AN EVALUATION FRAMEWORK FOR ADAPTIVE CO-MANAGEMENT: TOWARDS COMMONS GOVERNANCE IN AN UNCERTAIN WORLD

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ABSTRACT

Adaptive co-management is an important governance innovation because it recognizes that social-ecological resilience requires attention to changing and diverse livelihoods and the divergent capacities and power of different groups to engage in governance. Even though this is a growing research field, efforts to evaluate the process of adaptive co-management and the relationship between goals and outcomes have been scarce. Building on existing efforts, and drawing also from the field of public participation, we propose a formative evaluation framework for adaptive co-management, which focuses on its operation and the connections between process features and outcomes. The framework consists of four components and two evaluation approaches. The components of the evaluation framework are as follows: (i) Setting (ecological, social and social-ecological, institutional, external drivers); (ii) Process (participation, relationship building, social learning); (iii) Outcomes (social capital, social learning and adaptation, decision making) and (iv) Effects (ecological, social and socio-ecological). Methodologically, the two evaluation approaches integrated in our framework are conventional-constructivist and participatory or collaborative. This framework is being refined as we implement it in two case studies, one in Uruguay and the other in Brazil. We analyze how the twofold evaluation framework for adaptive co-management, aiming at improving practice, informing policy, and building capacity, may be a catalyst for collaboration and adaptation. The proposed framework may be transferable to other governance / management approaches involving multiple actors (e.g. community, government, non-government).

Key-words: co-management; collaborative management; formative evaluation; participatory evaluation; fisheries; protected areas

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INTRODUCTION

The commons have been increasingly conceived as complex systems characterized by uncertainty and multiple scales, needing innovative and multi-scalar governance approaches (Dietz et al. 2003, Berkes 2009). One governance approach suitable for complex social-ecological systems (SES) is adaptive co-management, which combines the dynamic learning characteristic of adaptive management with the linking characteristic of co-management, aiming to foster social-ecological resilience and ecologically sustainable livelihoods (Armitage et al. 2007). Key features of adaptive co-management include a focus on integrating different knowledge systems, collaboration and power sharing among community, regional, and national levels, and management flexibility (Olsson et al. 2004).

Several authors have discussed the conditions that can enhance the emergence or the success of adaptive co-management. These include well-defined resource systems, small-scale resource use contexts, enabling legislation, social networks, combination of various sources of information, arenas of collaborative learning, commitment to support a long-term institution-building process, and leadership, among others (Olsson et al. 2004, Armitage et al. 2007, 2009, Plummer et al. 2012). A systematic literature review has shown that the actual outcomes of adaptive co-management are numerous and include: conflict resolution, increased engagement of marginalized stakeholders, increased adaptive capacity, economic development, enhanced livelihoods, and improved resource health, among others (Plummer et al. 2012).

Even though adaptive co-management is a growing research field, with more than 100 published items and several proposed frameworks to conceptualize it (e.g. Plummer & Armitage 2007, Plummer 2009, Berkes 2010), efforts towards evaluating the process of adaptive co-management and the relationship between goals and outcomes have been scarce (e.g. Plummer et al. 2012, Smedstad & Gosnell 2013, Plummer et al. 2014). We intend to fill this gap by developing a formative evaluation framework for in-depth analysis of ongoing adaptive co-management initiatives, aiming to provide feedback to improve their processes and associated outcomes as well as to foster the capacity of government and non-government actors to engage in these collaborations. As we develop this framework, we are operationalizing it in two case studies in different institutional contexts. One case study looks into a consultative council for small-scale fisheries co-management in coastal Uruguay, and the other one investigates the consultative council of a marine protected area in Parana, Brazil. We use adaptive co-management as the central guiding concept, against which these cases can be evaluated, even though the leading government agencies adhere to other terms (co-management, participatory management, collaborative management).

In the next section, we introduce and unpack the evaluation framework for adaptive co-management, after which we provide some initial reflections from its current implementation in the two cases. The development of these case studies will help us refine the evaluation framework for future applications or transferability in different contexts. In the final section, we summarize the main contributions of the proposed framework.

