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Evaluating fisheries co-management trials – a discussion paper

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Executive Summary

Fisheries co-management is of increasing interest to governments, the fishing industry, fisheries managers and scientists because of its potential to improve the sustainability and efficiency of fisheries management. The Australian Fisheries Management Authority's (AFMA) Co-Management Program (CMP) is investigating the feasibility of co-management arrangements by conducting trials in three Commonwealth fisheries.

Co-management is a 'participatory' form of management that brings together a range of stakeholders in sharing responsibility for making decisions about natural resources.

The success of fisheries co-management initiatives, and the CMP in particular, ultimately depends on having sufficient, appropriate and timely information and methods to assess how well those programs or projects are working and how changes or improvements can be made. The process for undertaking these assessments is referred to as program evaluation. In Australia program evaluation frameworks have not yet been fully developed and applied to the co-management of fisheries.

This report was commissioned to redress a knowledge gap on appropriate program evaluation for fisheries co-management in Australia. The CMP was used as a case study. Information was gathered through a literature review and 12 stakeholder interviews with policy officers, scientists and industry representatives from three CMP trials: the Southern and Eastern Scalefish and Shark Fishery (SESSF: Lakes Entrance Cooperative Pty Ltd), the Great Australian Bight Trawl Fishery (GABTF) and the Northern Prawn Fishery (NPF).

Interview data showed that stakeholders' desired outcomes for fisheries co-management generally, and for the CMP trials in particular, are largely consistent with AFMA's formal aims for the CMP, and include:

- reduced costs and increased efficiencies within industry and government
- improved government-industry relationships
- increased environmental stewardship and management capacities in the fishing industry
- greater understanding of co-management theory generally.

Most interviewees felt that the evaluation of the CMP trials should test some of the broader theoretical assumptions about fisheries co-management. They felt that these trials should test how well those assumptions apply in specific contexts—identifying which arrangements were working well and which were not, and investigate what needs to be changed (and how). Interviewees supported the need for a highly participative, inclusive approach to evaluating the CMP trials that would produce data and information that could be readily accessed and understood by diverse stakeholders.

This report presents five main findings on program evaluation of fisheries co-management in Australia. These findings are based on 'best practice' principles evident in the literature on natural resource management (NRM) and fisheries co-management program evaluation. They are also informed by stakeholders' preferences for short to medium term outcomes for the CMP trials and for longer-term and broader outcomes of fisheries co-management.

Effective (program) evaluation helps stakeholders decide the extent to which a particular policy, program or (research) project is helping them to achieve their respective goals. There are eight basic steps to program evaluation: stakeholder analysis; identifying the primary purpose of and focus for the evaluation; designing the evaluation methods; data collection (or monitoring if the evaluation is on going); data analysis; dissemination and assessing the evaluation itself.

Participatory approaches add great value when evaluating fisheries co-management and/or the CMP trials. Stakeholders' involvement in different stages of an evaluation works well when that level of involvement is negotiated and clarified according to interests, capacities, availability, resources and timelines.

Evidence suggests that evaluation of fisheries co-management initiatives, such as the CMP trials, would improve if it were focused on how particular fisheries co-management processes are helping to achieve a range of desired *outcomes* (biophysical, social, institutional, and economic) over different scales and timeframes and how well CMP trial *processes* (social, institutional, economic) contribute to those outcomes. In addition, summative (at the end) and formative (during the program) evaluation methods could be used for fisheries co-management programs or the CMP trials. For programs or projects near completion, summative evaluations may be more appropriate, while those in the earlier stages of development may warrant a greater emphasis on formative evaluation.

The Australian Government's Land and Coasts inter-departmental team holds extensive knowledge and experience of monitoring, evaluation, reporting and improvement (MERI) of natural resource management relevant to fisheries co-management. The MERI framework is particularly useful for guiding evaluation of the CMP trials. Use of this highly successful framework could clarify and integrate the more immediate and specific goals, outcomes and activities of the CMP trials with the wide range of desired longer-term goals and outcomes for Australian fisheries co-management.

Stakeholders identified a range of planning and design challenges for evaluating the CMP trials. These included appropriate timing of and stakeholder consultation for the evaluation, ensuring credibility of the evaluation and trial results, and ensuring rigorous collection of data and information, and budgetary and cultural considerations.

Evaluation of current and future fisheries co-management initiatives in Australia can be facilitated by: positioning evaluation as a central component of policy and program cycles; appropriately resourcing evaluation(s) and building (government and industry) capacity to participate in program evaluations.

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1. Introduction

Background

Co-management is a ‘participatory’ form of management that brings together a range of stakeholders in sharing responsibility for making decisions about natural resources. There are different forms of co-management, which vary according to the scope of resources being managed, which tasks are being shared, the range of stakeholders involved and how much influence and responsibility is shared (see Appendix 1).

Co-management is of increasing interest to governments, the fishing industry, fisheries managers and scientists, and others, because of its potential benefits such as reduced costs and more efficient management systems. There is a substantive (and growing) body of international literature on co-management of natural resources and fisheries co-management. Several recent Australian reports:

- review different forms of co-management and assess aspects of co-management currently used in Australian fisheries, forestry, and land management (Brightling et al. 2006)
- fill some information gaps in fisheries co-management identified by the Australian Fisheries Management Authority (AFMA) and the Commonwealth Fisheries Research Advisory Body (COMFRAB) by reviewing international fisheries co-management trends and identifying the potential and risks for greater use of co-management in Australian Commonwealth fisheries (FERM 2007)
- investigated the potential for Commonwealth fisheries management to move into more participatory forms of co-management and closely examined co-management definitions, drivers, functions which could be delegated to industry, a range of operational considerations (necessary preconditions), governance issues, and identified current gaps in research (FRDC 2008).

Generally, this body of work supports the potential of co-management for improving fisheries management in Australia, provided certain social and institutional issues are addressed. Currently, fisheries co-management in Australia is defined as:

“...an arrangement where responsibilities and obligations for sustainable fisheries management are negotiated, shared and delegated between government, fishers, other interest groups, and stakeholders (FRDC 2007:10)”.

As part of its investigation into the potential for applying co-management models in Commonwealth fisheries, AFMA commenced work in 2008 on a three-year ‘Co-Management Program’ (CMP). The overall aim of the CMP is:

“...for AFMA and industry to work together in designing a series of trials, across a range of fisheries/sectors, to test industry self-regulated functions¹ and responsibilities and other arrangements that work beneficially for both parties and can be more broadly implemented across Commonwealth fisheries in the future”.

The CMP has eight guiding principles used to underpin the Program (see Table 1). AFMA has also suggested that, in relation to monitoring, review and assessment procedures, it will:

- prepare an audit, review and assessment plan (including the development of performance indicators) to enable monitoring of the effectiveness of the trials and individual functions being tested

¹ The AFMA Co-Management Program will test the feasibility of shared or devolved responsibility for functions such as: administration; compliance, research and development; monitoring and assessment; management planning; and communication and extension.

- assess industry’s capacity to address AFMA’s obligations and legislative objectives and identify potential improvements to current fisheries management arrangements
- use cost-efficiencies gained by AFMA and industry as a critically important performance indicator
- engender acceptance from all parties of the possibility of mistakes or problems along the way, which should not jeopardise the full Program.

Table 1: Guiding principles and aims of the AFMA Co-Management Program

Guiding program principles	<ul style="list-style-type: none"> • Industry manages their business to meet their needs and obligations • AFMA sustainably manages fisheries resources and fishing practices, and does with confidence of the Australian community • Facilitate acceptance of change in approaches and attitudes within AFMA and of new responsibilities by industry • Mutual trust and respect between industry and AFMA • Functions that benefit industry and AFMA • Functions are generic and can be applied elsewhere • Functions are cost-effective and balanced against efficient delivery of services and AFMA’s legislative objectives • Functions increase the accuracy and timeliness of information for decision making
Program aims	<ul style="list-style-type: none"> • Reduction in complexity • Simplified regulations • Eliminate duplication and reduce ‘red tape’ • Streamlined business practices • Reduction in ‘real’ costs and not simply shift costs • Increased industry stability • Credibility with external stakeholders maintained • Improved industry/AFMA relationships

Source: AFMA (May 2008)

The CMP trials will be initially conducted in three fisheries/sectors: the Southern and Eastern Scalefish and Shark Fishery (SESSF: Lakes Entrance Cooperative Pty Ltd), the Great Australian Bight Trawl Fishery (GABTF), and the Northern Prawn Fishery (NPF), with possible extension into other candidate fisheries as the Program progresses (see Appendix 2). By necessity, the CMP will employ a participative research approach (i.e. working directly with industry to identify effective and efficient partnerships for managing natural resources).

Project need

The CMP trial focuses on different co-management arrangements to:

- determine if specific co-management functions can be shared in the three fisheries/sectors
- understand the broader potential of co-management for other Australian fisheries/sectors.

Program evaluation can help provide an appropriate framework and methods to make such an assessment. Effective/well-designed program evaluation enables people to decide if a particular policy, program or project is helping them to achieve their goals. Program evaluation is essentially

a learning process that is conducted through systematic, often participative, (qualitative and quantitative) data-based inquiry focused on the relationships between stated goals, processes and outcomes.

It is important to note that in Australia program evaluation frameworks have not yet been fully developed and applied to the co-management of fisheries. On the basis of discussions in February 2008 among the Department of Agriculture, Fisheries and Forestry (DAFF) Bureau of Rural Sciences (BRS) and Sustainable Resource Management Division and the Australian Fisheries Management Authority (AFMA), it was determined that the CMP did not yet include a detailed approach to evaluate the outcomes of its trials in the Southern and Eastern Scalefish and Shark Fishery (SESSF; Lakes Entrance), the Great Australian Bight Trawl Fishery (GABTF), and the Northern Prawn Fishery (NPF). While this report does not evaluate these trials directly, it has identified knowledge that is relevant to implementation of fisheries co-management more generally, as well as for the evaluation of the CMP trials.

Project aims and approach

This report contributes to the evaluation of fisheries co-management through a) a review and synthesis of current literature on program evaluation and b) analysis of information provided by 12 stakeholder interviews.

The literature review included an examination of:

- current research and policy dialogues about co-management
- program evaluation literature
- recent work on program evaluation in natural resource management (NRM), including fisheries co-management.

Interviews were conducted with representatives from Commonwealth fishing industry sectors (3), Commonwealth fisheries policy and management (6), fisheries science (1), NRM monitoring and evaluation (1), and a fisheries consultant (1).

Both the literature and interviews contribute evidence on how to assess and evaluate fisheries co-management in general, and the CMP trials in particular.

2. Stakeholder views on evaluating the CMP trials

Useful evaluation involves a range of stakeholders in deciding the extent to which a particular policy, program or project is achieving its respective goals. Stakeholders should also have some level of input into designing and implementing such evaluations. Towards that end, interviews were conducted with a selection of key fisheries stakeholders in order to identify their views and preferences for evaluating the AFMA CMP trials. Interviewees were asked to discuss:

- appropriate functions to be shared in fisheries co-management in a broad context
- desired outcomes for the CMP trials
- the focus of evaluation of those trials
- whether a participatory approach to CMP evaluation is warranted
- challenges for evaluating fisheries co-management more generally in Australia (see Appendix 3 for the interview topics).

Defining fisheries co-management and its requirements

It is increasingly evident that the concept of ‘co-management’ means very different things to different people. These definitions vary in their focus on the roles of government and other stakeholders in the decision making process, the types of management tasks which can and/or should be co-managed, and/or the stage in the management process when co-management is introduced (planning, implementation, evaluation) (Nielsen et al. 2004; AFMA 2008).

