

# Implementation Readiness Checklist

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## TOOL DEVELOPERS

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## VERSION

The Implementation Readiness Checklist is being released as a beta version and has not undergone field testing. The tool will be updated as we receive feedback from fishery practitioners. The beta designation is a recognition of the value of stakeholder input, which we know will make this tool even more successful in supporting sustainable fisheries management around the world. We invite you to share your feedback on the Sustainable Fisheries Toolkit website.

## TOOL COMPONENTS

Checklist with instructions

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## BACKGROUND

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The specific ways in which a new or modified fishery management system is implemented—in the days, weeks and months after it “hits the water”—can be crucial in determining its long-term success. When fishery stakeholders conduct a thorough planning process—including diagnosing fishery conditions and challenges, carefully designing a program to address those challenges, and codifying the design into a fishery management plan (FMP)—the result should be a functional system that works toward clearly defined fishery goals, within the bounds of legal, fiscal and operational realities. However, even the most detailed FMP often does not address all of the important details that drive successful outcomes. In fact, certain aspects of program implementation are quite detailed or fluid, and therefore not appropriate or practical to codify in an FMP. Moreover, not all outcomes of a new management system can be predicted prior to implementation, and the system will need to be ready to address unanticipated needs and challenges as they unfold.

Experience across a range of fisheries suggests that there are several key systems that should be developed or strengthened as a fishery prepares for and proceeds with implementation of a new management system. This includes systems for: decision-making, communicating with participants, technical administration, enforcing regulations, managing grievances and appeals, monitoring and reporting catch, and adapting management to respond to changing conditions. This Implementation Readiness Checklist uses these systems as a framework for evaluating the readiness for a new management system to go “live” and to address any issues that arise.

### Purpose of this tool

The Implementation Readiness Checklist enables fishery practitioners to evaluate the readiness of a new management system for implementation “on the water.” The Checklist provides a structure for identifying and planning for needs, gaps and potential challenges that must be addressed for successful implementation. Using the Checklist as a guide, practitioners can identify specific actions they can take to improve readiness for implementation. This can help ensure the fishery system is prepared to address common needs and challenges as they arise.

The **Guidance for Implementing a New Management System** section of this document provides information about the major themes to address before and during implementation. Each theme includes a table with **indicators** of readiness and a **checklist** that includes detailed criteria for determining if the new management system is currently addressing the indicator.

### Intended audience

The Checklist is meant to be used by fishery managers, non-governmental organizations (NGOs), industry organizations and others involved in implementing a new fishery management program to identify any decisions or systems that need additional attention as they prepare to transition to a new management regime. Where the tool highlights gaps in readiness, practitioners can direct additional attention to planning and preparations.

## When to use this tool

The Checklist should be considered as early as possible, but especially as the start of a new fishery management system draws near and during its early stages. The Checklist can draw attention to issues that may arise during the implementation of an FMP and help fishery practitioners plan or respond to unforeseen challenges. See EDF's Sustainable Fisheries Toolkit website for more information on the phases of a fishery reform process.

The Checklist is designed to be completed in a half day or less. The tool can be completed by conducting desk research, reviewing the FMP and interviewing fishery administrators and other experts.

## Limitations

The Checklist is based on EDF's experience with implementation in several regions. However, each fishery's specific implementation needs will vary based on fishery context. Each fishery may require particular attention to specific themes—in some fishery systems, certain elements may be well established, whereas in others, there may be a significant amount of resources and capacity development required to ensure indicators are fully addressed. As such, **each theme should not be thought of as necessary preconditions for moving forward with an FMP, but helpful considerations for where additional effort may need to be applied (before and/or during implementation)**. Furthermore, as fishery systems are complex, there may be other needs that are not addressed by this Checklist.

## GUIDANCE FOR IMPLEMENTING A NEW MANAGEMENT SYSTEM

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The following sections reflect major themes of administrative needs and considerations for implementing a new fishery management system. Each theme includes a table with indicators of readiness and a checklist that includes detailed criteria for determining if the new management system is currently addressing the indicator.

