

Developing capacity in the Ecosystem Approach to Aquaculture Management (EAAM)

*Why do we use the ecosystem
approach to aquaculture (EAA)
and what are its principles?*



Module objectives



After this session you will be able to:

- Explain the principles of using an EAAM
- Explain how EAAM fits with other approaches
- Understand the need to find a balance
- Understand the difficulty in dealing with multiple societal objectives
- Understand the principles of EAAM and their links to the FAO Code of Conduct for Responsible Fisheries (CCRF)

What is EAAM?

EAAM is simply the ecosystem approach (EA) applied to aquaculture management (AM)

$$\text{EAAM} = \text{EA} + \text{AM}$$

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



The three Principles of EAAM

*Ecological
well being*

Aquaculture should be developed in the context of ecosystem functions and services with no degradation of these beyond their resilience capacity.

*Human
well being*

Aquaculture should improve human well-being and equity for all relevant stakeholders.

*Good
governance*

Aquaculture should be developed in the context of other sectors, policies and goals



Activity 5: Grouping threats & issues

Revisit Myanmar's aquaculture threats & issues.

Discuss whether any other threats & issues need to be added?

Group the threats & issues under the three EAAM components on a flip chart:

Ecological
well being

Human
well being

Good
governance



Conventional vs ecosystem approach

EAAM works on existing elements of aquaculture management and improves them with a system approach and broader participation

Conventional approach	Ecosystem approach
Top-down	Participatory
One objective: production	Multiple objectives
Sectoral	Interaction with other sectors
Farm scale (most common)	Multiple (nested) scales
Predictive	Adaptive
Scientific knowledge	Extended knowledge
Prescriptions	Incentives
Corporate	Public/Transparent

Why EAAM?

- System approach on the links between ecosystems and aquaculture;
- Contribution to more effective resource planning;
- Long term planning that can support countries' sustainable policies
- Participation of stakeholders and synergies among sectors
- Gender inclusion
- Conflict management
- Sustainable management of resources



Why EAAM? (contd.)

- More equitable use of natural resources
- Multi-functionality of ecosystems
- Synergic support to the fishery sector
- Precautionary approach
- Increased resilience and adaptation against climate change, population growth, environmental pressure
- Monitoring and adaptability to changing conditions
- Participation of donors to support the EAAM

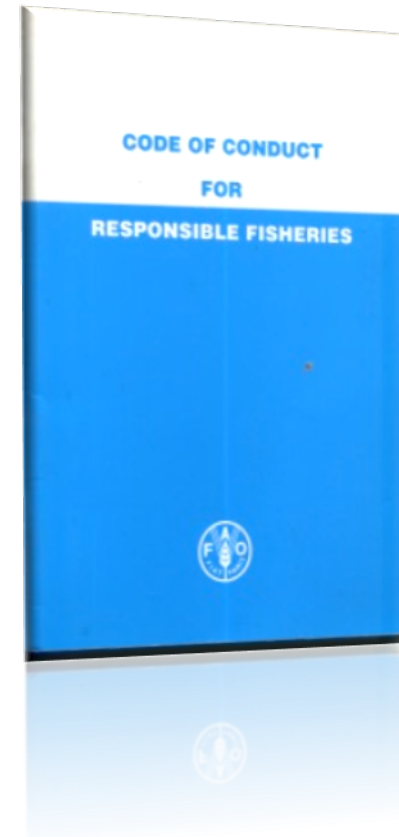


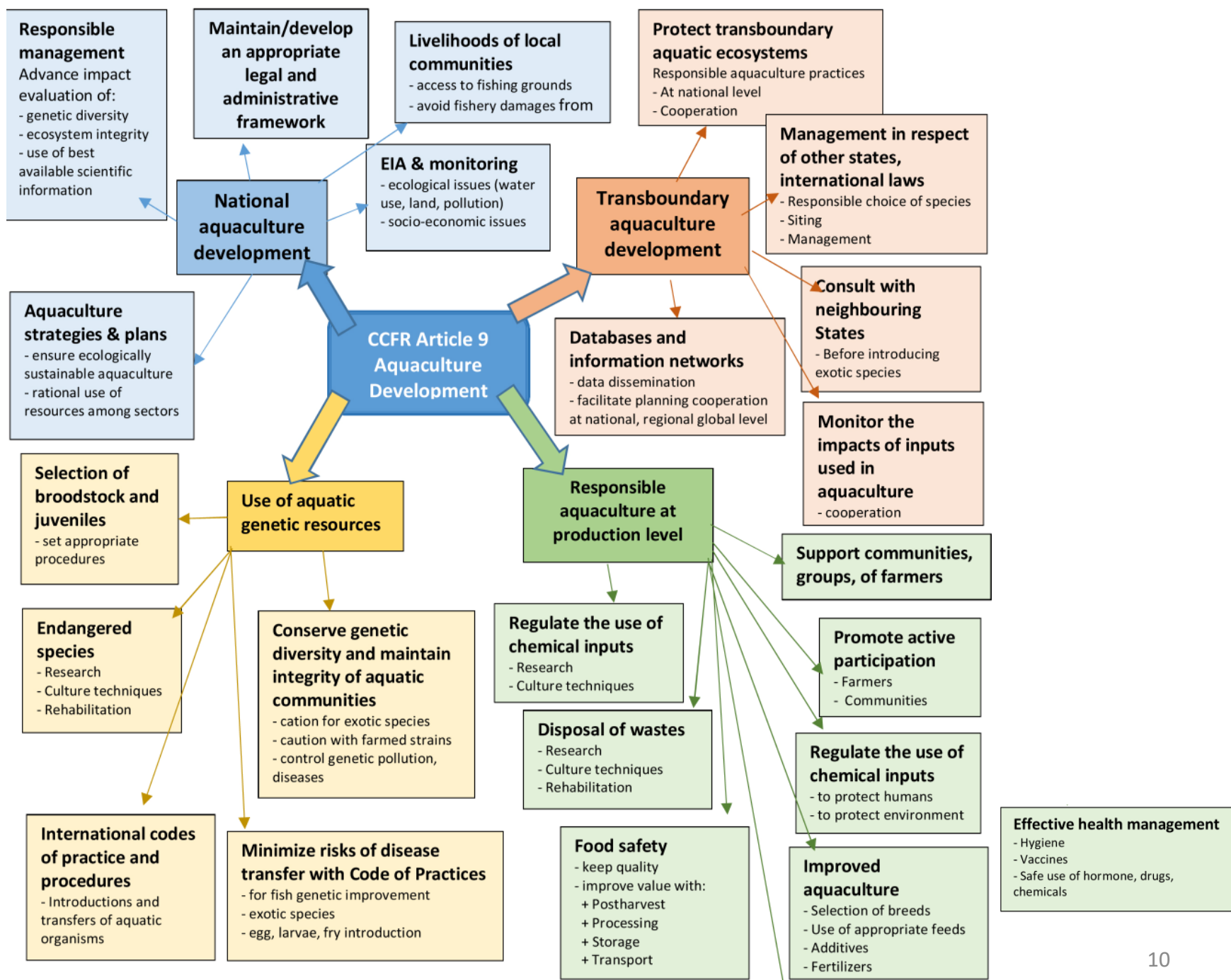
Other management approaches and standards

