Setting the Stage for Catch Accounting – Guiding Principles for Monitoring Programs

Bob Trumble
MRAG Americas

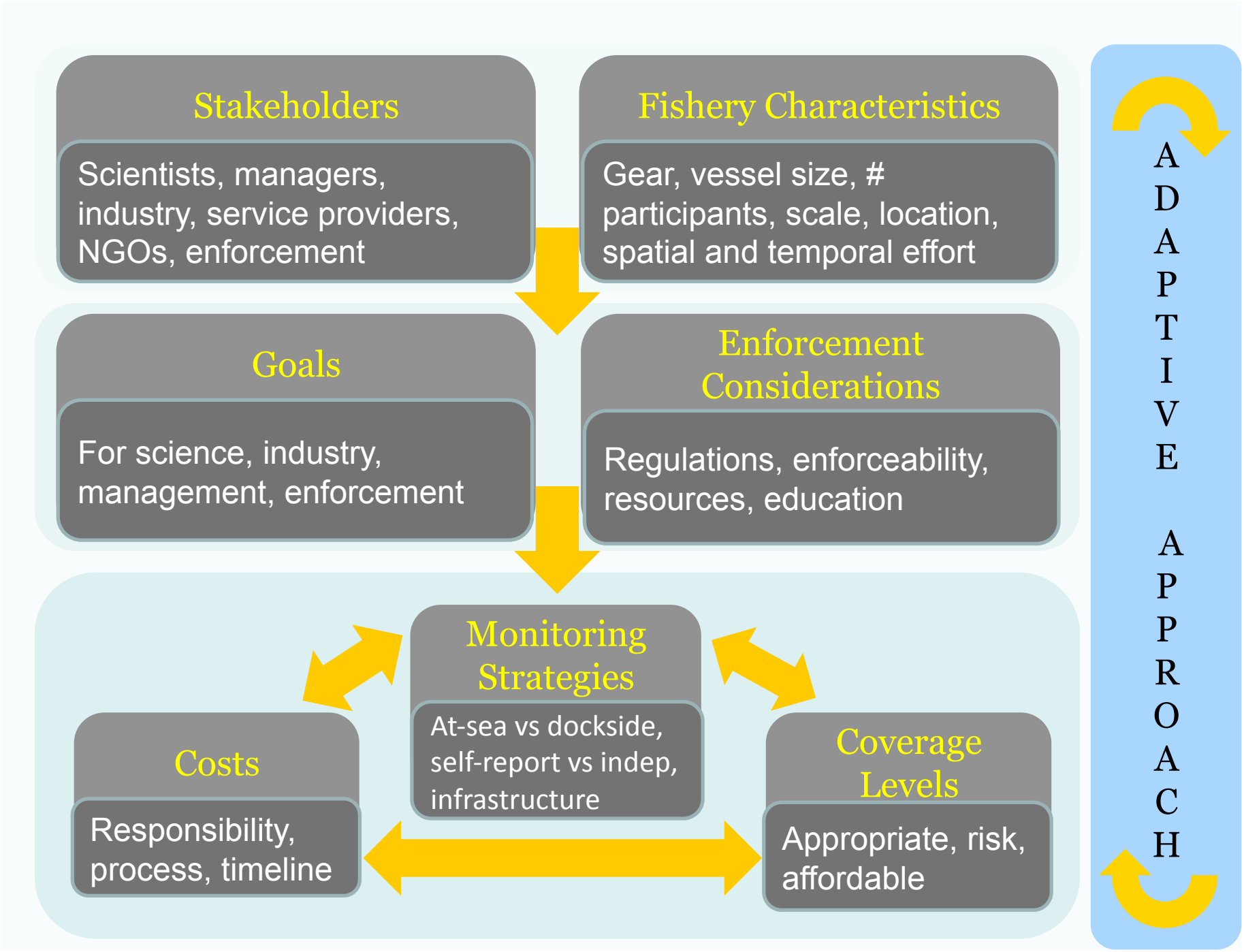
Based on a report for EDF

Development of the G P

- Fisheries struggle with monitoring
  - Elements, coverage, cost
- Workshops May, Nov 2010
  - International panel of experts
  - Fishery presentations
  - Challenges encountered
  - Lessons learned
- Balance general vs. specific