EVALUATION FRAMEWORK FOR ADAPTIVE CO-MANAGEMENT

After reviewing the literature on evaluation, assessment and monitoring of adaptive co-management, co-management and collaborative management, we found that several frameworks have already been proposed, most of which consider process and outcomes variables (Innes & Booher 1999, Conley & Moote 2003, Heylings & Bravo 2007, Plummer & Armitage 2007, Davis 2008, Plummer 2009, Cundill & Fabricius 2009, 2010, Muñoz-Erickson et al. 2010, Izurieta et al. 2011, Munaretto & Huitema 2012, Smedstad & Gosnell 2013, Plummer et al. 2014, Stöhr et al. 2014, Whaley & Weatherhead 2014). With the intent of contributing to the adaptive co-management field by putting forward a formative evaluation framework, we decided to build on existing efforts integrating some of the existing frameworks and bringing evaluation criteria from the public participation literature. Public participation, and specifically deliberative participation, has much to contribute to evaluative research of participatory processes but this literature has been mostly disconnected from the field of natural resources and environmental management (NREM) (Parkins & Mitchell 2005, but see Davis 2008, Stöhr et al. 2014, Trimble et al. 2014).

Adaptive co-management (like adaptive management and co-management) is a continuous and dynamic long-term process, which can logically benefit from permanent assessment and reflexivity. Regular and ongoing monitoring and evaluation of the process and outcomes of co-management interventions throughout their implementation has been recommended (Borrini-Feyerabend et al. 2004, Pomeroy & Rivera-Guieb 2006). Formative evaluation is particularly useful for this purpose because it is an ongoing process during the implementation phase of these arrangements, in which the results of the evaluation are used for taking appropriate actions to make improvements (Pomeroy & Rivera-Guieb 2006). In other words, formative evaluation is about learning in order to improve, and adaptive co-management is about adapting collaborative decision making through learning. Despite the direct applications of formative evaluation for improving practice, summative or post-evaluation, conducted after the implementation of a project, focusing mostly on results, outcomes and achievement of objectives (Pomeroy & Rivera-Guieb 2006) is prevalent in the fields of participatory processes and conflict management (Kaufman et al 2014). It is worth noting that outcomes are also assessed in a formative evaluation (see our framework below), but in an ongoing basis. Also, summative evaluation can complement a formative evaluation in cases where the adaptive co-management initiatives have ended.

The main articles that we used to select the components of the framework and the variables for an in-depth formative evaluation of adaptive co-management (ACM) cases were: (i) Plummer et al. (2014) who proposed a diagnostic approach for ACM with three components: the setting, assessing learning and collaboration, and making connections to outcomes. (ii) Plummer et al. (2012) who conducted a systematic review of the ACM literature, identifying variables of interest, successes, failures and outcomes. (iii) Armitage et al. (2009) who proposed broad assessment parameters and ten conditions for successful adaptive co-management. (iv) Plummer & Armitage (2007) who reviewed the evaluation literature in the NREM field and developed a resilience-based framework for evaluating ACM with three components: ecosystem conditions, livelihood outcomes and process and institutional conditions. (v) Berkes et al. (2007) who proposed three stages of maturity for a given ACM arrangement according to specific criteria and offered a prescriptive guide for practitioners. (vi) Rowe & Frewer (2000) who proposed a framework to evaluate public participation methods in science and technology policy (such as public hearings, consensus conferences and citizen juries). Even though these were the main articles informing our framework,

specific variables were taken from additional frameworks while reviewing the literature, such as some setting variables from Ostrom's (2009) diagnostic approach for analyzing the sustainability of social-ecological systems.

The formative evaluation framework for adaptive co-management (Figure 1), consisting of four components and two methodological approaches (conventional-constructivist and participatory), focuses on its operation and the connections between process features and outcomes. The components of the evaluation framework are as follows (categories of variables under each component are shown in brackets): (i) Setting (ecological, social and social-ecological, institutional, external drivers); (ii) Process (participation, relationship building, social learning); (iii) Outcomes (social capital, social learning and adaptation, decision making), and (iv) Effects (ecological, social, social-ecological). As the figure suggests, there are interconnections among the components of the framework. For instance, the setting or context in which the adaptive co-management case is taking place will influence its process, which will lead to specific outcomes that will in turn reshape the process. Implementing the formative evaluation framework during in-depth case studies will provide the possibility for investigating, at a finer scale, the interconnections between components and variables.