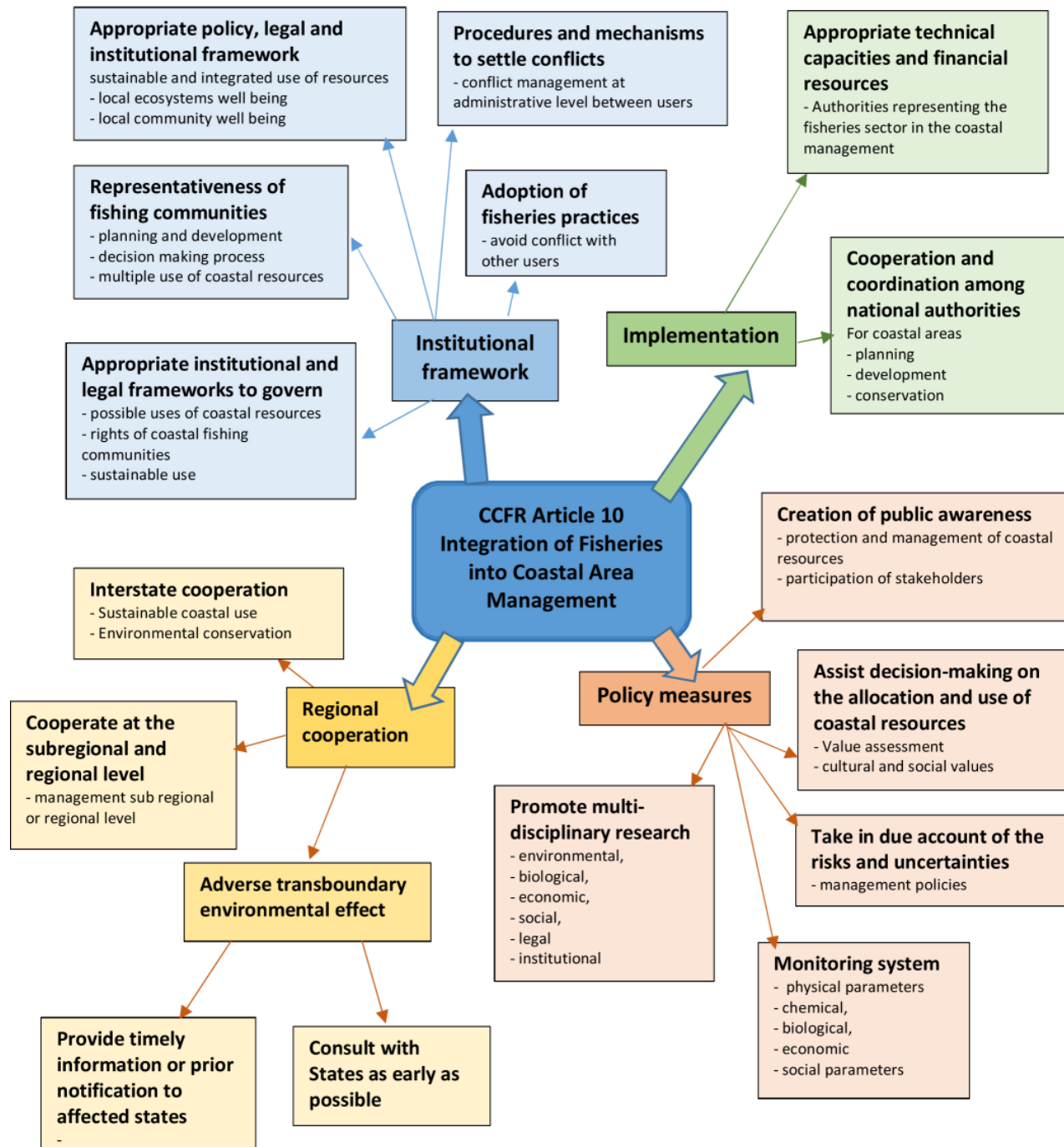
FAO Code of Conduct for Responsible Fisheries (CCRF)

Principles and standards for **responsible practices** to ensure **conservation, management and development** of aquatic resources, with due **respect for the ecosystem and biodiversity**.

