

EBMWG Project Close-Out Report

Project #: AM 02b

Project Title: Adaptive management Framework

Steering Committee Members: Dan Cardinal, Audrey Roburn, Grant Scott, Wally Eamer, Bill Beese, Dorthe Jakobsen, Amy Beetham, David Flood, Ken Dunsworth, Melissa Todd, Michael Barkusky, Rod Negrave, Sari Saunders,

1.0 FUNDING

The estimated total cost of the project is \$90 000. Final billings are outstanding and the project will be completed within budget.

2.0 EXTENT TO WHICH PROJECT OBJECTIVES WERE ACHIEVED

The AM framework project is one that evolved and changed significantly over time. As a consequence, in reviewing the extent to which project objectives were achieved, the steering committee considered its current understanding of the project objectives, which in some cases is different from the initial project objectives identified and written into the project RFP and ToR. With the goal of providing information to the LRF to guide next steps on AM, the evaluation below identifies gaps or further work that are sometimes a result of the steering committee's learnings over the course of this project (e.g. in retrospect we would have asked for something different in the ToR) and sometimes reflect different perspectives regarding either the recommendations made or the appropriate scope of the project amongst steering committee members.

Objective	Description	Evaluation (Text)	Summary*
1	Develop recommendations regarding institutional arrangements that will enable collaborative implementation of AM in the Central and North Coast.	<p>Consultant recommended a particular set of overarching AM structures and implementation tools in a report:</p> <ul style="list-style-type: none"> - <i>AMF for the Central and North Coast of BC: Institutional Design.</i> <p>The project terms of reference, and therefore the report focused on delivery of AM in relation to G2G land use plan objectives and strategies and the legal objectives, and did not address all linkages with the broader institutional context of coastal EBM.</p>	Partially Met
2	Develop recommendations for collecting, organizing, delivering and disseminating AM information to relevant parties including First Nation and other local communities, resource managers, and Provincial and First Nation decision makers so that AM results are translated into improved knowledge, better management practices and needed policy changes.	<p>Conceptual recommendations delivered through a number of reports:</p> <ul style="list-style-type: none"> - <i>AMF for the Central and North Coast of BC: Institutional Design;</i> - <i>Knowledge Summary for the Central and North Coast; and</i> - <i>Guide to using the Adaptive Management Knowledge Summary and Project Prioritization Procedure</i> <p>The various reports did not provide working level recommendations regarding organizing, delivering and disseminating AM information. Note the DS 01: Data Management project will build on the information provided in these</p>	Partially Met

		documents and provide more specific recommendations.	
3	Develop guidance for practitioners (First Nations, local communities, licensees, etc.) on how to plan and implement specific AM monitoring and research activities.	General practitioner guidance delivered through a report: - <i>Adaptive Management Guidebook for the Central and North Coast</i>	Substantially Met
4	Develop a transparent, rigorous, and replicable methodology for allocating HWB and EI objectives and strategies to appropriate types of research and monitoring and ranking them in order of priority.	A specific technical approach described and piloted in several reports: - <i>Knowledge Summary for the Central and North Coast</i> ; - <i>Guide to using the Adaptive Management Knowledge Summary and Project Prioritization Procedure</i> ; - <i>High Priority Adaptive Management Activities Related to Human Wellbeing in the Central and North Coast</i> ; and - <i>High Priority Adaptive Management Activities Related to Ecological Integrity in the Central and North Coast</i> . The recommended prioritization procedure is oriented toward identifying AM science research priorities – implementation, effectiveness and validation monitoring. Effectiveness in identifying priorities related to HWB and broader AM objectives is uncertain in part because the HWB prioritization could not be fully tested without a comprehensive HWB knowledge summary.	Partially Met
5	Provide advice on how to address climate change within the adaptive management framework.	Conceptual recommendations delivered through a number of reports: - <i>AMF for the Central and North Coast of BC: Institutional Design</i> ; and - <i>Knowledge Summary for the Central and North Coast</i> .	Partially Met
6	Summarize existing knowledge of the hypothesized relationships between land use planning objectives and strategies ¹ and among land use planning objectives and incorporate peer review of this knowledge summary.	Initial EI and example HWB knowledge summaries provided in report: - <i>Knowledge Summary for the Central and North Coast</i> . The EI knowledge summary is and will continue to be a working document, focusing on knowledge developed and synthesized by the CIT and the EBM WG. The HWB knowledge summary is an example based on information related to shellfish aquaculture, tourism and cultural heritage.	Evaluation of EI knowledge summary will be provided upon receipt of Ken Lertzman's peer review comments for this deliverable HWB Knowledge Summary is Partially Met
7	Apply the prioritization process to	Initial and example priorities identified in reports	Partially Met

identify initial AM monitoring and research priorities and provide guidance for implementation.