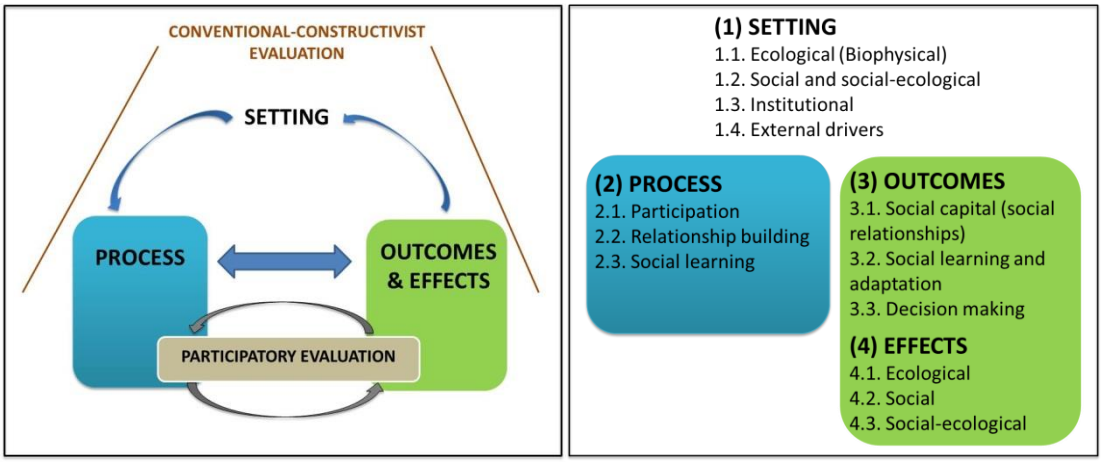

Figure 1. Adaptive co-management formative evaluation framework, consisting of four components (each with categories of variables to assess) and two evaluation approaches (conventional-constructivist and participatory).

The variables or evaluation criteria under each component category guide the data collection and analysis. For example, the Institutional setting (1.3) refers to the scale of the ACM case, its history and goals, existing enabling legislation, fit between the resources, users and the institutional arrangement, among others. The Participation process (2.1) includes the type of ongoing activities, their time, places, and dissemination, the representativeness and involvement of stakeholders, communication and deliberation, etc. (most evaluation criteria for 2.1. come from the evaluation of public participation). As can be observed, social relationships and social learning are included both as part of the process and as part of the outcomes of adaptive co-management. In the former component, attention is paid to factors affecting the processes of relationship building (e.g. pluralism, low turnover rate of participants, respectful dialogue, horizontal interactions) and social learning (e.g. interaction and negotiation, problem definition, different sources of knowledge, reflection). In the latter component, tangible and intangible outcomes of social capital (e.g. interinstitutional agreements for cooperation, responsibility sharing, conflict resolution, increased

interpersonal and institutional trust) and social learning and adaptation (e.g. management plans, enhanced adaptability, co-production of knowledge, problem solving) are investigated.

Methodologically, our framework integrates two evaluation approaches: conventional-constructivist, in which the evaluation is led by the researchers ("experts", "externals") who observe the case and gather information from stakeholders and documents, and participatory or collaborative, in which the evaluation is led by the different actors involved in the adaptive co-management initiative, often with the assistance of facilitators. The combination of "internal" and "external" evaluation for co-management arrangements was suggested a decade ago by Borrini-Feyerabend et al (2004) but has not become common practice.

In the conventional-constructivist approach of our framework, the variables to be assessed (under setting, process and outcomes & effects) are those mentioned above and come from the scholarly literature. The use of multiple methods, such as participant observation, focus groups, workshops, document analysis, interviews and questionnaires (e.g. Conley & Moote 2003, Kaufman et al. 2014) is encouraged for in-depth evaluations, allowing to increasing the validity of findings through triangulation. "Conventional" refers to external or non-participatory evaluation, whereas "constructivist" refers to an evaluation in which the claims, concerns and perceptions of those involved in the case are contemplated (Guba & Lincoln 1989). Gathering data from a variety of participating stakeholders to capture the diversity of views is often recommended in evaluation (e.g. Guba and Lincoln 1989, Bellamy et al. 2001, Borrini-Feyerabend et al. 2004, Rowe et al. 2004, Blackstock et al. 2007) and is compatible with the pluralist principle of adaptive co-management. As explained by Borrini-Feyerabend et al. (2004), different actors may provide a different perspective of what is a positive impact, and thus, when monitoring co-management arrangements, multiple views should be included. Moreover, whenever possible, the opinions of stakeholders who did not directly participate in the process (i.e. nonparticipants) and of those who stopped participating (i.e. lapsed participants) should also be gathered (Conley & Moote 2003, Trimble et al. 2014).

