



**INTERNATIONAL TROPICAL
TIMBER COUNCIL**

JOINT SESSION OF THE COMMITTEES

Distr.
GENERAL

ITTC-JC(XLVI)/2
5 October 2012

Original: ENGLISH

FORTY-SIXTH SESSION
5-10 November 2012
Yokohama, Japan

**Uses and Impacts of Criteria & Indicators for
Sustainable Forest Management
at the Field/FMU Level and Other Operational Levels**

Executive Summary

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May 2012

A. Introduction

1. Criteria and indicators for sustainable forest management (C&I for SFM) have been described as the most important and innovative policy instrument for operationalising the emerging concept of “sustainable forest management”. The International Tropical Timber Organization (ITTO) pioneered the development of C&I in the early 1990’s to assess the conditions of natural tropical forests in producer member countries and help identify weaknesses in forest practices and improvements needed¹. Based on this early work and the outcomes of the 1992 Rio Earth Summit, C&I initiatives were launched around the world.

2. By 2000, 9 regional and international C&I processes involving some 150 countries had been introduced (a number with support from FAO, UNEP and ITTO) and subsequently endorsed by the international forest policy community² as tools to monitor, assess and report on trends in forest conditions and progress toward SFM and, in turn, inform policy and management decisions. While the resulting sets of C&I differed in various respects, they all reflected a holistic approach to forests as ecosystems with multiple values beyond wood and fiber production. Criteria represented the essential economic, social, environmental and policy elements of SFM; indicators provided the ways to measure them.

3. During the last decade, ITTO has continued to provide leadership in the review, improvement and implementation of C&I, which have been among the Organization’s most important policy work. The ITTO has invested USD 30 million in training workshops and projects to build the capacity of tropical timber producer members to apply C&I at national and forest management unit (FMU) levels, with a view to improving tropical forest management. Several other C&I processes, including in the temperate/boreal forest region, have also remained active and improved initial sets of C&I based on the experiences of countries in data collection, analysis and reporting.

4. Today, it is recognized that C&I have contributed to a common understanding, within and across countries, of what is meant by SFM and provided a common approach to assessing forest trends and progress towards SFM, as well as a platform for exchanging knowledge, experiences and lessons learned. C&I have led to identification of the “seven thematic elements of SFM” which are drawn from the criteria common to process-level sets of C&I and now form the basis and organizing framework for the periodic global forest resource assessments (FRAs) coordinated by FAO.

5. At the same time, little information has been compiled on the ways C&I have been operationalized and contributed to improved forest policies and management practices. This study has been undertaken to gain a better understanding of the experiences of countries worldwide in using C&I and the impacts of these uses on SFM, as well as to identify relevant trends, developments and emerging issues. On this basis, proposals are made with a view to strengthening the impact of ITTO’s C&I in the field, informing a possible review of ITTO’s current C&I (last updated in 2005) and enhancing collaboration among C&I processes.

B. Scope of the study

6. This study is global in nature and focuses on the following five active C&I processes which together involve some 90 countries with tropical, temperate and/or boreal forests:

- ITTO C&I for sustainable management of natural tropical forests
- African Timber Organization/ITTO (ATO/ITTO) principles, criteria and indicators (PC&I) for the sustainable management of African natural tropical forests
- Tarapoto Process on C&I for sustainability of Amazonian forests (coordinated by ACTO)
- Pan-European C&I for SFM (coordinated by Forest Europe)
- Montreal Process Working Group on C&I for the conservation and sustainable management of temperate and boreal forests³

7. The sets of C&I currently used by the five processes are conceptually similar, but differ, sometimes significantly, in scale, emphasis and level of detail. ITTO’s 2005 C&I closely integrate national and FMU level C&I. Seven criteria and 48 indicators apply at both levels; an additional 9 indicators apply at the national level only. The ATO/ITTO PC&I were developed in 2001 and reflect a highly successful early collaboration between ITTO and African tropical timber producers. The detailed PC&I are normative in nature⁴ and comprise 4 principles (1 national, 3 FMU) under which are a total of 20 national and FMU

¹ *ITTO Criteria for the Measurement of Sustainable Tropical Forest Management (1992)*

² Intergovernmental Panel on Forests (IPF) 1995-1997; Intergovernmental Forum on Forests (IFF) 1997-2000

³ Many ATO/ITTO and Tarapoto countries are ITTO producers. Many European and Montreal Process countries are ITTO consumers.