The Code recognizes the **nutritional, economic, social, environmental and cultural importance** of fisheries and aquaculture and the interests of all **stakeholders**







Other management approaches and standards

BLUE GROWTH

It focuses on capture fisheries; aquaculture; ecosystem services; trade and social protection. It advocates ways to balance economic growth, social development, food security, and sustainable use of aquatic living resources



Other management approaches and standards

Good Aquaculture practices (GAqP)

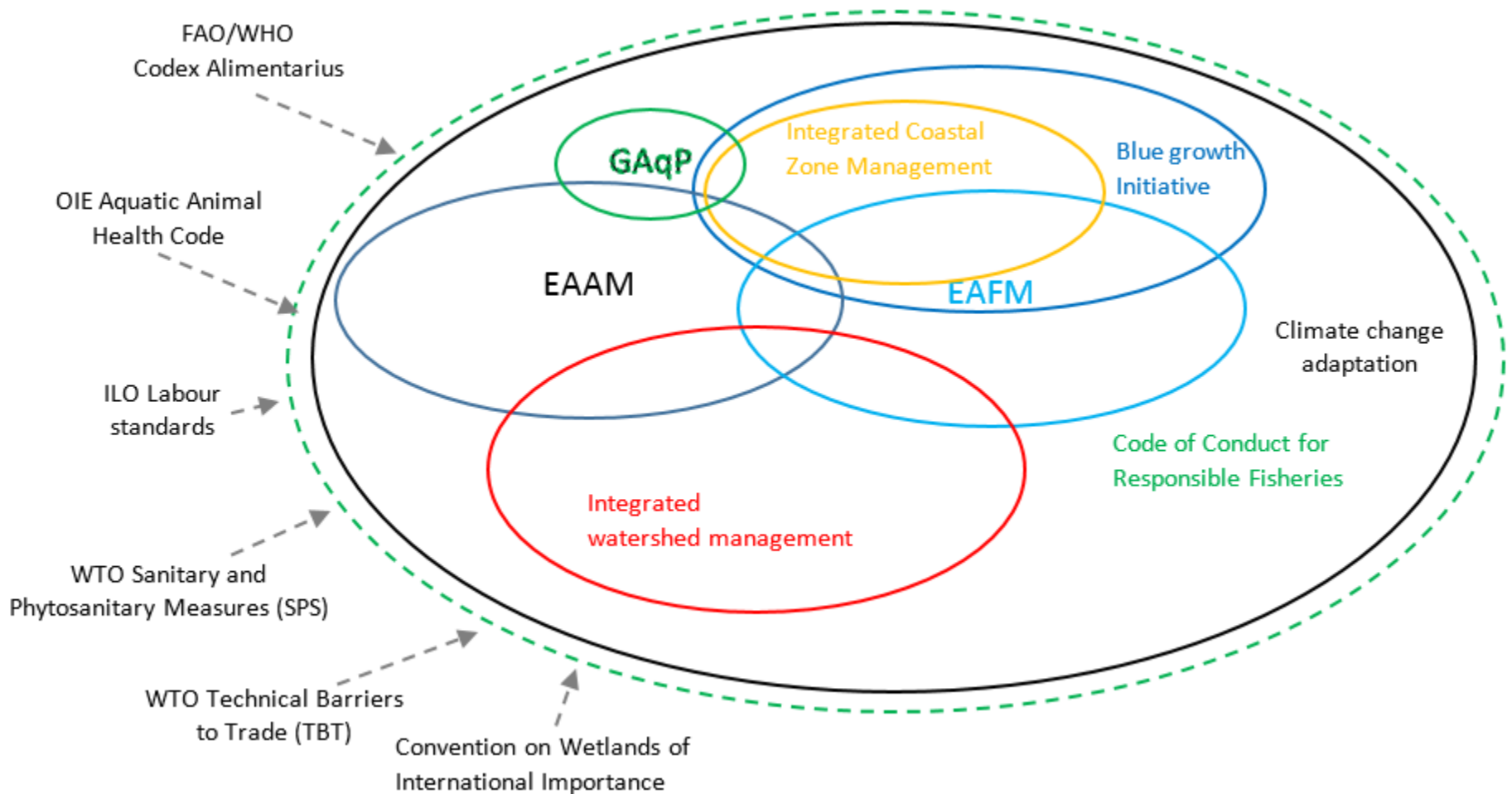
NACA/ASEAN initiative to prevent or minimize the risks of four areas of aquaculture production: Food safety, animal health, environmental integrity and socio-economic aspects.

Integrated coastal zone management (ICZM):

An ecosystem approach to managing coastal areas in integrative holistic ways with interactive planning processes.



Other management approaches and standards



Key messages

- **EAAM** is applying **EA** to aquaculture management (**AM**)
- **EAFM** has 3 components:
 - Ecological well-being
 - Human well-being
 - Good governance
- EAAM seeks to find a balance between these 3 components
- Many benefits of using an EAAM
- Builds on existing conventional management (*i.e.* we move towards EAAM)
- EAAM fits in and overlaps with other forms of integrated management



Activity 6: Balancing different objectives

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



Activity 7: Group timelines

Horizontal line represents 'time'

1. Think of events, (over the past 20 - 30 years, that have affected or been affected by, your aquaculture (political, environmental, social, etc).