In the participatory evaluation approach of the framework we propose, researchers engage as facilitators in a process in which the multiple actors define the goals, indicators and methods for the evaluation of the adaptive co-management initiative, carrying it out collaboratively, analyzing the data and discussing actions or plans. As opposed to the conventional-constructivist approach, the variables for assessment (qualitative and quantitative indicators) are proposed and negotiated by the different actors (e.g. community, government, non-government) and these indicators will likely differ from case to case. The facilitators help the group organize the indicators under categories, and facilitate the deliberation around the expected parameters for each indicator, among others. This collective discussion around indicators and expectations (which often vary from actor to actor) entails inevitably a learning process. As the figure indicates, the participatory evaluation becomes embedded in the adaptive co-management components and can potentially foster feedback to improve the process and outcomes.

One of the supportive arguments for the participatory evaluation approach (also regarded as collaborative evaluation and PME - Participatory monitoring and evaluation) is that given that co-management is about participation and involves multiple stakeholders, its evaluation also needs to be participatory and inclusive (Borrini-Feyerabend et al. 2004, Izurieta et al. 2011). Participatory approaches to evaluation were partly triggered to promote learning through the implementation of evaluation frameworks, a gap addressed by Cundill & Fabricius (2009) for instance, who proposed a social learning approach to monitoring,

entailing a cyclical process of problem identification, visioning, monitoring, taking action, reflection and redefining the problem. We argue that participatory evaluation becomes suitable for adaptive co-management because it fosters social learning, reflexivity and feedback during its implementation, collaboration, and capacity development (Pomeroy & Rivera-Guieb 2006, Ferreyra & Beard 2007, Cundill 2010, Cundill & Fabricius 2010, Izurieta et al. 2011, Stacey et al. 2013). Participatory evaluation holds potential for enhancing two main pillars of adaptive co-management: social relationships among stakeholders and social learning. Additional benefits of participatory evaluation (compared to conventional evaluation) supporting its use in development programs and conservation initiatives are: enhanced selection of indicators through negotiation, greater external validity, increased utilization of evaluation results, increased group cohesion and self-confidence, organizational learning, and empowerment of disenfranchised stakeholder groups (Papineau & Kiely 1996, Estrella et al. 2000, McDuff 2001, Sayer et al 2007, Aguilar Idañez 2011, Plottu & Plottu 2011). As Cundill (2010) pointed out, researchers become agents of change in collaborative monitoring, which may become a challenge when keeping track of changes in social-ecological systems. Similarly, one of the challenges of our framework is the dual role of researchers, as external evaluators (in the conventional-constructivist approach) and facilitators (in participatory evaluation).

INITIAL REFLECTIONS FROM THE TWO ONGOING CASE STUDIES

As mentioned in the Introduction, we are implementing the proposed evaluation framework for adaptive co-management in two case studies: (1) A consultative council for small-scale fisheries consultative co-management in Canelones, coastal Uruguay, led by the national fisheries agency-DINARA, involving fishers from two locations, the Coast Guard, and departmental/municipal governments, and (2) the consultative council of the Ecological Station (ESEC) of Guaraqueçaba, a no-take marine protected area aiming at mangrove conservation in Parana, Brazil, led by the federal conservation agency-ICMBio, involving twelve fishing communities, the Fisheries Ministry, municipal government, Environmental Police, NGOs and universities. The evaluation research is being coordinated with the government agencies leading the councils (DINARA / ICMBio).

Both councils are recent, with their origin in 2012, and there is enabling legislation in both: a new fisheries law in Uruguay (2013) and the National System of Protected Areas Law in Brazil (2000). The two councils are facing challenges that threat their success, or even the continuity in the Uruguay case. For instance, few or no positive outcomes are perceived from the council by the fishers who have been participating in the two cases (also by other participating stakeholders), leading to their low motivation or interest to participate (an example of interconnection between Process and Outcomes). Fishers from one of the two locations in the Uruguay case stopped participating and they have not gotten involved in the participatory evaluation of the council because they have no expectation that things will change, whereas in Brazil, fisher representatives have been "warning" ICMBio and other actors during council meetings that they may stop participating. This scenario suggests that a formative or ongoing evaluation in collaboration with the different stakeholders would be timely for fostering the use of the evaluation results for taking actions to make improvements.