⁴ C&I used by the other four processes are formulated as neutral rather than performance measures.

criteria, 90 indicators and 145 sub-indicators. The Tarapoto Process dates from the same period and focuses on a core set of 7 criteria (3 national, 3 FMU, 1 international) and 15 indicators as priorities for field validation in the Amazon region. These priority C&I are drawn from more detailed C&I contained in the 1995 Tarapoto Proposal.

8. The Pan-European C&I were last reviewed in 2002 and include 6 regional/national criteria with 52 quantitative and qualitative indicators. The Montreal Process includes 7 national level criteria with 54 indicators, which were updated in 2007-2008 following a comprehensive review. It is significant that neither process has elaborated FMU level C&I (or plans to do so) due to the significant differences among participating countries noted in paragraph 9. The lack of FMU C&I does not mean that temperate/boreal countries have not operationalized C&I in ways that have had a positive effect on forest management but that such applications may be indirect.

9. In addition to variations among C&I processes, countries within and across processes differ significantly in terms of forest governance structures (e.g. centralized versus decentralized), forest ownership patterns (one government owner versus millions of small private owners), existing forest policy frameworks and forestry traditions, as well as in forest type, extent and distribution. These factors, together with capacity issues, affect how countries use and apply C&I.

C. Methodology

10. The differences among sets of C&I, in particular regarding FMU level C&I, mean there is no common framework across processes to assess field level uses of C&I or their impact on forest practices. This lack of a common C&I structure required a broad approach in order to take into account ways countries may have operationalized C&I through national and subnational forest policies, programmes and regulations which impact how forests are managed at the field level.

11. Based on consultations with the ITTO Secretariat, it was decided that the most effective and efficient way to obtain factual information from a wide range of countries and C&I users at various levels would be through the use of general questionnaires. Two surveys were developed to target:

- Government officials with responsibilities at national or subnational (e.g. state, provincial, regional, local) levels for forest policy, planning, regulation and/or management;⁵ and
- Private forest stakeholders, including companies, associations and other operators subject to government policies and regulations, as well as forest certification programmes.

12. Between March and December 2011, the Executive Director circulated the government survey to some 100 officials in 40 countries, including 32 ITTO member countries for which contact information was provided by ITTO focal points. During the same timeframe, the second survey was circulated to private and other non-government stakeholders in 70 countries, including virtually all ITTO members, based on contact information drawn from ITTO and consultant databases, internet searches and personal contacts.

13. While survey responses provide the foundation for this study, the consultants also drew on ex-post evaluations of ITTO funded C&I projects in Asia, recent regional and international forest assessments (e.g. State of Europe's Forests 2011, SFM Tropics 2011, FRA 2010), ITTO's *25 Success Stories* commemorating its 25th anniversary (October 2011), and the outputs of recent C&I process collaborative meetings.

D. Overview of government survey results

14. Survey responses were received from 46 forest officials in 25 countries, including 17 responses from 10 ITTO producer countries⁶, mostly from Latin America, and 25 responses from 11 ITTO consumer countries associated with the Pan-European or Montreal C&I processes⁷. ITTO ex-post evaluations and success stories were used to bring forward the experiences African and Asian producers which were not represented in survey responses⁸. Four responses were also received from non-ITTO members⁹.

⁵ A pilot survey with limited circulation helped determine the suitability of questions for countries participating in processes without FMU level C&I.

⁶ Brazil, Colombia, Cote-d'Ivoire, Guatemala, Guyana, Honduras, Malaysia, Mexico, Peru, Togo

⁷ Austria, Canada, China, Finland, Japan, Korea, New Zealand, Norway, Sweden, UK, US

⁸ Ghana, Gabon, Indonesia, Philippines, Thailand

⁹ Argentina, Chile, Russian Federation, Slovenia

15. Together, responding forest authorities own, manage and/or regulate about 1 billion hectares (ha) of public and private forests, of which 40% is in the tropics. This represents 25% of the world's forests and an estimated 45-50% of production forests, which is significant. While responses provide a good overall picture of the range of C&I applications and impacts, specific applications and impacts, which are summarized below, are highly individual by country to factors noted in paragraph 9.