### Decision-making

As a fishery prepares to implement a new management program, it is important to ensure there is a clear decision-making structure for ongoing and day-to-day decisions. This includes clearly defining the authority of various decision-makers, such as government agencies and established management bodies, to implement the program as intended. While the fundamental roles of decision-making authorities may already be well established, there may be new and unique decisions that arise during the transition to a new management program. In some cases, some aspects of decision-making structure, roles and authority may be different between the management planning stage and the implementation of the management plan, so it is important to ensure clarity before a program goes live.

Streamlined implementation of a new fishery management program also requires that decision-makers have access to the information needed for ongoing decisions about the program. Often this means that they need access to scientific and technical expertise, as well as stakeholder

input. Setting up advisory groups and platforms for information sharing can help ensure decision-makers have the support needed.

READINESS FOR DECISION-MAKING	
INDICATORS	CHECKLIST
New decision-making roles are clearly defined	<input type="checkbox"/> New decision-making responsibilities of government agencies, multi-stakeholder management bodies and others have been clearly outlined <input type="checkbox"/> Administrators are aware of and accept their newly designated decision-making roles <input type="checkbox"/> Ambiguities in decision-making roles have been identified and clarified
There is a clearly defined structure in place for decision-making	<input type="checkbox"/> Decision-making protocols are well-defined and documented <input type="checkbox"/> Regular meetings are planned to bring essential decision-makers together to deliberate and reach agreement on key decisions <input type="checkbox"/> Relevant multi-stakeholder management bodies and/or advisory groups are established, with clearly defined representation, procedures and protocols <input type="checkbox"/> The frequency of meetings or other communications is adequate to address the anticipated frequency of decisions, and there are protocols in place for calling additional meetings as needed
Administrators have the legal authority to take the actions defined within their role	<input type="checkbox"/> The decision-making rights of relevant agencies and management bodies have been formally granted, either as part of existing mandates and/or through updates
Decision-makers have the technical support and stakeholder input to make informed decisions	<input type="checkbox"/> Advisory bodies are established as needed to provide scientific and technical recommendations <input type="checkbox"/> There are platforms and procedures for decision-makers to receive technical advice and to ask questions of experts <input type="checkbox"/> There are platforms and procedures for decision-makers to receive input and feedback from fishermen and other stakeholders

### Communication

Perhaps the most important need to make the implementation of a new fishery management system go as smoothly as possible is an effective communication strategy to ensure fishermen and others understand the new system and can relay feedback. A fishery should have ongoing

communication systems between fishermen and managers, as well as scientists and other key actors, as a standing component of its operations. A major change in the fishery management approach, such as a transition to a rights-based program, might call for a period of enhanced communication systems to help participants navigate the transition more smoothly and create buy-in through a truly participatory process. Over time, those systems can potentially be scaled back as participants adjust and the system stabilizes.

Another important communication channel that needs to be strong during the transition is between those who designed the system and those who will be implementing it. Fishery managers responsible for administering the new system must have an understanding of the requirements set forth by the policy. Furthermore, they must understand the intent and justification behind its provisions. This is particularly important when administrators must make decisions and rules to implement those provisions, which often requires some interpretation and may be subject to disagreement among decision-makers. Having opportunities for dialogue between those who developed the fishery management system and those who are tasked with implementing it can help administrators navigate potential disagreements and areas of uncertainty as they arise.

When considering how changes will be communicated, it is important to ensure that fishermen and others have clear initial guidance on the new requirements and opportunities presented by the new system. Fishery managers will also need mechanisms for rapid and widespread delivery of ongoing program updates as they arise. In providing this information, there is balance between providing enough detail and overwhelming participants with too much information. It may be helpful to ask fishermen to define their preferred means of getting information, and to test messages with fishermen where possible to ensure that they are understandable, sufficiently detailed and motivating. Multiple delivery mechanisms are often needed and should be adjusted based on local norms, perhaps including:

- In-person briefings and listening sessions with management officials
- Web-based and/or telephone consultations with stakeholders
- Websites, email communications and social media postings
- Smartphone or tablet applications
- Written summary documents
- Concise information cards suitable for posting in a wheelhouse or, if waterproof, storing in smaller open-decked vessels
- Information notices or posters on bulletin boards at ports, docks or community centers

Certain individuals who serve as contact points between fishery managers and fishermen can be vital in ensuring effective information transfer (e.g., sector managers in the New England groundfish program, fishery cooperative leaders, etc.). Engaging these individuals as partners in communication may be valuable.