Overarching Themes

- Monitoring strategy is an essential component of effective, long term management for all fisheries.
- Monitoring system effectiveness correlates with the level of effort and investment in the system.
- Each fishery is unique and requires its own unique monitoring solutions.
- Monitoring systems need to evolve over time along with fisheries.
- Learning from the experiences of others we can develop better monitoring systems more quickly.


Stakeholders
Scientists, managers, industry, service providers, NGOs, enforcement
Fishery Characteristics
Gear, vessel size, # participants, scale, location, spatial and temporal effort
Goals
For science, industry, management, enforcement
Enforcement Considerations
Regulations, enforceability, resources, education
Monitoring Strategies
At-sea vs dockside, self-report vs indep, infrastructure
Costs
Responsibility, process, timeline
Coverage Levels
Appropriate, risk, affordable
ADAPTIVE APPROACH

Stakeholders

- True engagement brings buy in
- Leadership is essential
- Consultation leads to effective solutions
- Advisory Committees are an important tool
- Facilitators can help with difficult issues
- Communication & education are critical
- Industry should be given responsibility
- Service providers play an important role

Fishery Characteristics

- Current management regime
- Fleet characteristics
- Spatial and temporal characteristics
- Biological characteristics of the catch
- Associated environmental issues
- Socioeconomic factors