Stakeholders’ general descriptions of fisheries co-management and its actual and potential benefits varied significantly. Two interviewees were more comfortable with allowing a specific definition of co-management to eventually emerge from the CMP trials, while another referred to the variety of arrangements that could be called ‘co-management’. Despite this variety, virtually all interviewees emphasized the relationship aspect of co-management when they talked about what ‘*fisheries co-management*’ meant to them. There was consistent recognition by interviewees that government-industry relations in Australia have been somewhat unsatisfactory to date, and that the essence of fisheries co-management should be on “developing trust ... to achieve mutual goals, reduce costs and build relationships”. Increasing industry responsibility, reducing (government and industry) costs and improving efficiencies were mentioned frequently by interviewees.

Research suggests that co-management arrangements can help improve fisheries management outcomes, provided that it is used selectively in situations where certain social and institutional conditions exist or can be established (see Appendix 4). Interviewees had similar views, often referring to certain social and institutional requirements for fisheries co-management. Several interviewees noted the need for the fishing industry to be “more mature” if co-management was to succeed. Another interviewee felt that a change of culture was needed at AFMA and among external stakeholders – one that was more trusting of industry. Interviewees also commented on why it was more appropriate to devolve some fisheries management functions to industry than others. Their reasons included:

- interests of industry (e.g. seeking increased and particular kinds of responsibility, reduction in paper work, improvements in quality of what is being done)
- capacity of industry (e.g. strong evidence of their ability, such as having a cohesive industry association)
- perceived potential cost reductions and increased efficiencies
- provides a starting point (e.g. moving from simple tasks to more complex ones involving higher levels of responsibility).

Some stakeholder interviewees felt that it was not appropriate for industry to take responsibility for certain management tasks, because doing so would conflict with current legislative specifications, and/or raise the concern of other stakeholders who are seeking stronger evidence that such arrangements would not compromise fishery or ecosystem health (e.g. credibility concerns over crew-based observer programs).

One interviewee felt that identifying functions to be delegated to industry as part of the CMP trials should be determined first by identifying how undertaking those tasks helps meet the operational goals of the fishery. Another interviewee felt that these and subsequent co-management trials would test the ‘theory’ about the necessary preconditions required for successful co-management, and eventually reveal more definitive information about which fisheries management tasks could be devolved to industry.

Desired outcomes for the CMP trials

Interviewees discussed what they hoped to see as a result of the CMP trials (see Table 2), and much of it was consistent with AFMA’s formal aims for the Program (see Table 1) and other benefits of co-management cited in the literature (see Appendix 5). The strong and consistent themes to emerge from industry stakeholders were:

- reduced costs for government and industry (a shared goal with government interviewees)
- improved working relationships between AFMA and industry
- improved industry capacity to take on increased responsibility for fisheries management.

Government and science interviewees mentioned that ultimately they wish to see the CMP trials contribute to greater stewardship for, and sustainability of, fisheries and the marine environment. They also wanted improved understanding of the match between co-management theory and practice. Government interviewees were focused on improved data and audit capacities, and both government and science interviewees hoped the CMP trials would satisfy non-fishing industry stakeholders’ expectations for transparent and credible ways to investigate and implement co-management arrangements.

Table 2: Interviewees' desired outcomes for the CMP trials*

Stakeholder group (N = 12)	Desired outcomes
Government	<ul style="list-style-type: none"> • Greater stewardship of fisheries and marine ecosystems • Improved capacity to jointly manage fisheries resources and the marine environment • To conduct the trials, and in so doing, identify: <ul style="list-style-type: none"> – how well the co-management principles are being met – new, successful ways of doing business – the need to proceed in an adaptive, flexible way – industry readiness to operate in a co-management model – degrees of consistency or inconsistency with legislative imperatives – that it is appropriate to increase the levels of responsibility for industry • Improved working relationships between fishing industry and AFMA, based more on mutual trust and respect • Increased efficiency in management procedures and lower costs for industry and AFMA • Ability to demonstrate business/market advantages to industry • Greater data accuracy • Improved and increased audit capacity for AFMA • Evidence that a credible, independent assessment has been undertaken and procedures are in place for long-term, continual, and comprehensive evaluations
Industry**	<ul style="list-style-type: none"> • A more mature industry that rejects an ‘us and them’ mentality • Management cost savings • Increased industry responsibility for core management and research tasks • Improved understanding of how well the co-management theory about necessary conditions matches on-ground realities
Science**	<ul style="list-style-type: none"> • Better management and more sustainable fisheries (e.g. improved industry practices and compliance) • Improved industry-government relationships (e.g. less adversarial, more cooperative) • 3rd parties acceptance of co-management as an appropriate way to move forward (e.g. non-government organisations [NGO], recreational sector, Department of the Environment, Water, Heritage and the Arts [DEWHA])

* These represent the range of ideas mentioned by each stakeholder group.

** Views of the fisheries consulted included in this grouping.

Why evaluate the CMP trials and what to examine?

Interviewees were asked to provide the three most important reasons for conducting an evaluation of the CMP trials. Generally, most people felt that an evaluation would provide information about the extent to which the CMP trials ‘succeeded’ or not. Several people felt that a ‘trial’ and ‘evaluation’ were virtually synonymous – “you cannot do a trial without measuring how it went”. A strong theme emerging from the interviews was that evaluation provided transparency and therefore credibility for the CMP trials, and potentially instilled greater confidence among stakeholders in continuing with co-management in the trial fisheries/sectors and trialling co-management in other fisheries.

For several interviewees, their reasons for conducting an evaluation mirrored their desired outcomes for the CMP trials. That is, the evaluation would provide evidence of what *had been achieved*, such as legislative objectives being met or other benefits that they felt were virtually assured or already well on their way to being realised (e.g. increased industry responsibility, reduced costs, improved working relationships). Others felt that evaluation provided a means to *test* the underlying assumptions about what kinds of co-management arrangements were feasible in the three fisheries/sectors: evaluation would provide details about what was working well and what was not, why, what needed to be changed and how, and the extent to which:

- costs were being reduced and efficiencies increased
- fisheries outcomes and services were comparable or improved
- it was wise to proceed with co-management in the trial fisheries/sectors, and give some indication of the feasibility of trialling co-management in other fisheries/sectors that were not part of the CMP trials
- relationships between AFMA and industry had improved and/or were improving.

Key factors and questions

Interviewees discussed *what aspects* of the CMP trials should be examined and key questions for the evaluation to answer. They referred to a range of social and organisational processes and outcomes, including:

- attitudes and perceptions
- relationships
- data quality
- specific tasks in the CMP trials
- administrative processes and operating systems
- costs.

One person felt that it was more important to measure outcomes of the CMP trials, although they recognised that others would want to be assessing specific processes used in each of the CMP trials as well.

When asked what *key questions* they would want the evaluation to answer, interviewees mentioned many that were similar to the reasons provided for *why* one would evaluate the CMP trials. They included:

Evaluation questions relevant to fisheries co-management generally

- Is co-management a means to an end or an end in itself? What should future investment in co-management look like?
- How might/does increased responsibility and stewardship assist industry or afford market advantages?

- Which of the preconditions as specified in the FRDC Co-management Framework must be in place before proceeding and which can be created or facilitated as you proceed?
- Have we sufficiently considered the experiences of co-management in other primary industry sectors?

Evaluation questions specific to the CMP trials

- What are the full cost-benefits of each of the CMP trials for government and industry?
 - Net financial savings?
 - What was the extent of cost-shifting?
- What advantages or disadvantages did participants experience as a result of the new arrangements (e.g. streamlined operating systems)?
- How have relationships between and within industry and AFMA, as well as with other stakeholders, changed?
- Which of the tasks laid out in the trials have been achieved, how well, and what has been achieved beyond what was specified in the trial?
- How will Management Advisory Committees (MACs) and other consultative mechanisms and processes be impacted by the trials?

Participatory evaluation

Many evaluation researchers and practitioners consider a participatory approach to evaluation is required. Similarly, all interviewees felt it was necessary to have stakeholders directly involved in an evaluation of the CMP trials. They believed that such an approach would be consistent with the participatory nature of fisheries co-management generally, and the CMP trials in particular. There was a strong sense that the knowledge gained from involving people was integral to reaching a broad understanding of what elements of the CMP trials are working and for whom. Involving people in a representative way (not limited to AFMA and industry association officers) was seen as important in order to reach agreement on what would be evaluated.

Ideally, any program evaluation should be done *for* and *with* the key ‘users’ of the evaluation results. Interviewees mentioned a range of stakeholders who they saw as ‘users’ of the CMP trials evaluation including, the fishing industry, AFMA, DAFF, DEWHA, NGO, recreational fishers, Indigenous communities and fisheries researchers. In most cases interviewees referred generally to the ‘fishing industry’, but also mentioned the industry associations directly involved in the CMP trials, as well as the Commonwealth Fisheries Association (CFA). Some interviewees made distinctions between ‘key’ and ‘other’ stakeholders. The fishing industry and AFMA were most commonly referred to as ‘key’ stakeholders because they are directly involved in management of commonwealth fisheries and the CMP trials. DAFF and DEWHA were also referred to as key stakeholders. Recreational fishers, Indigenous communities and fisheries researchers were mentioned least frequently as stakeholders with an interest in the evaluation of the CMP trials.

Generally, interviewees felt that the CMP trials’ evaluation results would be used by all stakeholders to see how well specific co-management functions were working, although their priorities for particular kinds of information were likely to differ. For example, most people assumed that DAFF, DEWHA and AFMA would have particular interest in what the evaluation could reveal about how well legislative objectives for sustainability could still be met, with DEWHA having a greater emphasis on wildlife conservation. Similarly, the NGOs would be interested in conservation of marine and ecosystem function. One interviewee suggested that:

- “key” stakeholders would need detailed evaluation results from each of the CMP trials in order to identify implications for continuing co-management arrangements in those fisheries/sectors and possibilities for trialling co-management arrangements in other fisheries/sectors

- “other” stakeholders would only be interested in the more general conclusions from the evaluation that draws conclusions about the potential of co-management for the trial fisheries and other fisheries.

One interviewee remarked that any information provided by evaluating the CMP trials would need to be presented in a way that was accessible to a diverse audience. Another interviewee was concerned about the expense of involving a lot of stakeholders in evaluating the CMP trials. Others felt that such ‘participation’ would need to be carefully defined and planned. That would include specifying:

- who wanted to contribute to what parts of the evaluation
- who was able to participate (what resources were required to assist)
- what level of involvement would they participate (e.g. being consulted on final evaluation framework, collaborate on evaluation framework development).

Evaluation challenges

Interviewees were asked to discuss what they saw as challenges to undertaking evaluation of the CMP trials. Most of them cited a range of planning and methodological challenges, including appropriate timing of the evaluation, consultation on developing an evaluation framework and measurement criteria, ensuring credibility of the evaluation and CMP trial results, rigorous collection of data and information, and budgetary and cultural considerations (see Table 3).

There was a high level of agreement about these challenges, as well as some conflicting opinions. Several interviewees wanted to see “less tangible phenomena” measured (e.g. improved relationships), although they expressed uncertainty about how to proceed with that measurement. These intangibilities are suited to measurement via qualitative methods (e.g. stakeholder interviews or ‘language-based’ methods). However, two interviewees remained cautious about relying too heavily on “people’s opinions” to draw conclusions about the CMP trials’ effectiveness. In addition, there were different views about how an evaluation should be timed. Some felt it should start as soon as the CMP trials begin, and monitoring (data collection) would take place while each of the CMP trials proceed. Others felt that it was appropriate to wait until the trials were over so that one could look back on what happened.