Finally, fishermen and others will need mechanisms by which they can pose questions, highlight deficiencies, and otherwise gain ready access to management officials who can provide

information and address problems. To support streamlined communication, these pathways may be similar to those by which management conveys new information to participants, but with added opportunities for information exchange in both directions.

<b>READINESS FOR COMMUNICATION</b>	
<b>INDICATORS</b>	<b>CHECKLIST</b>
Administrators understand the new system and the intent behind the adopted rules and regulations	<input type="checkbox"/> Relevant government agencies and others involved in administration of the fishery management program have been briefed on the management plan, including the justification and history behind its contents <input type="checkbox"/> There are systems in place for administrators to communicate with those who developed the new policy
There is a multi-faceted strategy to ensure fishermen understand the new system before it goes online	<input type="checkbox"/> In-person briefings are planned or have been completed to explain management changes to fishermen and answer questions they might have <input type="checkbox"/> The number and locations of briefings are sufficient to reach all relevant fishermen <input type="checkbox"/> The expected number of participants at each briefing is likely to enable sufficient engagement and dialogue <input type="checkbox"/> Briefings involve management officials with sufficient authority and knowledge to convey the changes accurately and effectively <input type="checkbox"/> Trusted industry or community leaders have a role in leading briefings to enhance effectiveness
Summary documents have been prepared that convey important aspects of the new system in a way that is comprehensive and clear	<input type="checkbox"/> Summary documents in various formats are accessible and relevant to fishermen in different locations <input type="checkbox"/> Documents have been prepared in all languages spoken by participants in the fishery <input type="checkbox"/> Documents are written to be easily understood by individuals with different educational backgrounds <input type="checkbox"/> Fishermen have access to concise materials suitable for them to carry with them at sea
There are systems in place to rapidly convey clarifications, changes and other new information to fishermen as the new system goes online	<input type="checkbox"/> Email and/or phone distribution lists have been created, including all relevant fishermen who have access to each <input type="checkbox"/> A website has been created to which fishermen can go for program updates <input type="checkbox"/> Social media platforms have been established to disseminate information more widely

	<input type="checkbox"/> Key individuals have been identified through whom information can reach fishermen when email, phone and social media are not effective <input type="checkbox"/> Central locations where fishermen go for information (docks, ports, community centers, etc.) are identified for outreach efforts <input type="checkbox"/> Management officials are planning regular visits to fishing communities to provide formal or informal in-person program updates
<p>There are systems in place for fishermen to pose questions, report problems, share observations and otherwise convey information to managers</p>	<input type="checkbox"/> A dedicated phone number and/or email address been established for fishermen to reach managers quickly, with adequate staffing to ensure timely responses <input type="checkbox"/> The program website has comment/query forms or other mechanisms for two-way communication <input type="checkbox"/> Social media platforms are sufficiently monitored such that questions, comments, problems, observations or other information conveyed can be received and responded to in a reasonable timeframe <input type="checkbox"/> Key individuals through whom fishermen connect with managers are able to rapidly reach management officials, and receive a timely response, when issues arise <input type="checkbox"/> Management officials are planning regular visits to fishing communities to conduct formal or informal discussions and listening sessions
<p>Participants in other fisheries that might be affected by behavioral changes resulting from implementation of the new program have been sufficiently engaged</p>	<input type="checkbox"/> Fleets that may be affected by management changes have been briefed on impending changes and likely implications <input type="checkbox"/> Two-way communications systems in place between fishermen and managers extend to those potentially affected fisheries

### Technical administration

When a new fishery management system is implemented, there are often many new administrative needs that may require additional preparation. Often this may involve augmenting existing administrative systems, and there may also be a need to set up some new systems.