(Events can be local, national or global)

2. Write each event (with its date) on separate card
3. Plot your cards onto the timeline



Key EAAM elements

1. Good governance

2. Appropriate scale

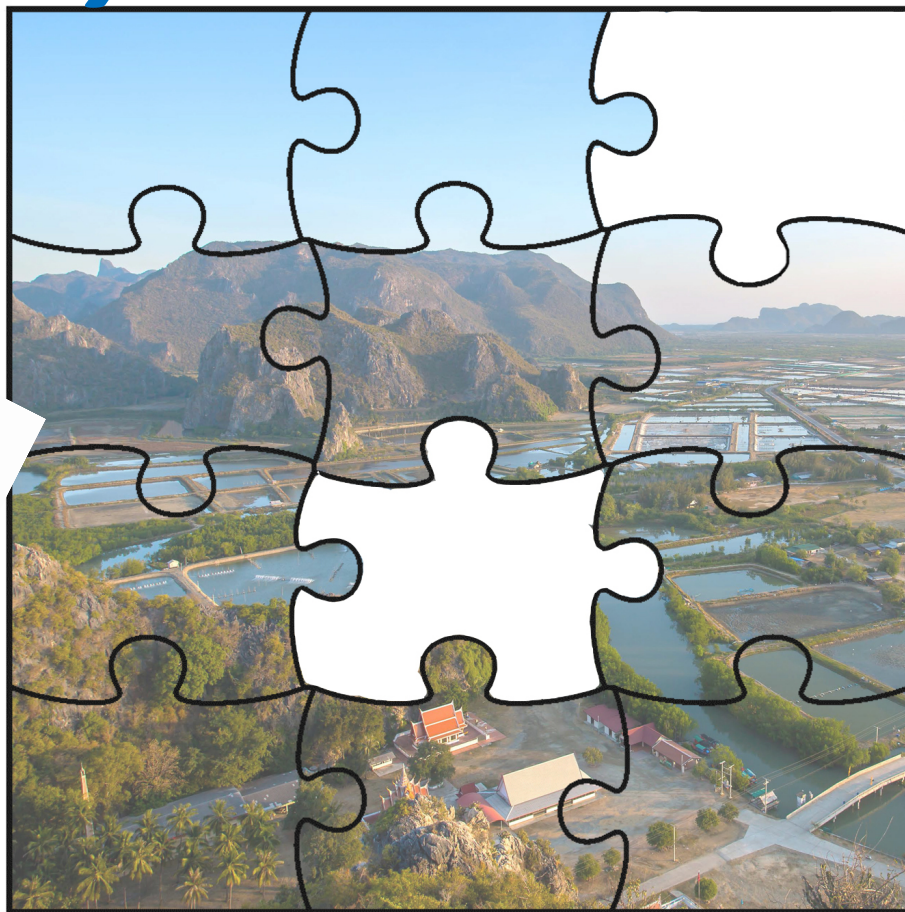
3. Increased participation

4. multiple objectives

5. Cooperation coordination

7. Precautionary approach

6. adaptive management





Good governance attributes

Governance is the **way rules are set and implemented**. It includes the **mechanisms, processes and institutions** through which people and institutions **find agreements among participated priorities**