and other documents:

- *High Priority Adaptive Management Activities Related to Human Wellbeing in the Central and North Coast;*
- *High Priority Adaptive Management Activities Related to Ecological Integrity in the Central and North Coast;*
- *Coast Monitoring Priorities (spreadsheet); and*
- *HWB Monitoring Priorities (spreadsheet)*

The identified priorities rely on the EI knowledge summary as developed so far and example HWB knowledge summary.

* Use: Fully met (100%), Substantially met (75%-100%), Partially met (50-75%), Marginally met (25%-50%), Not met (0% - 25%)

3.0 MAJOR TASKS COMPLETED

Task	Description	Date
1	Developed project workplan	April 15, 2008
2	Developed draft institutional design document	July 30 th , 2008
3	Met in Campbell River with the PSC to redefine workplan	October 22, 2008
4	Submitted final institutional design document	Sept 15 th , 2008
5	Developed draft practitioner guidance document, knowledge summary document, guide to knowledge summary and prioritization process document, priority EI and HWB issues documents, and AMF overview document	December 23, 2008
6	Attended peer review conference call	January 13, 2009
7	Incorporated peer review and EBM WG member comments and submitted final practitioner guidance document, knowledge summary document and guide to knowledge summary and prioritization process document	January 30, 2009

4.0 KEY PRODUCTS

Item #	Description	Completion date	Location
1	A report describing a recommended institutional framework for implementation of AM in the Central and North Coast that involves Provincial agencies, First Nations, local communities and stakeholders in AM planning, project design and implementation. The institutional framework provides recommendations regarding establishment of specific legal arrangements, and program organizations to guide and support management and delivery of AM in the Central and North Coast.	Sept 15 th 2008	To be forwarded to the LRF and posted on the EBM WG website with appropriate context and standard disclaimer

2	Guidance for practitioners which introduces adaptive management and provides an overview of the adaptive management process. It also provides a summary description of how adaptive management can be applied by: forestry practitioners, community resource planners, planners of community economic development and human well-being, researchers working in the North and Central Coast, and regional scale managers.	January 30 th , 2009	To be forwarded to the LRF and posted on the EBM WG website with appropriate context and standard disclaimer
3	A recommended technical method for summarizing EI and HWB knowledge and identifying AM research priorities, based on criteria such as risk, uncertainty, cost, resolvability of uncertainty, influence of the objective on the goal, influence of the goal on other objectives, and other relevant factors.	January 30 th , 2009	To be forwarded to the LRF and posted on the EBM WG website with appropriate context and standard disclaimer
4	An initial summary of regional knowledge related to the EI and HWB land use objectives. The document proposes hypothesized relationships between land use planning objectives and strategies, and includes a summary of EI knowledge produced through the JSP and CIT processes and more recent HWB knowledge produced in relation to coastal shellfish aquaculture and tourism initiatives. The summary is an initial effort that needs to be expanded to be useful, and then updated over time.	January 30 th , 2009	To be forwarded to the LRF and posted on the EBM WG website with appropriate context and standard disclaimer
4	A document that describes EI research priorities, based on the authors application of the recommended prioritization procedures to the EI Knowledge Summary. A spreadsheet demonstrating the ranking process is also provided.	January 30 th , 2009	To be forwarded to the LRF and posted on the EBM WG website with appropriate context and standard disclaimer
5	A document that provides a proposed checklist for identifying and ranking HWB research priorities, and examples of application of the checklist. A spreadsheet demonstrating the ranking process is also provided.	January 30 th , 2009	To be forwarded to the LRF and posted on the EBM WG website with appropriate context and standard disclaimer
7	An overview of the AMF deliverables and structure. In this document a brief explanation is provided of AM and the AMF recommendations. A summary is also provided of the key components of the AMF including the guidance documents and the organizations involved.	January 30 th , 2009	To be forwarded to the LRF and posted on the EBM WG

			website with appropriate context and standard disclaimer
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5.0 PEER REVIEW

The WG peer review protocol was applied to this project, which involved a “cradle to grave” approach starting with internal and independent review of the project terms of reference and internal review of a proposed project workplan and deliverables.

