

Application Of Criteria & Indicators Of Sustainable Resource Management In The United States

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Abstract

Sustainable development, comprised of interrelated social, economic, and ecological components, is a core value of the global community. We need jobs in rural and urban communities, commodities to support life processes, and a healthy environment inclusive of our heritage of plant and animal species. While sustainable development has gained worldwide prominence, difficulties remain in making progress towards that goal. Bridging information gaps in administratively fragmented landscapes, integrating environmental, economic and social issues, and the capacity to make consistent measures for assessing progress toward desired conditions that reflect sustainable development values are problematic. Within the United States and globally, we are seeing a convergence of how countries characterize and assess sustainable forest management. The Montreal Process (MP) framework of criteria and indicators (C&I) is helping to provide a unifying language of measures that clarify and better articulate understanding of key attributes that characterize the conservation and sustainable management of temperate and boreal forests. The U.S. is gaining experience in developing and applying C&I into both industrial and private forest certification processes as well as into state and federal forest assessment processes. The MP C&I are contributing to building both the intuitional capacity for and potential to: bridge administratively fragmented landscapes; foster dialog and collaborative planning processes; and to focus scarce resources to highest priority areas. The MP C&I are also strengthening the linkages between countries and are contributing to the emerging mode of better science based governance. This paper discusses U.S. progress in applying the MPC&I.

Keywords: sustainable development, criteria and indicators, sustainable forest management, science, assessments, governance

Introduction

This paper talks about how a common language of criteria and indicators is contributing to strengthening U.S. institutional capacity and potential for shared learning and decision making while on life's journey of sustainable development.

Sustainable Development: A Common Driver For Life

Desired conditions are the guiding star and reference point for assessing progress towards sustainable development. Desired conditions may change over time. Assessing progress towards desired conditions requires judgment about the state of our communities, country, and world, because it captures the relationship of ecosystem services to human well-being. Inherent in the sustainable development journey is valuation of those tangibles and intangibles we believe should persist in space and over time, and the need to identify and agree upon key 'vital signs' (criteria and indicators) of sustainable development that serve as a barometer of the state of our values (Wright, Pam.,etal, 2002)

U.S. Use Of Criteria And Indicators Is A Long Time Work In Progress

Despite decades of activity, billions of dollars of investment, no national system of criteria and indicators that enables the assembly of key information on environmental and social issues has been developed (National Research Council, 2000). Just as the scientific and medical community have established a dash board of vital sign C&I that characterize and enabling assessments of human health, resource partners need to do the same for natural resource management.

A Common Language of Criteria And Indicators Is Foundational For Our Common Future

The challenge for this century's generation of land managers is to bridge administratively fragmented landscapes to better enable collaborative efforts designed to address shared concerns. This requires new approaches, innovation, and the creation of new alliances between parties that may not have worked together in the past.

The Montreal Process Criteria and Indicators Have Provided a Common Language of Measures To Bridge Administratively Fragmented Landscapes (<http://www.mpci.org>)

The MP began in 1994 and resulted in the collaborative development of Criteria & Indicators. Collaboration occurred both within countries and between countries and resulted in a framework of seven criteria and 67 indicators (Montreal Process Working Group. 1998). The MPC&I's have strengthened member country capacity for good science based governance.

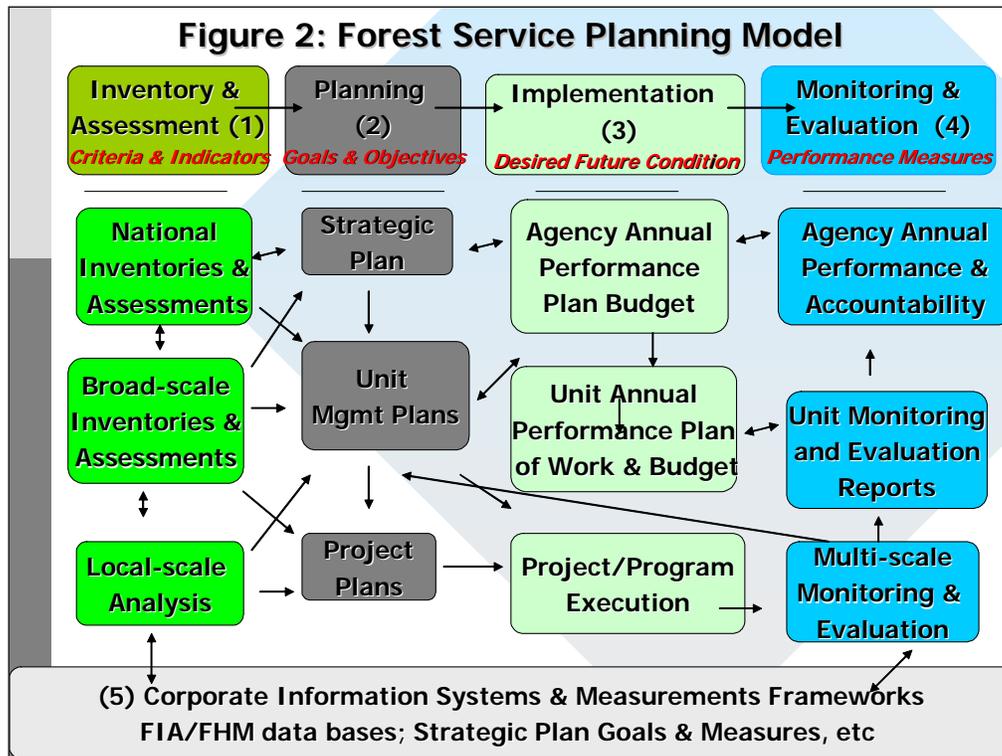
The U.S. has been a leader in broadening and deepening the application of C&I. Activities have both directly and indirectly contributed to the emerging mode of better science based governance as well as the building of institutional capacity for potential shared learning and collaborative planning processes designed to address shared social, economic and/or environmental concerns. Evidences of this reality include:

- *Establishment of broad political and constituent support for the MP C&I.* Early in 1997, the National Association of State Foresters (50 State Foresters) requested the nations lead forestry agency, the USDA Forest Service (F.S.), to play a leadership role in using the MPC&I for integrating inventory, monitoring, and assessment programs, fostering

sustainable forest management on all U.S. forests (National Association of State Foresters, 1997).

- *Forums for discussion, development, and application of the C&I.* In response to broad political and constituent support, and as part of U.S.' efforts to implement the MPC&I, in 1997, the F.S. organized a forum to discuss the development and application of the MPC&I. The establishment of other Roundtables followed the establishment of the Sustainable Forest Roundtable (*Roundtables*).
- *States Are Embedding Criteria and Indicators Into Their Forest Assessment Programs.* The National Association of State Foresters has been and is a guiding force for change in promoting sustainable forest management. About half of the States are now using MPC&I based protocols for assessment of their forests, as a tool to shape forest policy and practices, and to set priorities.
- *County Governments are using the MPC&I to help to secure forest values and environmental service for local residents.* For example, the Baltimore County's strategic plan, a poster designed by the county and an agreement between the county and a private land owner all link to the Montreal Process C&I or forest sustainability (<http://www.fs.fed.us/global/baltimore>).
- *Industrial and private sector application of C&I is growing.* C&I assessment frameworks and related certification mechanisms bring together sustainability concepts as specific performance requirements and accountability processes at the management unit level. Some certification processes that use C&I are long standing while others are parallel, coevolved efforts to MPC&I.
- The U.S. is leading the MP countries in *F.S. application of C&I to forest service planning processes.* The F.S. is using C&I to strengthen the relationships between inventory & assessment; planning; budget formulation and execution; and monitoring and reporting (Abee, 2000). Figure 2 shows the role of C&I in linking F.S. planning and decisionmaking processes.

Figure 2 Column 1 reflects that inventory and assessment information is collected and evaluated based upon selected C&I germane to informing approvals and interrelated decision-making processes. Column 2 reflects the three-tiered planning process of the F.S. Planning goals and objectives are designed to achieve desired conditions. Column 3 reflects budgets -implementation to move the planning area towards desired conditions. Column 4 reflects that monitoring of performance measures is done to evaluate progress towards desired conditions. Bottom Column 5 reflects that corporate information for analysis and reporting provides the foundation for consistent and effective information collection, analysis, and evaluation at multiple scales for various reporting requirements and needs. This is a practical example of how C&I inform inventory, assessment, planning, and budgeting processes. A shared set of C&I enable gauging agency progress towards mission delivery; connects project level plans and local activities and performance to strategic goals; helps to focus scarce resources to highest priority areas; and enables accountability.



Lessons Learned

Fifty years from now, historians will look back at this period of U.S. conservation history and conclude that the emergence of the MPC&I served the nation well, in helping to bridge our highly administratively fragmented landscape, thus fostering the potential for collaborative processes designed to promote sustainable forest and the American heritage of associated values. They will applaud the wisdom and boldness of key leaders (Scientist, Academics, NGO's, Professional Societies, Industrial leaders, Governmental leaders, the myriads of private sector interests, etc) of our day who largely served as the catalyst responsible for the application of the C&I into the fabric of our many operational programs: governmental, industrial, university, and private sectors alike. Lessons learned in working to embed C&I in U.S. operational programs include:

- In seeking to incorporate C&I into agency operational programs, build support within your own agency (Johnson, et al, 1999).
- Build support and develop partnerships with external customers. Broad public support results in management commitment.
- Establish an implementation team that represents the agency. Select players that are highly motivated and that believe in and want to be involved in the effort. Maintain focus.
- Develop an Action Plan that identifies specific tasks for collaborative implementation; responsible individual; and time frame for completion (Abee, 1999).
- Begin with the end in mind. Keep focus on agreed to goals and objectives and build on consensus and common ground, rather than surfacing issues.
- Involve all interested parties early in the process. Be confident in enabling and encouraging shared responsibility for populating the national measurement framework with data. Do not impose constraints but define outcomes with quality assurance.

Broadening And Deepening Application Of C&I Information In The United States

Social health and public welfare are affected by and dependent upon natural resources and the management of the landscapes in which they occur. Criteria and indicator frameworks should continue to be refined to reflect *ecosystem services* and link to and establish context for unit level certification strategies. Use of C&I should promote the following desired outcomes:

- *Promote Sustainability Through Improved Understanding.* To better enable informed decisionmaking, managers should promote understanding of resources conditions, trends, and relationships through the application of C&I.
- *Promote Sustainability Through Planning Strategies Designed to Bridge A Fragmented Landscape.* Managers should work towards reconnecting administratively fragmented landscapes by promoting planning strategies that are anchored in a framework of social, economic, and environmental C&I.
- *Promote Sustainability By Practicing Adaptive Management.* Plans, budgets, and management needs should be responsive to new information and emerging needs revealed through assessments using C&I.

Summary

- Healthy ecosystems and sustainable economies are goals shared by national, county, state, private, and industrial ownerships alike. Sustainable Development should be viewed as having three equal and interdependent components: ecosystems must be healthy, economies must be sound, and communities must be strong in order to fully meet the needs and expectations of people.
- The U.S. work environment is highly administratively fragmented. Land managers face common issues that are beyond sole source solutions or remedy along administrative lines. The challenge for this century's generation of land managers is to bridge administratively fragmented landscapes to address shared concerns.
- The legal and institutional framework mandating and promoting sustainability has precipitated decades of monitoring of associated criteria and indicators. Despite decades of activity, billions of dollars of investment, no national system of criteria and indicators that enables the assembly of key information on environmental and social issues has been developed.
- There is convergence for how federal and state governments, industrial sector, and private sector managers characterize sustainable forest management in the U.S. The MPC&I have precipitated forums for discussion, development, and implementation of C&I essential to collaborative assessment, planning, and decisionmaking processes designed to evaluate alternative approaches to address shared concerns.
- The U.S.F.S. is using C&I to strengthen the relationships between inventory, assessment; planning; budget formulation and execution; and monitoring and reporting at multiple scales.
- While the 'purest' of systems approaches are important in teasing out inter-relationships, they should not be considered the end all for dialog and decisionmaking. As demonstrated, C&I measurement frameworks such as the MPC&I are invaluable tools to inform dialog and decisionmaking processes.
- There is continued need to strengthen partnerships and integrated approaches between federal and state governments to enable the assembly of unified information

on key social, economic, and environmental issues to facilitate collaborative processes designed to address shared concerns.

- On the aggregate, US progress in applying C&I for sustainable forest management by both federal, state, and country government and industrial, and private sectors, has increased the US institutional capacity to bridge administratively landscapes, foster shared learning, and to work together to help provide the American people the cherished values inherent in U.S. forests. This progress has contributed to the emerging mode of better science based governance.

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Roundtables:

Sustainable Forests Roundtable: www.sustainableforests.net

Sustainable Rangelands Roundtable: <http://sustainableangelands.cnr.colostate.edu/>.

Sustainable M&E Roundtable: <http://www.fs.fed.us/servicefirst/sustained/iemeindex.html>.

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