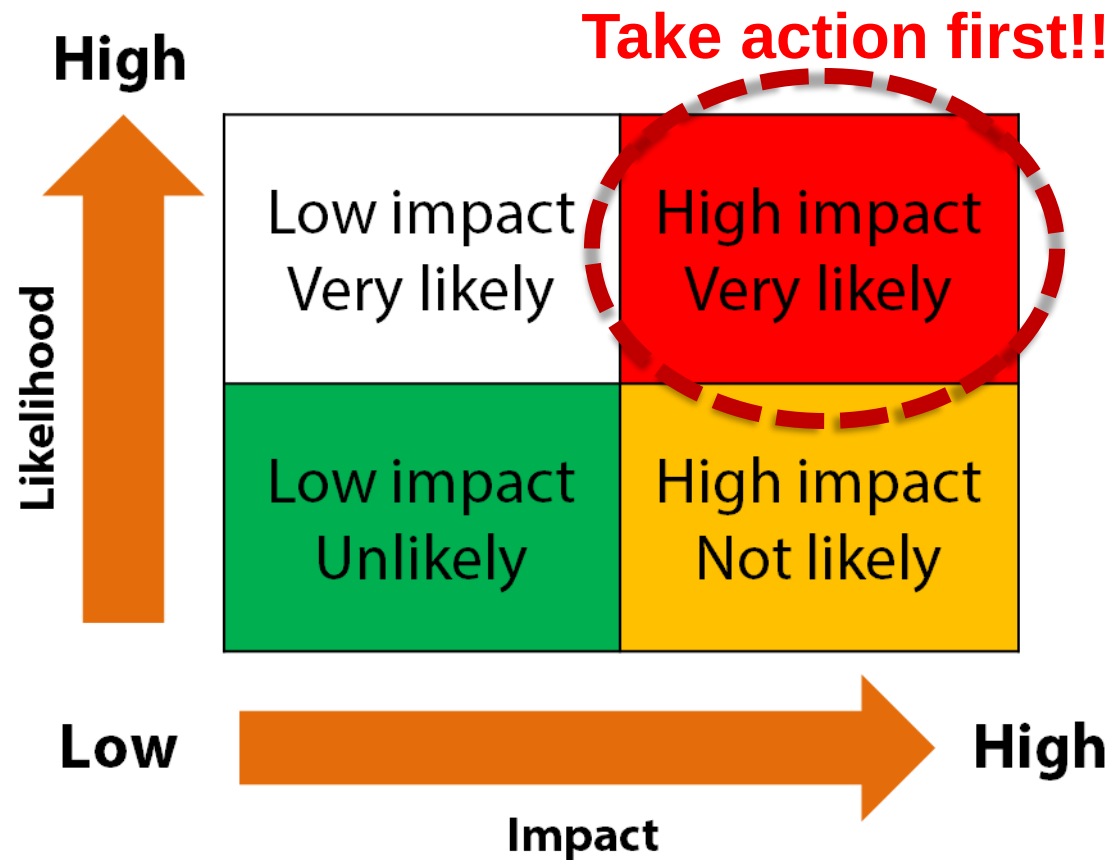
2.2 Prioritizing issues

Impact

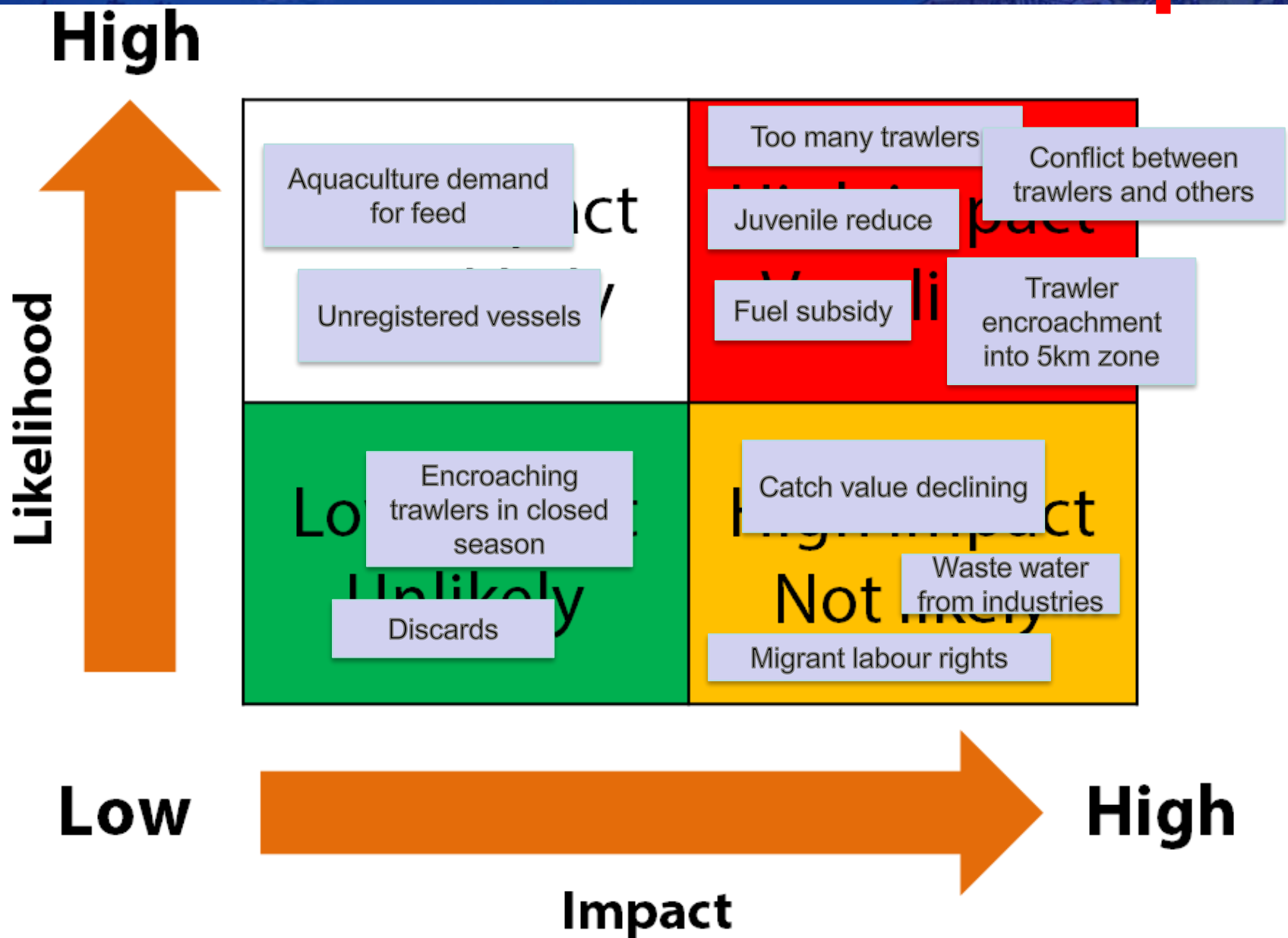
-how much change would occur

Likelihood

-probability of it occurring



Example





In your groups

10 mins!

Take the **problems/issues** and place them on a 2x2 matrix

*Make sure that
Hi/Hi has contained of 3 components*



2.3 Goals for the EAFM plan

Goals can now be developed for a set of issues.

A goal point of what you want the FMU look like in the future

For example:

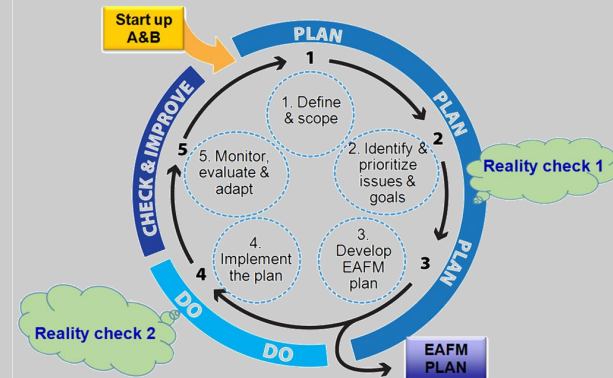
Goal 1: Fisheries and critical habitats have been restored and sustained

Goal 2: The compliance and enforcement of illegal activities are effective and efficient

Goal 3: Fisheries community are improved and maintained above the poverty level

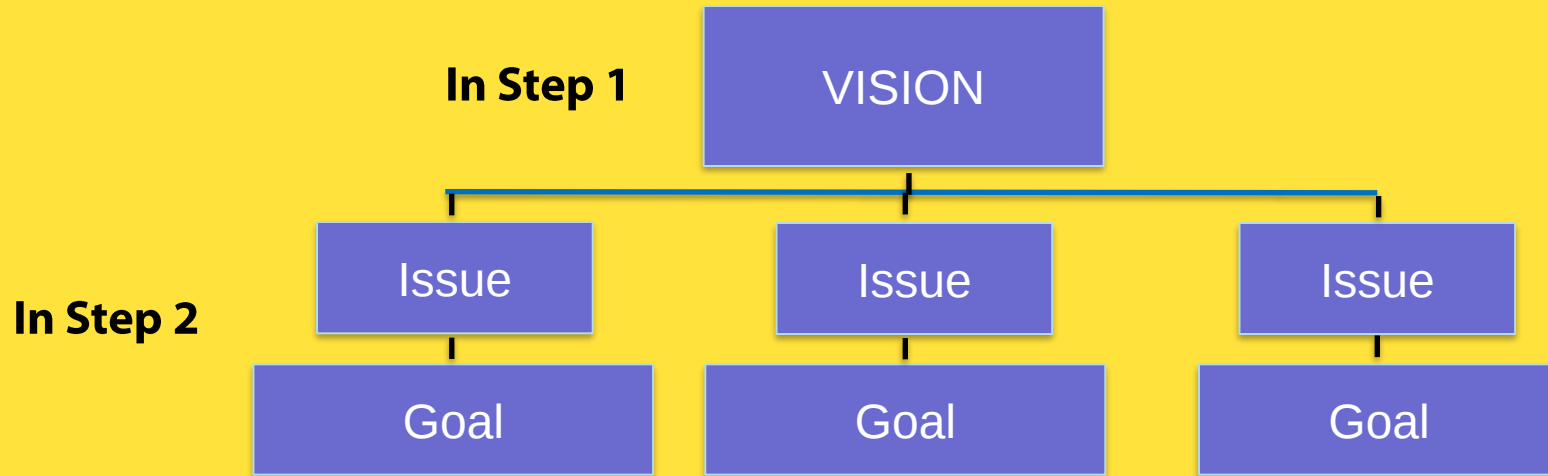
Key messages

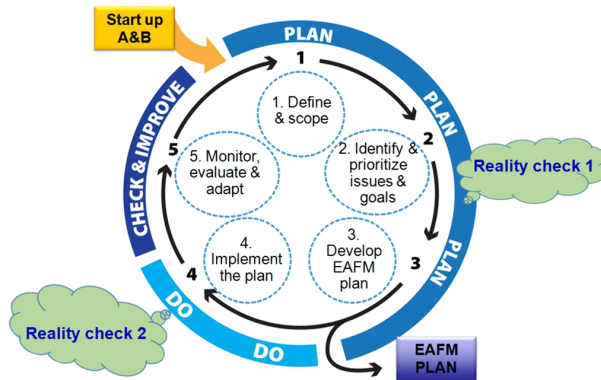
In Step 2:



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

Outputs





- **Are the goals achievable**
 - Have we engaged with the key stakeholders?
 - Do we have enough money?
 - Do we have enough human capacity?
 - Do we have political support?
 - Do we have support from our agency/Department?

6. Steps 3.1 & 3.2

Develop objectives, indicators and benchmarks

Source : http://www.boblme.org/ea/m/course_materials.html



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Session objectives

After this session you will be able to:

- **Develop objectives**
- **Develop indicators & benchmarks related to the objectives**

Building the EAFM plan





3.1 Developing objectives

Ask:

For this issue: what do you want to achieve?



Objective = To reduce the % of juvenile fish caught



~~Objective = Improve the health of the ecosystem~~



3.2 What is an indicator?

- A measure of the current status at one point in time (*e.g.* temperature, number of fish, area of mangroves)

An indicator must be linked to the objective



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



**When the indicator is compared to benchmark
it tells you how well you are meeting the objective**



Ecological example

Objective

Reduce the % of juvenile fish caught in the fishery

Indicator

% of juvenile fish caught by the boat or at landing sites

Benchmark

juvenile fish caught <10% by the boat or at landing sites within 3 years



Governance example

Objective

Strengthen cooperation amongst different compliance and enforcement agencies

Indicator

- Coordination among group/agencies
- Groups meeting regularly with agreed minutes

Benchmark

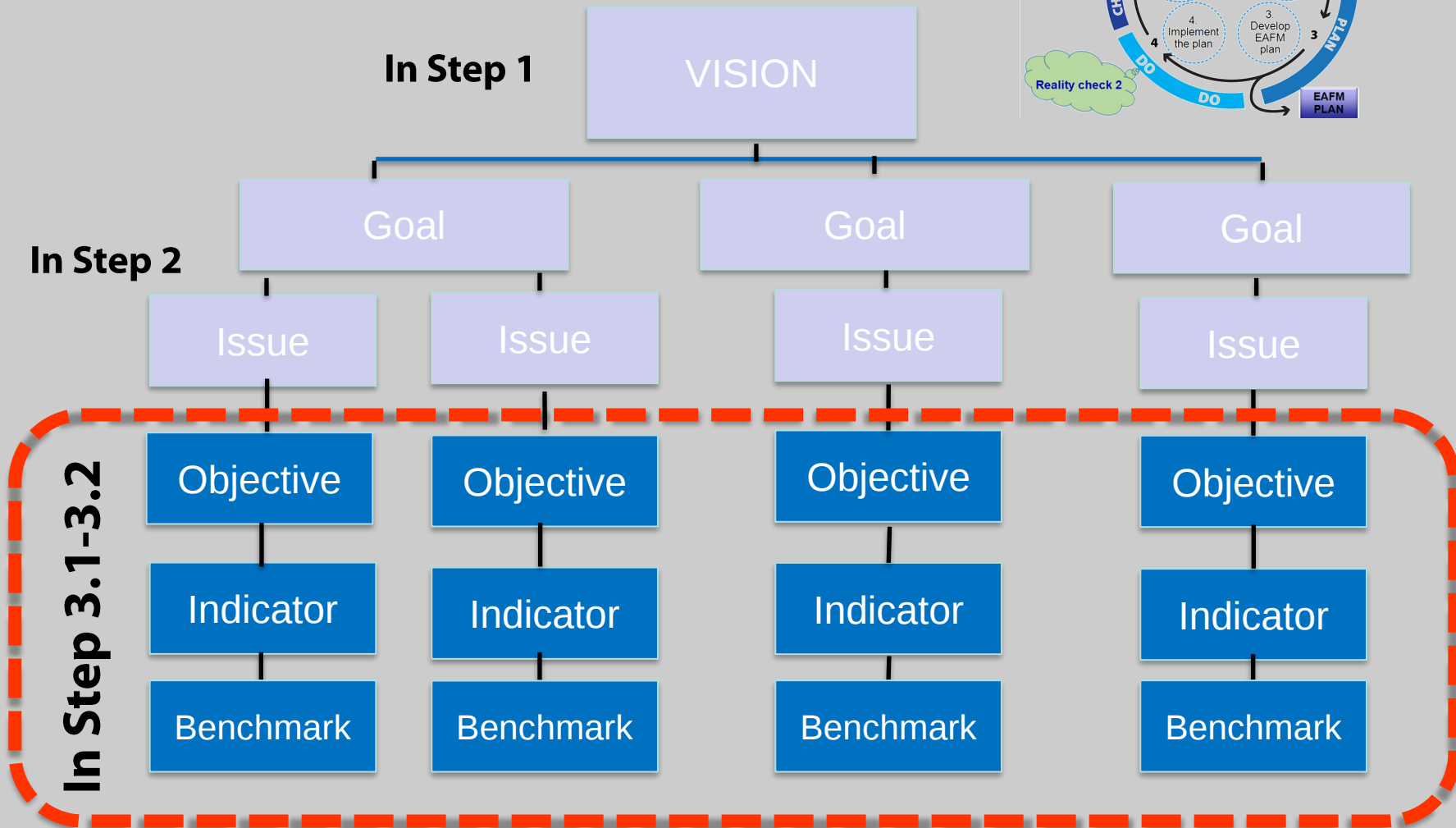
- Meetings are held at least once/month or 4 times/year
- Meeting minutes are signed/approved by all parties at least 80% of all meeting



Data & information for the indicators and benchmarks

- Use existing data, where available
- Collect new data, if necessary
- Use participatory approaches, if possible
- **Stakeholders are involved in:**
 - developing the indicators and benchmarks
 - collecting data
 - deciding on the methods to use

Key messages



7. Steps 3.3–3.5

Management actions, compliance, finance & finalize EAFM plan

Source : http://www.boblme.org/eafm/course_materials.html



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Session objectives

After this session you will be able to:

- **Agree on management actions**
- **Include financing mechanisms in the plan**
- **Bring it all together – finalize the EAFM plan**



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 (con't.)

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



Compliance & enforcement

How to ensure that management actions are complied with MCS when they are developed?

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

Top-down

Government MCS:

Fishery patrols enforcement:
by fishery patrols



Bottom-up

Local MCS:

Co-management:
Patrolling by fisher
participation



3.4 Financing

- **Plan needs to have a section on how it will be financed**

Budget

- How much?
 - Where from? (Existing? New?)
 - Need to consider who will/can pay, equity, impacts
- **A good EAFM Plan will attract funding from different sources**
 - Ideally the plan should be supported from existing budget by including it in the budget planning cycle

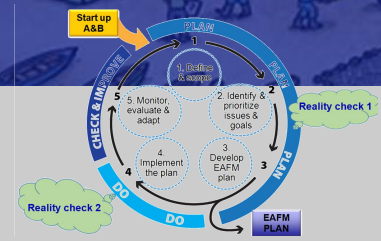


Sources of funding

- **Government (part of the normal budget cycle)**
- **Other sources:**
 - Government special grant
 - Donors (may cover start up costs but not ongoing)
 - Grants from NGOs
 - Fishing fee (*e.g.* licenses)
 - Linked to access rights
 - Fines for non-compliance
 - Stakeholders (share the costs)

Key messages

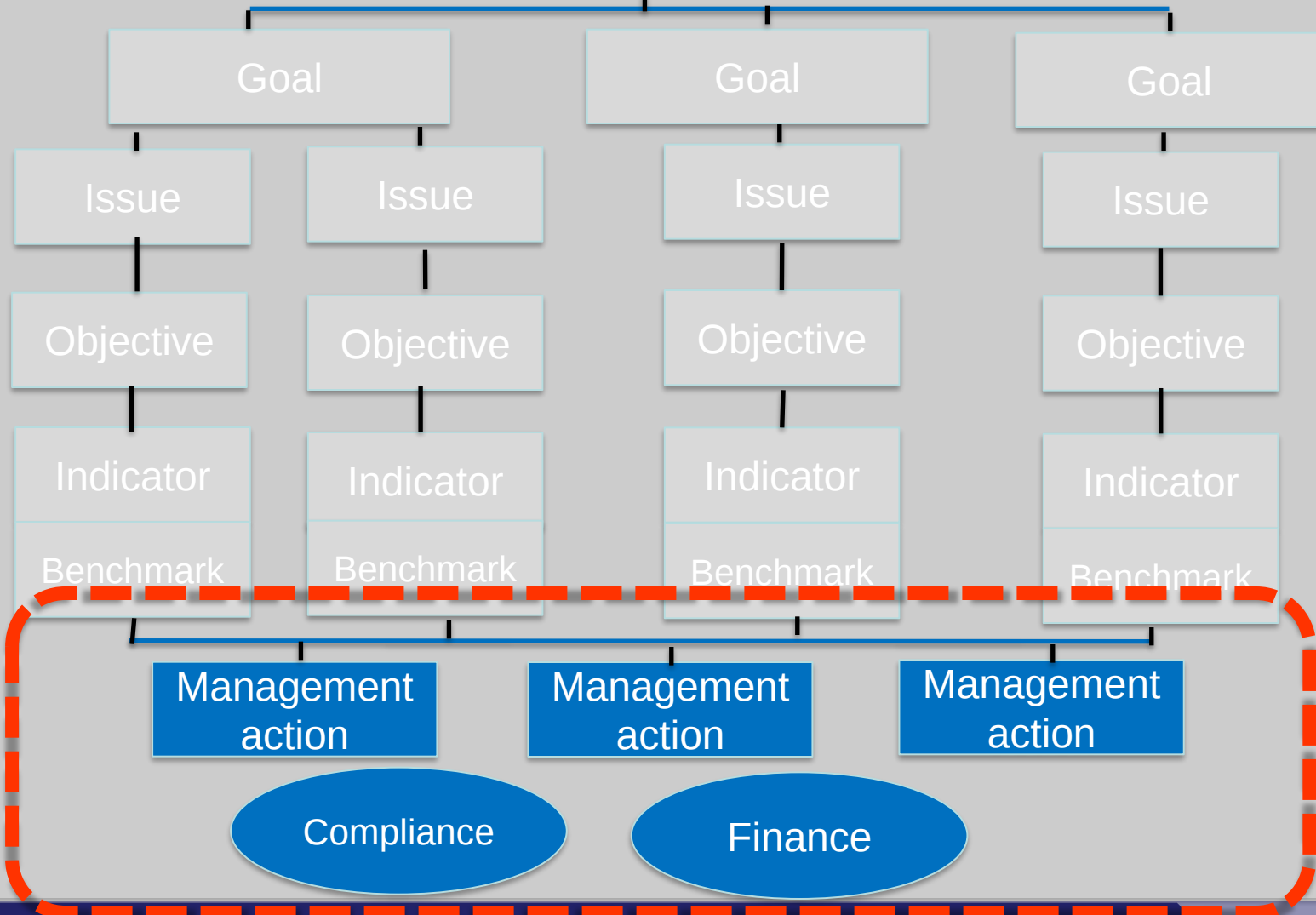
In Step 1 VISION



In Step 2

In Step 3.1-3.2

In Step 3.3-3.5





In your groups:

15 mins!

- 1. Management actions, Compliance**
- 2. Financing to support the management action**
- 3. Each group presents 7 minutes**

8. Step 4 Implement: Formalize, communicate & engage

Source : http://www.boblme.org/ea/m/course_materials.html



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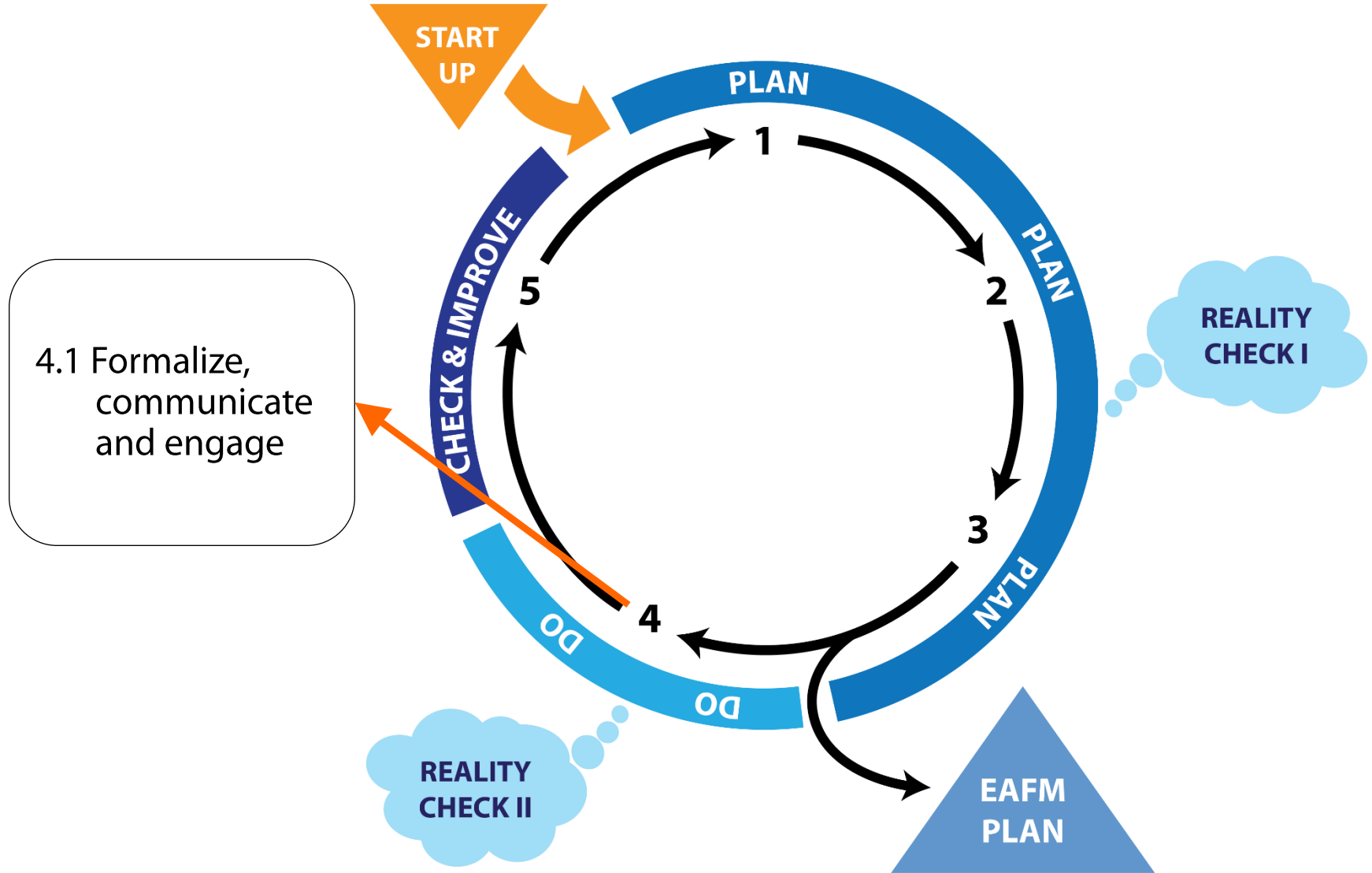


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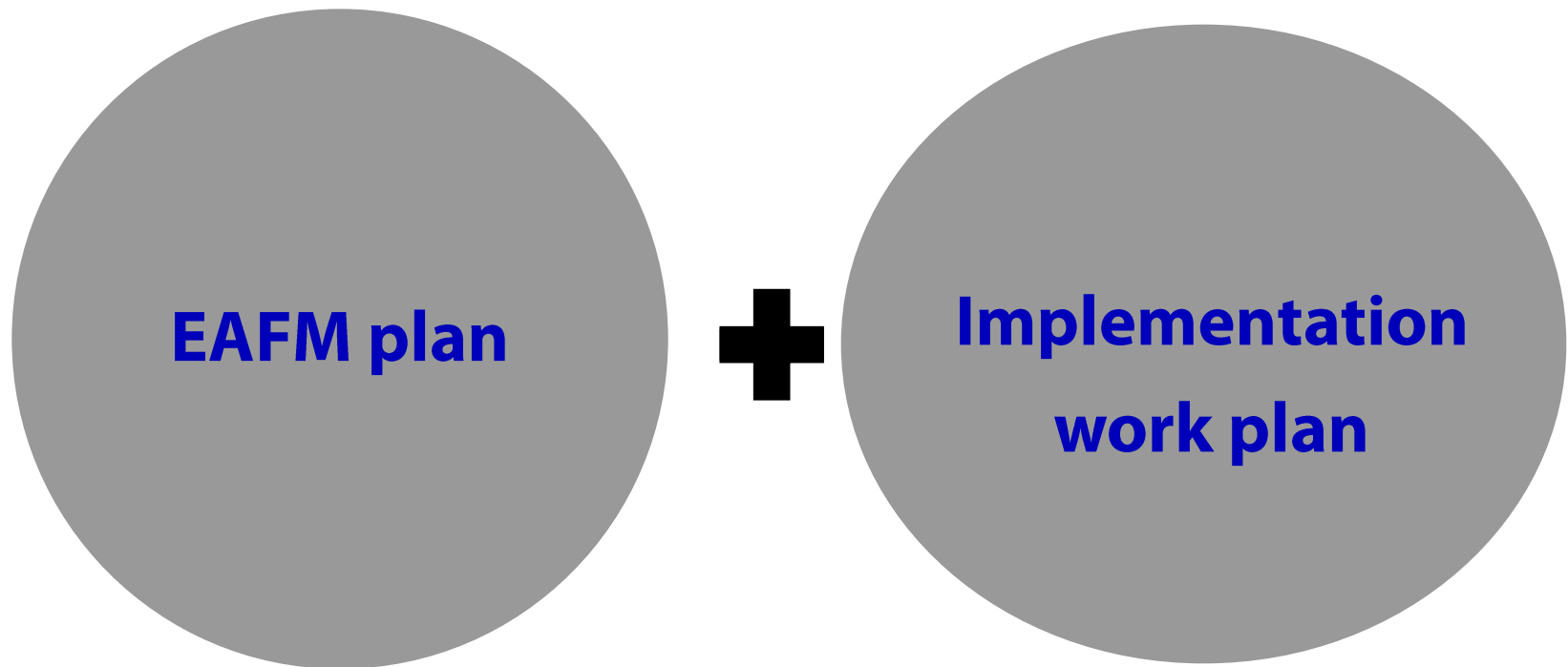
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Need a work plan to help implement the EAFM Plan





Implementation work plan

- Implementation will require working with other sector agencies
- Each agency should have a clearly defined role and responsibility
 - WHAT tasks need to be done?
 - WHO does them?
 - WHEN will they be done?



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



Communicating the EAFM Plan

Purpose → Sharing the EAFM plan and results with target audiences

How?

- Identify target audiences
- Develop approaches for communicating with each
- Develop key messages, languages
- Timing, location



Communication Strategy

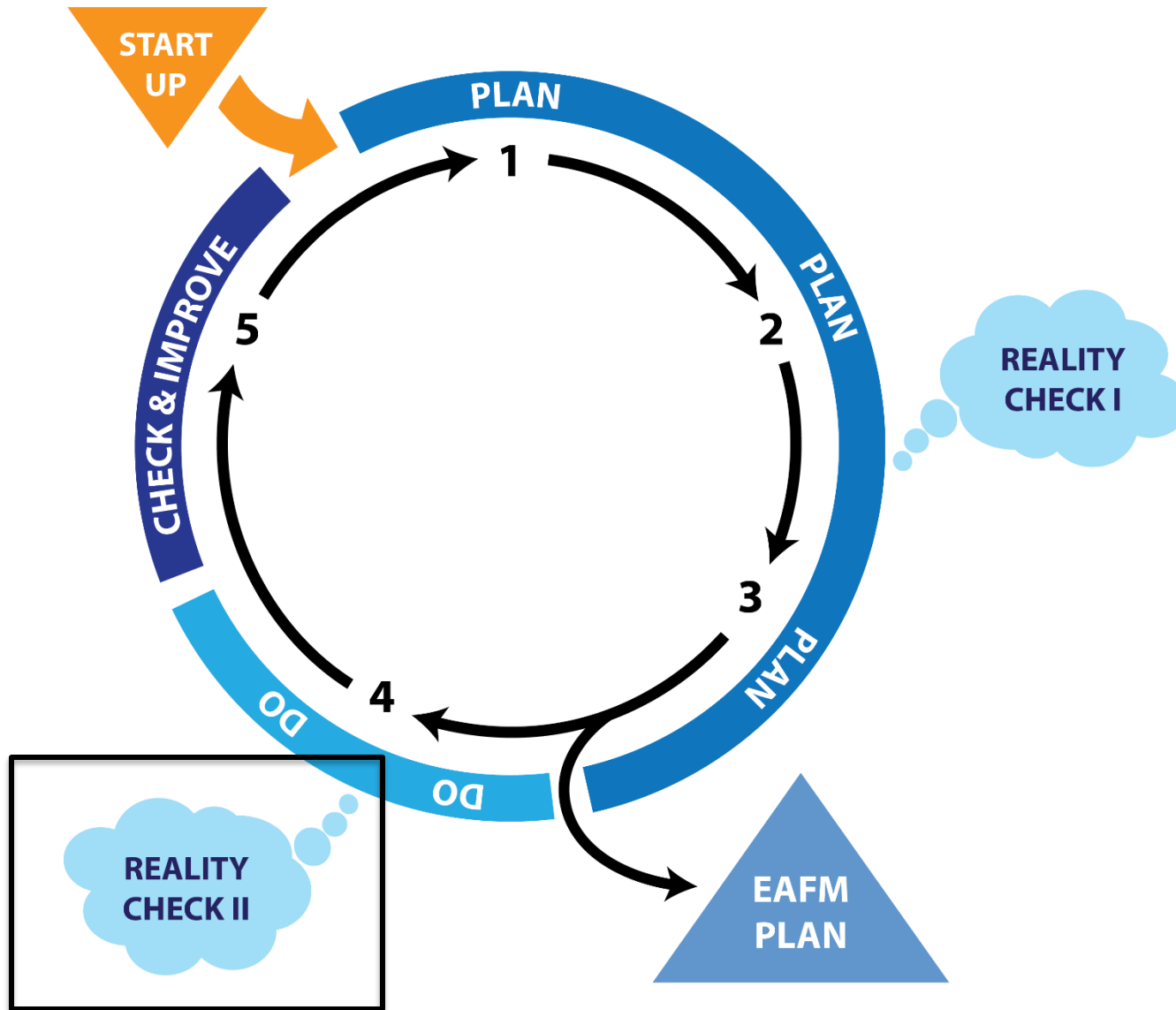
Target audience	Communication method (how & where)	Key messages	Timing



Key messages

In Step 4:

- **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**
- **An implementation work plan is needed to put the EAFM plan into action**



9. Step 5 Monitor, evaluate & adapt

Source : http://www.boblme.org/eafm/course_materials.html



**CORAL TRIANGLE
INITIATIVE**
ON CORAL REEFS, FISHERIES AND FOOD SECURITY

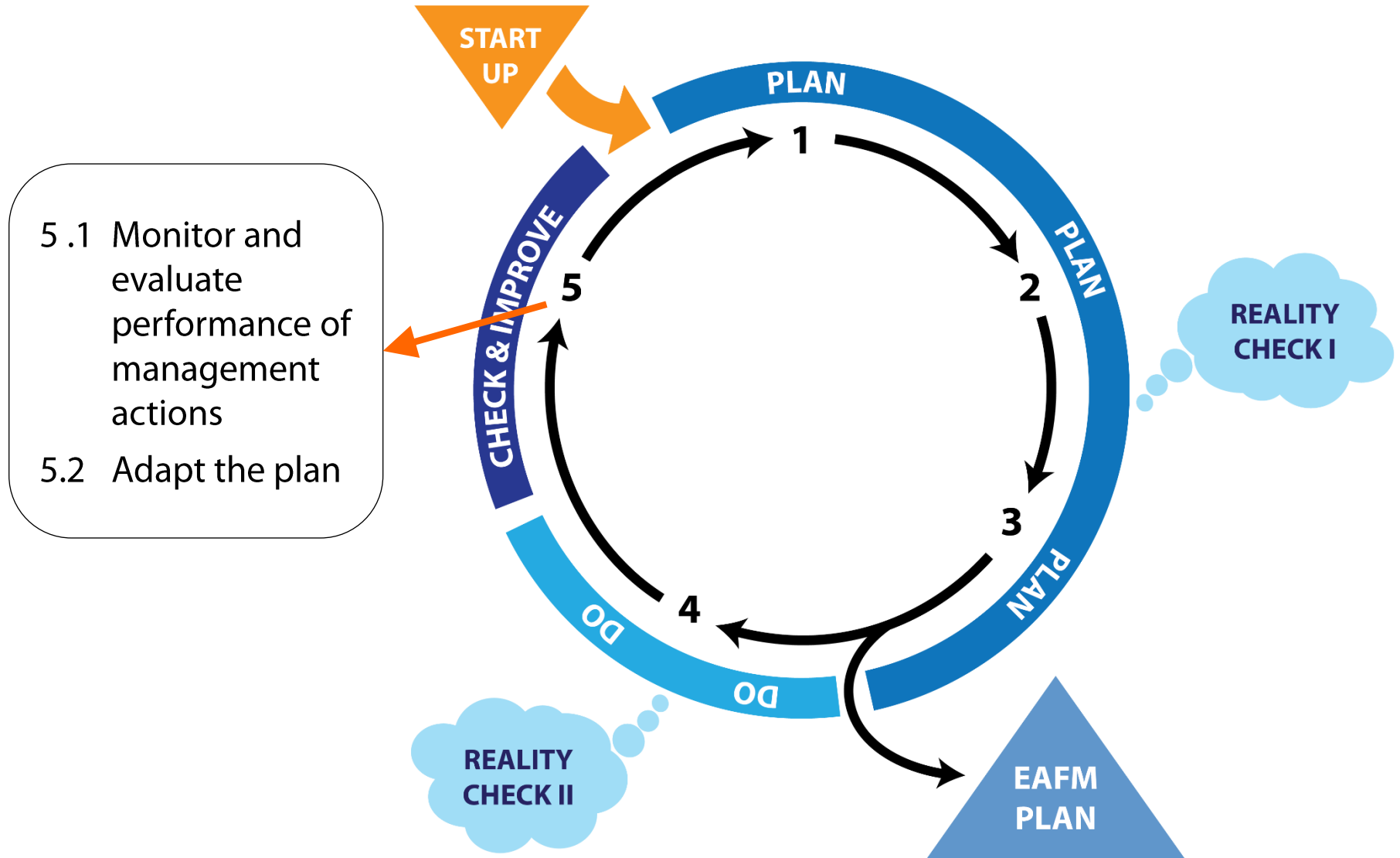


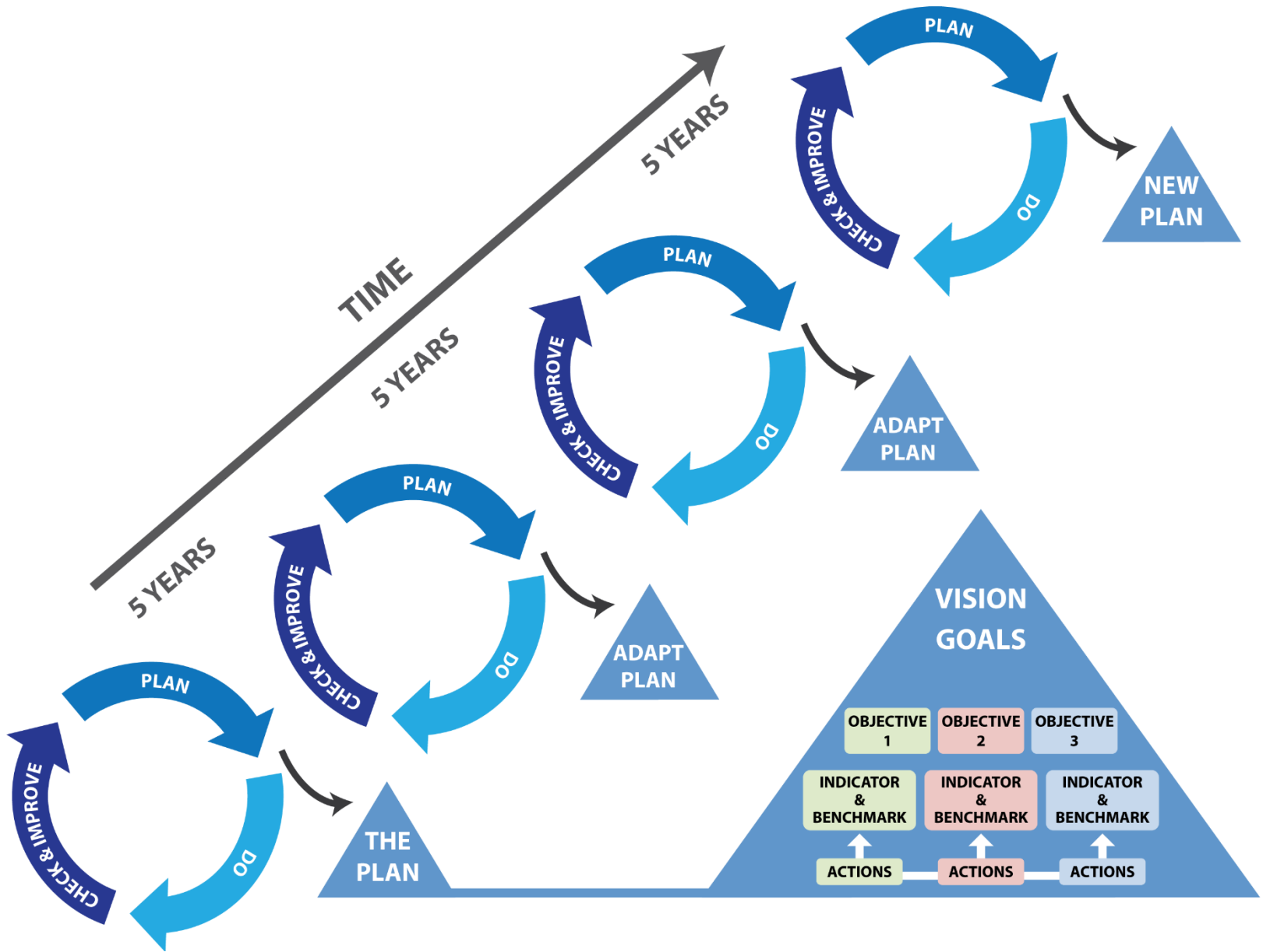
Norad



USAID
FROM THE AMERICAN PEOPLE

ASIA







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
- M&E provides the critical information for adaptive management (Adapt the plan as required)
 - Monitor: Collect data (focus on indicators)
 - Evaluate: Collate results of monitoring and evaluate management performance against benchmarks, and report



Monitor

- **Collect data for each indicator**

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

- **Frequency of monitoring depends on the indicator**

- Some indicators will require monthly, some seasonal and some annual sampling

- **Participatory M&E**



Evaluate

- Evaluate all indicators
- Assess other sources of information that verify (confirm or refute) the indicator evaluation

e.g. cross-check with stakeholder observations



Communicating and reporting

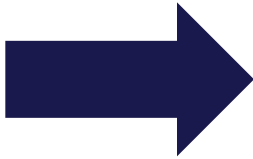
- The evaluation needs to be communicated
- Different users will require different reporting styles
 - Simple and easy to understand for community stakeholders



Review and adapt

Monitoring

1 YEAR

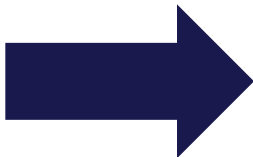


Short-term reviews

- 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

A blue-toned illustration at the top of the slide depicts a coastal scene. It includes several boats: a small rowing boat, a larger fishing boat with a net, and a small motorboat. A sign on a post in the water reads "MARINE RESERVE" and "NO FISHING". The background shows a coastline with buildings and a lighthouse.

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, where necessary)
- 5-yearly review: are you meeting objectives and goals? (if not, may be necessary to also revisit issues and goals as well)