EVIDENCE-BASED FISHERIES MANAGEMENT: WHAT IS NEEDED TO ACHIEVE BIOLOGICAL SUSTAINABILITY OF GLOBAL FISHERIES?

Ana Parma
Center for the Study of Marine Systems, CONICET, Argentina

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Session 1
Panel 1.2

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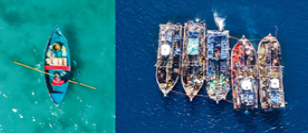
ATTRIBUTES OF EFFECTIVE FISHERIES MANAGEMENT SYSTEMS

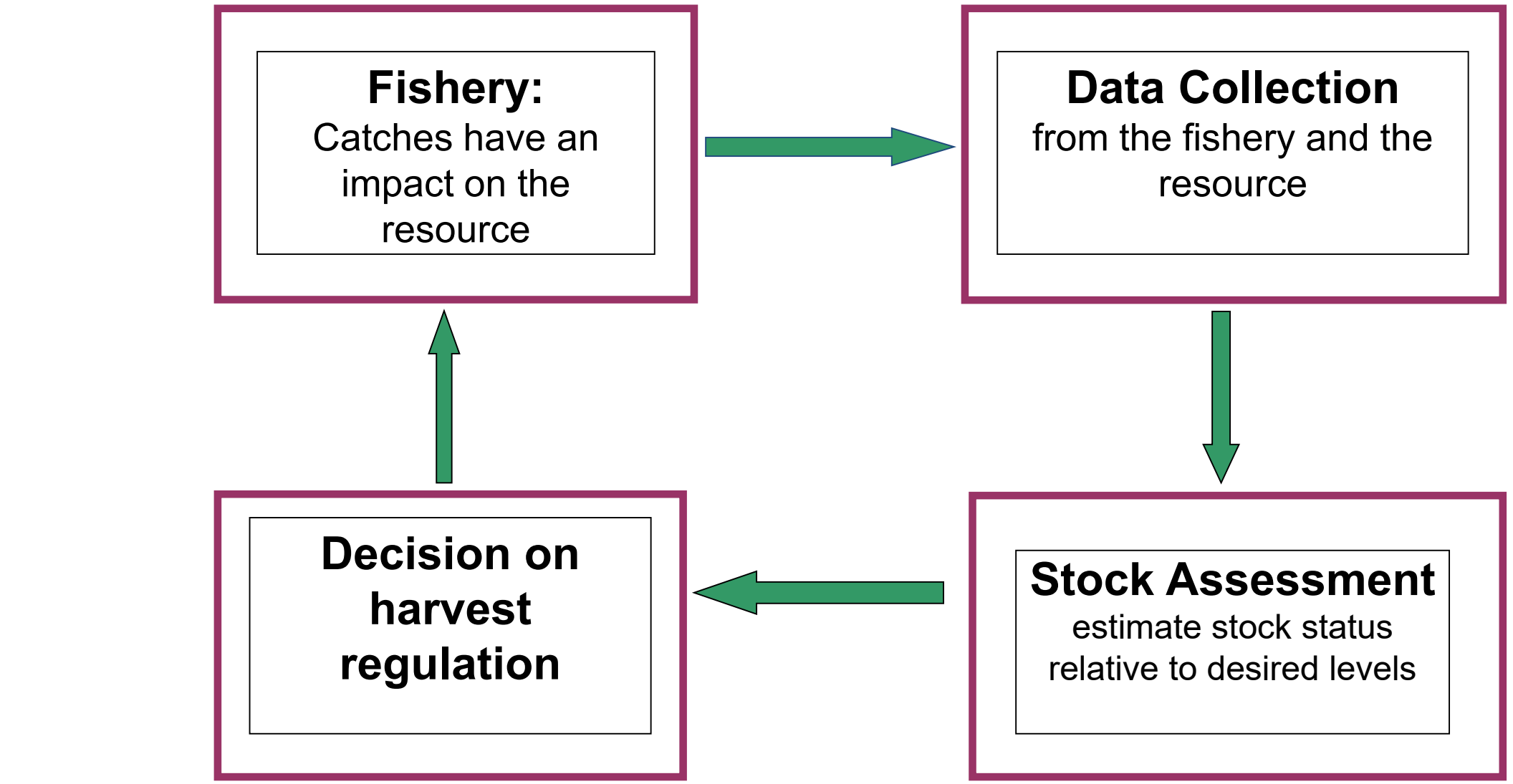


1. Availability of information on resource status and trends relative to desirable levels

2. Capacity to adjust harvest controls in response to changes in stock abundance

3. Ability and willingness to implement and enforce harvest regulations