Draft project documents were circulated to EBMWG members who, through conference calls, project steering committee meetings and written communications, provided verbal and written recommendations regarding further development and refinement of the project deliverables.

External reviewers, acknowledged in their field of expertise, including project management, community economic development, ecology, and forest operations, provided external peer review of draft project deliverables. Specifically, Four professionals reviewed individual project deliverables, provided general comments on the AMF, and 3 of them participated in a conference call with EBM WG members and the project consultants, to discuss comments in detail: Note that Kenneth Lertzman did not participate in the conference call and the EBM WG are awaiting his written comments.

- Larry Greba – practitioner guidance, human well-being knowledge summary and priorities, overview
- Kenneth Lertzman – EI Knowledge Summary
- Lee Failing – Guide to the knowledge summary and prioritization procedure
- Bill Bourgeois – institutional design

The consulting team worked to modify their proposed AM framework and documents to address comments and recommendations from EBMWG members and peer reviewers. Not all comments/recommendations were addressed. The consultants provided a general explanation of what they did and did not address which can be found in the peer review package, along with EBM WG and peer review comments and the response to the Institutional design peer review which was not incorporated in the report as the report had already been delivered to the LRF.

6.0 MAJOR FINDINGS

Key consultant recommendations

1. General Approach to implementation. The framework is a proposal. It lays out a direction for collaborative adaptive management and provides tools that have had limited testing by resource managers. Linking the various organizational pieces, further testing tools and building a common understanding of how to use them will take several years. To get started, we (the consultants) suggest:
 - a. Regardless of the institutional structures eventually adopted, some kind of *Adaptive Management Support Unit*, with functions as described above, is

needed to provide regional leadership and . Without this measure, it is very unlikely that adaptive management will be implemented.

- b. An early responsibility for an *Adaptive Management Support Unit* should be to review the documentation from this project and determine which, if any, products should be prepared for broader public use (editing, layout, production).
- c. The value and functionality of adaptive management tools should be tested in pilot activities at different scales. Engage multiple organizations, build experience, and consider modifications.
- d. Inclusiveness and consultation are as important as scientific rigour in the adaptive management process, relevance and local engagement and commitment.
- e. First Nations have growing authority and responsibility for resource management and community economic development decision-making. Building their capacity to oversee good practices should be a central task in implementing adaptive management. First Nations communities should be able to seek external support and technical assistance on their own terms (e.g. through development of research protocols).
- f. A variety of unanticipated EBM implementation issues that may have little to do with adaptive management are likely to arise at the operational level. Consultative and collaborative processes to address these should be put in place.

2. Incentives for implementing AM –Four main incentives should be offered to managers of natural resources and human well being including: 1) training, coaching and mentoring support; 2) access to updated monitoring data; 3) funding for high priority monitoring and applied research studies; and 4) access to the results of research studies and the deliberations of expert forums.

3. Creation of an Adaptive Management Support Unit – In order to support adaptive management on the coast, we recommend the creation of a new Adaptive Management Support Unit (AMSU), comprising 3 or 4 professional staff, based on the Coast and interacting extensively with resource managers from First Nations communities, the forest industry, and provincial agencies. The new organization will rely on relevant skills, knowledge and expertise provided by other organizations and collaborate in sharing information and new knowledge. AMSU responsibilities are to:

- a) Identify monitoring and research priorities
- b) Assess technical and financial feasibility of priority research
- c) Identify potential funding sources and support community level applicants for such funding
- d) Coordinate delivery of research and monitoring projects
- e) Maintain and share resulting information and knowledge

4. Institutional Structure – Development of an independent Adaptive Management Trust established by collaborating organizations on the Coast: First Nations, provincial government, forest industry and NGOs. The trust agreement should provide for administration of funds from a variety of sources and should specify negotiated provisions for monitoring and research prioritization as part of its oversight of AMSU.