D.1. C&I as a framework for forest monitoring, assessment and reporting (MAR)

16. Within the ITTO, ATO/ITTO and Tarapoto processes:¹⁰

- C&I are generally, but not consistently, used as a framework for MAR at the national level and for reporting to ACTO, ITTO (for SFM Tropics) and FAO (for the FRAs).
- Several countries have developed their own sets of C&I based on ITTO's C&I to reflect national and FMU circumstances and special forest ecosystems (e.g. mangroves).
- A number of countries, often with ITTO assistance, have used C&I frameworks to strengthen national and FMU baseline data and forest inventories and build data bases on social and environmental indicators.
- Applications of FMU C&I are uneven across countries. Some countries are using FMU C&I to:
 - Monitor and evaluate FMU management based on forest management plans (FMPs) or other operational plans
 - Evaluate and report on progress toward SFM at broader levels by aggregating FMU level data
 - Report on certified forest areas
- ITTO FMU C&I are typically used for MAR of ITTO-financed projects.

17. Within the Pan-European and Montreal processes:

- C&I are widely used as the framework for periodic MAR at the national level and for national reporting at regional/process and international levels, including for the FRAs.
- Process-level C&I have often been stepped down or otherwise adapted to national circumstances (e.g. by developing national-level C&I) to facilitate MAR.
- National level reporting may be more detailed and comprehensive than C&I and draw on additional sources of information.
- In federations, national level data for many indicators is typically obtained by aggregating field data provided by states/provinces.
- Process/national level C&I may provide a basis for MAR at subnational and FMU levels.
- A number of state/provincial forest authorities have identified subsets of C&I (e.g. core indicators) for use as a MAR framework, including in some cases at the FMU level.
- Trends observed through C&I-based MAR have highlighted problems and catalyzed needed adjustments/improvements in forest policies and practices in some countries.
- C&I have been widely used to organize, compile, present and communicate existing forest-related data and information.

D.2. Applications of C&I in forest policies, programmes, plans and regulations

18. A number of countries across the five C&I processes have operationalized C&I by incorporating them in various ways and at various levels into forest policies, plans and/or regulations, sometimes in response to information generated by C&I-based MAR. For example, individual ITTO producers, often facilitated by ITTO training and project support, have applied national and FMU C&I as a basis or framework for one or more of the following:

- Forest-related legislation and regulations at national, local and/or FMU levels
- Forest-related planning at state, river basin and/or FMU levels
- Developing and approving forest management plans and monitoring/evaluating compliance
- Establishing best management practices and other technical standards
- Preparing forest management guidelines, procedures and manuals
- Formulating terms of concession contracts, licenses and logging permits, evaluating performance and auditing
- Developing legality and chain-of-custody control and verification systems
- Carrying out environmental monitoring and impact assessments
- Developing national forest certification schemes

¹⁰ While Mexico is a member of the Montreal Process, its responses are incorporated under ITTO producers.

19. In a number of Pan-European and Montreal process countries, C&I have been integrated into, or helped shape, national forest programmes (NFPs), strategies, plans or guidelines. Individual countries have also applied C&I in the context of:

- Improving forest legislation and regulations at national, local and/or FMU levels
- Developing national or subnational (e.g. provincial/state) forestry standards
- Developing best management practices for experimental or model forests
- Assisting private forest owners to develop FMU management plans
- Evaluating regulatory compliance and effectiveness
- Regulating wood harvesting quotas

D.3. Stakeholder involvement

20. Nearly all respondents indicated making efforts to engage stakeholders in C&I activities. A variety of means are being employed, including establishing committees, roundtables and dialogues at national, state/provincial and/or local levels. Many countries consider that the meaningful involvement of stakeholders, while often challenging, is essential to the effective use and uptake of C&I. A number of European and Montreal Process countries emphasized that stakeholder participation is a basic principle of their wider forest management planning, assessment, reporting and regulatory processes.

D.4. Challenges encountered

21. Nearly all countries reported facing challenges to using C&I. The major challenges across the five C&I processes were:

- Limited financial and technical resources, especially to collect data on social and environmental indicators¹¹;
- Poor stakeholder understanding of the concept and purpose of C&I (including confusion between C&I and certification); and
- Conflict among stakeholders on the use and management of forest resources

22. ITTO producers also noted the lack of political commitment as a serious constraint, while European and Montreal respondents identified multiple levels or layers of forest authorities. Other challenges were more country-specific and included issues related to land tenure, limited forest mandates, lack of cross-sectoral coordination, agricultural incursions into forests, and the presence in forests of armed groups.