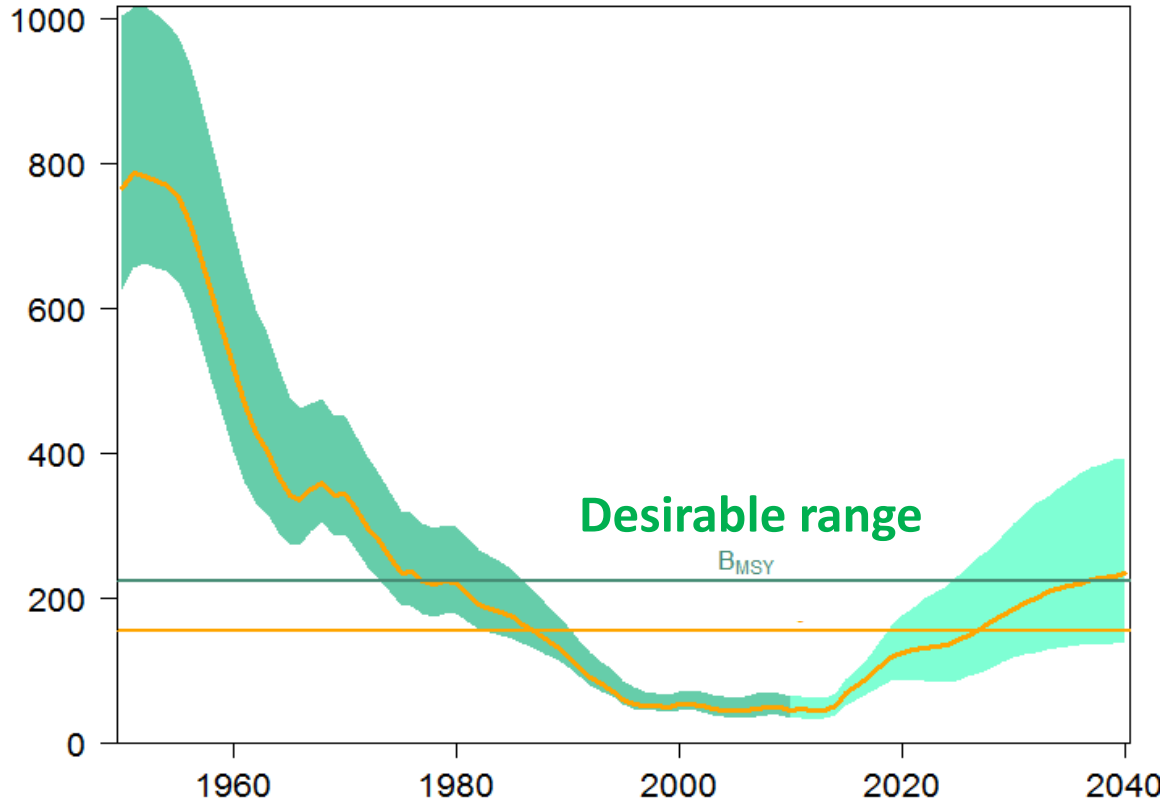
MANAGEMENT CYCLE



1. Information on resource status and trends relative to desirable levels

FORMAL STOCK ASSESSMENTS

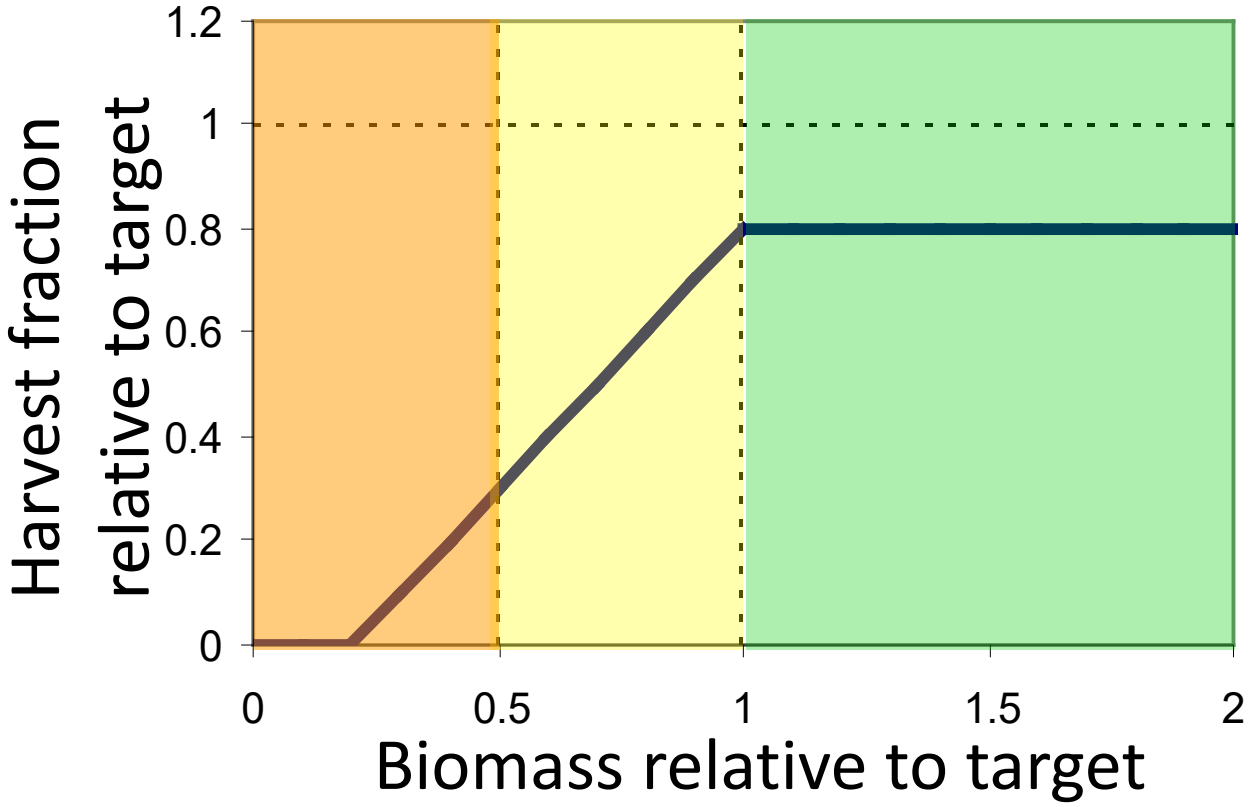
- Analyze data collected using rather complex statistical models
- Estimate current stock status and changes over time
- Estimate desirable levels of stock size