We are in the process of conducting and integrating the two evaluation approaches of the framework. The conventional-constructivist evaluation has been conducted since 2014 in Uruguay and Brazil through participant observation during council meetings and during visits to fishing communities, semi-structured interviews with participants and non-participants,

and document analysis. Interviewees were also invited to the participatory evaluation component of the research. Fishers, government and non-government actors valued the proposal of a participatory evaluation initiative. They argued that this "self-evaluation" would prompt them learn from mistakes and successes, helping improve the operation of the council, while also contributing to understand the needs and expectations of each group. In those interviews, stakeholders were asked about potential indicators they would use to evaluate the council, which would be brought for collective discussion to a participatory workshop in a later stage.

The participatory evaluation of the council in Uruguay started in late 2014. Two workshops have been conducted, where the aims of the evaluation as well as the indicators to evaluate the council have been discussed and partially agreed by the different actors involved (DINARA, fishers, Coast Guard, municipal/departmental governments). Given that the council has not had any session since mid-2014 (because DINARA considers there is no urgent topic to address), fishers and government actors shared their concerns about the "future" of the council, which they see as uncertain. The participatory evaluation workshops have become a space in which the different actors exchange opinions and reflect about the council. This is an interchange that they have valued. Due to the lack of internal rules and clear aims of the council, participants have proposed evaluation indicators and parameters that reflect their expectations for the council operation, such as continuity of participants at the sessions over time, the intervention of everyone when addressing a certain issue, and listening to one another. Other indicators have been proposed to evaluate the council's outcomes and refer to the fishing resources, fisheries management (e.g. influence of the council inputs for decision-making at higher levels), fishers' wellbeing, relationships among stakeholders, among others. These indicators were going to be discussed at the third workshop (April 2015), through deliberation and consensus-building, but none of the ten participants showed up (despite most of them having confirmed their attendance). This suggests that a participatory evaluation initiative in a context in which the council is not operating might not be sufficiently attractive, and/or that other setting variables are affecting participation. We will explore this in the coming months.

For its part, the council of the protected area in Parana-Brazil has been meeting 1-3 times per year, and in mid-2014 the internal regulations of the council were discussed and approved. The evaluation of the council and of the protected area as such are included in these rules. Specifically, for the internal organization of the council, advisory groups will be formed, such as an evaluation advisory group. The participatory evaluation of this council has not begun because representatives are being re-elected, among other changes. However, from what we have discussed with the manager, the participatory evaluation initiative would be part of the council's activities and would be coordinated with the evaluation advisory group in 2015.

The institutional differences between the two case studies (among other differences, ecological, social-ecological, etc.), which influence the implementation of the evaluation framework for adaptive co-management, provides a productive research context for refining the framework and drawing lessons for transferability to other cases. In Uruguay and Brazil, preliminary findings from the conventional-constructivist evaluation will be brought back to council participants during the participatory evaluation workshops, and we will explore the connection between these two methodological approaches further.

CLOSING REMARKS

Through this project we are intending to contribute to adaptive co-management and related fields by proposing a formative evaluation framework that can be used for in-depth analysis of ongoing initiatives, promoting collaboration, learning and actions to improve practice (their processes and outcomes). The initiative to be evaluated does not need to be in a mature stage of adaptive co-management; our two cases studies are in their early stage, showing little collaboration, learning and power sharing (if any).

The framework we are developing and refining (as a work in progress) is innovative because it brings two evaluation strands (conventional-constructivist and participatory) into the adaptive co-management field. This is relevant because adaptive co-management research has largely overlooked evaluation approaches, and specifically, the contributions of participatory evaluation to adaptive co-management processes and outcomes have not been yet investigated. Our framework can complement the diagnostic framework proposed by Plummer et al. (2014), which has informed our work, by addressing the internal dynamics of adaptive co-management, looking at a finer scale.

In addition, the proposed evaluation framework for adaptive co-management, with modifications as needed, could be implemented to evaluate any decision-making initiative (co-management, collaborative management, collaborative governance, participatory management or governance, etc.) involving communities, government agencies and other actors, and to evaluate deliberative participatory mechanisms involving lay citizens. We will explore the potential for transferability of the framework as we advance in the development of our project.

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LITERATURE CITED

Aguilar Idañez, M. J. 2011. Evaluación participativa en la intervención social. In: Herramientas para el diseño de proyectos sociales (E. Raya Díez). Universidad de La Rioja, Logroño. Pp.91-101

Armitage, D., F. Berkes and N. Doubleday (Eds). 2007. Adaptive Co-Management: Collaboration, Learning and Multi-Level Governance. University of British Columbia Press, Vancouver.