5. Prioritization Procedure –The recommended process builds on informed judgments about uncertainty and risk as presented in the Knowledge Summary, and produces priority knowledge-generating activities in five categories: objectives required, strategies to be developed, implementation indicators needed, reducing uncertainty, and studying high risk

issues. Most AM activities will be devoted to the latter two categories. [See Guide to Knowledge Summary and Prioritization Procedure]

6. **Data management** – Since information relevant to EBM implementation on the Coast is scattered in many different sources and formats, management of information will be a key task for AM. Information created by the Adaptive Management Framework should be freely available, easy to retrieve and appropriate for a range of audiences. A standard methodology for calculating indicators used by many different organizations should be developed and tested. Data gathering and preparation should be separated from analysis so that indicators requiring similar types of data can be grouped for analysis. [See Institutional Design document Appendix 3]
7. **Climate change** – There is no need for an Adaptive Management Framework to treat climate change differently from other kinds of ecosystem dynamics. The scientific evidence for climate change on the Coast is emerging, and as this knowledge becomes more clear and predicted ecosystem impacts certain, it can be readily factored into the knowledge base and used to adjust management strategies or monitoring investments. This illustrates the strengths of an adaptive management approach. [See Institutional Design document Appendix 4]

7.0 STEERING COMMITTEE RECOMMENDATIONS

With respect to the AM Framework reports, the project steering committee recommends the following actions to the LRF:

A. Institutional Design Report

1. Accept the institutional design report as information, and consider the consultants' recommendations in developing and implementing arrangements and a program for the Central and North Coast.
2. Establish a collaborative technical working committee² to review the report, identify gaps (i.e. needed working linkages with current management, research and monitoring institutions), and provide additional recommendations regarding an operational program for AM.

B. Adaptive Management Guidebook and Overview Document

1. Accept the AM Overview and Adaptive Management Guidebook reports as working documents that can be distributed as information about AM implementation in the Central and North Coast.
2. Establish a collaborative technical working committee to review the AM Overview and AM Guidebook reports, identify gaps and undertake further refinement of the final documents to support implementation (i.e. perform final revisions, technical editing and publication layout).

² A collaborative technical working committee has already been established which could take on these tasks.

C. Guide to Knowledge Summary and Project Prioritization Procedure

1. Accept the Guide to Knowledge Summary and Project Prioritization Procedure as technical recommendations, and consider those recommendations in the development of project development, selection and funding criteria for an AM program.
2. Establish a collaborative technical working committee to:
 - a. Review the prioritization recommendations,
 - b. Assess relevance and applicability to AM program delivery³, including potential linkages to an active AM program as proposed in the experimental watersheds project (AM-04a).

D. EI and HWB Knowledge Summaries

1. Accept the EI and HWB Knowledge Summaries as a starting point for collating and summarizing EI information that supports implementation of AM.
2. Establish a collaborative technical working committee to:
 - a. Review the initial EI and HW Knowledge Summaries,
 - b. Identify and develop recommendations regarding the collection and summarizing of additional information and knowledge that may be relevant to application of AM in the Central and North Coast, and
 - c. Develop arrangements for developing and maintaining knowledge that is relevant to application of AM in the Central and North Coast.

E. EI and HWB Research Priorities

1. Accept the identified EI and HWB research priorities as a starting point for discussion of AM priorities.
2. Establish a collaborative technical working committee to:
 - a. Review the initial EI and KS priorities and related evaluation and scoring;
 - b. Develop guidance for selecting, prioritizing and funding AM projects.

8.0 RELEVANCE/SIGNIFICANCE FOR EBM IMPLEMENTATION

Implementation of a collaborative approach to AM is recognized by the Province, First Nations and stakeholders as being fundamental to successful implementation of EBM in the Central and North Coast of BC. However, AM has not before been implemented in BC in a manner that gives human well-being objectives equal consideration. Nor has it been implemented using a dedicated program that potentially cuts across so many diverse institutional and organizational boundaries.

The AM02 reports contain:

³ The prioritization procedure is intended to be a tool that is applied collaboratively with those people charged with deciding on project priorities. Thus it might be applied by AM technical support (in whatever form it takes) and then discussed with whichever AM institution (e.g. Trust or Steering Committee) is responsible for research priority decision-making and final approval of priorities.

- recommendations regarding the institutional arrangements and analysis tools that could be incorporated into a coastal AM program.
- initial efforts to apply the recommended tools in the development of knowledge summaries and the identification of priority AM projects.
- guidance on how to engage in and apply AM at regional and local levels.