2. Adjust harvest regulations in response to changes in stock abundance

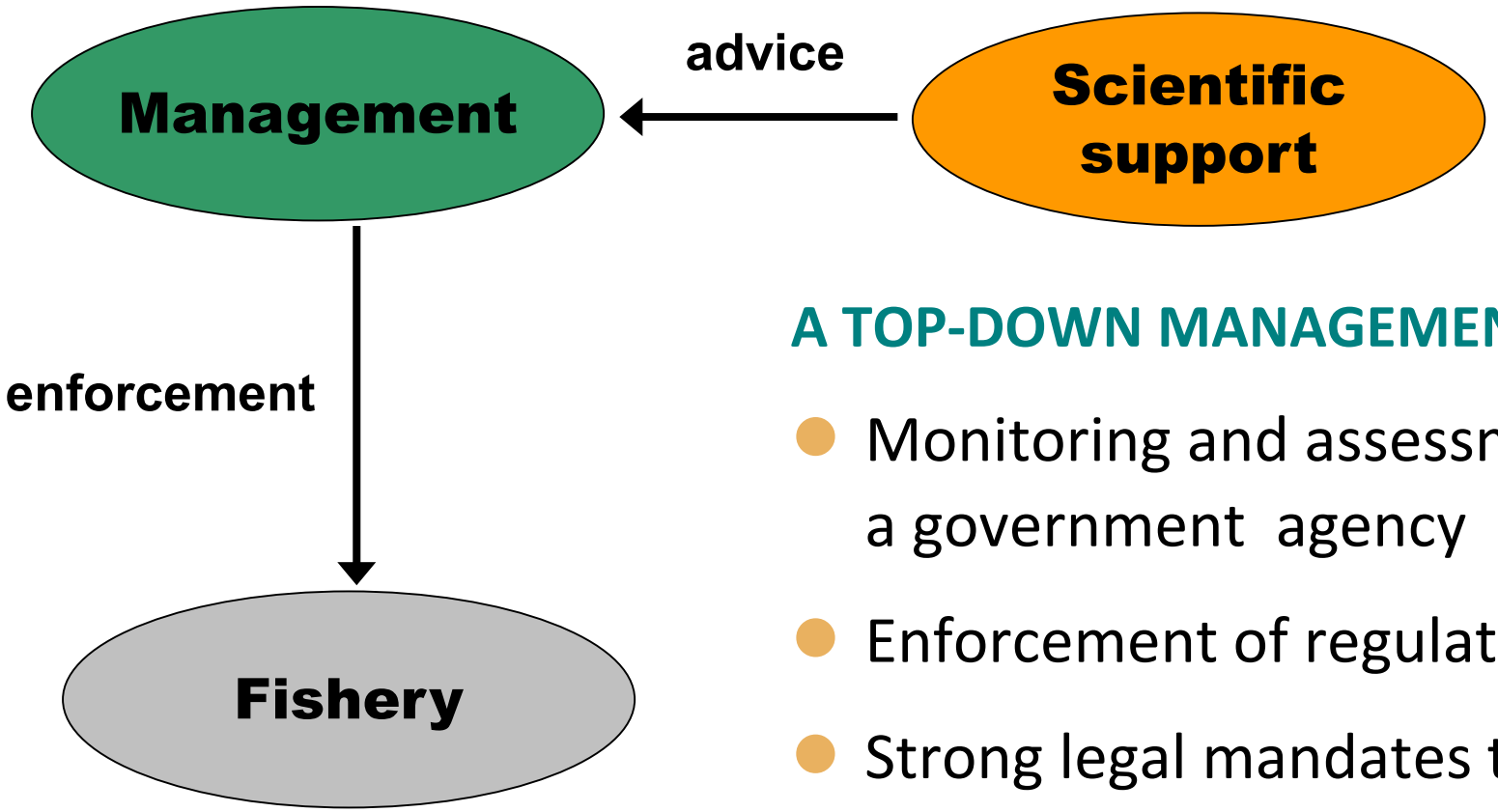
The most common approach is to limit the anual catch

Total Allowable Catch = harvest fraction x biomass estimate



EFFECTIVE MANAGEMENT SYSTEMS

3. Ability to implement and enforce harvest regulations



A TOP-DOWN MANAGEMENT MODEL

- Monitoring and assessments conducted by a government agency
- Enforcement of regulations are centralized
- Strong legal mandates to avoid overfishing and rebuild overfished stocks

THIS APPROACH IS HIGHLY DEMANDING OF DATA AND CAPACITY

Key attributes of fisheries where this approach has resulted in good outcomes:

- They are industrial: landings concentrated in a few ports with significant infrastructure
- Concentration of landings
  - facilitates data collection: tend to be data-rich
  - facilitates enforcement of catch regulations
- Strong government institutions

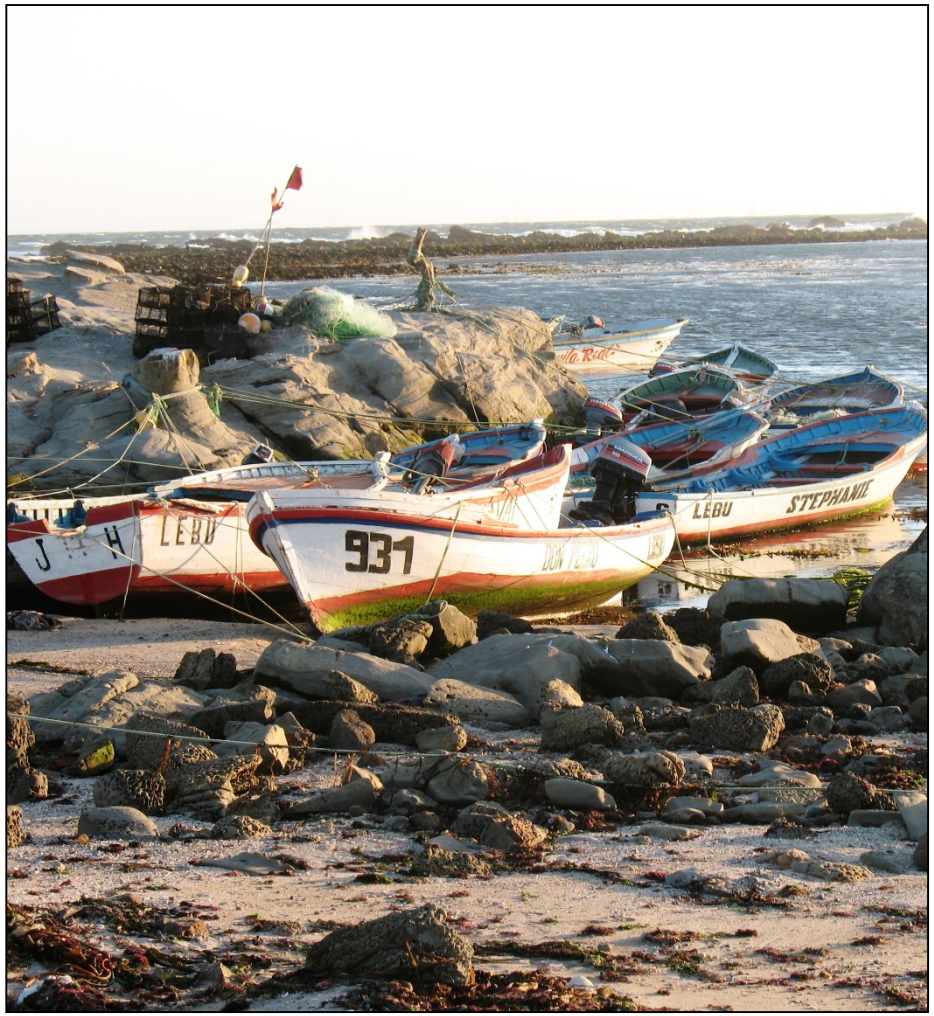
WILL NOT WORK FOR THE MAJORITY OF UNASSESSED FISHERIES

Conditions are not met in the majority of world fisheries that remain unassessed, especially in the developing world, which tend to be:

- Data limited
- Capacity limited
- Have weak government institutions and support

The challenges are especially difficult in small-scale fisheries, both inland and marine

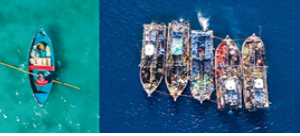
SMALL-SCALE FISHERIES: DATA AND ENFORCEMENT LIMITATIONS



- Dispersed landing sites
- Fisheries heterogeneous in space
- Often multiple species & multiple gears
- Difficult to collect representative data
- Centralized monitoring and control is too costly

Data-limited + weak enforcement

SMALL-SCALE FISHERIES- QUEST FOR ALTERNATIVES

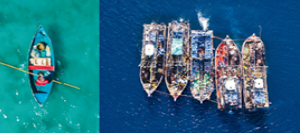


Tools and methods have been prescribed with a focus on:

Resource assessment and harvest controls

Management institutions

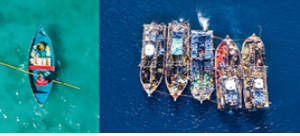
TOOLS TO ADDRESS DATA LIMITATIONS



	Industrial & data-rich	Small-scale & data-limited
Stock assessment	- Quantitative, complex stock assessment models	- Indicators of resource trends - Size-based methods - Local participatory surveys - Folk knowledge
Harvest controls	- Total Allowable Catch (TAC) - TAC determined based on estimates of absolute biomass	- Effort limits, size limits, closed areas - Empirical rules that respond to indicators

But, technical progress has yet to produce on-the-ground impacts at scale

EMPHASIS ON TECHNICAL CAPACITY LIMITATIONS



- Most suitable approaches for monitoring, assessment and management depend on fishery-specific characteristics (biology, geography, fishing dynamics, markets, economics, etc.) and on the local institutional context
- The design of monitoring programs and simple harvest control rules still requires expertise that is often lacking in developing countries
- Data sometimes exist but are not accessible nor standardized, and there is limited capacity to analyze them
- Information often exists but suitable processes need to be put in place to make it available for its use in management

EMPHASIS ON INSTITUTIONS

	Large-scale, developed countries	Small-scale, developing regions
Governance	- Strong legal mandates to eliminate overfishing - Command-and-control approach	- Devolution of power to local communities: • Community-based • Co-management
Access rights	- Quota shares allocated by government agencies to individuals or companies	- Territorial Use Rights (TURFs) - Communal/fishers' organizations - Attention to traditional forms of tenure

EMPHASIS ON CAPACITY BUILDING AND PROCESS

- Too much emphasis has been placed on tools
- Tools and methods often prescribed as silver bullets

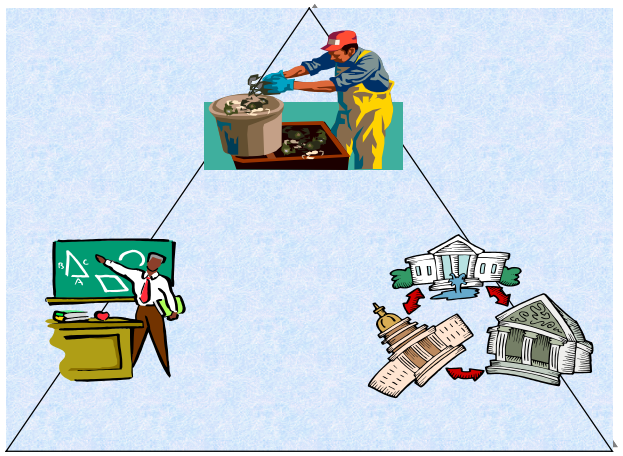
It is not just about tools but mainly about capacity and process!

Must avoid the "panacea trap"!

A WAY FORWARD 1

- Build management institutions that facilitate:

  - Involvement of fishers and fishing communities in all stages of management and in the identification of ways forward
  - Provision of feedback, not just about resource status but also about human responses to management interventions



A WAY FORWARD 2

- Lack of simple universal recipes implies that local capacity is required to design and implement strategies that are tailored to each situation
- Local successes cannot be scaled up simply by replication
- Sustained global efforts are needed to train and build local capacity to monitor, assess and manage fisheries and to support communities of practice

A WAY FORWARD 3

- Key role for on-site agents that provide local technical support to:
  - catalize data collection and analysis
  - help in routine implementation of primary management
  - facilitate processes and help build social capital

Have to be converse in all aspects of fisheries management, equipped with toolbox, and have good facilitation skills

The “barefoot ecologist”, Prince 2003

Thank you

Acknowledgements

SNAPP
Science for Nature and People PARTNERSHIP

Food and Agriculture Organization of the United Nations

SUSTAINABLE DEVELOPMENT GOALS

Partnering with FAO to make fisheries sustainable

Working for #ZeroHunger