Table 3: Evaluating the CMP trials – challenges perceived by interviewees

Appropriate timing for the evaluation	<ul style="list-style-type: none">• How to measure outcomes over a relatively short period of time (e.g. 12 month trial)• Beginning the evaluation as early as possible to enable sufficient and appropriate planning and the collection of pre and post trial data• Undertaking the evaluation late enough to enable assessment of “what happened”• Undertaking the evaluation over a sufficiently long period to ensure people are meeting their respective commitments
Appropriate consultation	<ul style="list-style-type: none">• How to reach agreement on the most effective purpose and design for the evaluation, including reconciling the different priorities for particular outcomes, and therefore what is evaluated, and how to judge ‘success’ or ‘failure’ (e.g. costs/benefits and business efficiencies, legislative objectives)
Credibility	<ul style="list-style-type: none">• Ensuring sufficient independence and objectivity of the evaluation so that it stands up to scrutiny by a range of stakeholders
Effective and appropriate data collection (or monitoring) to elicit useful and informative conclusions	<ul style="list-style-type: none">• How to estimate accurate measurement of costs and benefits, including establishing baseline information (e.g. some government and industry costs not well documented, measuring the difference between cost-shifting and cost-savings)• Appropriate comparisons between industry and governments’ financial systems• How to measure less tangible processes and outcomes (e.g. improved working relationships, reduced administrative burdens)
Focus of evaluation	<ul style="list-style-type: none">• How to ensure the evaluation is both sufficiently focused, context-specific, yet comprehensive (e.g. informs refinement of arrangement in a fishery, helps determine if legislative imperatives will continue to be met)• Drawing lessons from trials that can be applied more broadly both within and between fisheries
Budgetary and cultural considerations	<ul style="list-style-type: none">• Determining appropriate level of investment in evaluation of co-management trials• How to create and maintain a policy, management, and industry culture that is truly adaptive (e.g. internal and external tolerance of mistakes, managing expectations that the trials ‘have to’ succeed, valuing the learning benefits of reflective processes such as evaluation)

3. Evaluation approaches and resources

This chapter provides a brief overview of key program evaluation concepts and tools. The basic concept of ‘evaluation’ is clarified, program evaluation planning tools are listed and recent program evaluation trends in NRM and fisheries co-management are noted and applied to the CMP trials. For further details about the full range of materials reviewed, readers are referred to the list of references and to Appendices 6 to 10.

Basic types of program evaluation

The main purpose of program evaluation is to help individuals, groups or organisations think about what is to be achieved, assess how far efforts are succeeding and identify any required changes (Evaluation Trust 2008)². It has been defined as:

The systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming (Patton 1990).

There are many approaches to evaluation and an almost equal number of different conceptual classifications of these approaches. These different approaches overlap considerably with one another. Different types of evaluation have different purposes, seek answers to varied questions, and use a range of methods (see Appendix 6). Some suggest that the best evaluation borrows from the perspectives of all these approaches (Patton 1997).

Two common and overlapping ways to distinguish between evaluation approaches are shown in Table 4 – evaluation focused on process and outcomes or formative and summative evaluation. Others have identified evaluation types according to a program’s particular stage of development, because user needs vary depending on how far a program has progressed and/or some aspects of programs may be more or less available for measurement. The primary driver for choosing different forms of evaluation is what questions stakeholders are seeking to answer.

Table 4: Different types of evaluation

Evaluation type	Focus
Process	<ul style="list-style-type: none">• How a program is delivered or implemented• When, where program activities occur• Who delivers program activities• Are programs delivered as intended
Formative	<ul style="list-style-type: none">• Strengthening or improving program• Delivery, quality of implementation• Context, personnel, procedures and inputs• Refining form and delivery of program or project
Summative	<ul style="list-style-type: none">• Final outcomes or effects produced by program• Post-delivery; should program be continued; if so at what level• Overall merit and worth of program
Outcomes	<ul style="list-style-type: none">• What are results of programs/projects• Distinctions between long and short term outcomes

² Since program evaluation involves the systematic collection of information, it bears close resemblance to research, and to social research in particular (e.g. it uses many of the same qualitative and quantitative methodologies, such as probabilistic and non-probabilistic sampling, surveys, interviews, focus groups, document analysis).

Incorporating evaluation into planning cycles

Generally, where evaluations are prioritised, supported and systematically integrated into work plans, users are more able to develop and improve programs. Figure 1 depicts evaluation as part of a policy or program planning cycle, which is comprised of sequential stages (or tasks) that build on each other – and thus encourages a continual process of consideration, action, reflection and adjustment. The main stages are often described as including:

- the identification and clarification of issues
- refining those issues into a particular problem to be addressed
- considering a range of ways to respond
- choosing amongst those options a particular way to proceed
- implementing a particular course of action
- evaluating how the implementation has proceeded
- consider what changes need to be made.

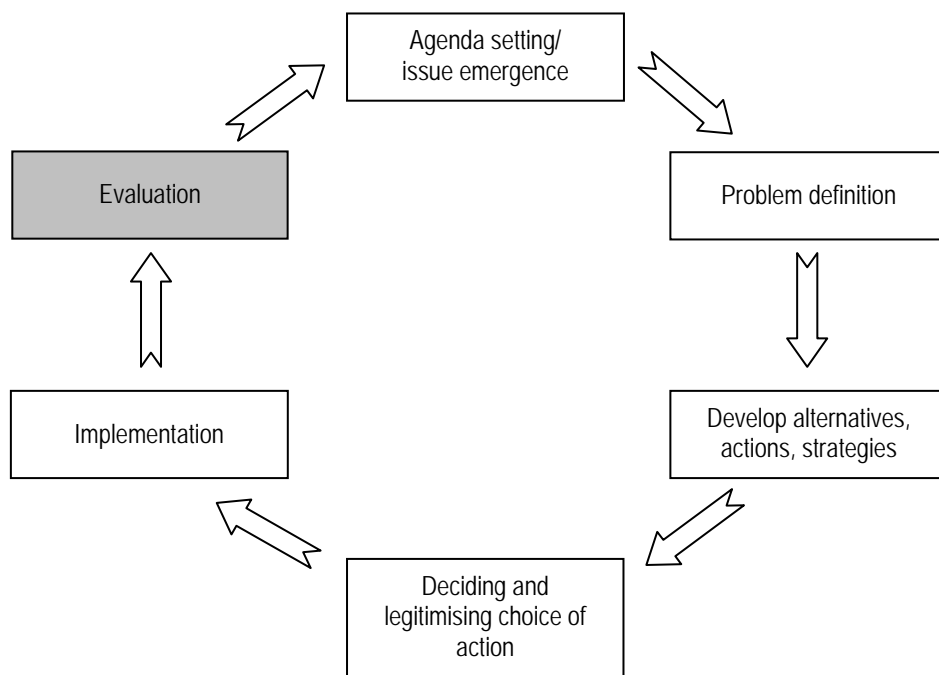


Figure 1: Evaluation in the adaptive management cycle

An alternate approach depicted in Figure 2 is to use evaluation to address issues occurring *throughout* the entire decision/planning cycle (e.g. do strategies achieve objectives they are meant to, are outputs helping achieve appropriate outcomes, etc.).

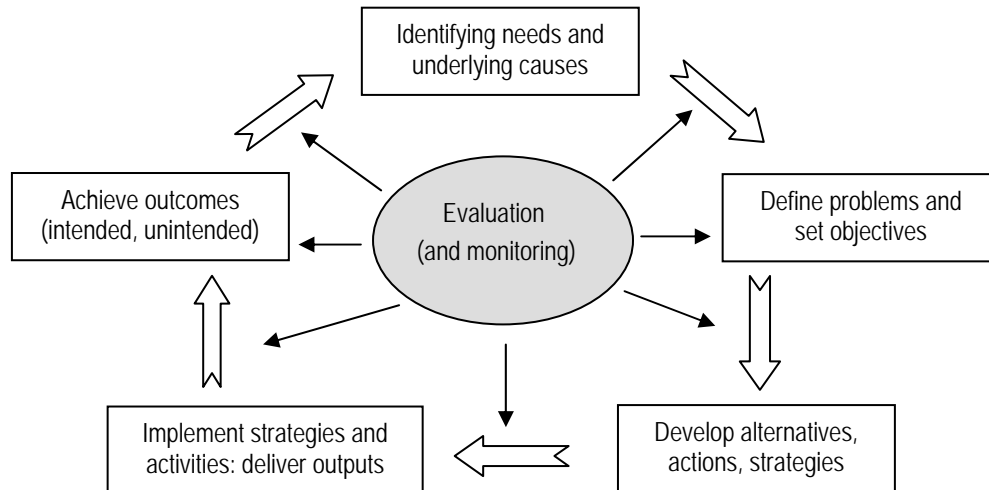


Figure 2: Evaluation as a central component of adaptive management cycle
(Adapted from Zamitt et al. 2000)

Planning program evaluation

All program evaluations benefit from careful planning and use of the following sequence of key steps (see Figure 3). These include:

- **stakeholder analysis:** who will be affected by the program, who is interested in the evaluation, clarify their expectations and capacities to contribute/be involved, considering representativeness of stakeholder selection, negotiate their participation in evaluation
- **identify primary purpose(s):** intended uses of the evaluation, including identifying program's rationale (goals, objectives, outputs, outcomes)
- **focus the evaluation:** formulate, test and refine key evaluation questions.
- **design:** the evaluation approach and methods (tools and information appropriate to answer evaluation questions, methods to collect information/data)
- **data collection:** in on-going or continuous evaluation also known as 'monitoring'
- **data analysis:** initial analysis, organise information to be accessible for stakeholders and facilitate their contributions to additional data analysis/interpretation
- **dissemination:** determine breadth of distribution of findings, disseminate findings
- **evaluate the evaluation:** assess effectiveness of evaluation, decide if evaluation process should be sustained and in what form.

