Guiding Principles for Fisheries Monitoring Programs – Making the Most Out of Limited Resources

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EDF ENVIRONMENTAL DEFENSE FUND™
Finding the ways that work

MRAG Americas

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

- An essential component of effective, long term management for all fisheries.
- 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.
- Lessons learned.


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

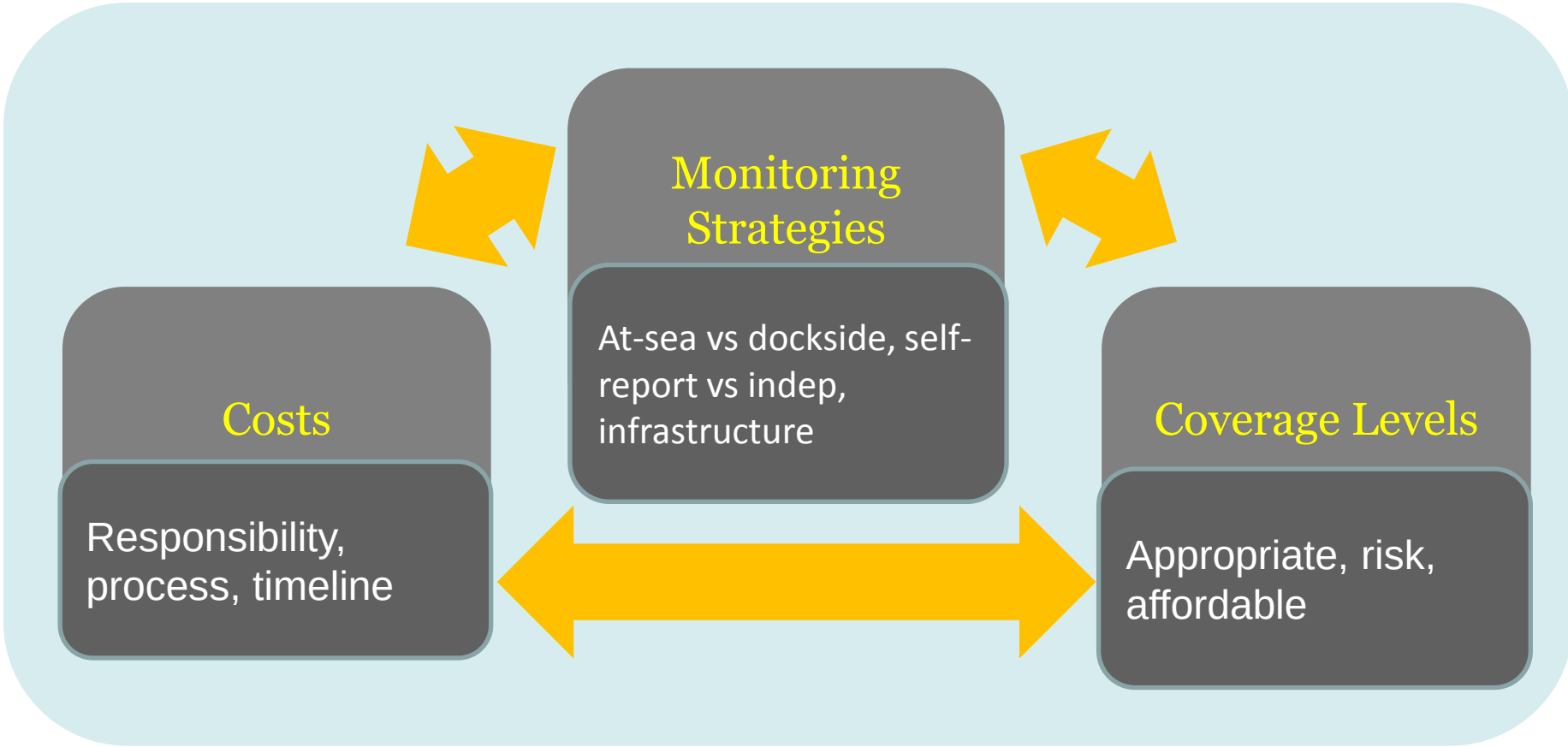
Goals

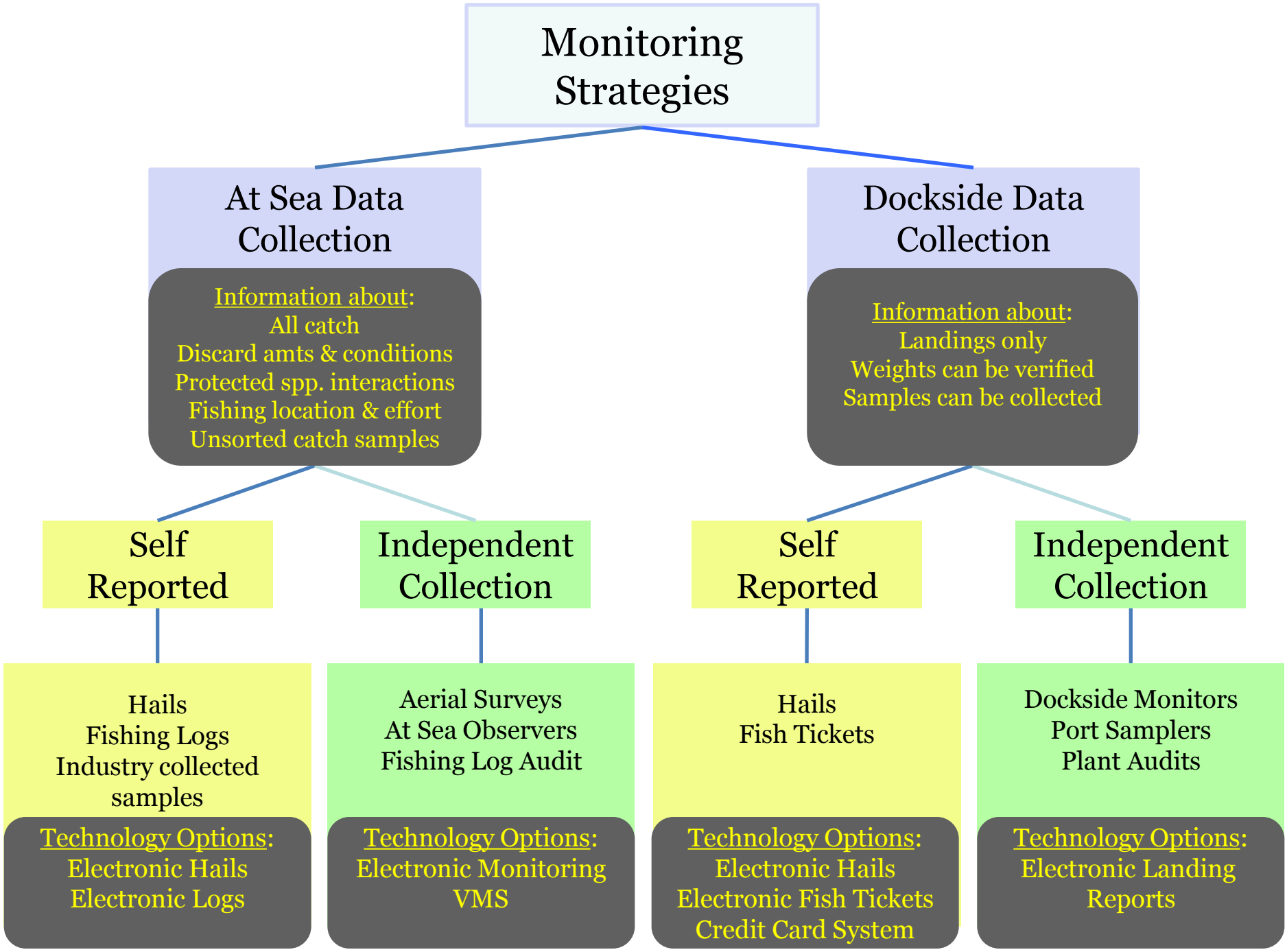
- All stakeholders involved
- Often many goals, often in conflict
- Must be clearly stated with relative priority
- Define around data:
  - Precision/Accuracy & Timeliness
  - Credibility/Transparency
- Goal setting is not a one time activity