Armitage, D. R., R. Plummer, F. Berkes, R. I. Arthur, A. T. Charles, I. J. Davidson-Hunt, A. P. Diduck, N. C. Doubleday, D. S. Johnson, M. Marschke, P. McConney, E. W. Pinkerton and E. K. Wollenberg. 2009. Adaptive co-management for social-ecological complexity. Frontiers in Ecology and the Environment 7:95-102.

Bellamy, J., D. H. Walker, G. T. McDonald and G. J. Syme. 2001. A Systems Approach to the Evaluation of Natural Resource Management Initiatives. Journal of Environmental Management 63:407-423.
Berkes, F. 2009. Evolution of co-management: Role of knowledge generation, bridging organization and social learning. Journal of Environmental Management 90:1692-1702.
Berkes, F. 2010. Devolution of environment and resources governance: trends and future. Environmental Conservation 37(4):489–500.
Berkes, F., D. Armitage and N. Doubleday. 2007. Synthesis: Adapting, Innovating, Evolving. In Adaptive Co-Management. Collaboration, Learning, and Multi-Level Governance (Armitage, D., Berkes, F. and Doubleday, N., Eds). UBC Press, Vancouver. Pp. 308-327.
Blackstock, K. L., G. J. Kelly and B. L. Horsey. 2007. Developing and applying a framework to evaluate participatory research for sustainability. Ecological Economics 60(4):726-42.
Borrini-Feyerabend, G., M. Pimbert, M. T. Farvar, A. Kothari and Y. Renard. 2004. Sharing Power. Learning-by-doing in Co-management of Natural Resources throughout the World. IIED and IUCN/CEESP/CMWG, Cenesta, Tehran.
Conley, A. and M. A. Moote. 2003. Evaluating collaborative natural resource management. Society and Natural Resources 16:371–386.
Cundill, G. 2010. Monitoring social learning processes in adaptive comanagement: three case studies from South Africa. Ecology and Society 15(3):28. [online] URL: http://www.ecologyandsociety.org/vol15/iss3/art28/
Cundill, G. and C. Fabricius. 2009. Monitoring in adaptive co-management: Toward a learning based approach. Journal of Environmental Management 90(11):3205-3211.
Cundill, G. and C. Fabricius. 2010. Monitoring the governance dimension of natural resource comanagement. Ecology and Society 15(1):15. [online] URL: http://www.ecologyandsociety.org/vol15/iss1/art15/
Davis, N. A. 2008. Evaluating collaborative fisheries management planning: A Canadian case study. Marine Policy 32:867–876.
Dietz, T., E. Ostrom and P. C. Stern. 2003. The struggle to govern the commons. Science 302:1907-12.
Estrella, M., J. Blauert, D. Campilan, J. Gaventa, J. Gonsalves, I. Guijt, D. A. Johnson and R. Ricafort (Eds). 2000. Learning from change. Issues and experiences in participatory monitoring and evaluation. IDRC, Ottawa, and Intermediate Technology Publications, London.
Ferreyra, C. and P. Beard. 2007. Participatory Evaluation of Collaborative and Integrated Water Management: Insights from the Field. Journal of Environmental Planning and Management 50(2):271 – 296.
Guba, E. G. and Y. S. Lincoln. 1989. Fourth generation evaluation. Sage Publications, Thousand Oaks.
Heylings, P. and M. Bravo. 2007. Evaluating governance: A process for understanding how co-management is functioning, and why, in the Galapagos Marine Reserve. Ocean & Coastal Management 50:174–208.
Innes, J. E. and D. E. Booher. 1999. Consensus building and complex adaptive systems: A framework for evaluating collaborative planning. Journal of the American Planning Association 65(4):412-423.
Izurieta, A., B. Sithole, N. Stacey, H. Hunter-Xenie, B. Campbell, P. Donohoe, J. Brown and L. Wilson. 2011. Developing indicators for monitoring and evaluating joint management effectiveness in protected areas in the Northern Territory, Australia. Ecology and Society 16(3):9. http://dx.doi.org/10.5751/ES-04274-160309