23. Some respondents had encountered challenges with process-level C&I themselves. These included indicators that were redundant, unsuitable or irrelevant to national or FMU circumstances, or overly complex or impractical to use, especially by local and indigenous communities and small FMU operators. It was also noted that C&I sets which had remained unchanged for many years would benefit from review and update to take into account country experiences in using C&I, as well as global trends and developments, e.g. related to climate change and bioenergy.

D.5. Impacts of C&I on SFM

24. In general, forest authorities have not undertaken formal assessments to determine the impacts of C&I uptake on forest operations. The views of experts responding to the government show variations from country to country and sometimes within countries. Despite financial, technical, political and other challenges encountered, 59% of respondents considered that C&I had appreciably improved forest management practices, as follows:

- Great improvement in SFM: 13% of respondents, 6 countries (3 ITTO producers)¹²
- Moderate improvement in SFM: 46% of respondents, 12 countries (6 ITTO producers)
- Slight improvement in SFM: 22% of respondents, 5 countries (1 ITTO producer)
- No improvement in SFM: 17% of respondents, 5 countries (1 ITTO producer)
- Not known: 2% of respondents (1 response from 1 country)

25. The general view was that C&I had contributed to SFM by providing a framework or basis for:

- Developing a common global understanding of SFM and in turn catalyzing improved forest policies, programmes and strategies
- Increasing awareness and appreciation of non-timber forest benefits and values
- Improving and expanding forest monitoring and assessment
- Developing management plans and standards and monitoring compliance
- Communicating trends in forest conditions to policy makers and the public

¹¹ While all responding countries can report on some indicators, very few countries can report on all indicators.

¹² Some countries with multiple respondents are represented in more than one group, reflecting differing views within a country.

- Communicating with and engaging stakeholders
- Improving forest databases and inventories and systems for collecting, managing, retrieving, updating and analyzing data

26. Among the countries which reported little or no impact of C&I on SFM, reasons given included one or more of the challenges noted in paragraphs 21-23, which had affected C&I uptake; the greater attractiveness of market-oriented certification; a long-standing tradition of SFM; and unique national circumstances which limited C&I relevance (e.g. timber harvesting restricted to plantations).

D.6. Innovative applications of C&I

27. Survey responses revealed that countries are using C&I frameworks in innovative ways which indirectly have positively impacted SFM. Examples include using C&I to identify forest research needs and priorities, develop education initiatives and prepare environmental assessments and management plans for projects impacting forests.

28. One country has used C&I as a basis for creating a conservation bank to generate sustainable financing to conserve unique forests. Under this innovative programme, commercial enterprises, NGOs and other entities can purchase certificates representing 100 square meters of forest protection and rehabilitation. Commercial benefits accrue to companies indirectly in the form of brand imaging to consumers and recognition of corporate social responsibility.

E. Overview of stakeholder survey results

29. Twenty-four survey responses were received from the following stakeholders:

- 8 tropical timber harvesting companies managing 2 million ha of natural forest in Bolivia, Brazil, Cameroon, Ghana and Malaysia (Sarawak)
- 4 industry associations with 760 members representing at least 10 million ha of natural forest in Bolivia, Brazil and Malaysia (Sarawak)¹³
- 4 plantation companies managing 222,500 ha in Australia, Bolivia, Ecuador and Mexico;
- 1 national NGO working with community production forests in Papua New Guinea (Forests for People and Community Development-FPCD)
- 2 family forest owner associations, including the International Family Forest Alliance (IFFA) whose member organizations represent 25 million families which own an estimated 20-25% of the world's forests, primarily in Europe and North America
- 5 national/regional forest certification programmes covering 94 million ha in Australia, Brazil, Cameroon, Malaysia and North America¹⁴

30. Despite their small number, these respondents represent a broad cross-section of forest stakeholders, as well as significant forest area, and provide a picture of C&I awareness and use which may well reflect the experiences of stakeholders more widely, particularly in the tropics.