New fishery management programs, such as rights-based approaches, often involve new licensing requirements. For example, limited fishery-specific permits may be issued for eligible participants in a rights-based program. Such permits may be supplementary to standard licenses or permits that authorize an individual or a vessel to engage in fishing activity. In some

contexts, the adoption of a new management system may necessitate issuance of licenses or registration of vessels for the first time. In any fishery where new licensing, permitting or registration requirements will be adopted, it is important for administrators to be prepared to issue such licenses.

Other administrative changes may stem from the collection of new fees under an updated fishery management system. This may include licensing fees or cost recovery fees that are sometimes collected from fishermen to support the transition to a more sustainable management approach. Ensuring administrators are prepared to collect these fees is essential for a smooth transition.

If the new management system will allocate quota to fishermen (such as in an individual transferable quota program), new data systems and platforms may be required. Systems to track fishermen’s catch and quota transfers may need to be established (Bonzon et al., 2013). If these systems are not ready when a quota-based program is initiated, there can be significant administrative challenges that interfere with the intended outcomes and benefits of such a program. Ensuring these systems are operational and effective is necessary for transitioning to quota-based management.

If the new system involves new spatial management measures—such as Territorial Use Rights for Fishing (TURFs) or marine protected areas—there may be additional administrative needs to ensure boundaries are clearly identified and adhered to. Administrators may need to be prepared for activities such as placement of boundary markers, marking or color-coding of boats, or installation of GPS systems.

<b>READINESS FOR TECHNICAL ADMINISTRATION</b>	
<b>INDICATORS</b>	<b>CHECKLIST</b>
Administrators are prepared for licensing, permitting or registration required under the new management system	<input type="checkbox"/> There are systems, resources, equipment and personnel available to issue any new licenses that are necessary for the program and/or to register fishermen or vessels <input type="checkbox"/> Data systems have been set up to house fishermen/vessel registration information <input type="checkbox"/> There are clear procedures for licensing and registration, including what information fishermen will be required to present and who will review such information to confirm eligibility <input type="checkbox"/> Procedures and requirements for licensing and registration are accessible to all fishermen who are part of the new management system
Administrators are prepared to collect any fees associated	<input type="checkbox"/> Administrators have appropriate procedures and financial systems to collect any fees that stakeholders will pay under the new management system

with the new management system	<input type="checkbox"/> There are clear guidelines for how funds may be used and procedures to ensure transparency
If relevant, user-friendly platforms for fishing quota tracking and transfers have been established	<input type="checkbox"/> If the management system allocates fishing quota to individuals or groups, there is a data system in place to track fishermen's catch relative to their quota allocation <input type="checkbox"/> If quota transfers are part of the program design, a transparent and user-friendly web platform has been established and/or a quota broker has been designated to ensure seamless transfers and to track quota balances
If relevant, the administrative needs of spatial management approaches are addressed	<input type="checkbox"/> If there are new spatial management approaches, boundaries of management areas are clearly defined and appropriately marked <input type="checkbox"/> Vessels are equipped (e.g., with GPS) and/or marked (e.g., color coding) as appropriate to promote compliance with spatial measures

**Enforcement**

Adequate preparation to enforce the provisions of a new fishery management system is important to ensure that an expectation of compliance is established from the start and that fishery participants have confidence in the effectiveness of the program. This starts with a clear definition and communication of penalties for various types of offenses.

As the new fishery management system is initiated, it is important to ensure the appropriate enforcement personnel are prepared to promote compliance with new regulations. If enforcement has been weak in the past, it may be necessary to recruit and train new officials. Enforcement can be carried out by a formal enforcement unit, such as the national or regional fisheries department, police or Coast Guard. It may also involve more informal agents, such as deputized community leaders or senior fishermen. Local enforcement agents will be more effective if they are legitimized through some process, and thus perceived to have legitimacy and authority by the community (Pomeroy et al., 2001).

It is important for enforcement officials to have the adequate training, information and equipment to carry out the necessary enforcement duties to detect, intercept and deter violations. For enforcement to be effective, enforcement agents must conduct frequent surveillance activities, have the ability to detect violations, and the willingness to report them (Hønneland, 1999). Having systems in place for community members to report violations can help enforcement officials intercept illegal activity. As appropriate, enforcement officials should have the authority and capabilities to make arrests. It is also important that enforcement agencies take immediate action when violations are detected to deter other fishermen from similar actions (Raakjaer Nielsen and Mathiesen, 2003).

Some fisheries that have undergone the transition to a new management system have adopted a formal or informal adjustment period as participants adapt to the requirements of the new system. During this adjustment period, enforcement officials may respond to certain violations with a degree of leniency, such as by issuing written or verbal warnings, citations without penalties, reduced penalties, etc., rather than formal citations. An adjustment period can help reduce challenges fishermen face in understanding new regulations and changing their behavior to comply, but should be applied with caution and clear parameters. There may be adverse consequences, perhaps quite severe, due to misaligned understanding of where leniency is allowed, abuse of leniency and legal ramifications. To avoid such challenges, it is important to clearly define the duration of the adjustment period, how various types of violations will be handled and tracked, how many and what types of violations will be tolerated, and other specifications.

It is also important for authorities to be prepared to prosecute those who violate fishery regulations. Having systems in place for legal prosecution can help ensure that action is taken promptly to prevent continued offenses by bad actors. Adjudication processes should be fair and transparent, with clearly defined procedures administered by an independent decision-making authority.

<b>READINESS FOR ENFORCEMENT</b>	
<b>INDICATORS</b>	<b>CHECKLIST</b>
Penalties for violations are clearly defined and communicated	<input type="checkbox"/> Penalties such as fines, confiscation of illegal gears or catch, license revocation, etc. are specified for various types of violations and increase with the severity of the offense <input type="checkbox"/> Enforcement officials and fishermen have access to resources that clearly communicate penalties
Personnel, equipment and protocols are in place to effectively detect and deter violations	<input type="checkbox"/> Adequate personnel are designated for patrols, surveillance, outreach with fishermen and other relevant duties <input type="checkbox"/> Enforcement officials have adequate training and information on management changes, including aspects that are most likely to be confusing or otherwise more difficult for fishermen to navigate <input type="checkbox"/> The frequency and protocols for patrols and surveillance are defined and sufficient to detect violations, including illegal activity on the water, at the point of landing and other relevant points in the product supply chain <input type="checkbox"/> Enforcement personnel have boats and surveillance equipment adequate to detect violations <input type="checkbox"/> Enforcement officials have the means and authority to make arrests under appropriate circumstances

	<input type="checkbox"/> Enforcement officials have access to paper and/or electronic systems for issuing citations and tracking violations
There are systems in place for community members to report violations	<input type="checkbox"/> There are designated means by which community members can anonymously report violations, such as through a telephone hotline <input type="checkbox"/> There are protocols and designated authorities to respond to reported violations
If appropriate, an adjustment period has been clearly defined to ease the transition to the new system	<input type="checkbox"/> Enforcement officials and fishermen have clear guidance on when and how warnings or reduced penalties may be issued in lieu of citations to account for adjustments to the new system <input type="checkbox"/> There is a system for tracking warnings to participants that enables enforcement officials to identify repeat violators
There are systems in place to prosecute offenders	<input type="checkbox"/> Authorities have clear legal processes by which they can prosecute offenders <input type="checkbox"/> Adjudication processes are fair and transparent <input type="checkbox"/> An independent decision-making authority with clearly defined procedures exists to preside over cases related to fishery violations

**Grievances and appeals**

In any new management system, there are likely to be grievances expressed by fishermen or other stakeholders that administrators need to be prepared to address. First, there must be systems set up for fishermen to express grievances and file appeals or legal claims. Having such systems in place ensures such challenges are channeled to administrators in appropriate, formal ways and can therefore be addressed in a timely and appropriate manner. Administrators and others must also be prepared to respond to such grievances through arbitration or, as needed, in courts.

<b>READINESS FOR GRIEVANCES AND APPEALS</b>	
<b>INDICATORS</b>	<b>CHECKLIST</b>
There are formal systems in place for fishermen to express grievances, file for appeals and submit legal claims	<input type="checkbox"/> There is a clearly defined process for fishermen to express grievances to fishery administrators and about challenges or problems pertaining to the design and/or implementation of the new fishery management system <input type="checkbox"/> There is a formal, clearly defined appeals process for decisions that affect fishermen, such as those pertaining to allocation of fishing rights

	<input type="checkbox"/> There are clear mechanisms for fishermen or others to file legal claims as needed
There are administrative systems and staff designated to respond to grievances	<input type="checkbox"/> Administrators are trained to appropriately respond to grievances <input type="checkbox"/> Administrators have processes and resources for arbitration <input type="checkbox"/> Courts are prepared to respond to legal disputes

### Monitoring and reporting

To ensure a new management system can be implemented effectively, it is important to have a clear plan and dedicated resources in place for effective fishery and ecosystem monitoring. This typically includes fishery-dependent and fishery-independent data collection and analysis to monitor stock and ecosystem status, and to accurately track fishery catch for science and accountability. It is also important to have a plan in place for monitoring the social and economic outcomes of a new fishery management system, particularly in relation to defined social and economic goals. A new management system may call for updates to existing monitoring and reporting systems, or there may be a need for completely new systems if they were previously absent.

Changes to the monitoring and reporting system should be clearly defined during the design phase, and codified in the FMP. However, the FMP might not sufficiently address all of the details necessary to effectively execute the transition. Management plans often do not articulate detailed monitoring plans to ensure objectives are met, which can contribute to a disconnect between the intended aims of a management plan and its implementation (Arkema et al., 2006).

For all aspects of monitoring, it is important for administrators to ensure they have adequate resources, equipment and personnel to fulfill new monitoring requirements. Monitoring may involve a combination of government staff and third-party service providers, and designating roles up-front can help ensure the right support is in place. Managers and scientists may need to be prepared to receive a greater volume of data, new types of data or both. It will be critical to have systems in place to store those data, conduct quality control and utilize the data for science and management in a timely fashion. Fishermen and other stakeholders will be frustrated if the added expense and effort required to improve monitoring and reporting do not yield tangible outcomes.

Changes in monitoring and reporting systems can present new challenges to fishermen, such as when there is new technology or a requirement to carry human observers onboard. It may be appropriate to phase in certain monitoring requirements over a defined time period to ease the transition. It is also important for fishermen to be adequately prepared for the new types of information that must be provided, to whom, with what frequency, etc. Fishermen will need clear guidance, training, support and avenues for communication to adjust to these changes in a timely manner.

New monitoring and reporting requirements can motivate innovations on the part of fishermen, scientists or managers, and the management system should have mechanisms in place to adapt to these changes as quickly as possible. For example, a requirement to carry human observers might incentivize fishermen to trial and advocate for use of electronic tools. Management should be ready to evaluate and, if warranted, incorporate those approaches. Where innovations might first be adopted by a portion of the fleet, rather than across all vessels, it is important to ensure the evaluation and implementation of such innovations will not have undesirable impacts to the rest of the fleet.

<b>READINESS FOR MONITORING AND REPORTING</b>	
<b>INDICATORS</b>	<b>CHECKLIST</b>
There is a clearly articulated monitoring plan to support the monitoring needs of the program	<input type="checkbox"/> There is a plan for fishery-dependent and fishery-independent data collection and analysis to monitor stock and ecosystem status <input type="checkbox"/> There is a plan for accurate and timely catch accounting to support science and accountability to science-based limits
There are adequate financial and technical resources to address monitoring needs	<input type="checkbox"/> Monitoring roles are defined and adequate resources (financial, human, etc.) are dedicated to fulfilling such roles <input type="checkbox"/> Relevant third-party service providers are identified and prepared to support monitoring <input type="checkbox"/> There is adequate equipment and data systems to collect and analyze data <input type="checkbox"/> Scientific and management entities are prepared to store, conduct quality control on, analyze and act upon new and potentially higher-volume data streams
There is support for fishermen to adapt to new monitoring and reporting requirements	<input type="checkbox"/> If appropriate, there is a timeline for adopting new monitoring and reporting requirements in a staged manner <input type="checkbox"/> Fishermen have adequate guidance, training and other resources needed to report their catch and participate in other aspects of fishery monitoring
There are systems in place to enable innovative monitoring approaches and technology	<input type="checkbox"/> There are processes to evaluate innovation in monitoring approaches and systems and, if warranted, approve innovations in a timely manner <input type="checkbox"/> There are mechanisms to ensure adoption of innovative approaches by some but not all members of the fleet will not introduce any operational, behavioral or other challenges

## Adaptation and innovation

As a new fishery management system is implemented, it is important for there to be a clear process for adaptation as conditions change, new information is obtained and outcomes are observed. Administrators should be prepared for both regular reviews of the program and also for any adaptations that must occur in real time.

Administrators should be prepared for regular reviews of the fishery management program, which may occur annually or at another appropriate frequency. Administrators should have a clear understanding of what the program review will involve, including what data will be needed for evaluation of the program. It is also important to anticipate and prepare for the administrative needs (such as meetings by management councils) and resource requirements to conduct such reviews. Finally, it is important to clearly define how program changes will be made in response to needs identified by decision-makers.

To the extent possible, administrators should be prepared to respond promptly to any unanticipated challenges or changes that arise. These may include:

- **Changes in fishermen's behavior** – Fishermen might fish in new areas or target new stocks in response to either the increased flexibility afforded by the new system or constraints imposed by new harvest control measures. Those changes can introduce new user conflicts within and among fishing fleets or sectors.
- **Gear switching and modifications** – Fishermen might choose to change gears, within regulatory allowances, in order to capitalize on new opportunities and flexibility.
- **Changes in stock status** – As depleted species recover due to improved management, there may be mismatches between species availability and regulations, which can interfere with desired outcomes of increased flexibility and profitability. In some cases species recovery may occur more quickly than previously expected, and it is important for managers to be able to adapt regulations accordingly.
- **Innovations and scientific improvements** – Fishermen or scientists may innovate to find more efficient and effective approaches for meeting monitoring needs. Scientists may discover that new data streams enable use of different analytical models, especially ecosystem-level models, which could modify existing management measures or identify new management objectives.
- **Outdated regulations** – At the onset of a new program, managers might opt to leave in place some existing harvest controls due to concerns that the new system will not address all management objectives, or at least until they see tangible outcomes of the system emerge. However, if those existing controls are not addressing clear management needs with tangible outcomes of their own, then continuing them can compromise effectiveness of and buy-in to the new system.

Ideally, the system will be ready to respond to these and other types of changes through design elements. When critical outcomes were not, or could not be, anticipated, it will be important to have mechanisms in place for rapid evaluation and response. A management system that is more readily adaptable will be better positioned to respond. Often, the scientific review process and management adaptation system will both need to be able to expedite evaluation and

incorporation of needed changes. Such changes have the potential to cause political, socio-economic and ecological disruptions, so strategies for phased incorporation of changes may be considered (e.g., maximum allowable increases or decreases in quotas in any given year).

<b>READINESS FOR ADAPTATION AND INNOVATION</b>	
<b>INDICATORS</b>	<b>CHECKLIST</b>
There are systems in place for regular reviews and adaptation of the fishery management program	<input type="checkbox"/> There are clearly defined procedures for program reviews, including data needs for program evaluation <input type="checkbox"/> The frequency and timing of program reviews is clearly defined <input type="checkbox"/> Adequate resources, personnel, etc. are available for program reviews <input type="checkbox"/> There are defined procedures for making program changes in response to identified needs
There are systems in place to address urgent challenges in a timely manner	<input type="checkbox"/> There are appropriate mechanisms in place to rapidly adapt the fishery management program in response to urgent challenges <input type="checkbox"/> There are resources available to enable administrators and scientists to expedite decision making processes to respond to critical needs in a timely manner

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