Kaufman, S., C. P. Ozawa and D. F. Shmueli. 2014. Evaluating participatory decision processes: Which methods inform reflective practice? Evaluation and Program Planning 42:11–20.
McDuff, M. D. 2001. Building the Capacity of Grassroots Conservation Organizations to Conduct Participatory Evaluation. Environmental Management 27(5):715–727.
Munaretto, S. and D. Huitema. 2012. Adaptive comanagement in the Venice lagoon? An analysis of current water and environmental management practices and prospects for change. Ecology and Society 17(2):19. http://dx.doi.org/10.5751/ES-04772-170219
Muñoz-Erickson, T.A., B. Aguilar-González, M. R. R. Loeser and T. D. Sisk. 2010. A framework to evaluate ecological and social outcomes of collaborative management: Lessons from implementation with a Northern Arizona collaborative group. Environmental Management 45(1):132-144.
Olsson, P, C. Folke and F. Berkes. 2004. Adaptive comanagement for building resilience in social–ecological systems. Environmental Management 34(1):75-90.
Ostrom, E. 2009. A general framework for analyzing sustainability of social-ecological systems. Science 325:419-422.
Papineau, D. and M. Kiely. 1996. Participatory evaluation in a community organization: fostering stakeholder empowerment and utilization. Evaluation and Program Planning 19(1): 19-93.
Parkins, J. R. and R. E. Mitchell. 2005. Public Participation as Public Debate: A Deliberative Turn in Natural Resource Management. Society and Natural Resources 18:529–540.
Plottu, B. and E. Plottu. 2011. Participatory Evaluation: The Virtues for Public Governance, the Constraints on Implementation. Group Decision and Negotiation 20:805–824.
Plummer, R. 2009. The adaptive co-management process: An initial synthesis of representative models and influential variables. Ecology and Society 14(2). http://www.ecologyandsociety.org/vol14/iss2/art24/
Plummer, R. and D. Armitage. 2007. A resilience-based framework for evaluating adaptive co-management: Linking ecology, economics and society in a complex world. Ecological Economics 61(1):62-74.
Plummer, R., B. Crona, D. R. Armitage, P. Olsson, M. Tengö and O. Yudina. 2012. Adaptive comanagement: a systematic review and analysis. Ecology and Society 17(3):11. http://www.ecologyandsociety.org/vol17/iss3/art11/
Plummer, R., L. Shultz, D. Armitage, O. Bodin, B. Crona and J. Baird. 2014. Developing a diagnostic approach for adaptive co-management and considering its implementation in biosphere reserves. The Beijer Institute of Ecological Economics. Beijer Discussion Paper Series No. 245.
Pomeroy, R. S. and R. Rivera-Guieb. 2006. Fishery co-management: A practical handbook. International Development Research Centre and CABI Publishing, Cambridge.
Rowe, G. and L. J. Frewer. 2000. Public participation methods: A framework for evaluation. Science Technology and Human Values 25(1):3-29.
Rowe, G., R. Marsh and L. J. Frewer. 2004. Evaluation of a deliberative conference in science. Technology and Human Values 29:88–121.
Sayer, J., B. Campbell, L. Petheram, M. Aldrich, M. R. Perez, D. Endamana, Z.-L. Nzooh Dongmo, L. Defo, S. Mariki, N. Doggart and N. Burgess. 2007. Assessing environment and development outcomes in conservation landscapes. Biodiversity and Conservation 16(9):2677-2694.
Smedstad, J. A. and H. Gosnell. 2013. Do adaptive comanagement processes lead to adaptive comanagement outcomes? A multicase study of long-term outcomes associated with the National Riparian Service Team's place-based riparian assistance. Ecology and Society 18(4):8. http://dx.doi.org/10.5751/ES-05793-180408

Stacey, N., A. Izurieta and S. T. Garnett. 2013. Collaborative measurement of performance of jointly managed protected areas in northern Australia. Ecology and Society 18(1):19. http://dx.doi.org/10.5751/ES-05273-180119

Stöhr, C., C. Lundholm, B. Crona and I. Chabay. 2014. Stakeholder participation and sustainable fisheries: an integrative framework for assessing adaptive comanagement processes. Ecology and Society 19(3):14.

Trimble, M., L. G. Araujo and C. S. Seixas. 2014. One party does not tango! Fishers' non-participation as a barrier to co-management in Paraty, Brazil. Ocean and Coastal Management 92:9-18.

Whaley, L. and E. K. Weatherhead. 2014. An integrated approach to analyzing (adaptive) comanagement using the "politicized" IAD framework. Ecology and Society 19(1):10. http://dx.doi.org/10.5751/ES-06177-190110