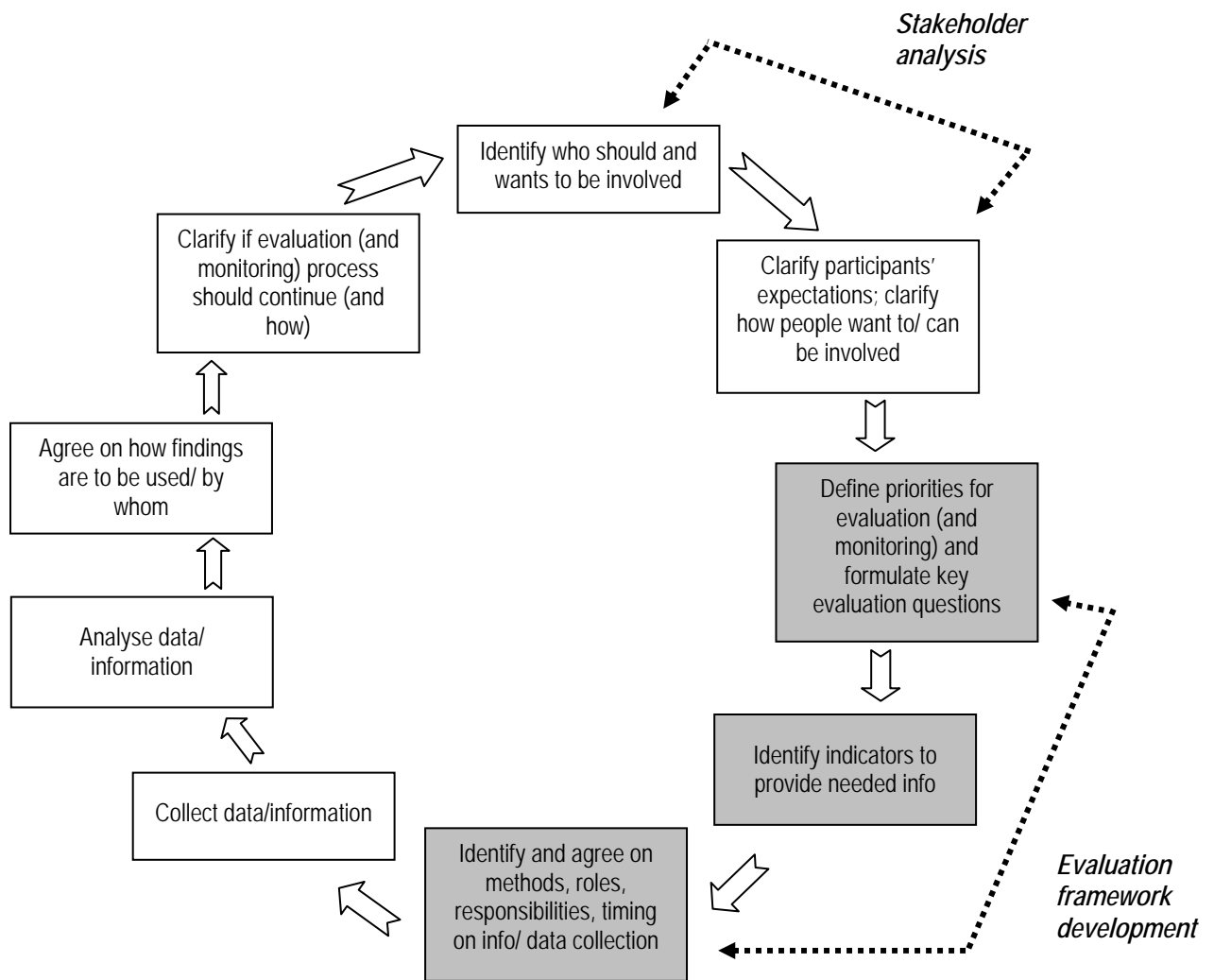


Figure 3: An evaluating planning cycle

Applying NRM evaluation frameworks to fisheries co-management

There are valuable insights for evaluating fisheries co-management that can be gained from recent trends in program evaluation in the broader field of NRM. There is increased recognition that many desired changes in NRM occur over longer time scales than typical investment cycles. Therefore, natural resources should be managed adaptively – using planning cycles in which evaluation facilitates regular reflection on policy and program assumptions, learning and possible required changes (see Figures 1, 2, 3). Such evaluation should focus on assessing **process and outcomes**³, and be applied throughout the life of programs (see Table 4) (Zammit et al. 2000; Bellamy et al. 2001; Allan 2007; Leverington et al. 2008).

³ Previously, most of the monitoring and evaluation activities in NRM have focused on the extent to which there have been changes in the biophysical environment. While many see improvement in natural resource condition (biophysical or natural assets) as the ultimate outcome for sustainably-managed fisheries, there are also a host of social, institutional and economic outcomes that will be just as important to different stakeholders to obtain in the short to medium term.

An example of this kind of thinking is illustrated in the *National Natural Resource Management Monitoring, Evaluation, Reporting and Improvement (MERI) Framework* (DEWHA 2008). It was developed to help undertake national-scale monitoring and evaluation and encourage adaptive NRM aimed at continuous improvement (see Table 5). This approach uses ‘program logic’ (or theory of planned change) to assess *the extent to which* investment in a program (e.g. foundational resources, immediate activities and outputs) are logically contributing to the desired social, economic and environmental outcomes whether at the intermediate, longer-term or aspirational level of outcome hierarchy. Notably, effective *processes* (how policy/management is planned, developed, coordinated, implemented) help *cause* particular *outcomes* (co-management and sectoral objectives).

Once an evaluation framework is developed, key evaluation questions, indicators and data collection/monitoring approaches are identified for those outcomes. The MERI framework is used to periodically assess the appropriateness, impact, effectiveness, efficiency and legacy of a policy, program or project (see Appendix 7 for a definition of those criteria).

Table 5: Australian Government's MERI framework

Program logic template (aka outcome hierarchy)	
Aspirational	Vision for the asset(s) ⁴
Longer term outcomes	Improvements in the state of the asset(s)
Intermediate outcomes	Aggregate changes in how asset(s) being managed across geographical area Practice and attitude change
Immediate activities	Biophysical outputs Non-biophysical outputs Project activities
Foundational activities	Project resources, information, capacity, plans, tools etc.

Figure 4 goes some way toward identifying how a series of goals, outcomes, outputs and inputs for the CMP trials could be organised in the MERI program logic approach. Although incomplete and not identified by consensus or workshop, the outcomes at each level were identified by stakeholders interviewed for this report. It demonstrates how the CMP trials can assist in meeting the long term goal of sustainable fisheries through co-management which contributes to healthy marine ecosystems, viable fishing communities and stable fish stocks. The program logic also demonstrates how the CMP trials could be assessed in the short-term according to the extent to which they are achieving a range of increased management efficiencies and effectiveness.

⁴ An asset is something deemed to have high utility, quality – it has value (MERI 2008). In NRM dialogues, these often include human, social, natural, physical and financial capital. Financial capital can be assets like income, savings and credit, dependence on income, business spending and gross sales. Social capital refers to networks and shared interactions that individuals can use for a range of purposes, including gaining new knowledge, interacting socially and receiving various types of support – emotional, physical and otherwise. Human capital includes labour and influences on the productivity of labour including education, skills and health. Natural capital refers to land, water and biological (fish stocks) resources. Physical capital is produced by economic activity and includes infrastructure, equipment and technology.

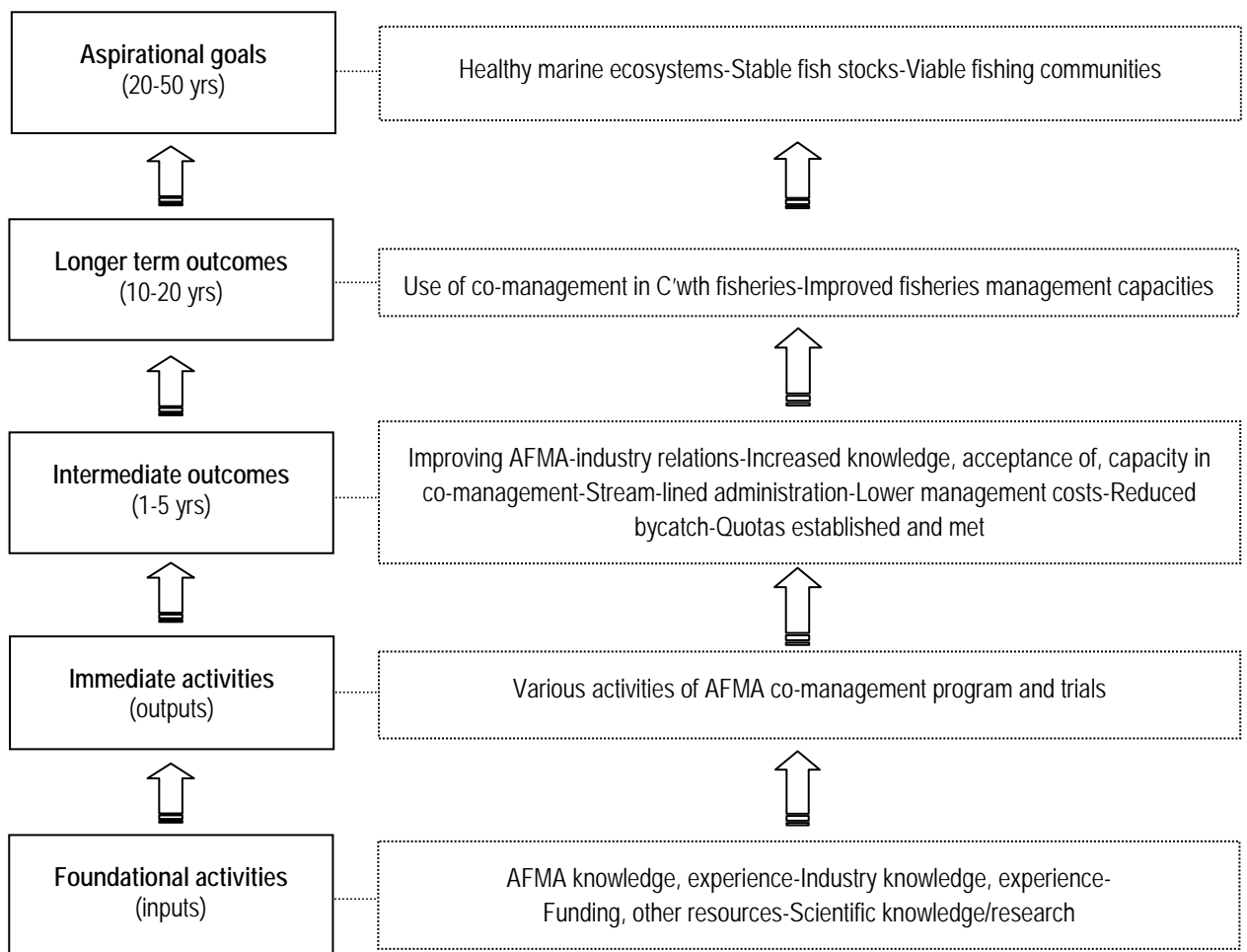


Figure 4: Partially populated program logic framework for fisheries co-management trials

Evaluation tools from fisheries co-management

The following examples of fisheries co-management evaluation primarily come from development work in subsistence fisheries in Africa and Asia. These include guidelines for a participatory approach to evaluating fisheries co-management and examples of evaluation criteria. Other work in fisheries co-management has a stronger research focus for developing ways to examine fisheries co-management arrangements and identify conditions for successful fisheries co-management arrangements, rather than evaluation (see Appendix 8). That work could be drawn on when developing evaluation questions and appropriate performance indicators.

Evaluation guidelines

Pittaluga and Reyntjens-Mesquita (2004) formulated a set of guidelines for participatory monitoring and evaluation in fisheries co-management. The guidelines were formulated to help

improve the livelihoods of communities dependent on natural resources⁵. Their framework recommends that participatory evaluation:

- is focused on identifying changes: broad domains where change is envisioned as a result of the project; within those broad domains, identify areas where change is more likely to occur; and within those areas identify indicators that could help track change and its direction
- includes the use of non-indicator approaches to identify change, including a range of qualitative tools (direct observation, key informant interviews, rapid appraisal techniques, focus groups) and recent innovations such as Most Significant Change stories⁶
- allocates sufficient time and resources to conducting stakeholder analyses. These analyses include understanding the interests and levels of influence of different groups and identifying how the project might impact on those interests, and their degree of interest and capacity to be involved in the evaluation
- appropriate monitoring processes – including addressing the particular information needs and indicators for tracking the status of both biophysical resources (e.g. fish stocks) and social aspects.

Evaluation criteria

Similar to evaluation in terrestrial NRM, evaluation criteria developed for fisheries co-management are based on efficiency, equity and sustainability (see Table 6). These criteria, which overlap with the MERI criteria mentioned above (see Appendix 7), are designed to assess a range of fisheries co-management processes and desired outcomes.

⁵ Pittaluga and Reyntjens-Mesquita's (2004) evaluation work, undertaken on projects in West Africa, had a strong poverty-reduction focus. They sought to monitor a wide range of potential changes in people's lives and use methods that could be readily taken up by members of those communities.

⁶ MSC is a participatory, qualitative evaluation tool used to monitor program outcomes and impacts. Stories about changes resulting from the program are collected from a range of stakeholders. This technique is useful for complex, participatory programs that have diverse and emerging outcomes.