community participation

collaborative decision-making

effective institutions

skills and commitment

legal authority to manage

dedicated resources

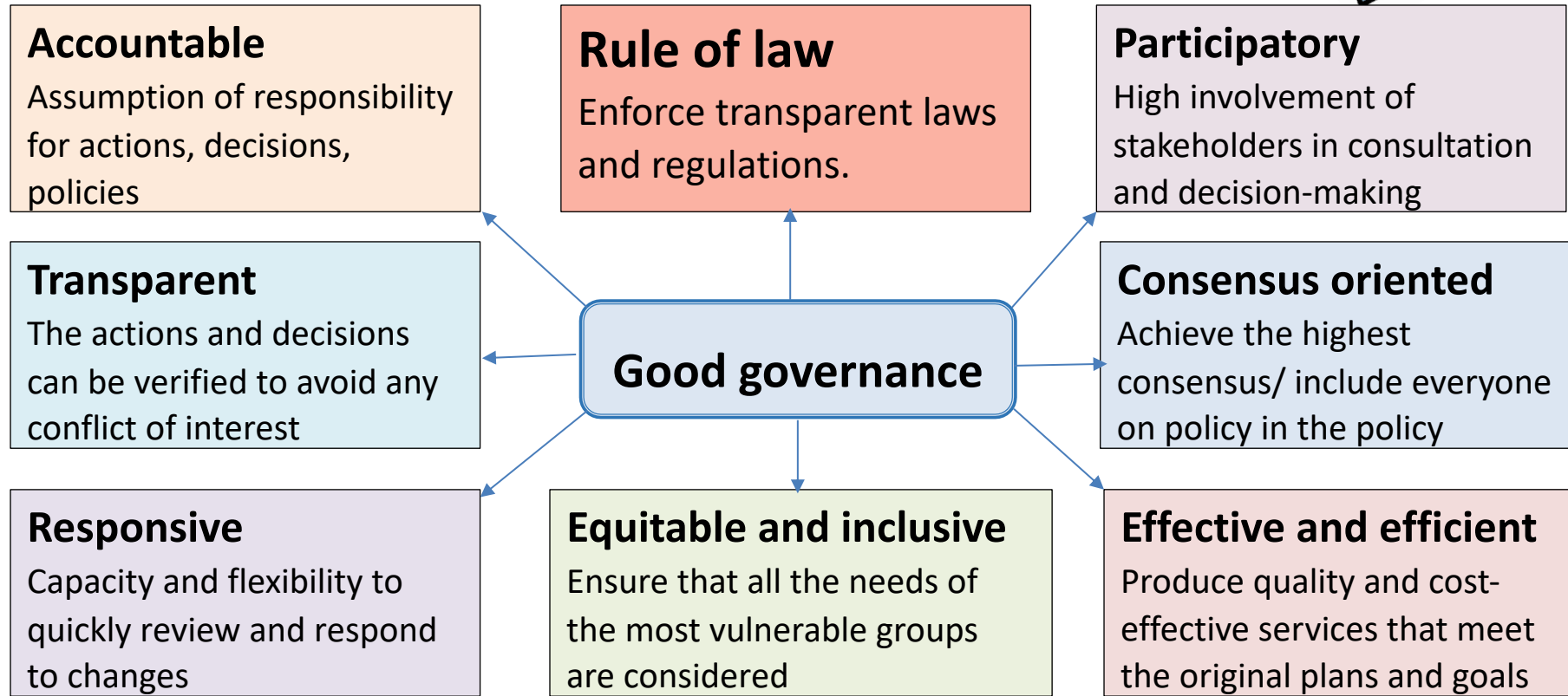
key political support

enforcement and compliance

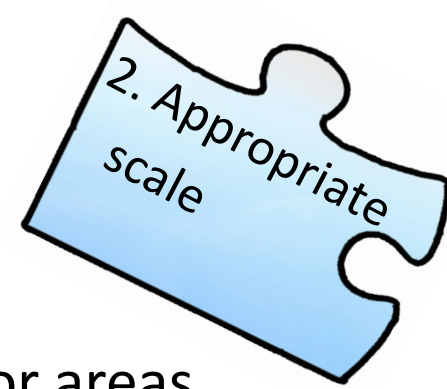


Good governance characteristics

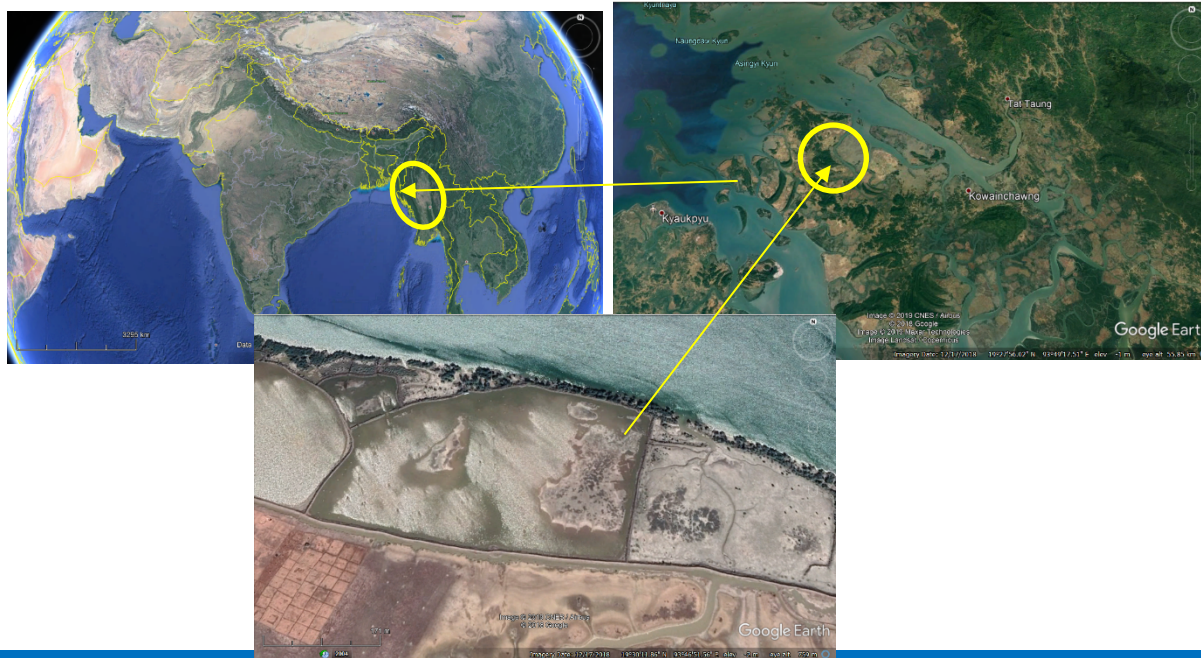
1. Good governance



Appropriate scale



The scale define the boundaries of the ecosystem.
The scale criteria can be either ecological (spatial) for areas that have the same environmental characteristics, socio-economic, political or temporal



Appropriate scale



Ecological scaling

Aligns with ecosystem boundaries or productions

- Mangrove aquaculture
- Shrimp areas
- Coastal aquaculture

Temporal scaling

Consider changes over time

- Short term
- Long term

Socio-economic scaling

Includes socio-economic issues

- Urban
- Rural
- Production chain

Political/Governance scaling

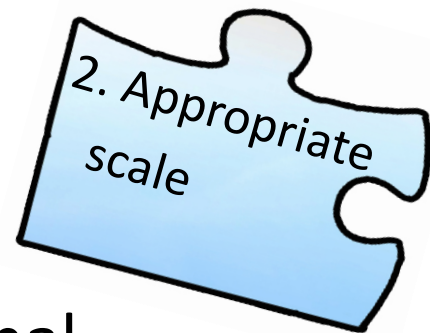
Who has the mandate to manage

- Single jurisdiction
- Multiple jurisdiction
- Local district level
- National level



Realities of scale

Take a practical approach:
begin working with what exists, *e.g.* jurisdictional
boundaries (townships, states/regions)



Challenge

Getting the scale correct for the four dimensions.
This often requires increased cooperation and
coordination across jurisdictions, agencies and
stakeholders.



Activity 8: Governance scale discussion

- In Myanmar, aquaculture management has been devolved down to state & regional level.
- In your groups, answer the question: “Is the state/region the appropriate scale for managing aquaculture?”