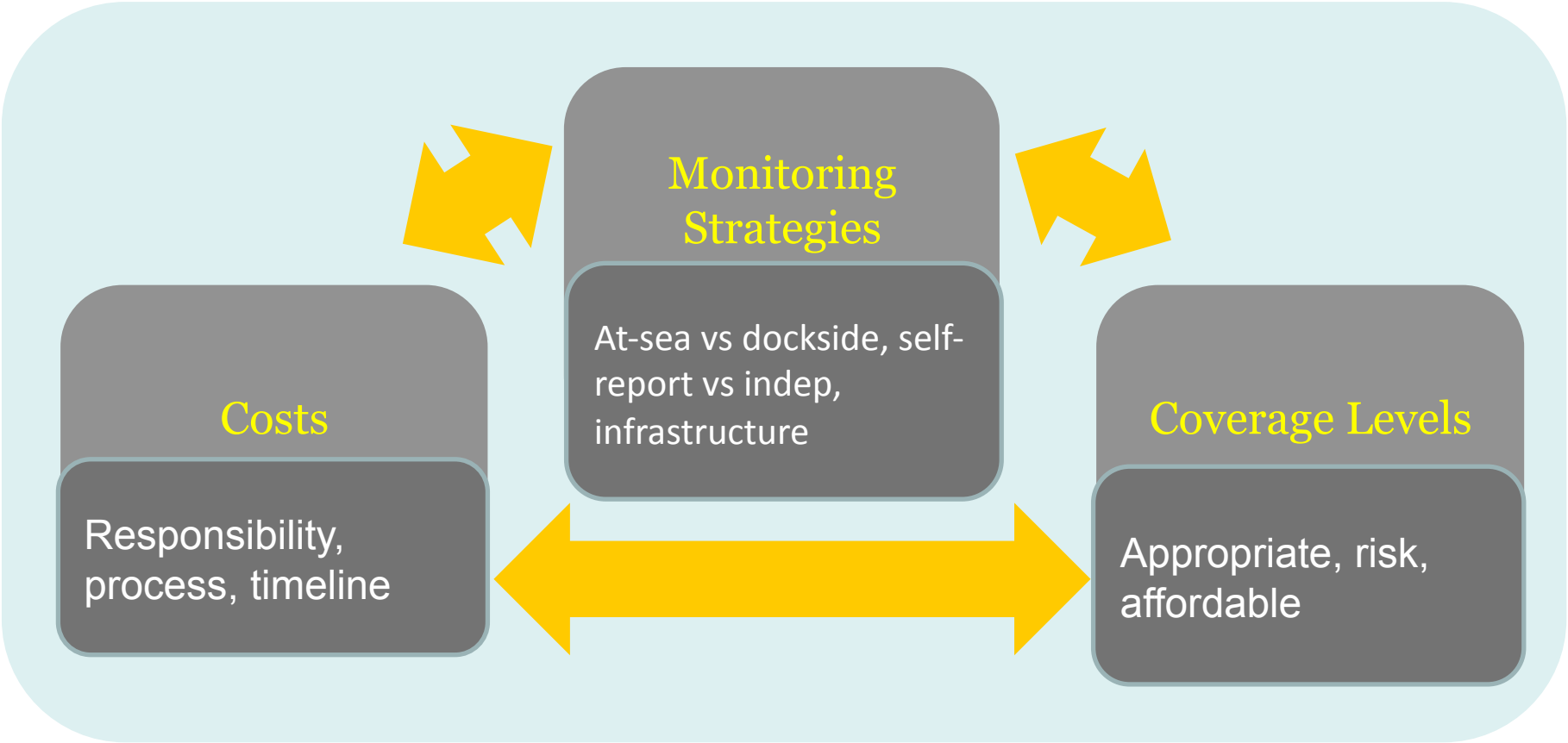
Goals

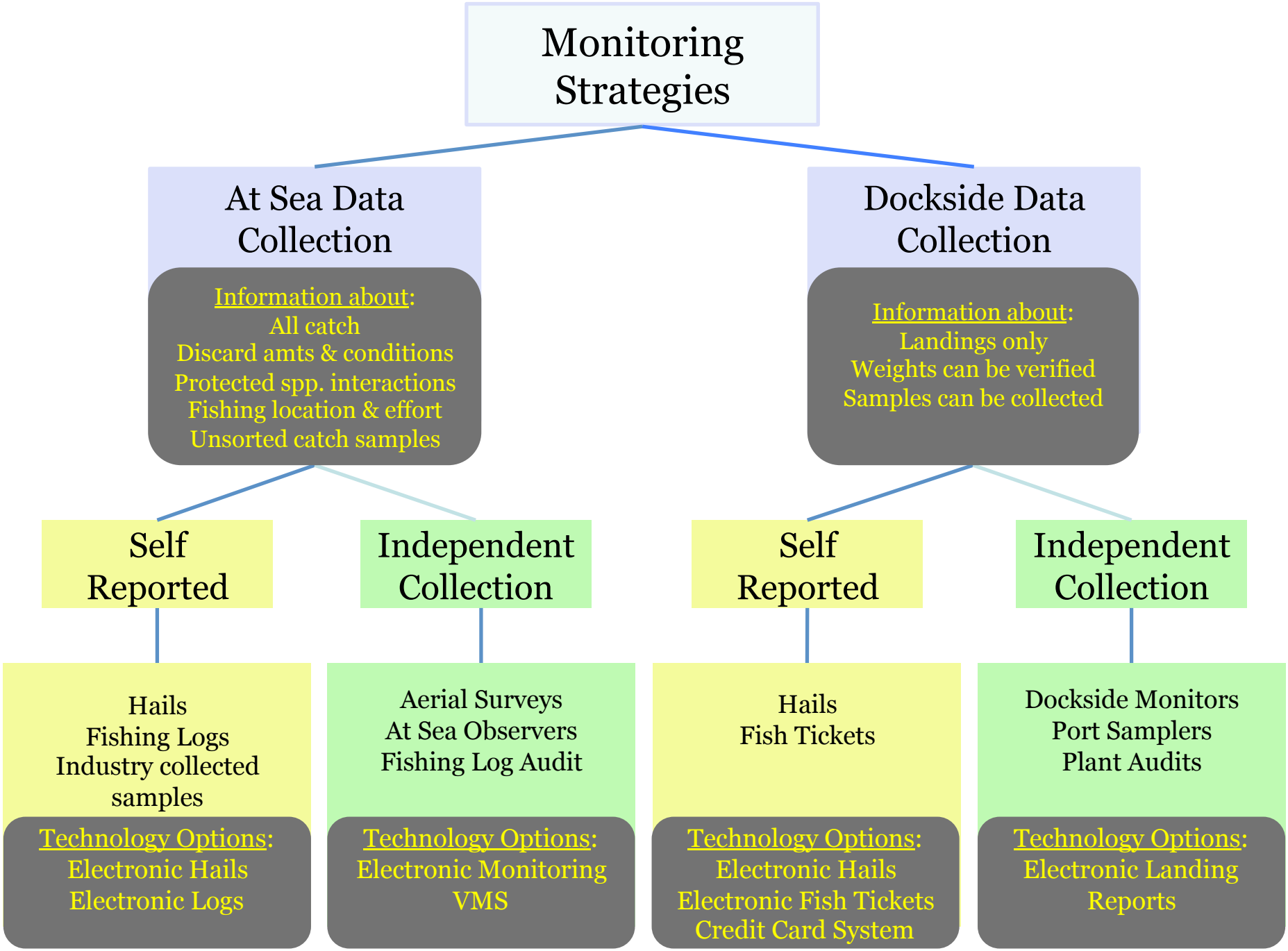
- All stakeholders involved
- Often many goals, often in conflict
- Must be clearly stated with relative priority
- Often a single primary motivating catalyst
- Define objectives around data:
  - Precision/Accuracy & Timeliness
  - Credibility/Transparency
- Goal setting is not a one time activity

Enforcement Considerations

- Need to be considered early in planning
- Transparency with industry
- Enforceability of monitoring strategy
- Enforcement costs considered
- Education to officers
- Use incentives where possible

The Monitoring Triangle




Monitoring Strategies
At Sea Data Collection
Information about:
All catch
Discard amts & conditions
Protected spp. interactions
Fishing location & effort
Unsorted catch samples
Dockside Data Collection
Information about:
Landings only
Weights can be verified
Samples can be collected
Self Reported
Independent Collection
Self Reported
Independent Collection
Hails
Fishing Logs
Industry collected samples
Technology Options:
Electronic Hails
Electronic Logs
Aerial Surveys
At Sea Observers
Fishing Log Audit
Technology Options:
Electronic Monitoring
VMS
Hails
Fish Tickets
Technology Options:
Electronic Hails
Electronic Fish Tickets
Credit Card System
Dockside Monitors
Port Samplers
Plant Audits
Technology Options:
Electronic Landing Reports

Costs

- Stakeholders receiving benefit should be considered for funding involvement
- Govt/Industry cost sharing common
- Cost responsibility linked with control
- Cost burden can shift over time
- Fund collection mechanisms can be key
- Evaluate design aspects for cost implications

Coverage Levels

- Coverage and cost highly correlated
- Coverage will be informed by goals
- Science/Manag./Enforce./Industry coverage goals often not aligned
- Data precision/accuracy goals key
- Fishery characteristics key
- Threat assessment, cost/benefit helpful

Adaptive Approach

- The data must be analyzed to learn and improve the monitoring approach
- Circumstances will change
  - Stock condition
  - Outside forces
  - Industry will adapt
- Trade off between stability and adaptability
- Allow adequate time for implementation
- Review and refine

Why Catch Accounting?

- Building block for science and management
- $B_{T2} = B_{T1} + R + G – D$
- Deaths = Z = M + F
- Need catch accounting for F

What Goes Into Catch Accounting

- Landings
- Plus discards of retained species
- Plus discards of non-retained
- Plus ghost fishing mortality
- Interactions with ETP species

What do decision makers need to know?

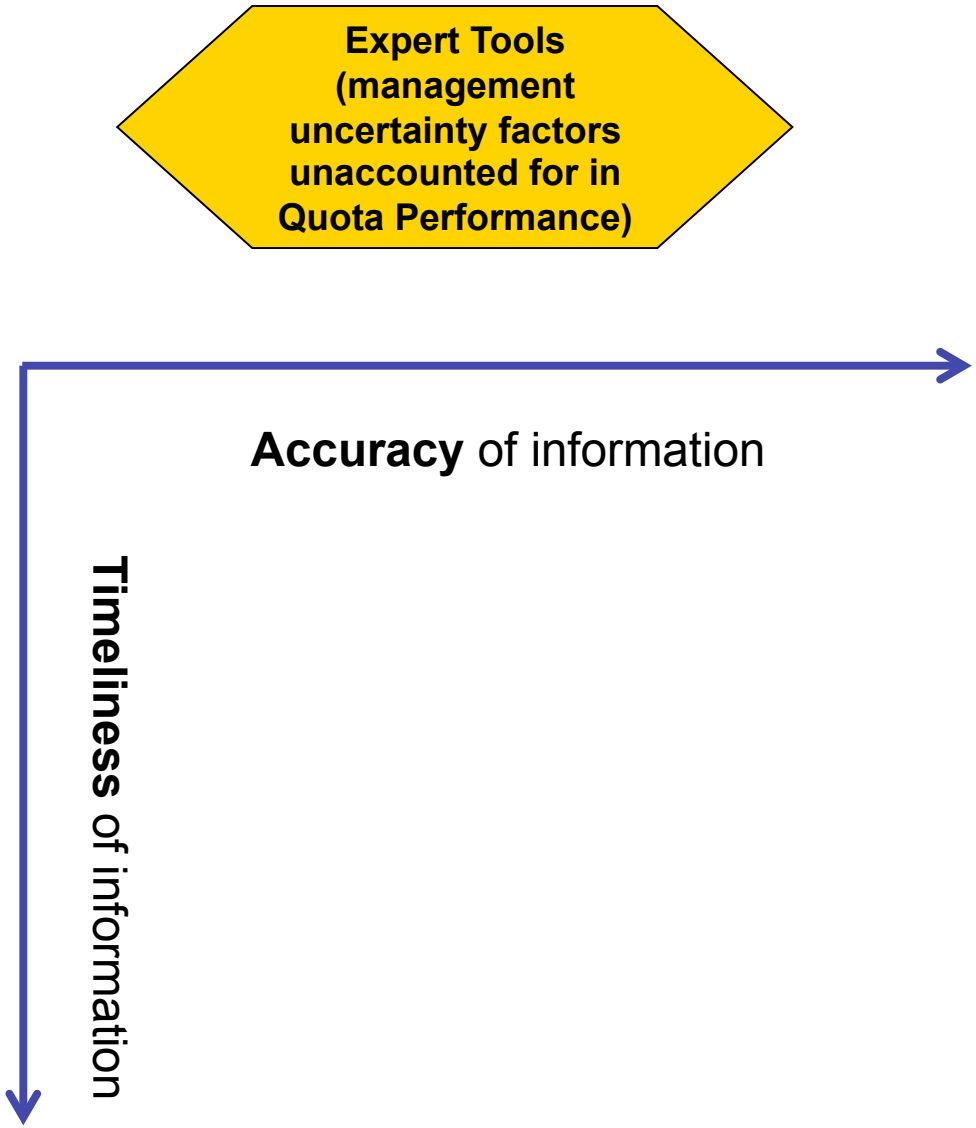
Are My Catch Data Adequate?

1. What needs to be estimated from the data?
2. What resolution (e.g., time and space) is needed?

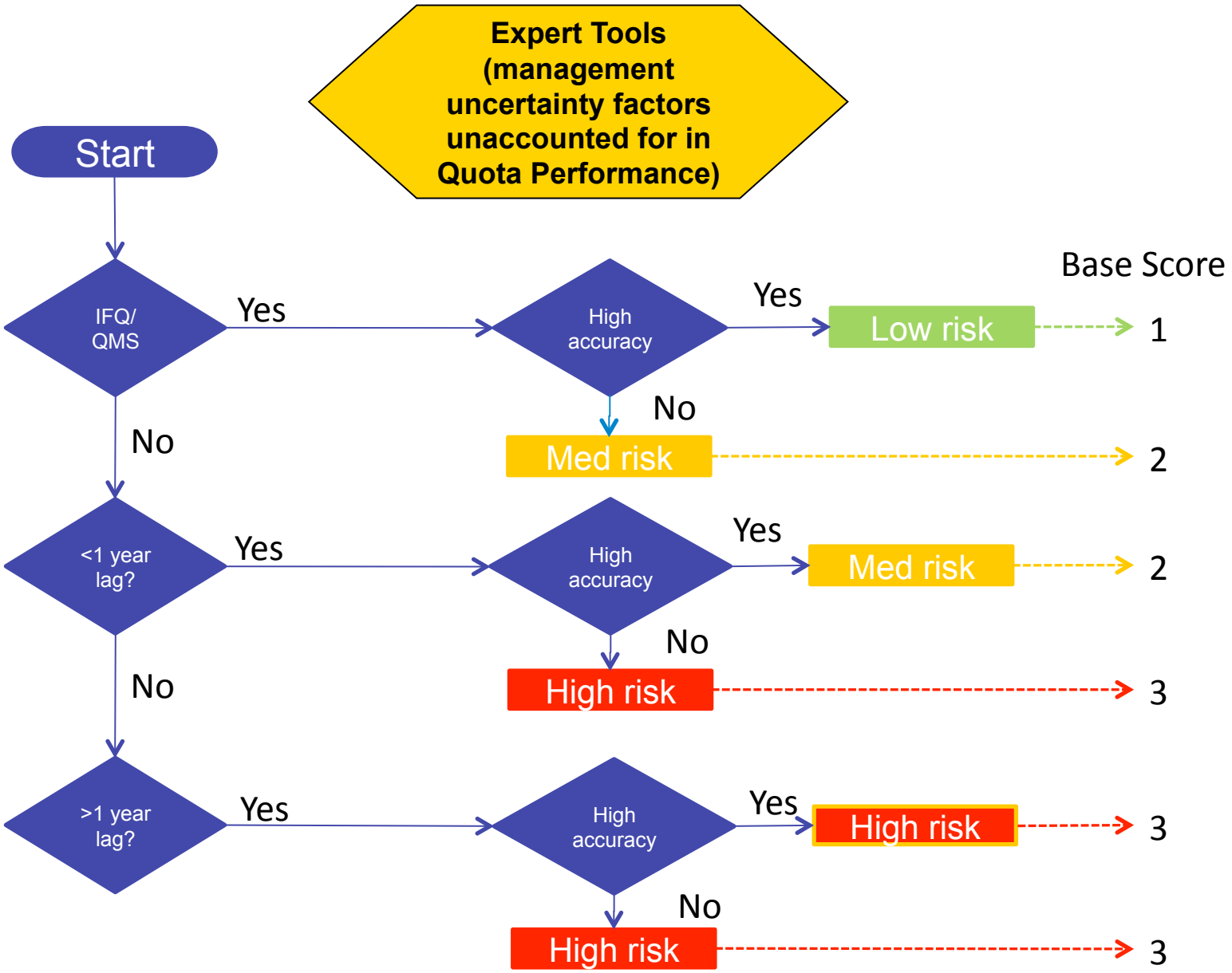
Estimates for:
- Landed
- Discarded
- Rare events
- Biological Information

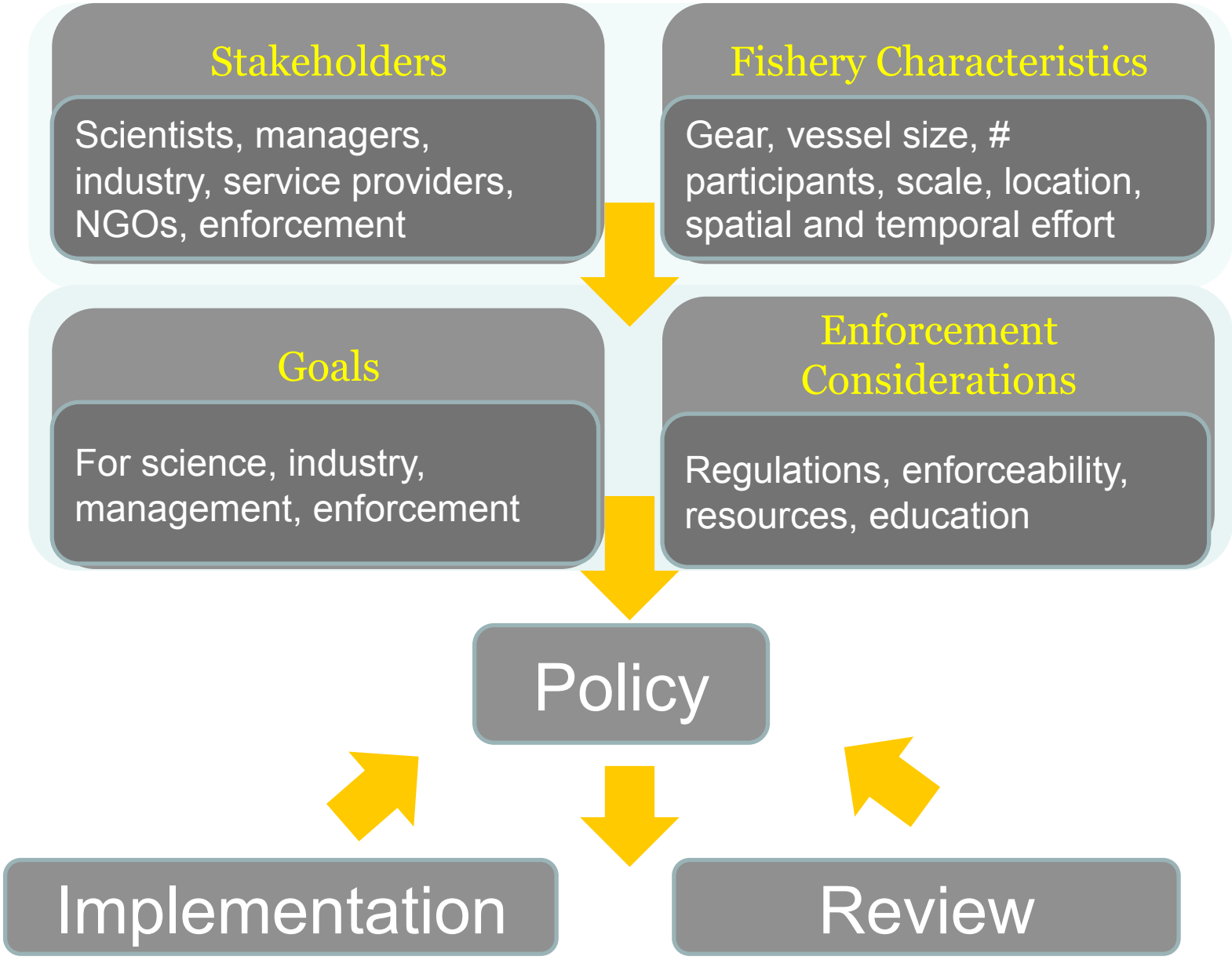
Resolution:
- Fishery wide
- Fleet/sectors
- Season/area
- Individual vessel

Management uncertainty decision tree



Management uncertainty decision tree




Stakeholders
Scientists, managers, industry, service providers, NGOs, enforcement
Fishery Characteristics
Gear, vessel size, # participants, scale, location, spatial and temporal effort
Goals
For science, industry, management, enforcement
Enforcement Considerations
Regulations, enforceability, resources, education
Policy
Implementation
Review