E.1. Harvesting in natural tropical forests (companies and industry associations in Bolivia, Brazil, Cameroon, Ghana, Sarawak)

- All forestry operations are required to be planned and carried out under approved forest management plans, often consistent with SFM. Other requirements may apply as well.
- Most operators are familiar with the ITTO C&I and, depending on country, the ATO/ITTO or Tarapoto C&I. Many had been involved in government discussions on C&I. Several have benefited directly or indirectly from ITTO sponsored C&I training.
- One large association has used ITTO's C&I to train forest managers and workers and establish university curricula.
- Many operators are certified under the Forest Stewardship Council (FSC) and use FSC P&C for MAR. For some, FMU C&I paved the way for certification. Certified operators generally have less need for FMU C&I, although one continues to use them to assess high conservation value forests and forest protective functions.
- A number of non-certified operators use FMU C&I for MAR. Others expressed interest in receiving C&I training, in some cases as a step toward certification.

¹³ Two associations could not provide figures on the area of forest represented by their members.

¹⁴ Australian Forest Standard (AFS), CERFLOR (Brazil), Cameroon Forest Certification Initiative (CFCI), Malaysian Timber Certification Council (MTCC), Sustainable Forestry Initiative (SFI - US and Canada)

E.2. Harvesting in tropical plantations (Australia, Bolivia, Ecuador, Mexico)

- All forestry operations are required to be carried out under approved forest management plans. Other internal and external procedures/standards/controls often apply.
- Most operators are FSC or PEFC-certified or in the process of becoming certified.
- Operators generally were unfamiliar with C&I, including FMU C&I.

E.3. Community forestry (PNG)

- While FPCD is very familiar with ITTO's extensive work on C&I, FPCD has developed the Indigenous Community Forestry Group Certification Scheme based on PNG's FSC national standards, which are simple to use and reflect the PNG context.

E.4. Family forestry (temperate/boreal region)

- Government regulations and programmes (e.g. NFPs) apply but vary across countries.
- National forest owner organizations are typically involved in developing national FSC or PEFC standards. Many family harvesting operations are certified.
- In many countries, family forestry is increasingly multiple-use oriented, supplementing or occasionally replacing timber harvesting with income from recreation and non-wood products.
- IFFA uses the Pan-European and Montreal C&I frameworks, together with local/traditional knowledge, as guides to promote SFM, multiple use approaches and locally controlled forests.

E.5. Certification programmes (Australia Brazil, Cameroon, Malaysia, US-Canada)

- All programmes use standards based on one or more C&I frameworks.
- Four programmes are endorsed by PEFC (Programme for the Endorsement of Forest Certification) which is also based on C&I.
- The area of forest certified under these programmes has increased significantly in the last decade and is likely to continue to expand.

F. Trends related to FMU management

31. The following trends and developments are relevant to C&I, including future C&I applications, reviews and updates.

32. Areas under SFM. According to FRA 2010 (which is based on C&I reporting), the area of forest covered by a forest management plan (FMP) -- an important tool for achieving SFM -- has steadily increased over the last 10 years and now exceeds 1.6 billion ha globally. This suggests a positive trend toward SFM, recognizing that not all FMPs are effectively implemented and that a forest may be sustainably managed without a plan. Based on additional data collected from over 100 countries, FRA 2010 also concludes that "significant progress has been made over the last ten years" toward SFM. These trends are reflected in SFM Tropics 2011 (also based on C&I reporting) which estimates that 52 million ha of production-focused natural tropical forests are under SFM (an increase of 50% since 2005) and 131 million ha are covered by an FMP as compared to 96 million ha in 2005. Both FRA 2010 and SFM Tropics 2011 note great improvement in the quality of information provided by countries. While major drivers of these trends include certification and in the tropics climate initiatives, improved C&I-based forest policy, management and databases are also factors globally as indicated in government survey responses, 80% of which indicated that C&I had had some impact on SFM in their countries.

33. Certification. The increase in SFM areas has been driven in part by growing demands in key markets for assurances that wood is sourced sustainably. The area of certified forest has increased 300% in the last 8 years. Today, an estimated 10% of all forests (350-400 million ha) and 20% of production forests are certified under FSC, PEFC or separate national schemes. While most of these forests are in Europe and North America, the area of certified tropical timber producing forests has also increased and now covers 22 million ha. While this trend toward certification is expected to continue, many tropical FMUs may remain uncertified due to cost and other issues, which suggests a continued value-added for FMU C&I in a number of ITTO producer countries.