Increased participation

3. Increased participation

One of the foundations of the EAAM is the participation of people and groups that brings in different needs, issues and priorities

Value chain operators

Other sectors/industries

Energy industry

village communities

NGOs, INGOs

Agriculture farmers/groups

Aquaculture farmers
farmers groups

Women groups

Minority groups

Tourism industry

Government departments/GOs
(Fishery, Agriculture, Forestry, Water
Management, Tourism, Planning, Mines)

Scientist groups



4. multiple objectives

Multiple objectives

The success of EAAM

reaching a balance between:

- Conservation and productivity
- Ecological and socio-economic well being
- Aquaculture and other productive sectors



gender



Market access



Other water uses

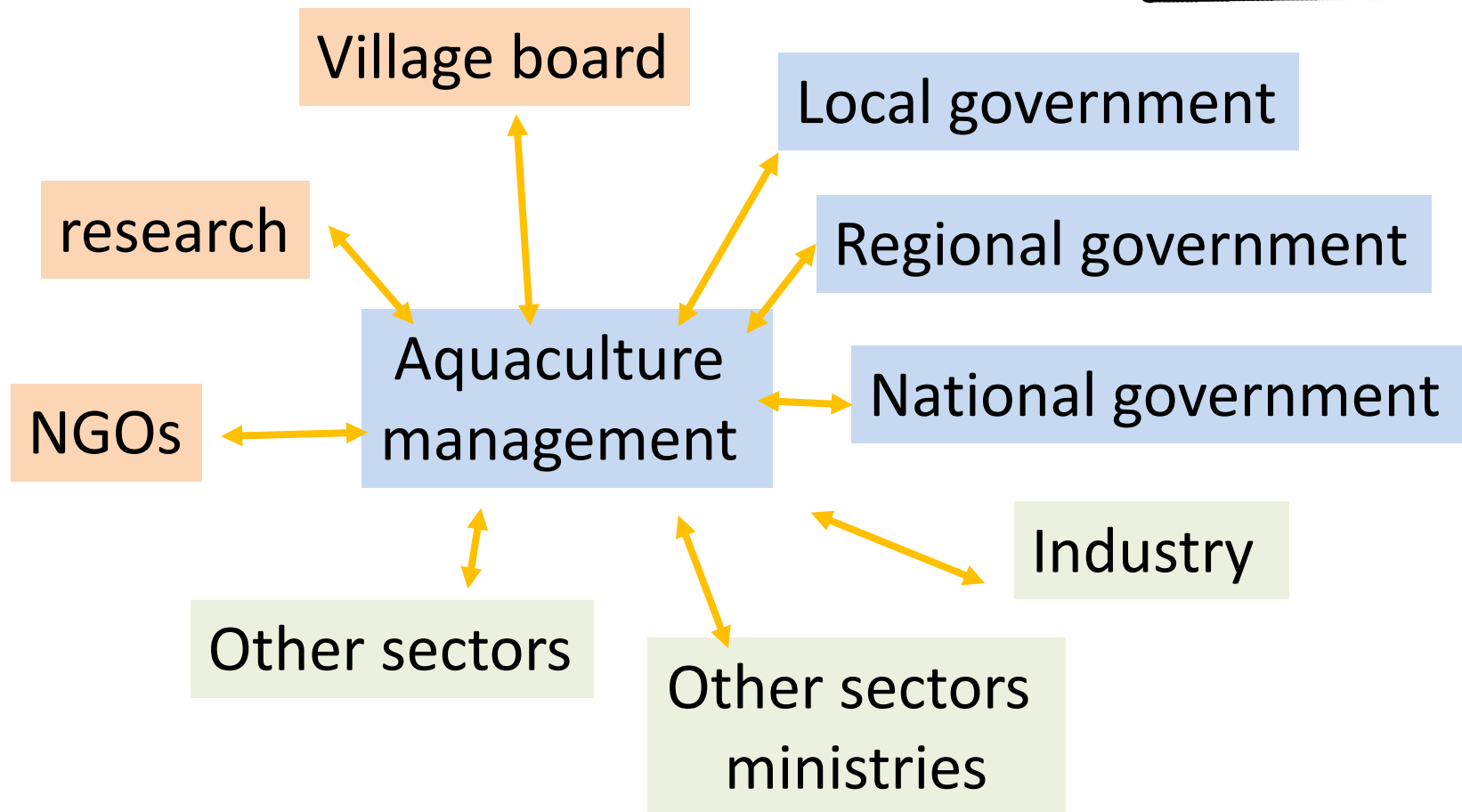
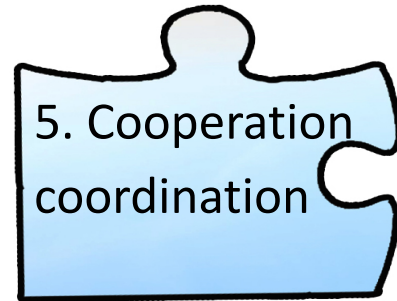
Aquaculture



Agriculture

Cooperation & coordination

EAAM has interactions of the aquaculture sector with other sectors



Institutional cooperation & coordination

How do you encourage this?

- Talk to others
- Link in with existing activities
- Share information
- Harmonize work plans/budgets
- Memorandums of understanding/binding agreements

