

## What are the “*management*” questions?

### 1. How is habitat changing and what are the causes of changes

- What is the distribution of major habitats (habitat mapping)
- How is it changing (quality/health) over time
- What are the factors that affect habitats (reefs, seagrass) and their impacts (development, climate change, boat anchorage, etc.)
- Are specific/multiple stressors including oceanographic/atmospheric conditions affecting water quality/habitats
- Is management safeguarding biodiversity, marine ecosystems and ecological processes?

### 2. What is the seasonal occurrence of ciguatera/fish poisoning

- Are there ciguatera outbreaks (cases/dinoflagellates)
- What species are more likely to be toxic, from which locations

### 3. What is the status of the targeted fisheries?

- spawning seasons/areas
- recruitment, growth, mortality, health
- What are the recommended size limits/species for harvesting
- What is the current stock
- How much can we harvest from the stock in a sustainable way
- What are the trends (decline/increase)
- How do we determine if and when to open/close a fishery
- Is there a change in the abundance of fish in the no take areas compared to fished areas?
- Are the average sizes of fish being caught changing?
- Are there signs of certain fish species returning?
- Is the amount of time/effort spent fishing changing?
- Is the fishing methods changing?
- Is there any change in targeted species over time
- What is the distribution of the targeted species/spawning areas

### 4. What are the export volumes, values and trends by species

- Commercial exports
- Non-monetary exports for personal uses
- What is the level of illegal exports

**5. What is the contribution of coastal/inshore fisheries sectors and their management to the national and local objectives**

- What is the real market value of commercial fisheries (local vs international markets)
- Are govt funded FADs creating employment/wealth for local communities
- How much fish (volume/value) is sold at market outlets (road sides,...) /artisanal
- Who are the resources users and what are their relative impacts
- What are the best alternative livelihood options for different countries
- Database/data sharing to support that question
- What is the volume and value of subsistence fisheries
- How much fish is consumed
- What is the importance of fisheries for livelihood of populations
- Who are the resources users and what are their relative impacts
- What are the best alternative livelihood options for different countries
- Is the Community diet changing in regards to fisheries resources?  
Are we getting enough to eat now?
- Are our management actions working to reduce threats?  
(e.g. littering, sand mining, sedimentation, poaching, reclamation)
- Is the household income from fish changing?
- Is the management improving social cohesion or conflicts within the community?
- How does management affect village governance and vice versa?
- Is management strengthening community a sense of ownership of resources?
- Is the community wealth/standard of living changing as a result of management?

**6. Is enforcement effective**

- Are boundary markers effective for compliance of MMAs regulations
- Is enforcement effective for current legislation and traditional management practices
- How can we enforce or comply to international obligations (CITES, OIE)
- Are licensing conditions relevant to current situation
- Are the fisheries policies inline with current situation (current management practices, size limits...)
- Are the current fisheries legislations effective to address growing demand and expanding industry in a sustainable approach
- What's the level of compliance to management actions?
- What's the effectiveness and ability of the community to enforce management rules?
- Are Legal mechanisms effectively supporting management actions?

**7. Are co-management partnerships effective?**

- Are we getting the support we need from co-managers? (e.g. technical, resources, awareness)
- Are communities supporting the co-management approach
- What do multiple individual sites contribute to the national level targets/objectives and fisheries management?
- Are we providing the right information for communities to make informed decisions?
- What is the budget and cost effectiveness of the program?