34. CoC and legal verification. Chain-of-custody (CoC) certification and legal verification initiatives have come on line in recent years to offer consumer guarantees that wood-based products are sourced legally and sustainably in the country of origin and can be traced back through a “chain of custody”. Since 2005, FSC and PEFC have issued 30,000 CoC certificates covering a variety of products. While most of these originate in the temperate/boreal region, tropical forest products are increasingly represented, particularly products originating from Brazil, Malaysia, Vietnam, India and Indonesia. The Tropical Forest Foundation (TFF) has also introduced CoC and RIL (reduced impact logging) certifications, which can also be a step toward FSC/PEFC certification. Government schemes to address the trade in illegally harvested timber include the EU’s Voluntary Partnership Agreements with exporting countries; the US Lacey Act amendments which prohibit wood imports illegally sourced in the country of origin; various log tracking systems, many of which have been introduced by ITTO producers; and procurement policies requiring legality documentation.

35. Local forest management. About 1 billion ha of forest are privately owned, the majority by some 25 million families primarily in Europe and North America. As noted in SFM Tropics 2011, local control of tropical forests is also on the rise. Since 2002, some 30 million ha of forest have been turned over to local and indigenous communities in the tropics, particularly in Latin America and to a lesser extent in Asia. Today, 25% of tropical forests are under some form of local control, and this is expected to increase to 30% by 2015. The transition from centralized to local management, and the degraded state of many of the forests involved, can pose significant challenges, some of which might be facilitated by the development of indicators adapted specifically to community circumstances.

G. Relevant Developments and emerging issues

36. Climate change. Concerns that REDD may view and value forests solely or primarily for their carbon storage benefits have led to REDD+ which adds, *inter alia*, “sustainable management of forests” as an element of REDD financial incentives for developing countries to reduce deforestation and forest degradation. While a very positive development, challenges remain in the climate context to fully apply the SFM concept and take a holistic view of the multiple benefits of forests, of which carbon storage is only one. Since most national and FMU C&I sets include indicators relevant to forest carbon (e.g. growing stock, age structure, annual removals, annual harvest, forest carbon pools, storage and fluxes), C&I can provide a useful reference for operationalizing SFM aspects of REDD+. In responding to the government C&I survey, a number of countries also noted that they consider C&I in the context in carbon calculations and methodologies.

37. Forest governance. The legal, policy and institutional components of C&I frameworks are a foundation for a new initiative by FAO and the World Bank’s PROFOR programme to develop a “framework for assessing and monitoring forest governance” in the REDD/REDD+ context. Input from ITTO and other C&I processes in future development of the framework could be useful.

38. Biofuels. Rising energy costs and concerns over carbon emissions from fossil fuels have generated interest in increased production of forest-based biofuels as an alternative energy source. Since biofuels are among the products flowing from forests, current sets of national and FMU C&I include relevant a number of indicators relevant to sustainability (e.g. land available for production, growing stock, value/volume of wood products, wood consumption, impact of economic use on resource availability). Building on these indicators, the International Energy Agency (IEA) and FAO have recently developed principles, criteria and indicators (PC&I) for intensive sustainable woodfuel production and harvesting. Again, input from ITTO and other C&I processes on future development of the PC&I could be useful.

39. C&I for other natural resources. In responding to the government C&I survey, some countries noted using C&I for SFM as a model for other domestic indicator initiatives, including developing national environmental indicators, as well as C&I frameworks for other natural resources, such as rangelands/grasslands, water resources and minerals. Drawing on these experiences, there may be further scope to utilize forest C&I frameworks as a reference for other indicator initiatives at various levels.

40. Biodiversity. Several of the 20 Aichi Biodiversity Targets within the Convention on Biological Diversity’s Strategic Plan for Biodiversity 2011-2020 encompass forests. An “Indicative List of Indicators” has recently been developed to assess global and national trends towards the targets. Input from ITTO and FAO could help identify measurable forest-related indicators based on national C&I data aggregated in SFM Tropics 2011 and FRA 2010. It would also advance joint work under the March 2010 ITTO-CBD MOU which includes a focal area on “examining opportunities for harmonized reporting on sustainable use and conservation of tropical forests”.