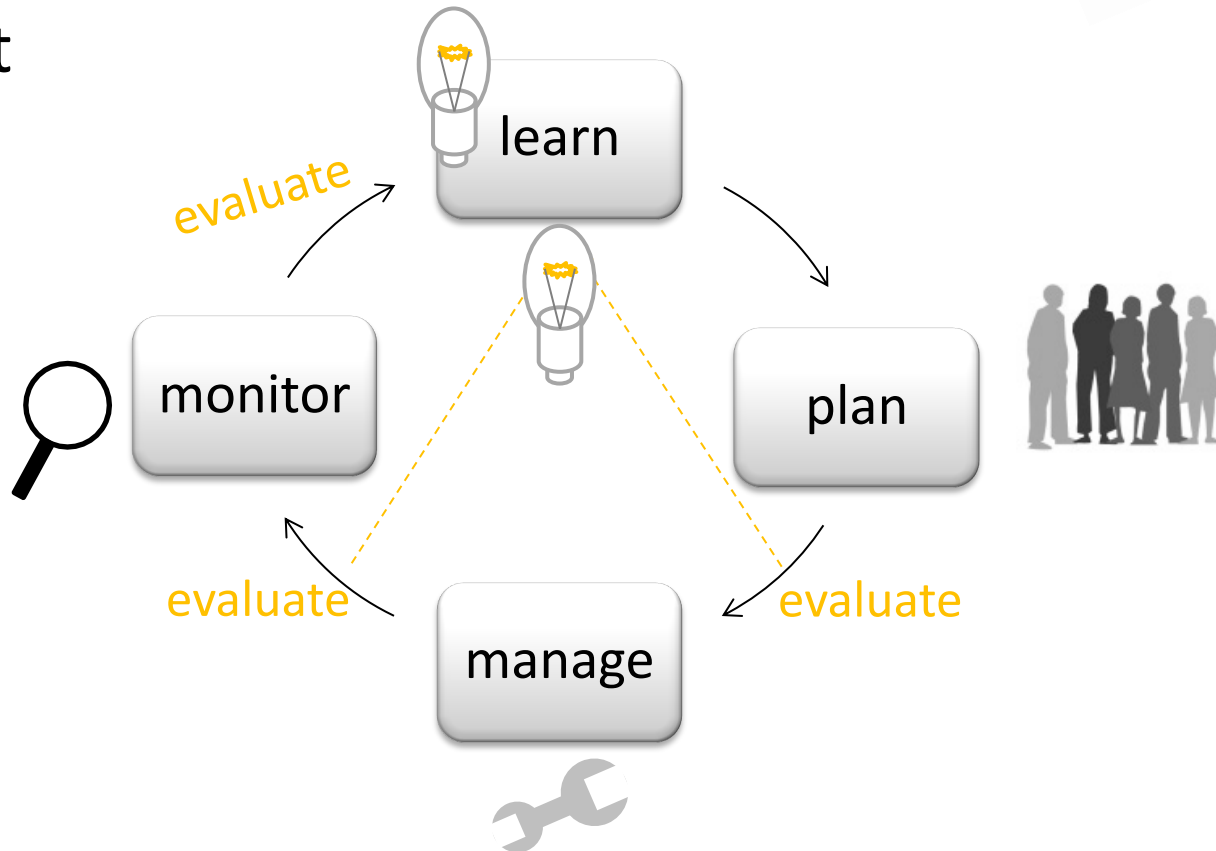


..... Any other suggestions?



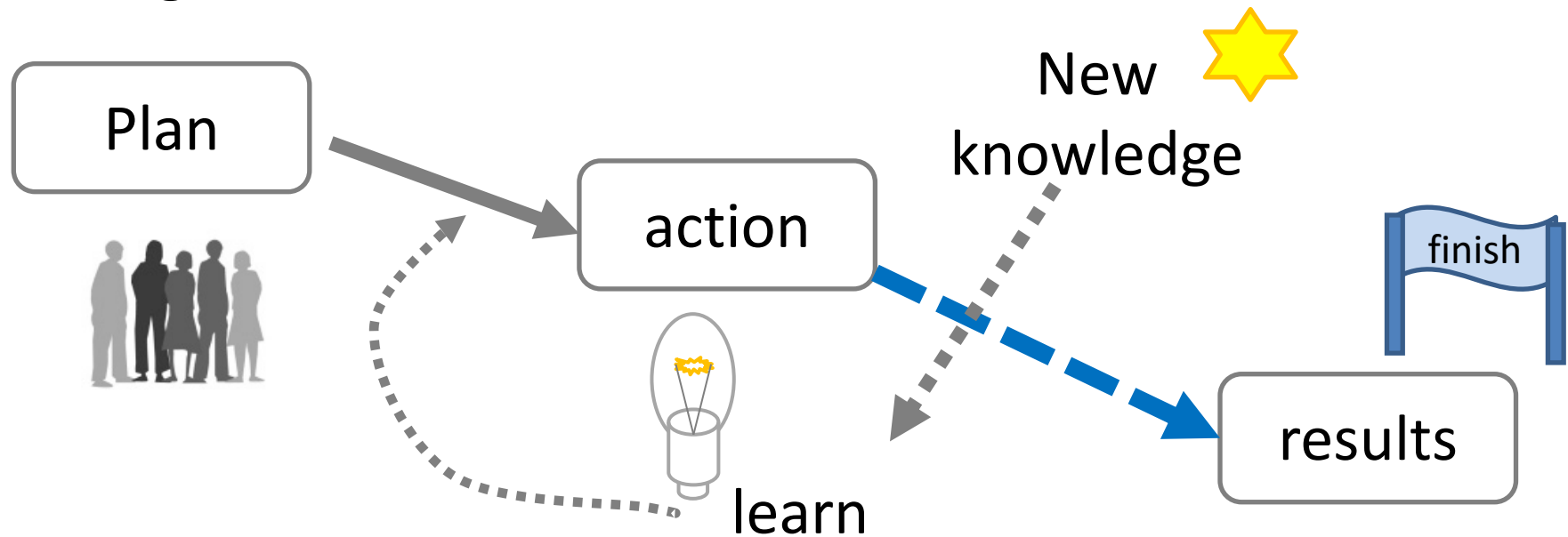
Adaptive management

Adaptive management is *learning by doing*.
Management decisions are chosen while at the same time the information gathered increases experience and improves management