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

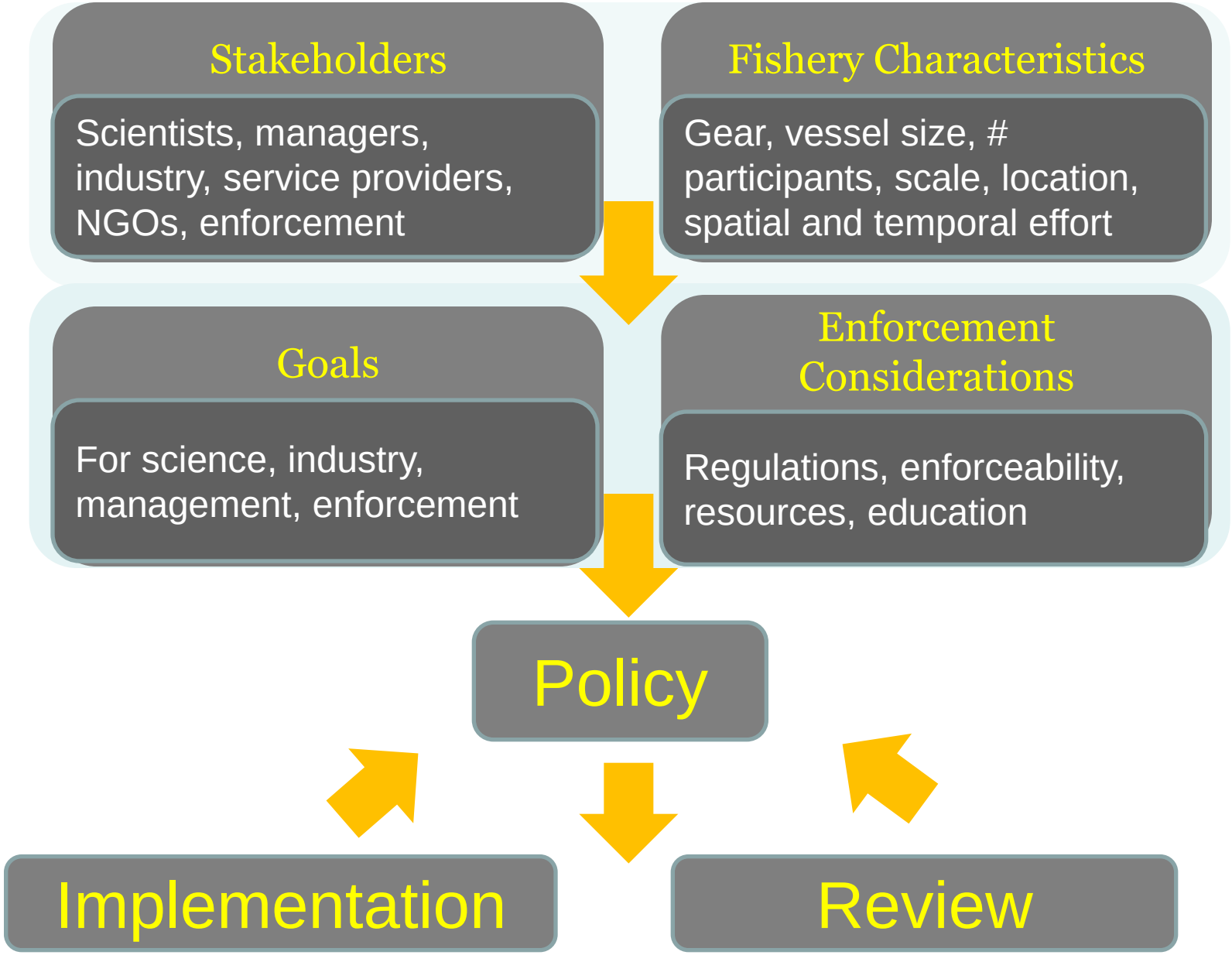
- Stakeholders receiving benefit should be considered for funding involvement
- Govt/Industry cost sharing common
- Cost responsibility linked with control
- Cost burden can shift over time
- Fund collection mechanisms can be key
- Evaluate design aspects for cost implications

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

- Analyze data 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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Policy
Implementation
Review

Practical Application: Is My Monitoring 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 (ETP)
- Biological Information

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