41. C&I collaboration. There has been significant collaborative work among C&I processes in the last year, including the International Seminar on Challenges of SFM co-hosted by Japan and Indonesia (Tokyo, March 2011), the Regional Workshop on Using C&I to Improve Forest Monitoring Capacity and Promote SFM in Latin America co-hosted by Chile and the US (Valdivia, Chile, April 2011), and the Joint Workshop of the Montreal Process, ITTO, Forest Europe and FAO hosted by Canada (Victoria, Vancouver, October 2011). These meetings underscored the value of C&I in helping address the above global issues and have led to a process to develop a “joint forest resources questionnaire” to streamline and rationalize national reporting for SFM Tropic, FRAs and regional forest assessments.

H. Key conclusions

42. The following conclusions are drawn from survey responses, which together represent a broad cross-section of countries and stakeholders, as well as ITTO ex-post evaluations of C&I projects in Asia and recent international forest assessment reports and C&I collaborative meetings.

- C&I have helped countries and the international community to understand and operationalize the evolving concept of SFM since ITTO pioneered C&I in the early 1990's.
- Differences among countries in terms of forest governance structures, ownership patterns, existing policy frameworks and forestry traditions, as well as capacity issues, affect how countries use and apply C&I.
- While process-level C&I provide a common reference framework for participating countries, it is often useful for countries step down or otherwise adapt process C&I to reflect national and/or FMU conditions and circumstances, e.g. by developing country/FMU-specific C&I.

Forest monitoring, assessment and reporting (MAR)

- ITTO producers, often with ITTO support, and other countries have made progress in using C&I for MAR, which is reflected in improved forest inventories and databases, systems of data collection and analysis, and information available at national, subnational and FMU levels.
- National and FMU trends observed from monitoring indicator data have helped officials and FMU managers identify weaknesses in forest management and make adjustments needed.
- Improvements in the quality, coverage and consistency in C&I data from countries has led to more comprehensive regional and international forest assessments as reflected in, inter alia, SFM Tropics 2011 and FRA 2010. Countries using C&I for MAR tend to be well-positioned to respond to external forest-related reporting requests.

Contribution to SFM

- While the effect of C&I on SFM varies by country, C&I have had an overall positive impact and have contributed in a variety of ways, sometimes significantly, to improved forest management and the expansion in SFM areas.
- C&I have increased awareness of forest benefits beyond timber/fiber production and highlighted the importance of policy and management frameworks which integrate the economic, social and environmental values of forests.
- The impact of C&I on SFM has generally been greater in countries which have incorporated C&I approaches, with stakeholder involvement, into legislation, policies, programmes, strategies, guidelines and/or standards which govern forest practices.
- FMU level C&I in particular have provided a basis for a number of ITTO producers, often with ITTO support, to formulate, approve and monitor compliance with FMPs, best management practices, and concession contracts, agreements and permits.
- Innovative applications of C&I in the areas of research, education, training, conservation financing and environmental assessments have also positively impacted SFM in some countries.
- C&I have contributed to (and in many cases provided a basis for) forest certification which has expanded significantly in response to market demands for sustainably and legally harvested products. FMU C&I applications have helped private operators move toward certification.

Challenges encountered

- Despite progress in operationalizing C&I, all countries, particularly tropical producers and other developing countries, face challenges in applying C&I due to insufficient capacity, commitment, policy frameworks and/or stakeholder engagement.
- The nature and extent of the challenges vary by country. Some challenges can only be addressed internally by raising the priority of forests on national agendas. Others can be facilitated through enhanced international cooperation, partnerships, and collaborative C&I initiatives.
- Strengthening the ability of countries to collect data and report on indicators, and integrate C&I into policies and programmes at operational levels, will continue to be important for SFM decision-making in many regions.

- Existing sets of C&I may present challenges for some users. FMU indicators in particular may benefit from review regarding their suitability for use by local communities and small enterprises.

Global developments and emerging issues

- C&I are playing a role in wider forest-related developments and issues, including in international initiatives to assess forest governance in the REDD context and establish PC&I for sustainable woodfuel production. C&I are relevant to assessing forest trends under the Aichi Biodiversity Targets.
- At the national level, C&I frameworks are relevant to national forest carbon calculations and efforts to place carbon values in the broader context of SFM and can serve as models for C&I for other natural resources, e.g. rangelands/grasslands, water resources and minerals.
- The value and contribution of C&I in addressing forest-related global challenges is increasingly evident and warrants further attention, including input from ITTO and other C&I processes.

ITTO leadership

- ITTO has been the single major supporter of C&I training, testing and implementation in producer countries, which can continue to benefit from ITTO assistance. Other potential sources of C&I financing, including FAO, GEF and World Bank, could contribute significantly to national efforts and complement ITTO project support.
- ITTO's 2005 C&I would benefit from review and update to take into account the experiences of member countries, progress under other C&I processes and relevant trends and developments.
- Given ITTO's long experience with C&I, enhanced collaboration with FAO, other CPF members and C&I processes can further promote learning, innovation and cooperative activities and enhance the contribution of C&I to global developments and emerging issues.

I. Recommendations

43. In order to continue and strengthen its work and leadership on C&I and the contribution of C&I to SFM, ITTO may wish to consider the following activities:

Strengthen the impact of ITTO's C&I in the field

- Organize additional national and/or sub-regional consultations/workshops involving private stakeholders to focus strategically on C&I uptake at the FMU level, including identifying specific challenges and ways to meet them, for example, by:
 - Adapting ITTO C&I to FMU circumstances in individual countries
 - Establishing mechanisms for effective stakeholder communication and outreach
 - Identifying capacity building priorities for data collection and analysis
 - Establishing demonstration forests for FMU C&I applications
 - Exploring linkages between FMU C&I and applicable certification standards, including TFF's RIL standard, and the potential for harmonization in individual countries
- Incorporate C&I uptake into components of ITTO's thematic programmes which address forest monitoring, assessment and reporting and progress toward SFM.

Review ITTO's 2005 national and FMU C&I

- Initiate a process to comprehensively review and as needed improve ITTO's 2005 C&I based on lessons learned and recent developments, taking into account: (1) ITTO's revised guidelines for sustainable management of natural tropical forests and other relevant guidelines, (2) recent indicator updates by other C&I processes, in particular the Montreal Process, (3) the seven thematic elements of SFM, (4) trends in certification and local control of forests, and (5) relevant global developments and emerging issues related to, inter alia, climate, bioenergy and biodiversity. Consideration might be given to:
 - Streamlining aspects of the national and FMU C&I
 - Identifying a core set of indicators for use by local/indigenous community forest managers
 - Further elaborating and/or grouping indicators related to sustainable wood fuel production, forest contribution to carbon cycles, and forest governance
 - Exploring linkages between FMU C&I and certification standards
 - Exploring connections among the ITTO, ATO/ITTO and Tarapoto C&I and the feasibility/merits of enhanced convergence

Strengthen partnerships and collaboration with CPF members and C&I processes

- Engage with IEA, FAO and PROFOR staff on their initiatives on assessing and monitoring forest governance in the context of REDD+ (FAO-PROFOR) and develop PC&I for sustainable woodfuel production (IEA-FAO). Invite representatives to make presentations on the status of these initiatives during the next ITTC.
- Work with the CBD secretariat (under ITTO-CBD MOU) and FAO Forestry Department to identify indicators for the forest-related components of the Aichi Biodiversity Targets, for which C&I baseline information is available through SFM Tropics 2011 and FRA 2010.

- Organize an expert meeting with FAO, other CPF members, Montreal Process, Forest Europe and representative countries to:
 - Finalize the joint forest questionnaire for national reporting for FRA and SFM Tropics and develop joint data collection schedules and methodologies
 - Explore using the joint questionnaire as a framework for forest-related reporting to other CPF members.
 - Exchange experiences and lessons learned on applying C&I at various levels and for various purposes
 - Examine how C&I can help countries address developments and emerging issues related to climate, bioenergy, biodiversity, etc.
 - Establish a regular framework of communication on C&I and related SFM issues
- Organize in collaboration with FAO, World Bank, GEF and other CPF members, a joint expert consultation to identify ways to improve and expand international financial, technical and scientific cooperation on C&I, including by tapping into climate-related sources of funding.
- Urge ITTO focal points to facilitate enhanced coordination between national forest authorities and focal points for REDD+, GEF, CBD and UNCCD in order to highlight the contribution of C&I to forest-related work under the Rio conventions, avoid duplication of effort in the development of forest-related indicators and measures, and generate funding for C&I implementation to complement ITTO support.
- Encourage ITTO members to consider giving greater priority to FMU C&I implementation in ITTO Thematic Programmes and in project proposals financed through the Special Account, as well as in projects financed through bilateral cooperation, FAO and the GEF.

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