Table 6: Some criteria for the evaluation of fisheries co-management

Criteria	Process	Outcomes
<p>Efficiency: cost-effectiveness of co-management arrangements, how are costs distributed.</p>	<p>Management costs: Is the co-management system cheaper to maintain than the state-based system?</p>	<p>Management costs: Does the flow of benefits resulting from the co-management institutional arrangement make up for the costs of establishing and maintaining such arrangements (transaction costs met)?</p> <p>Maximum sustainable yield: Do arrangements enable fisheries to achieve optimal rate of use of the fishery (e.g. not exceeding maximum yield or related target reference points)?</p> <p>Income and revenue: Do fishers generate more income; does fishery generate more revenue or sustain higher number of livelihoods?</p>
<p>Equity: the fairness of the arrangements and processes, how are benefits distributed.</p>	<p>Representation: Does management team include representation of the range of interests in fishery? Quality of stakeholder engagement: is there sufficient spread of interests involved at appropriate stages and to appropriate degrees?</p> <p>Expectations: How well are different stakeholders' expectations accommodated in management processes?</p> <p>Transparency: How transparent and purposeful is the management process? Process sufficiently resourced?</p>	<p>Distributive effects: Has the management process led to a more equitable distribution of benefits?</p>
<p>Sustainability: how well ecological and social resources can be maintained, given the decision making systems in place.</p>	<p>Policy objectives sufficiently linked to fisheries context, needs of resource users, enabling legislation.</p> <p>Policy objectives based on data/information relevant at national, regional, local scales and sufficiently consistent with national and local requirements.</p>	<p>Extent to which conditions for success have been created (e.g. clear sectoral objectives that are widely recognized, establishment of access rights, legislation legitimising local management decision-making).</p> <p>Extent to which policies delivering outcomes through local management plans meeting local and national objectives.</p> <p>Governance: What are rates of compliance with rules, trends in rates/severity of conflicts?</p> <p>Resilience: Can management system absorb external shocks and adapt to changes?</p> <p>Stewardship: Is there an ethical or social commitment by resource users to maintain productivity and ecological characteristics of the resource?</p>

Source: Adapted from ICLARM and IFM (1998, Appendix 8), Allison and Badjeck (2004), Arthur (2005).

Evaluating participation in NRM and co-management

Co-management is a ‘participatory’ form of managing natural resources. However, different forms of co-management vary according to *how much* responsibility is shared among authorities and stakeholders. That distinction also applies to conventional and participatory approaches to program evaluation. That is, stakeholders will have different levels of involvement in assessing how well fisheries co-management arrangements are achieving their goals and objectives.

Participatory approaches to evaluation have benefits similar to the benefits of participatory forms of resource management, but there are particular challenges that should be addressed in order to reap the advantages of such an approach (see Appendix 9 for a more detailed discussion about the types, benefits and challenges of participatory program evaluation).

Criteria for evaluating participation

Since a key element of co-management is to involve a range of stakeholders in decisions about managing natural resources, particular criteria can be used to assess how well participation is helping to achieve co-management objectives. In other fields such as research and planning, there are a range of criteria which have been developed to evaluate participatory processes and outcomes that could be applied to fisheries co-management policies and programs and to the CMP trials (see Appendix 10).

4. Main findings

The findings presented here are based on ‘best practice’ principles for (NRM and fisheries co-management) program evaluation as identified in the literature, as well as on key stakeholders’ specific ideas about how the CMP trials might proceed.

Evaluation planning considerations

As noted earlier, evaluation is more informative when it is undertaken as an integral component of policy, program or project planning and implementation and when it is planned carefully. This premise is useful for evaluation of fisheries co-management in any context. Irrespective of the type of evaluation eventually chosen for the CMP trials, the evaluation (and monitoring) would benefit from applying a participatory approach, which uses the following sequence of steps in a continuous cycle of reflection.

Finding 1- program evaluation process

- **Stakeholder analysis:** identify who will be affected by the trial/program, who is interested in the evaluation, what are their expectations and capacities to contribute/be involved, how representative the selection of stakeholders is and negotiate processes for them to participate in the evaluation.
- **Evaluation purpose(s) and uses:** identify the program rationale – list desired goals/outcomes, clarify assumptions regarding temporal and geographic scale and type of expected changes; conduct participatory program logic workshops.
- **Evaluation focus:** formulate key evaluation questions, test whether primary users can identify how answers to those questions might be used, refine evaluation questions and timing.
- **Evaluation design:** identify participatory evaluation methods, select indicators, gather data and information required to answer evaluation questions, define data/information sources and type (including quantitative and qualitative data), select data/information collection methods.
- **Data collection:** determine on-going or continuous evaluation also referred to as ‘monitoring’.
- **Data analysis:** undertake an initial analysis, organise the information to make it accessible for stakeholders and facilitate their contributions to additional data analysis/interpretation.
- **Evaluation dissemination:** determine scale/target of distribution of findings and disseminate.
- **Evaluate the evaluation:** decide on how evaluation and monitoring should be sustained.

Participatory evaluation

Good evaluation planning of any type of fisheries co-management initiative begins by considering who should be involved and how they should be involved. There are substantial benefits to involving people who share responsibility for managing natural resources in the evaluation of how that process is progressing. Some of the potential and actual benefits of fisheries co-management parallel those of participatory approaches to program evaluation. Participatory evaluation can build partnerships and capacities, improve the credibility/validation of the evaluation and broader program, and provide invaluable information from diverse perspectives (see Appendix 9). While some interviewees made distinctions between ‘key’ and ‘other’ fisheries co-management stakeholders who may use the findings of the CMP trial evaluations, all agreed that the evaluation would benefit from having ‘participatory’ design and implementation stages. Further, there was consistent recognition that government-fishing industry relations could be improved and that successful co-management will depend on certain social and institutional conditions being met,

including a “more mature” fishing industry, an AFMA culture that is more trusting of industry and devolved functions that are clearly linked to a fishery’s particular operational goals.

Program evaluation needs to be done *for* and *with* the key ‘users’ of the evaluation results. Interviewees identified a range of stakeholders as potential ‘users’ of the CMP trials evaluation – including the fishing industry, AFMA, DAFF, DEWHA, NGOs, recreational fishers, Indigenous communities and fisheries researchers. The fishing industry and AFMA were most frequently referred to as ‘key’ stakeholders of Commonwealth fisheries, who would need access to detailed evaluation results for planning. Some interviewees felt that ‘other’ stakeholders would be more interested in the general conclusions of the evaluation that identify the potential of co-management for particular fishing industry sectors. One interviewee pointed out that *any* information provided by the evaluation of the CMP trials would need to be made readily accessible to all stakeholders.

All interviewees agreed that it was also necessary to involve stakeholders directly in the design and implementation of the evaluation of the CMP trials. They felt this approach was consistent with the participatory nature of fisheries co-management generally, and the CMP trials in particular. Interviewees pointed out that ‘participation’ in the evaluation of the CMP trials and any future trials would need to be carefully defined and planned – detailing stakeholders’ interests in and capacity to be involved, and to what level of involvement.

Finding 2 – Participatory evaluation

The evaluation of the CMP trials would benefit from involving a range of stakeholders in the planning, design and implementation. This participation and involvement needs to be defined in more detail and negotiated according to stakeholders’ interests, capacities and availability, project resources and timelines. Furthermore, it would be helpful to clarify with stakeholders what level of involvement they might have in particular components of the evaluation (see Figures 3 and 6).

Evaluation outcomes and design

There is some evidence that the adaptive management culture required for ‘best practice’ program evaluation is not fully present in the Australian fisheries community of interest. Interviewees were either very determined that the current CMP trials will succeed, felt cautious about what might be achieved from the CMP trials (or from co-management more generally), or somewhere in between those views (e.g. the purpose of a trial is to find out what is possible).

Nonetheless, most interviewees felt that the most important reasons for evaluating the CMP trials were to:

- test assumptions and elicit detailed information (and evidence) about how much the trials had ‘succeeded’ or not (e.g. extent of reduced costs, increased efficiencies, improved outcomes and services, improved relationships)
- demonstrate transparency and therefore greater credibility of the trials (and for the idea of co-management more generally).

Interviewees referred to a range of processes and outcomes that should be examined during the evaluation of the CMP trials, including attitudes and perceptions, relationships, data quality, specific co-management functions/tasks, administrative processes/operating systems and costs. They also posed a number of broad and more specific questions they felt the evaluation should answer, which were similar to their reasons for why the CMP trials should be evaluated.

Interviewees’ spoke about their desired outcomes from the current CMP trials, as well as from any future co-management initiatives. Those outcomes are largely consistent with the formal aims of the CMP. Interviewees hope to see:

- improved administration and reduced costs for government and industry

- improved working relationships between AFMA and industry
- improved fishing industry capacity to take on greater management responsibilities
- improved understanding of the match between co-management theory and practice
- increased industry stewardship for sustainable management of fisheries resources and the marine environment
- improved transparency/credibility of the CMP trials.

The primary driver for choosing what type of evaluation will be used is often based on *what questions* stakeholders are seeking to answer. As noted earlier, interviewees were interested in having the evaluation of the CMP trials focus on a range of processes and outcomes. They wished to see the CMP trial assess what was working well, what was possible, what needed to be changed and how, and the extent to which costs were reduced, efficiencies increased, government-industry relations improved, industry's management and environmental stewardship capacities increased, and understanding of co-management theory extended.

Finding 3 – Evaluation outcomes and design

The evaluation of the CMP trials will generate more useful information if it is consistent with stakeholder preferences and expert knowledge about evaluating natural resource management. Therefore, the evaluation could focus on assessing the extent to which a range of desired *outcomes* (biophysical, social, institutional and economic) over different scales and time frames have been achieved and how well CMP trial *processes* (social, institutional, economic) will have contributed to those achievements.

Summative evaluation techniques (often used at the end of projects to consider whether project goals and milestones have been achieved, how well money was spent, whether projects should be continued, etc) could be applied to those CMP trials which are well underway and/or near completion. *Formative* evaluation (e.g. taking place *during* the co-management trials to elicit clearer understanding of the delivery and quality of the trial's implementation, its context, personnel, procedures and inputs to refine and improve the form and delivery of the trials) could be used for CMP trials currently under development, as well as for future CMP trials and other fisheries co-management initiatives.

Stakeholders suggested that the CMP trial evaluation design further consider:

- identifying ways to accurately measure the specific costs and benefits (and their distribution) of the CMP trials given different industry and government financial systems and a lack of 'baseline' information to date
- facilitating greater acceptance of the validity of qualitative approaches to program evaluation methods
- ensuring the credibility of the CMP trials by having the evaluation undertaken/led by sufficiently independent parties.

Insights from evaluating NRM

There are evaluation frameworks, guidelines, tools and criteria currently being used in terrestrial natural resource management and fisheries co-management that could be applied to the evaluation of the CMP trials. The Australian Government's MERI framework could nest the CMP trials in a hierarchy of desired outcomes for sustainable fisheries co-management in Australia (see Table 5, Figure 4, Appendix 7).

Other fisheries-specific research and evaluation resources reviewed in this report offer additional insights about overarching evaluation principles, identify a range of social and institutional processes that affect co-management and list further potential evaluation criteria (see Table 6, Appendices 8-10).

Finding 4 – Learning from NRM evaluation

The Australian Government’s Land and Coasts inter-departmental team holds extensive knowledge and experience of monitoring, evaluation, reporting and improvement (MERI) relevant to fisheries co-management. The MERI framework is particularly useful for guiding evaluation of the CMP trials. Use of this highly successful program logic framework could clarify and integrate the more immediate and specific goals, outcomes and activities of the CMP trials with the wide range of desired longer-term (see Figure 4).

Challenges to undertaking the CMP trial evaluations

When asked about potential challenges for evaluating the CMP trials, interviewees referred to a range of planning and methodological issues. Those issues included how best to time the evaluation, consult/involve stakeholders in the development and implementation of the evaluation framework, ensure the credibility of the evaluation and CMP trial results, ensure sufficient rigour in the data and information collection, and secure sufficient resources and facilitate the culture required for comprehensive evaluations.

Program evaluation is more than simply collecting a list of required ingredients for a recipe and following a series of steps. It is complex and often takes place in a politicised environment, characterised by competing demands, finite resources and contested views about appropriate methods. As mentioned earlier, the stakeholders interviewed for this report listed a range of planning and methodological issues they felt needed to be addressed in order for any evaluation of the CMP trials to be useful. Interviewees were asked about challenges in the CMP trial evaluation. However, other stakeholders – *who have not yet been consulted* – are likely to have additional concerns. It would be beneficial to solicit these concerns, make them explicit and negotiate a process for resolving them.

Finding 5 – Evaluation challenges

To overcome the challenges of participatory evaluation, there is a need for further discussion on designing the evaluation approach and criteria to maximise evaluation rigour, representativeness, credibility, transparency, inclusivity etc, (see Appendix 1, 9, 10). Specific topics for discussion include:

- timing of the evaluation to enable reflection on the CMP trial processes as they are being implemented and to be able to look back on those processes and at the resulting outcomes
- unfamiliarity and/or discomfort with approaches to measuring less tangible processes and outcomes (e.g. improved relationships, reduced administrative burdens)
- the need to balance evaluation of longer-term or aspirational outcomes (e.g. sustainability) with more immediate ‘lessons’ applicable to CMP or other co-management trials.

These concerns and challenges could be addressed by a thorough participatory evaluation plan as outlined above in Finding 1.

5. Conclusions

Fisheries co-management is of increasing interest to the Australian fishing industry and to the Australian Government due to its potential to reduce costs, improve stakeholder relations, and improve fisheries management outcomes. By conducting trials in three Australian fisheries/sectors. AFMA's CMP will provide information about the potential for applying co-management models to Commonwealth fisheries. The success of the AFMA's CMP can be determined by the development of an appropriate framework and methods to evaluate how well those trials are achieving their objectives, using that information to make any necessary changes or adjustments to the current program and applying what was learned to potential co-management arrangements in other Australian fisheries/sectors.

This report was commissioned to redress a lack of information about appropriate frameworks for evaluating fisheries co-management in Australia generally, and to the CMP trials in particular. The key findings may assist decision makers and stakeholders with planning the evaluation of current and future CMP trials and other fisheries co-management policies, programs or initiatives.

Fostering an evaluation culture

There is substantial knowledge and evidence that program evaluation is most helpful where it is undertaken in a culture that values reflective and adaptive processes. AFMA has indicated that there should be "acceptance from all parties that not all facets will work out in the trials and there may be slip ups along the way that should not jeopardize the whole program" (AFMA 2008). It could be argued that this statement by AFMA is essentially a call for shifting towards a more adaptive management culture – a cycle of practice that emphasises and supports continuous reflection and consideration of change.

The stakeholder interviews suggest that such a culture is not yet fully present in Commonwealth fisheries management. A greater shift towards policy, management and industry cultures that are receptive to and supportive of trialling (and therefore evaluating) co-management arrangements in a truly reflective and adaptive manner requires an enabling process. That process will take time, effort and resources. It also requires increased awareness of and interest in adaptive management, and a deeper understanding of the social and institutional processes required to foster such cultural change and social learning.

Implication of this research

The cultural change required to facilitate a highly reflective evaluation of the CMP trials can be facilitated by:

- positioning program evaluation more centrally in the CMP (see Figures 1 and 2). Evaluation would ideally be planned at the outset of a particular trial (or as soon as possible after commencement of the specific CMP trials), occurs at all stages of the CMP trial planning cycles, and therefore ensures that the design, planning and implementation of the trial functions are appropriate, efficient, effective, have impact and are sustainable
- appropriately resourcing the evaluation of the CMP trials (e.g. the recommended proportion of funds for evaluation from a program's total budget ranges from 6-15%)
- considering whether the goals of the CMP trials should include building government and industry capacity to evaluate the CMP trials and/or co-management arrangements that are trialled in the future and/or eventually finalised in each fishery/sector.

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Appendix 1. Co-management as a continuum of participation

There are a range of diagrammatic representations of fisheries management (including co-management) and those too vary according to how much they focus on the degree of influence and responsibility sharing, the nature of those interactions, the range of stakeholders involved and/or the scope of resources being managed. One of the more popular ways to depict co-management is according to the degree of involvement by resource users and governments. Figure 5 shows the diagram used by the FRDC (2007) to depict a continuum of sharing arrangements in Australian fisheries management. At one end of the spectrum is the centralised model where decisions are made by government (with little or no consultation); followed by the consultative model where government makes decisions but consults with other stakeholders; then, the collaborative model where government and stakeholders cooperate jointly in decisions, with some decisions potentially assigned to user groups; and finally, the delegated model where decisions are agreed and negotiated by stakeholders (including government) within a broad government framework and agreed functions are undertaken or services delivered by industry (FRDC 2007).

Co-management is often described as a participatory form of natural resource management, however, as in co-management there are different ways to understand and use the term 'participation'. Figure 5 and other co-management diagrams like it, are very similar to diagrams providing a typology of participation in formal decision-making processes. Figure 6 shows the different forms of participation that can be used to involve people in decision making. What is of particular importance here, and what is missing from Figure 5, is not just that there are different levels of involvement (by stakeholders, communities, the public), but also different *purposes* for involving people at those levels, and therefore different inherent promises made between authorities and participants on the basis of that involvement. IAP2 strongly recommends that whatever level of participation is used, it is critically important to clarify⁷ with participants what level of involvement they can expect to have, why, and what that involvement entails.

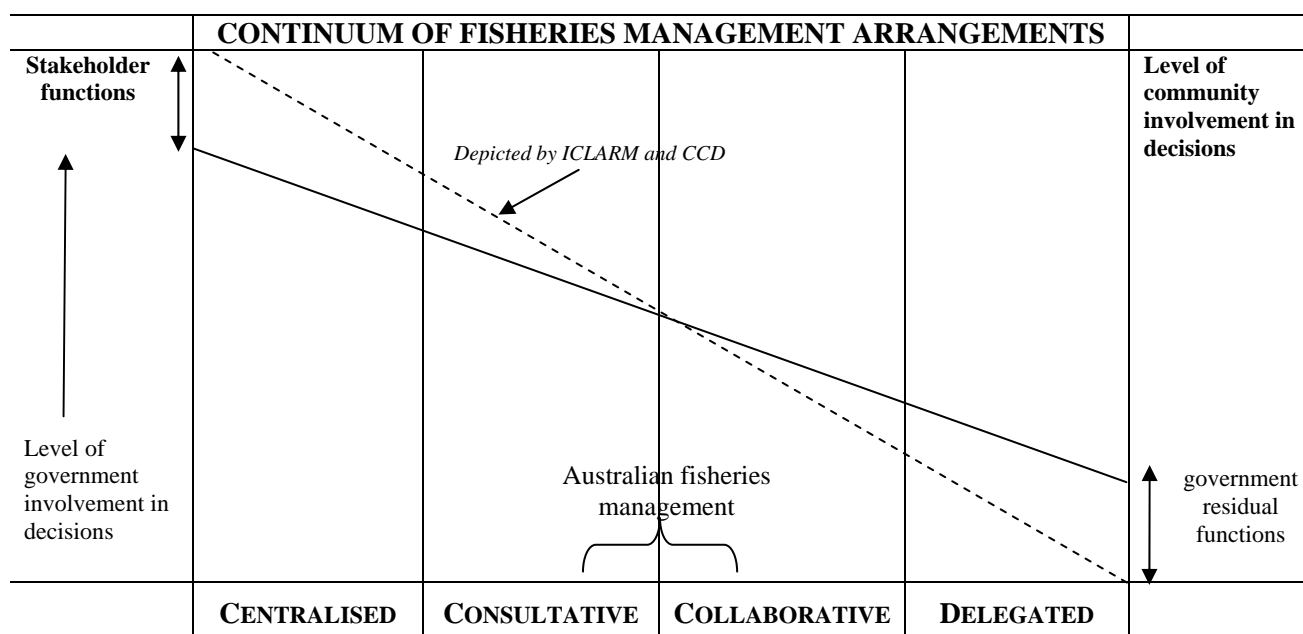


Figure 5: A continuum of participation in fisheries management

⁷ Ideally, where circumstances (time, resources) allow – decision makers would negotiate with participants to identify appropriate levels of involvement, based on agency and community capacities.

Inform	Consult	Involve	Collaborate	Empower
Objectives				
To provide participants w/ balanced info to assist understanding of problems, alternatives and/or solutions	To obtain feedback on analysis, alternatives, and/or decisions	To work directly w/ participants throughout process to ensure concerns/ issues understood, considered	To partner w/ participants throughout process to identify alternatives and preferred solutions	To place substantial part of decision in hands of participants
Promise to participants				
Will keep you informed	Will keep you informed, listen to and acknowledge concerns, provide feedback	Will work w/ you to ensure concerns directly reflected in alternatives and provide feedback	Look to you for direct advice in forming solutions, incorporate input into decisions to maximum extent	Will implement what you decide

Figure 6: A continuum of participation (Source: IAP2 2008)

Appendix 2. AFMA Co-management Program (CMP) Trials

Three Commonwealth fisheries/sectors (SESSF-Lakes Entrance, NPF and GABTF) were the initial focus of the program which commenced in 2007, with possible extension into other candidate fisheries as the program progresses.

Lakes Entrance Co-Management Trial

The Lakes Entrance Fishermen's Cooperative (LEFCOL) and some individual SESSF operators at Lakes Entrance have begun working with AFMA to trial some co-management arrangements. The focus of these trials will be on LEFCOL taking responsibility for some integrity and compliance aspects of fisheries management. LEFCOL will be conducting a range of quota management, data collection and compliance functions, with a long-term view for implementing similar arrangements in other co-operatives and fisheries. The trial will include the following functions:

- quota pooling and monitoring
- quota transaction and reconciliation processes
- automated data transmission and data collection protocols
- industry self-regulated compliance functions.

Initially the trial will focus on identifying particular business practices of LEFCOL and fish receivers. Several workshops and meetings will be conducted initially with industry to refine the functions and activities to be undertaken by LEFCOL, individual operators and AFMA. The trial will then focus on refining business rules to simplify administration and producing software and an information management system to help improve the quality and flow of information used by AFMA for quota management.

Great Australian Bight Trawl Fishery Co-Management Trial

Similar to LEFCOL, the Great Australian Bight Industry Association (GABIA) has expressed interest in testing the feasibility of co-management arrangements in the GABTF, and recently submitted a research paper to AFMA for starting trials in their fishery. This report has been incorporated into the Co-Management Project, and the GABTF trial will include a consultative forum (workshops with a range of stakeholders) to identify in more detail what management functions might be shared and how that sharing might contribute to greater management efficiencies.

Some preliminary research was undertaken in 2006 and 2007 to assess the potential for the GABTF to operate under a co-management model (see FERM 2007). While FERM (2007) concluded that most Commonwealth fisheries do not meet most of the preconditions required for co-management, they did assess the GABTF as an ideal candidate for co-management, because it:

- has a small number of participants – all of whom are established corporations and members of an active, cohesive industry association
- has clearly defined boundaries
- operates under an 'Equal Allocation Agreement', in which it has been reported that internal conflict about future quota allocations have been neutralised, and equal contributions from participants to the Association's operating costs and research costs has been facilitated (FERM 2007:59).

FERM (2007) identified certain functions that could be devolved to this fishing sector and clarified the roles of AFMA, GABIA, and the MAC:

- Development and delivery of services required by the fishery harvest strategy by:

- giving GABIA primary responsibility for making recommendations to AFMA on the establishment and operation of the strategy
 - providing recommendations to AFMA on Total Allowable Catch, trigger catch limits, and bycatch mitigation measures.
- Introduce contract-based compliance services to improve credibility, gain better control of association members, and contain rising AFMA compliance costs; and towards that end GABIA would:
 - form member contracts that uphold codes of conduct and engender compliance with AFMA rules⁸,
 - hire contractors to monitor landings.

Northern Prawn Fishery Co-Management Trial

The focus of the NPF Co-Management trial is to assess the extent to which the NPF Industry Pty Ltd can assume greater responsibility for management of the fishery. This increased responsibility initially will include:

- full administration of an electronic log-book system, complemented by NPF Industry Pty Ltd administered scientific and crew based fishery observation
- manage fishery information required for stock assessments and management planning
- NPF Industry Pty Ltd testing its capacity to fully run the management advisory role currently undertaken by NORMAC
- testing the potential for establishing third party observer and monitoring services for the fishery.

Early in the trial, several workshops and meetings will be conducted with the NPF Industry Pty Ltd to more specifically scope the functions and activities to be undertaken as part of the trial.

⁸ This action would require GABIA to revise its association rules.

Appendix 3. Stakeholder interview topics

Co-management

- What does it mean in an Australian NRM/fisheries/Commonwealth fisheries context?
- Are the necessary conditions present (for the trial fisheries? Generally?)
- How many/which management functions are best shared and/or devolved to resource users? Why?
- What are some benefits and disadvantages/benefits-costs of fisheries co-management?
- What outcomes do you want to see from fisheries co-management (generally, and in the fisheries to be trialled)?

Evaluation of fisheries co-management, evaluation of the fisheries co-management trials

- What is the 'it' that should be evaluated? (e.g. processes, outcomes, etc.), and what shouldn't be?
- Top three reasons for conducting the evaluation?
- What key questions need answering?
- Who is the evaluation for? (Who are stakeholders? Which ones will use results?)
- What kind of information will be useful (to whom, and how will that info be used)?
- Any views on how the evaluation should be done (e.g. ideas, concerns about methods, degree of stakeholder participation)?
- What are some of the challenges to evaluating co-management trials?

Appendix 4. Functions, conditions and challenges of fisheries co-management

There are a range of activities, services and functions that constitute fisheries management – administration, compliance, research and development, monitoring and assessment, management planning and policy, and communication and extension (FRDC 2007). Researchers, policy makers and managers have debated which of those are best suited to the various models to co-manage fisheries. By the late 1990s, the literature was suggesting that different management tasks may be more suited to different forms of co-management – full and equal decision-making (e.g. long-term planning), full decision-making by government with stakeholder consultation (e.g. access rights), total delegation to industry (e.g. data gathering) (Nielsen 1996; ICLARM and IFM 1998).

In 2007, the FRDC identified the key management functions needing to remain the full responsibility of government, but suggested that a high percentage of fisheries management tasks could be delegated to the fishing industry provided that:

- there was a legally binding instrument in place with appropriate performance measurement and audit specifications
- a range of essential and necessary conditions were met.

The successful operation of co-management ultimately rests on the relationships among stakeholders (Pinkerton 1994:2374), which are informed by particular external factors. Indeed, over the last ten years, co-management researchers have identified a range of institutional and social processes and conditions that provide the foundation for successful co-management, including:

- partnerships between government and stakeholders characterised by:
 - equitable representation
 - an open and free exchange of ideas, knowledge, skills and experience with and among varied stakeholders
 - a widely-perceived common purpose and collaborative relationships underpinned by a strong sense of trust (both of which are enabled by social learning⁹)
 - clearly defined, realistic goals and objectives agreed on among participants.
- a sense of empowerment among participants and communities
- sufficient and appropriate capacity of all participants
- clearly defined property rights, scale and boundary issues
- readily identifiable incentives for participation
- effective organisational arrangements and processes
- adequate resources and finances to implement the system
- a supportive, enabling policy and legislative environment (Pinkerton 1994; ICLARM and IFM 1998; Schusler 2001; Allison and Badjek 2004; Reap 2005; Syme 2006).

Many of these factors are reflected in the FRDC list of essential and necessary preconditions for fisheries co-management (Table 7). Most of those factors refer to partnerships with the commercial fishing sector, but presumably many are relevant to co-management with other sectors

⁹ Social learning is a phenomenon where people discuss, debate and interact with others (often in a group) and in so doing are exposed to new ideas, views, and practices. The necessary conditions for learning include: a sense of need for the group to exist; networks; a sense of collective ownership of particular issues; sufficient time for group processes to develop; participants believe they need each other to develop solutions; trust, equity and openness; and comprehensible options for action (Van Dijk 2001)

(e.g. recreational fishing, Indigenous fishing, etc.). The FRDC distinguishes between the factors that are needed to work towards for successful co-management and those that further complicate co-management if they are not present. This list also emphasises a lead role for fisheries authorities in facilitating constructive dialogues about and support for co-management, good working relations with stakeholders, capable, well-resourced partners, and articulation of clear goals and information for moving forward.

Table 7: Essential and necessary preconditions for fisheries co-management

Essential preconditions	<ul style="list-style-type: none"> • Clear objectives established by the authorities who establish a receptive culture for discussing co-management • A fishing industry (sector) that is sufficiently motivated and cohesive, with representatives willing to champion the ‘co-management cause’, is financially viable, has appropriate organisational and administrative arrangements established, and possesses or has access to a range of knowledge and skills • Consistently good working relationships among and between the authorities and the relevant fishing industry, with established and effective communication, administrative and conflict resolution systems and procedures • A solid legislative and legal foundation for operations • No social/community conflict associated with the fishery
Necessary preconditions	<ul style="list-style-type: none"> • Appropriate levels of support for co-management obtained by the authorities • Similar economic interests in the fishery among industry representatives • Examples of cooperative working relationships, such as those formalised in Codes of Practice and Environmental Management Systems • Clear and established property rights system • A well-defined and researched fishery

(Source: FRDC 2007)

Despite considerable discussion about what is needed to establish or what characterises effective co-management, concerns about certain issues and challenges remain. For example, a concern about the lack of appropriate and/or sufficient industry capacity (e.g. interest, representative and cohesive industry bodies, leadership, effective conflict resolution).

These are primarily related to the identified requirements for co-management *not* being present – and some of those issues and challenges have been identified below as particularly relevant in Australia:

- culture of resistance in government authorities to relinquish significant responsibility to industry
- high transaction costs
- insufficient resources
- unclear geographical boundaries (overlapping fisheries and regions)
- community opposition
- unclear and/or inappropriate stakeholder consultation
- persistent information gaps (e.g. how comprehensively to investigate allocation and attribution of costs/benefits, define/determine appropriate management functions to be devolved, define a particular fishery) (Syme 2006; FERM 2007; FRDC 2007).

Appendix 5. Actual and potential benefits of co-management

Research and policy dialogues have cited a range of actual and potential benefits from co-management (see below), and these have fuelled some of the interest in using this method to manage natural resources in general, and fisheries in particular. Many of the same potential benefits have been identified by key Australian fisheries stakeholders in regards to co-management and the benefits it might bring. These include the following:

- a genuine culture of inclusive partnerships for fisheries stewardship
- more flexible and adaptive management (e.g. timely responses, improved ability to innovate and meet industry development needs)
- opportunities for better social outcomes via improved work/life balance
- opportunities to highlight the economic and social importance of flow-on impacts of recreational fishing, both marine and freshwater
- a chance for the fishing industry to showcase its Codes of Practice (FRDC 2007).

These benefits describe both processes that lead to or enable particular outcomes and outcomes. One of the more commonly discussed benefits is the potential cost savings for the fishing industry or communities and governments, although there is debate about the extent to which this can be achieved.

Potential benefits of fisheries co-management

- Reduced costs to government and the fishing industry through the reallocation of certain responsibilities (e.g. industry taking on enforcement).
- Reduced uncertainty in fishery management decision outcomes.
- More informed management decisions that draw on broader basis of information and knowledge.
- Increased capacity in resource management for the responsible government agency and other stakeholders, particularly the fishing industry.
- Enhanced commitment to and legitimisation of fisheries policy and management processes and its outcomes.
- Increased transparency, trust and cooperation in making and enforcing management decisions and identifying problems.
- Increased public awareness and support.
- A more democratic and participatory society.

(Source: Nielsen 1996; Brightling et al. 2006; Syme 2006; FERM 2007; FRDC 2007)

Appendix 6. Different types of evaluation

Focus/Type	Defining question or approach
Accreditation focus	Does the program meet minimum standards for accreditation?
Causal focus	Use rigorous social science methods to determine the relationships between the program (as a treatment) and resulting outcomes.
Cluster evaluation	Synthesising overarching lessons and/or impacts from a number of projects with a common initiative or framework
Collaborative approach	Evaluators and intended users work together on the evaluation
Comparative focus	How do two or more programs rank on specific indicators, outcomes or criteria
Compliance focus	Are rules and regulations being followed?
Context focus	What is the environment in which program operates politically, socially, economically, culturally and scientifically? How does this context affect program effectiveness?
Cost-benefit analysis	What is the relationship between program costs and program outcomes (benefits) expressed in dollars?
Cost-effectiveness analysis	What is the relationship between program costs and outcomes (where outcomes are NOT measured in dollars)?
Criterion-focused evaluation	By what criteria (e.g. quality, cost and client satisfaction) shall the program be evaluated?
Decisions focus	What information is needed to inform specific future decisions?
Descriptive focus	What happens in the program? (No 'why' questions or cause/effect analyses)
Developmental evaluation	Evaluator is part of the program design team, working together over the long term for ongoing program development.
Diversity focus	The evaluation gives voice to different perspectives on and illuminates various experiences with the program. No single conclusion or summary judgement is considered appropriate.
Effectiveness focus	To what extent is the program effective in attaining its goals? How can the program be more effective?
Efficiency focus	Can inputs be reduced and still obtain the same level of output or can greater output be obtained with no increase in inputs?
Effort focus	What are the inputs into the program in terms of number of personnel, staff/client ratios, and other descriptors of levels of activity and effort in the program?
Empowerment evaluation	The evaluation is conducted in a way that affirms participants' self-determination and political agenda.
Equity focus	Are participants treated fairly and justly?
Ethnographic focus	What is the program's culture?
Evaluability assessment	Is the program ready for formal evaluation? What is the feasibility of various evaluation approaches and methods?
Extensiveness focus	To what extent is the program able to deal with the total problem?
External evaluation	Evaluation is conducted by specialists outside the program and independent of it to increase credibility
Formative evaluation	How can the program be improved?
Goal-free evaluation	What are the actual effects of the program on clients (without regard to what staff say they want to accomplish)? To what extent are real needs being met?
Goals-based focus	To what extent have program goals been attained?
Impact focus	What are the direct and indirect program impacts on participants and on larger systems and the community?
Implementation focus	To what extent was the program implemented as designed? What issues surfaced during the implementation that needs attention in the future?
Inputs focus	What resources (money, staff, facilities, technologies, etc.) are available and/or necessary?

Internal evaluation	Program employees conduct the evaluation
Intervention-oriented evaluation	Design the evaluation to support and reinforce the program's desired results
Judgement focus	Make an overall judgement about the program's merit or worth (see also summative)
Knowledge focus	What can be learned from the program's experiences and results to inform future efforts?
Logical framework	Specify goals, purposes, outputs, and activities, and connecting assumptions; for each, specify indicators and means of verification
Longitudinal focus	What happens to the program and participants over time?
Meta-evaluation	Was the evaluation evaluated? Is it worth using? Did the evaluation meet professional standards and principles?
Mission focus	To what extent is the program or organisation achieving its overall mission? How well do outcomes of departments or programs within an agency support the overall missions?
Monitoring focus	Routine data collected and analysed routinely on an ongoing basis, often through a management information system
Needs assessment	What do clients/participants need and how can those needs be met?
Needs-based evaluation	See goal free evaluation
Norm-referenced approach	How does this program population compare to some specific norm or reference group on selected variables?
Outcomes evaluation	To what extent are desired client/participant outcomes being attained? What are the effects of the program on clients or participants?
Participatory evaluation	Intended users, usually including program participants and/or staff, are directly involved in the evaluation
Personnel evaluation	How effective are staff in carrying out their assigned tasks and in accomplishing their assigned or negotiated goals?
Process focus	What do participants experience in the program? What are strengths and weaknesses of day-to-day operations? How can these processes be improved?
Product evaluation	What are the costs, benefits, and market for a specific product?
Questions focus	What do primary intended users want to know that would make a difference to what they do? The evaluation answers questions instead of making judgements
Reputation focus	How the program is perceived by key knowledgeable and influential people; rating of the quality based on peer review.
Social and community indicators	What routine social and economic data should be monitored to assess the impacts of this program? What is the connection between program outcomes and larger-scale social indicators?
Summative evaluation	Should the program be continued? If so, at what level? What is the overall merit and worth of the program?
Theory-driven focus	On what theoretical assumptions and models is the program based? What social theory is the program a test of and to what extent does the program confirm the theory?
Theory of action approach	What are the linkages and connections between inputs, activities, immediate outcomes, intermediate outcomes and ultimate impacts?
Utilization-focused evaluation	What information is needed and wanted by primary intended users that will actually be used for program improvement and decision making? (includes any of the other types listed above).

(Source: Patton 1997)

Appendix 7. MERI evaluation criteria

Appropriateness

- To what extent is the program aligned with the needs of the intended clients?
- To what extent is the program compliant with recognised best practice processes in the field, e.g. the type, level and context of investment and associated activities?

Impact

- In what ways and to what extent has the program or strategy contributed to changing asset condition and management practices and institutions?
- What, if any, unanticipated positive or negative changes or other outcomes have resulted as a contribution of the program?
- To what extent were the changes directly or indirectly produced by the program or project interventions?

Effectiveness

- To what extent have the planned activities and outputs been achieved?
- Are current activities the best way to maximise impact or are there other strategies that might be more effective?
- To what extent is the program or project attaining, or expected to attain, its objectives efficiently and in a way that is sustainable?

Efficiency

- To what extent has the program or project attained the highest value out of available resources?
- How could resources be used more productively and efficiently?
- What could be done differently to improve implementation, and thereby maximise impact, at an acceptable and sustainable cost?

Legacy

- Will the program's or project's impacts continue over time and after the program or project ceases?
- How should the legacy be managed and by whom?

Appendix 8. ICLARM and IFM research framework

Attributes	Description
Biological, physical and technical– major recent changes	<ul style="list-style-type: none"> • Type of ecosystem (marine, coast, estuary, etc.) • Boundaries (physical, administrative, access to fish resources) • Health status of fish habitats • Characteristics of target fish species and stocks (migratory, sedentary, status of stocks) • Characteristics of fisheries (industry, artisanal, technologies used, physical range of fishing) • Post harvest utilisation of catches (fresh, smoked, frozen)
Fish market– major recent changes	<ul style="list-style-type: none"> • Types of fisheries taking place (commercial, recreational, subsistence) • Market orientation of fisheries (local, regional, international) • Value of fish products (high, low) • Market structure (many or few suppliers, market dominance)
Socio-economic and socio-cultural	<ul style="list-style-type: none"> • Homogeneity/heterogeneity of fishers, fish traders, processors, other stakeholders (ethnicity, religion, fishing gear use, gender, ownership of equipment) • Dependency on fisheries/fish, trade/fish processing for livelihood; other sources of income/subsistence • Indigenous knowledge relevant to fisheries management (ecological, biological of resources and habitats, knowledge of catchability and fishing technologies)
Institutional and organisational arrangements (at community level) – major recent changes or new developments	<ul style="list-style-type: none"> • Community power structures and leadership (role, functioning and importance of decision making structures inside/outside fisheries sector) • Organisations established/appointed to act as co-management partner (legal basis, mandate, representation, decision systems, enforcement mechanisms) • Local regulation of access to fish resources • Operational rules re: fish catch, fish trade and processing • Legitimacy of institutional arrangements and organisational set up involving fishers and other stakeholders (attitudes towards co-management) • Mechanisms for conflict resolution among resource users
External institutional and organisational arrangements) – major recent changes or new developments	<ul style="list-style-type: none"> • Overall structures of national political/administrative systems • Fisheries departments and other relevant organisational structures • Legal basis for co-management arrangements • Power structures outside fishing communities (influence of political leaders)
Marco-economic, social, political, natural	<ul style="list-style-type: none"> • Political and economic context of co-management (change in political system, economic development, market liberalisation) • Major climate or natural events (floods, typhoons)
Patterns of interaction among co- management partners	<ul style="list-style-type: none"> • Major incentives for fishing and other groups and for governments to engage in co-management • Drivers of co-management • Characteristics of co-management arrangements • Methods of communication between co-management partners • Mechanisms for conflict resolutions among co-management partners.

Appendix 9. Participatory evaluation – types, benefits and challenges

Many contemporary monitoring and evaluation frameworks in NRM advocate strongly for directly involving stakeholders and communities in the design and implementation of project assessment. While there was a time when there were few instances of resource users being actively involved in evaluating co-management, some have suggested that the increased degrees of participation in management would eventually be extended to assessing management effectiveness and that this is already occurring in development project contexts (Nielsen 1996; Hockings 2000).

Just as there are different degrees of participation in NRM, there are also different types and degrees of stakeholder/public involvement in program evaluation. Table 8 illustrates some of the differences between conventional and participatory approaches to evaluation (and monitoring). This table might be compared to the fisheries management continuum and more general spectrum of participation discussed earlier (see Figures 5 and 6):

- ‘conventional’ (or ‘centralised’, ‘inform’) sits at one end of the spectrum where authorities retain all influence and responsibility for the evaluation (and monitoring) and tell stakeholders about the decisions that have been reached
- ‘participatory’ (or ‘delegated’, ‘collaborate’, ‘empower’) is at the other end where communities or stakeholders hold a great deal of responsibility for and influence on the evaluation (and monitoring) design and implementation.

In between those ends of the spectrum are different levels of power and responsibility-sharing arrangements for different monitoring and evaluation tasks, depending on the situation.

Table 8: A spectrum of participatory evaluation

	Conventional	←—————→ Different degrees of responsibility	Participatory
Evaluation (and monitoring) planning and management	Senior managers Experts		Local people, project staff, managers, other stakeholders, and assisted by facilitator
Role of ‘primary’ stakeholders	Provide information only		Design and adapt methods, collect and analyse data, share findings, link them to action
How success is measured	Externally defined, using mainly quantitative indicators		Internally-defined indicators, including more qualitative judgments
Which approach used	Pre-determined		Adaptive
When to evaluate	Mid-term and completion Sometimes ex-post		Frequent ‘small’ evaluations, with blurred boundaries between ‘monitoring’ and ‘evaluation’

Participatory forms of evaluation are sometimes referred to as participatory action research (PAR)) and associated with community-based programs and initiatives such as fisheries co-management in developing countries, further and higher education, preventative drug use programs, community IT

programs. These programs and projects often have high stakeholder or community involvement (e.g. often towards or beyond the right end of the co-management continuum or participation spectrum). Nonetheless, their benefits parallel those of other participatory forms of NRM and co-management, because they are predicated on similar principles and include:

- improving the credibility of the evaluation (and broader project) system
- building partnerships for and local ownership of projects
- building consensus among project staff and partners about project goals/objectives
- mobilizes and empowers people by enhanced local learning, management capacity and skills
- provide timely, reliable and valid information for management decisions
- increase cost-effectiveness of M&E (Pittaluga and Reyntjens-Mesquita 2004; Lennie 2006).

Participatory MERI is not without its challenges, and similar to co-management, there are a range of factors that will facilitate or inhibit its success (see Table 9). Many of these factors are related to tailoring the type and degree of involvement to the project/program context, using appropriate communication and engagement of stakeholders before, during and after the evaluation process, as well as ensuring there is a supportive environment in which the evaluation (and monitoring) is taking place. It would be contradictory to ask people to share responsibility for managing resources, and then not involve them in assessing how well that process is helping to achieve desired outcomes. Where this is recognition of this inconsistency and an appreciation of the value of participant’s contribution to monitoring and evaluation, then there is greater potential for the use of participatory monitoring and evaluation in co-management.

Table 9. Factors constraining or enabling participatory evaluation

Inhibiting factors	Enabling factors
<ul style="list-style-type: none"> • Lack of perceived benefits relative to costs • Priorities of the evaluation perceived to be irrelevant to stakeholders • Evaluation processes insufficiently flexible to address diverse/changeable information needs • Slow or no feedback on evaluation findings • Lack of clear linkages between evaluation findings and subsequent project actions • Lack of openness and/or interest in sharing of influence and responsibility • History of community or stakeholder conflict • Imbalance between short-term and long-term needs of project and of stakeholders • Insufficient resources (human, funds, materials) to make the evaluation possible 	<ul style="list-style-type: none"> • Need and responsibility for evaluation widely recognized and not seen as threat • Value placed on learning by experience, including making errors • Recognised need for partnerships between diverse actors • Decentralised institutions • Decision makers open to the use of qualitative data and indicators • Participation seen and used as a democratic – not extractive process • Stakeholders/community involvement process has been inclusive and well understood • Sufficient time to develop the evaluation process • Prompt feedback and use of evaluation findings is standard procedure.

Source: Pittaluga and Reyntjens-Mesquita (2004)

Appendix 10. Evaluation criteria for participatory processes and outcomes

Criteria	Description
<i>Clearly scoped</i>	Participation is planned and specifies: <ul style="list-style-type: none"> • what project processes are included and what are not • how the involvement of participants will inform decision making • how information will be gathered and analysed • how it will be used to inform decision making.
<i>Transparency and accountability</i>	People know what is happening and how their input is being used; processes and results are documented, audited and readily accessible.
<i>Linked to decision making</i>	Input sought is gathered, analysed effectively and used to inform decision making.
<i>Representative/inclusive</i>	Diverse views from those who have an interest or are affected have a genuine opportunity to participate.
<i>Informative</i>	People have ready access to multiple sources of information that they need to participate meaningfully.
<i>Timely</i>	Opportunities provided early in the process for people to generate ideas and express their interests, not simply invite feedback on solutions/approaches already decided upon.
<i>Deliberative</i>	Conditions are established to enable sufficient time and appropriate environment for participants to share diverse views, respectfully question each other, explore complex and challenging issues, and weigh up alternatives – in atmosphere of sensitivity and humour.
<i>Relationship building</i>	Opportunities provided to enable people to know each other, remain curious, and provide opportunities for participants to appreciate each other's perspectives.
<i>Influential</i>	Participants feel the process is worthwhile, because there is evidence that the process influences the outcomes.
<i>Feedback provision</i>	People are notified about how their contribution has made a difference.
<i>Building trust</i>	Through their interactions, participants gain confidence in how decisions and rules are made and implemented.
<i>Conflict resolution</i>	Clear processes established to enable participants to express differences of opinion and reconcile those differences in a satisfactory way.
<i>Facilitation/leadership</i>	Skilled, neutral parties are available to provide guidance on and/or to lead deliberative processes.

Source: Adapted from Brisbane Declaration on Community Engagement 2005; OBPR 2006; Kelly et al. 2007.