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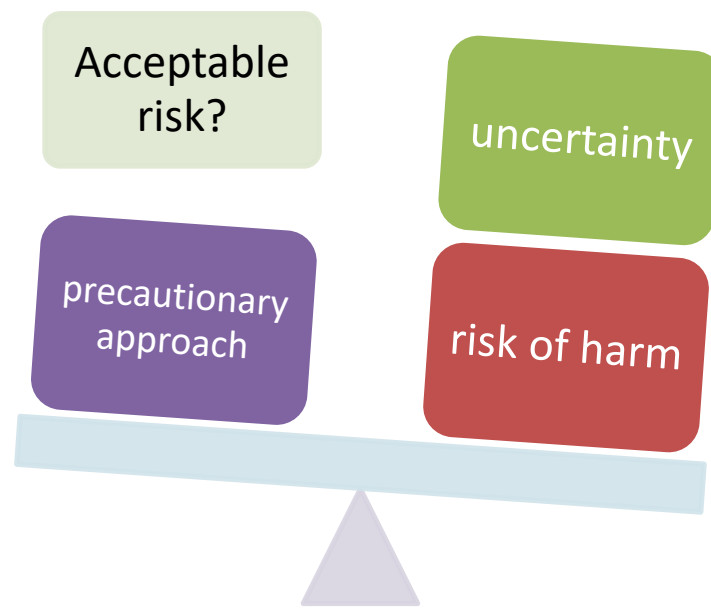
Precautionary approach



Where to use

Where there is a **lack of sufficient scientific knowledge or information to take a sound decision** or where the **threat of serious or irreversible damage to ecosystems exists**

Actions should be **carefully** taken if the consequences are uncertain or potentially dangerous



Precautionary approach

Example

We want to
produce 500
MT/year



A community of fishermen wants to shift to cage aquaculture of high value fish species in a creek where there are mangroves.



Precautionary approach

Example

We have no data
500 MT/year
may be risky

Water
exchange may
be low

Shwethaungyan

There are no data on the carrying capacity of the creek. Some water measures were carried out in the past by the university in partnership with the environmental protection agency.



Precautionary approach

Example

The area is still an uncontaminated environment, but tourism and human settlements are rapidly growing. There may be concerns of pollution.

We do not know how much pollution will come from people

Perhaps there is big impact from people



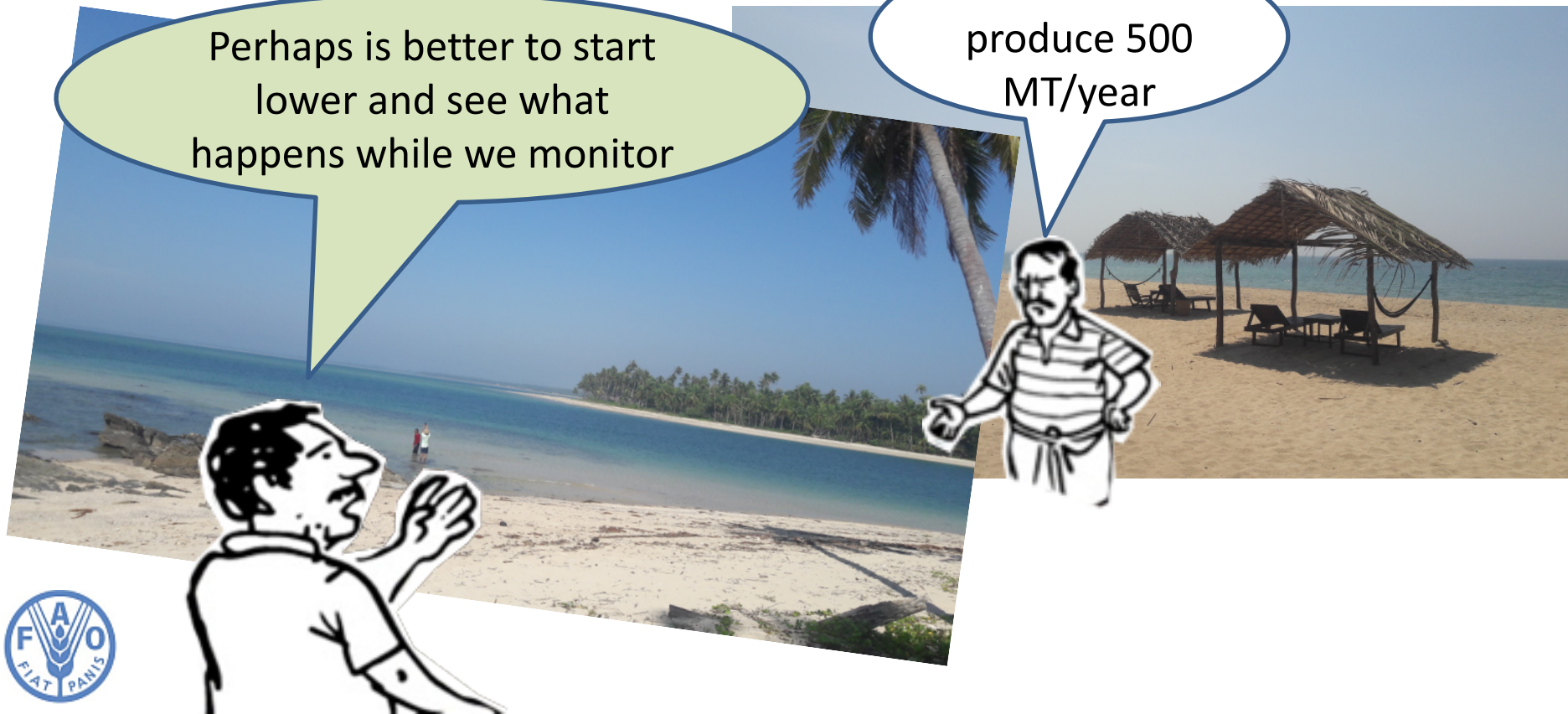
Precautionary approach

Example

The growing impact of tourism does not give assurances on the quality of the water and the cumulative effect of human with aquaculture pollution

Perhaps is better to start lower and see what happens while we monitor

We want to produce 500 MT/year



Precautionary approach

Example

The Department of Aquaculture only allows for an initial farming of 200 MT/year. The DoA leaves the increasing of production to the outcomes of the monitoring of the wastes and environmental indicators.

You start with 200 MT/Year and we let you increase if there are no problems with pollution

Yare Yare
Ok Sayar!



Essential EAAM

To download all materials please visit:

