Annex H—TAC Convenor draft Overview and Achievement report for feedback

27th Montréal Process Working Group Meeting

DRAFT OVERVIEW AND ACHIEVEMENT REPORT

As discussed at 27th Working Group Meeting

'The Working Group agreed the report should be concise (8 pages) and should focus on MP impacts, achievements, and future aspirations with links to concise 2-page country achievements that are readily updatable.'

PROGRESS TOWARDS THE SUSTAINABLE MANAGEMENT OF TEMPERATE AND BOREAL FORESTS: HIGHLIGHTS FROM THE MONTRÉAL PROCESS

"Sustainable Forest Management, as a dynamic and evolving concept, aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations" United Nations Forum on Forests.

The global sustainability movement kicked off with the 1987 Brundtland report and the Rio Earth Summit in 1992. Forests and forestry were seen as a core component and a number of forest sustainability initiatives were established after Rio. The Montreal Process – fully entitled The Working Group for the Sustainable Management and Conservation of Temperate and Boreal Forests (www.montrealprocess.org) was one of these initiatives and twenty five years post Rio has made a significant contribution to Sustainable Forest Management in these forests and in the wider global forest arena. This report outlines some of the progress made, highlights from the Montreal Process, and the impact it has had. It also looks to the future – 'where to next' for Sustainable Forest Management?

Development and refinement of the C&I set.

The set of 7 criteria[1] first adopted in 1995 have proved very robust and have remained unchanged since that time. They cover the full breadth of forest related activities – environmental, social, and economic. These criteria differ in one aspect from other sets of forestry C&I in that the MP identified the importance of global carbon cycles at this early stage and incorporated a criterion 'maintenance of forest contribution to global carbon cycles'. Each criterion was supported by a number of indicators which covered important components of the criterion and would allow description of the state of that indicator and combine with others to give an overall picture of that criterion. Subsequently by combining all criteria giving

[1] 1. Conservation of biological diversity, 2. Maintenance of productive capacity of forest ecosystems, 3. Maintenance of forest ecosystem health and vitality, 4. Conservation and maintenance of soil and water resources, 5. Maintenance of forest contribution to global carbon cycles, 6. Maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies, and 7, Legal, institutional and economic framework for forest conservation and sustainable management.

the ability to report on the overall state of the forests. The 67 indicators were a mix of both quantitative and qualitative measures, and each indicator was supported by suggested approaches to measurement in the supporting technical notes (link).

The original 67 indicators (link) were reviewed after ten years and between 2005 and 2008 were revised by the Technical Advisory Committee resulting in a reduced set of 54 indicators (link). During the process of revision the TAC looked for gaps in the indicators set caused by omission from the original set or from changed circumstances requiring completely new indicators. The revision was more of a refinement and condensation of some indicators with only a few new indicators identified reflecting the emergent concepts of avoided fossil fuel emissions, ecosystem services, the resilience of forest based communities and the importance of forests to people. The review also focused on ensuring there was a clear descriptor and rationale for each indicator written for a non-technical audience. The original set had a much more 'science' flavour. This change was in line with the wish to make the indicators accessible and understandable to all stakeholders and not just technical experts.

The limited changes required to the indicators have helped with the MP's ability to look at long term trends in the state of the forests and tell a cohesive story through its regular series of country 'state of the forests' reports. The indicator set was also evaluated for its ability to tell thematic stories – such as the contribution of forests to provide a range of ecosystem services, or to contribute to disaster risk responses. Using subsets of indicators to build a narrative around a theme has been found to be a very successful approach and use of the indicator set. This approach was highlighted in the 2009 overview report (link) where climate change, water, biodiversity and bioenergy were the focus of a thematic analysis.

The ability to report on the indicators has improved over time as both technology and availability of data improves and methods are developed to measure and report on some indicators. An analysis in 199X reported that overall there was sufficient data to report on X% of indicators, some work was required to enable reporting on a further Y% and Z% required significant work to allow reporting. In the most recent round of country reports it is clear that countries are able to report successfully on the state of the vast majority of indicators.

One of the reasons for the robustness of the indicators and excellent coverage can be attributed to the very thorough co-design process with numerous iterations between technical experts, policy makers, and forestry practitioners across the 12 member countries. This meant development and revision processes took time but were better grounded on completion.

The 5th edition of the Montreal Process handbook (2015) and associated poster (links) are the latest version of the indicators and are being used by all countries in their third round of reporting.

How we work

Through the long term membership of the 12 countries one of the most notable and valuable achievements of the MP has been the development of mutual trust and confidence which has led to the development of a **'network of knowledge'** which has enabled inter-country discussion, research, collaboration, communication and capacity building with great opportunities for learning from each other. This network has two key nodes – the policy focussed Working Group and the technically focussed Technical Advisory Committee. These nodes reach back into member country networks – research organisations, forest services, forest companies, and policy agencies and multiply the capacity that can be brought to bear on activities. The nodes also reach into other global forestry initiatives (e.g. ITTO, Forest Europe, UNFAO) achieving a very strong global reach. (possible diagram here)

A review of key words that can be associated with the Montreal Process was undertaken in 2015 as part of the development of this report. They are presented here as a word cloud and highlight the collaborative and collegial approach the Process takes to its work along with its objective to be accessible, useful and transparent.

Montreal Process Declarations

The three published Declarations by the Montreal Process Working Group (Santiago 1995, Quebec 2003, and Yanji 2017) provide a window into the evolution of the MP activities and focus. The Santiago Declaration (link) set the scene for MP activities and outlined the importance of SFM and endorsed the newly developed set of C&I. It encouraged widespread use for Monitoring Assessment and Reporting (MAR) by member countries and other countries with temperate and boreal forests. By 2003, member countries were producing their first national reports and the first overview report, and the Quebec declaration (link) re-emphasised the importance of MAR and outlined a vision to increase country reporting capacity. This vision focussed on continued improvement of the indicators and enhanced technical collaboration. It also for the first time looked to increase communication, collaboration and cooperation externally with other C&I processes to assist with the common goal of developing a global set of criteria, streamlined reporting, and moving towards the use of C&I as the basis of national reporting to international fora such as UNFF. The Yanji (2017) declaration (link) built further on these global collaborations encouraging the utmost use of C&I frameworks to enhance the understanding and uptake of SFM policies practises and reporting processes. Today the C&I frameworks are well embedded in country reporting practices and the collaborative nature of the Process itself is contributing very significantly to global forest related developments such as the contribution of forests to the SDGs.

CHANGES IN FORESTS AND FORESTRY SINCE 1995

Montreal Process colleagues were involved with a series of papers outlining results from the Global Forests Resource Assessment (2015) that were published in a special issue of the International Journal, Forest Ecology and Management, (link to special issue here). The FRA2015 gave us the opportunity to look at global and regional forestry trends over the 25 years of the MP's existence, and to put temperate and boreal forest trends in a global context. The FRA data does not cover the full spectrum of information covered by the Montreal Process C&I but does serve to give an overall picture of some of the more quantitative variables or indicators.

Overall, in 2015, Montreal Process countries accounted for 49% of the world's forests, 90% of the world's temperate and boreal forest, 58% of the world's planted forest, 49% of the world's Roundwood production and 31% of the world's population. In terms of designated purpose Montreal Process countries accounted for 23% of global forests designated as protected, and 73% primarily for soil and water protection.

Globally, deforestation continued to be a negative trend for forests though the rate of deforestation slowed in the 2010-2015 period. Montreal Process countries showed an overall increase in forest area of 59 million hectares since 1990, going against the global trend, however a 79 million hectare increase in planted forest area masked a 20 million hectare decrease in natural forest area. Third party certification of forest management is a good indicator of progress towards SFM. In 2010 when the most recent and complete data was available there were 284 million hectares certified under either FSC or PEFC. This is up from zero in 1990 (certification only became available in the early 1990s). This equates to 8.1% of Montreal Process member countries' forest area and is slightly higher than the world average of 7.1%.

Forestry issues have also changed over this time period, concerns around deforestation and biodiversity loss have remained very high throughout the period but over this time other new forestry issues have emerged that have had an impact on forestry practises. For example increased severity of forest health impacts, climate impacts – especially from extreme events, and the recognition of ecosystem services as a new holistic framework for considering forestry.

THE CONTRIBUTION OF THE MONTREAL PROCESS AND THE C&I FRAMEWORK

While it is hard to attribute a proportion of the changes outlined in the previous section to the impact of the Montreal Process and its C&I framework there were a range of common themes identified by member countries that could be attributed to the influence of the MP C&I (ref country 2 pagers for more detail) and that have affected forests and forestry in their countries.

The Working Group developed a ***value proposition*** (link) in 2015 that summarised the main 'value add' flowing from involvement in the Process. In brief there are four key points:

1. the provision of a common reporting framework to track the state and change of forests transparently and enhance understanding
2. a collaborative co-learning approach between the 12 member countries with similar forest types and interests
3. an informal and voluntary approach with a great degree of flexibility
4. outreach to other international forestry C&I processes.

All these points together will accelerate progress towards SFM both within member countries and within the wider forest community globally.

Some more specific impacts are outlined as follows.

National level:

By far the most important impact has been the availability of the C&I framework itself, resulting country reports, and the benefits these have provided in improving the understanding of forests and forestry. The production of clear accessible forestry information that is transparent, consistent, and efficiently gathered has had a profound impact as a foundation of a shared language and common framework. The country reports have been used to communicate state and trend information and to inform debate using the evidence base from the reports.

The framework itself and the information available from reports have been used in a variety of ways: informing policy development, communicating forest information widely, design of forest monitoring programmes, improved forest data quality, focussing and design of research programmes, development of forest company monitoring systems, development of demonstration forests, education and training for SFM, development of certification frameworks for endorsement by PEFC, and for informing development of sustainability frameworks for other land uses. Longevity has built credibility.

International level:

The MP has had significant international impact in recent years with numerous outreach activities to other active C&I processes (ITTO, Forest Europe, COFAC) and the UNFAO. The focus of the international activities is on alignment of data collection requirements and schedules to improve efficiency and consistency of forest reporting. This has led to less onerous data collection, the data is available for multiple reporting requirements and is more accessible. MP with four other international reporting organisations created the Collaborative Forest Resources Questionnaire (CFRQ) – a tool to reuse data in multiple international reports and forming a core part of the Global Forest Resource Assessment (FRA) 2015.

With the emergence of the Sustainable Development Goals, the Paris Agreement, and ongoing involvement in the FRA the MP WG convened and hosted a major international workshop involving all major SFM groups to look at mobilising the full potential of forestry

C&I to support these global initiatives. The workshop identified six priority areas[2] for concrete action which will help increase the consistency of authoritative information about forests, focus efforts towards SFM, streamline reporting and increase collaboration. This will help position forests (which make up ~30% of the global land area) well in the SDG and Paris arenas where forests have never been more important in an increasingly resource constrained world and where they can make a massive contribution.

At UNFF 12 in May 2017 the MP reiterated its commitment to continually enhance and use C&I to support progress towards SFM, and to actively engage in global initiatives related to forests to improve reporting, collaborations among experts, and enhance progress towards SFM (link Yanji Declaration)

Local level

Most impact of the Process has been at the national level with fewer documented impacts at the local level though there are a number of good examples where local (forest) level implementation has had an impact. Examples include: forest company level C&I reporting to demonstrate SFM, use of the C&I framework for locally applied forest certification and audit systems, and use of the framework to look at forestry futures and undertake strategic planning exercises; the design of model forest programmes to demonstrate good practice. Over time local level application is increasing as the C&I set and framework's utility becomes better understood.

Individual country level impacts of the MP C&I

More details of changes in forestry in each of the member countries since 1995, the impact the MP C&I have had, plus a perspective for the future can be seen at each of the country links in the globe below (or in Appendix X). Just click on the country icon for a 2-4 page overview. Some impacts that were country specific included…… (add in some more examples from 2-4 pagers)

[2] Develop a core set of indicators for global forest reporting, report progress on global commitments, integrate C&I into inter-sectoral policy decision making, share knowledge and capacity building, analyse commonalities and differences among C&I processes and analyse C&I Process evolution and lessons learned.

(note figure needs updating)

CHALLENGES AND FUTURE ASPIRATIONS FOR THE MONTREAL PROCESS AND THE C&I FRAMEWORK

Challenges

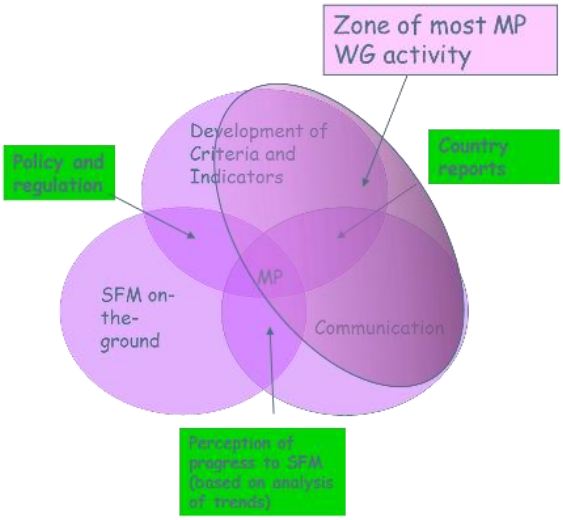
While we can report positive movements towards Sustainable Forest Management over the review period many challenges remain for temperate and boreal forests as a whole. A high level review of threats to ***boreal forests*** repeatedly identified climate change; industrial development (logging, mining, oil and gas and hydro power), acid rain and pollution; biodiversity loss; fire, insects and invasive species. Of these Climate Change may well be the largest threat (Gauthier et al 2015) and least easy to respond to. (*expand a little – permafrost melt, soil damage, methane emissions*)

Temperate forests are also under threat from climate change, especially extreme weather events. Other threats identified in the review included pressure from timber harvesting and for change of land use to agriculture; invasive species; fire; pollution and acid rain. These threats are expected to lead to habitat loss and fragmentation and adverse impacts on ecosystem function. The two top pressures are likely to be climate change and conversion of forests for agricultural production.

Through the country reports in the previous section and a survey of experts within member countries the challenges identified were similar to those above but with some more specific or country focussed challenges. These included: (add in)

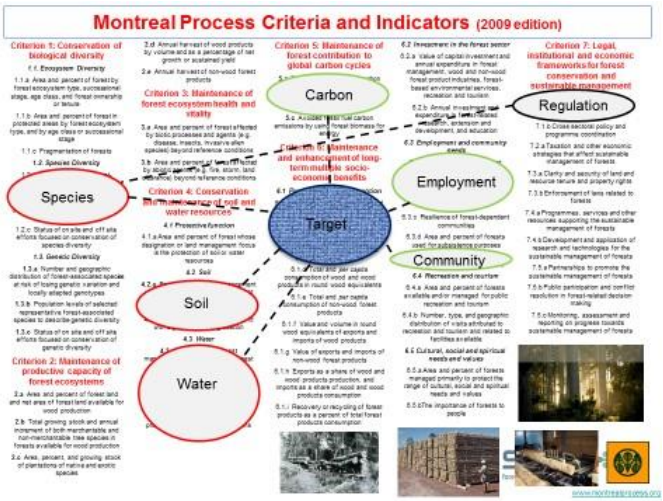
Future aspirations

Enhanced country level implementation: As communicated in the Yanji Declaration all countries are very strongly focussed on continuing to implement and use the C&I framework for reporting and communication on the state of forests and to make progress towards SFM. The figure below show areas of MP activity. Past focus has been very much on developing the C&I framework, embedding it in policy, and developing reporting mechanisms to communicate the state of country's forests. As noted emphasis is likely to more towards 'SFM on the ground' with increasing use being made of the valuable data collected as part of the series of five yearly country reports.



International collaborations. The Working Group will also continue to contribute to international C&I developments to support other global forestry and wider sustainabiltiy initiatives such as the United Nations Sustainable Development Goals and to work towards harmonising and streamlining reporting.

Thematic responses



With the emergence of major new challenges to temperate and boreal forests such as climate change the Montreal Process is very well placed with its C&I framework and network of knowledge to play a significant role in addressing these challenges. Sustainability is a complex issue and the C&I framework describes this complexity through the 7 criteria and 54 indicators. The suite of indicators offers the opportunity for complex systems (Drivers:Pressure:State:Impact:Response) analysis of the effect a new challenge such as climate change, or our response to that challenges may have on forests. This is predicated on the fact that the indicators cover the full spectrum of SFM, that they are all directly or

indirectly inter related (an ecosystem), and that making a change on one part of the system will affect all parts. Understanding these impacts will enable development of more resilient responses to challenges. If for instance we had a target to increase Forest production this may influence employment, forest carbon stocks and the community positively, but could have an adverse effect on the environment – soil, water and biodiversity (Figure X). These direct impacts could then have further indirect impacts or require responses such as modified legislation in response to those impacts. There are significant technical challenges associated with developing these approaches but the potential value is large.

Overall the Montreal Process will continue to champion SFM and the use of the C&I framework and continue to enhance and improve the approach to better enable communication of the state and trends within temperate and boreal forests and support responses to reduce pressures on the forests.

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APPENDIX 1. Country 2-4 page summary reports

ARGENTINA

CHANGES IN FORESTRY SINCE 1995

In Argentina there were changes in the legal framework and regulations on natural resources and the environment that promote sustainable forest management. Reforms of national legal frameworks are complemented by initiatives on criteria and indicators for forest management (the Montreal Process), international dialogue on forests, and international conventions and conferences on the environment and natural resources. Improvements in public administration and the adoption of assistance and monitoring mechanisms are beginning to show greater capacity to enforce forest management laws and regulations.

Technological advances, such as Remote Sensing, Geographic Information Systems (GIS) and Information Management Systems, have led to the development of forest inventories and the preparation of management plans in recent years.

Market demand for timber and wood products with a seal that guarantees sustainable production is another factor that contributed to the increase of the area under management. In recent years, the area in the region with forest certification has increased considerably.

In order to achieve sustainable forest management, it is essential that the various stakeholders, in an inclusive and participatory manner, promote the development and application of criteria and indicators of good management practices, forest certification and legal trade. With the purpose of strengthening the commercial chain of the forestry sector and promoting a responsible management of the forests, the Argentine State encourages the use of forest certification, such as FSC® (Forest Stewardship Council), and CerFoAr (Argentine System of Forest Certification).

CerFoAr is a voluntary initiative of the national forestry sector that establishes the requirements for forestry certification on native and cultivated forests, and for the traceability of the related industries located in the country. The technical standards of voluntary application that constitute the normative base of CerFoAr are the IRAM normative of the series 39.800 on sustainable forest management. CerFoAr adopts as well the PEFC international standards related to the chain of custody of the forestry products and rules upon the requirements of use of the logotype PEFC.

In August 2014, CerFoAr obtained the international endorsement of the system PEFC, and this international recognition will be valid until 2019 creating new opportunities of local development and negotiations on the international market for businesses certificated by the Argentine system.

Concern about the global effects of forest degradation, including loss of biodiversity and its impact on climate, led the country to review its policies and programs. Argentina participates actively in the Montreal Process working group since 1996, and has been able to promote the

sustainable management of their forests through the establishment and enforcement of criteria and indicators internationally approved on conservation and management of temperate and boreal forests. Such criteria and indicators contain special considerations for plantations regarding the following topics: planification, selection of species, use and management of the soil, pests and diseases, and conservation and restoration of the forest natural cover.

Currently, the country is doing the follow up and implementing actions for developing and obtaining information about forest plantations, with the purpose of evaluating the progress made upon the sustainable management of the forest. The current approach of sustainable production raises major requirements and challenges upon aspects of social interest and environmental services, such as conservation of biodiversity, regulation on the quality of water resources, sustenance of soil, among others.

Evidence indicates that forests contribute to mitigating the phenomenon of climate change, as well as possibly allowing human populations and ecosystems to be better prepared to face extreme weather events. Forest biomass is one of the raw materials with better projections on reducing greenhouse gas emissions. Measures designed to transform those residues in resources or supplies, promoting an integrated use of production, are indispensable in order to create a sector that contributes on mitigating climate change and helps reducing the energy deficit.

The national contribution to the mitigation of greenhouse gases will be realized with the conservation of the forests and the integrated management of the forests with the livestock.

THE CONTRIBUTION OF THE MONTRÉAL PROCESS C&I FRAMEWORK TO THE CHANGES ABOVE

Report from Argentina to the Montreal Process

First Report May 2002

Second Report August 2015

Criteria and Indicators (C&I) are an assessment and monitoring tool for progress towards Sustainable Forest Management and to define policy goals at different levels of implementation. The Global Forest Resources Assessment (FRA), driven by FAO and other international initiatives, is reduced in effort by C&I. The United Nations General Assembly, as well as the business community of countries, uses these criteria and indicators for certification and reporting on corporate social responsibility.

The periodic review of national reports on the different indicators allows the public and forest sector decision makers to identify the current status and trends of almost all aspects of forests. Reporting has involved experts from the forestry sector at the inter-agency level and

seeks to interest the forest industry and other stakeholders in the development of national C&I.

The work of the National Reports revealed gaps in the available data and showed that a large amount of useful information, available inside and outside the forest sector, was not included in the first national reports due to lack of participation. This information may be incorporated into future national reports. As we develop a National Network to enable data collection, monitoring and reporting on indicators more fully, the active participation of all stakeholders from different fields will be crucial. Indigenous and local communities, private forest owners, industrial and university sectors and others, could help provide the data required for evaluation. They could also make decisions about the exploitation of the forest area and participate and influence the determination of the regulation for the management of the forests.

FUTURE ASPIRATIONS FOR USE OF THE MONTREAL PROCESS C&I FRAMEWORK

The implementation of the C&I is now a priority for the Ministry of Agroindustry and the Ministry of Environment and Sustainable Development. Continuous monitoring will provide the information needed to assess national trends in forest conditions and make the necessary policy decisions to enable the country to achieve the sustainable management of forests. The work on C&I requires a constant adaptation to the new information, the experience, the greater capacity and the changing necessities of the society. The decision to implement C&I reflects the recognition of its value and usefulness in measuring the status of forests.

Part 4: Country Advances and Impacts
Australia[3]

Australia's Forests

Australia's forests are recognised and valued for their diverse ecosystems and unique biodiversity, for their cultural heritage, and for the provision of goods and services such as wood, carbon sequestration, soil and water protection, and aesthetic values and recreational opportunities. Australia's forests are subject to a range of pressures, including extreme weather, drought, climate change, invasive weeds, pests and diseases, changed fire regimes, urban development, mining, agricultural management practices such as grazing, and the legacy of previous land-management practices. The sustainable management and conservation of Australia's forests, whether on public or on private land, requires a sound understanding of their condition, use and management.

Implementation of Criteria and Indicators for Sustainable Forest Management

Since joining the Montréal Process, Australia has shifted from fragmented national forest reporting to reporting with a shared understanding of purpose, increased transparency and trust in the processes and increased capacity-building. Importantly, this has led to increased harmonisation between local, regional, national and international reporting for Australia. The primary reasons for this change are the adoption of the Montréal Process criteria and indicators, the creation of a national consultative forum, the integration of the framework into formal reporting processes, the alignment of Australia's forest certification scheme to the framework and the ongoing engagement with Montréal Process country members.

Following the development of the Montréal Process Criteria and Indicators in 1994, Australia adopted a modified set of Montréal Process Indicators in 1996, underpinned by Australia's national policy platform for the management of all forests – the 1992 National Forest Policy Statement (NFPS).

Australia's State of the Forests Reports

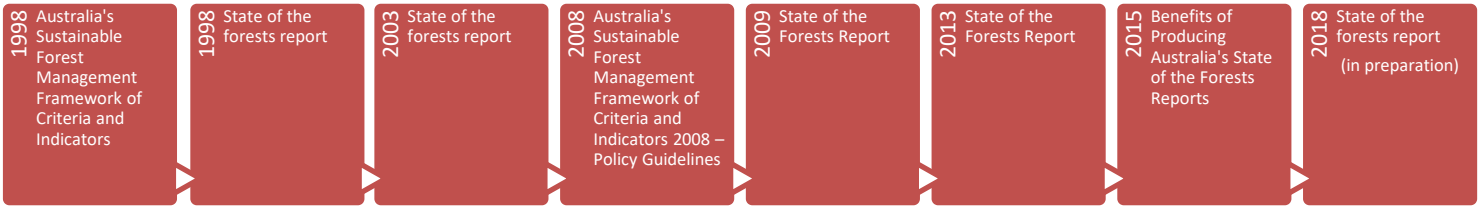
Australia's State of the Forests Report (SOFR) series is the mechanism by which the state of Australia's forests, and changes over time in a range of social, economic and environmental forest-related indicators, are reported to government and industry stakeholders and the broader community. The most recent SOFR was produced by Australia's Montreal Process

[3] Material from this section is largely drawn from Howell, C., Wilson A. and Butcher G. (2015) *Achievements in Australia from using a criteria and indicator framework for forest reporting*. XIV World Forestry Congress. FAO, and *Australia's State of the Forests Report 2013.*

Implementation Group and National Forest Inventory Steering Committee. The series is Australia's response to the Montréal Process requirement for five-yearly country reporting. The comprehensive and consistent nature of the SOFR series, and the wide range of users, leads to the following benefits:

- Informed policy and decision-making
- Informed industry development and improved capacity to inform decision-making, regionally, nationally and internationally
- Improved trade and market access from the credibility and confidence provided to communities about the sustainable management of Australia's forests
- Informed research and analyses by consultants and academics
- An informed community.

The reports also fulfil national legislative and policy obligations. They are an efficient compilation of data facilitated by the formal structure of the Montréal Process framework of criteria and indicators, which contribute to national, international, state and regional reporting, and are compatible with certification frameworks.



Forest Policy

Australia has a well-established framework for forest management, including policy and legislative instruments, and codes of forest practice. The area of forest in which forest management is certified has continued to increase over the reporting period.

National Forest Policy Statement

The National Forest Policy Statement (NFPS) specifies policies and objectives that underpin the development of forest C&I, including a requirement for a sound scientific basis for sustainable forest management and efficient resource use across all land uses and tenures. The NFPS requires a review of the state of Australia's forests every five years through publication of the Australia's State of the Forests Report (SOFR).

Regional Forest Agreements

Australia's Regional Forest Agreements (RFAs) are 20-year legally binding agreements between the Australian Government and four individual state governments, designed to provide certainty for forest-based industries, forest-dependent communities and conservation. The RFAs seek to balance and protect – for current and future generations – the full range of environmental, social and economic values provided by forests. An important element of each RFA is the requirement for a five-yearly performance review to assess progress against milestones, including the monitoring of sustainability indicators. These indicators, which are consistent with the Montréal Process framework of criteria and

indicators (C&I) adopted by Australia, provide a consistent and comprehensive approach for undertaking RFA reviews.

Implementation by states and territories

All Australian states and territories have developed comprehensive legislation that ensures the sustainable management and conservation of forests on public and privately owned land. Provisions cover planning and review, public participation, and the regulation of forest management activities in multiple-use public forests, public nature conservation reserves and, to a lesser extent, private and leasehold forests. A number of these instruments make explicit reference to the C&I framework. The structure of the Montréal C&I are maintained across evaluation and reporting on the effectiveness of the achievement of planned activities across the forest.

Forest Certification

The Australian Forestry Standard (AFS), developed in the late 1990s, is endorsed by the international forest certification scheme, the Program for the Endorsement of Forest Certification (PEFC). The PEFC bases its sustainability benchmark on broad consensus by society, expressed in globally respected international and intergovernmental processes and guidelines. The criteria and requirements in the AFS forest management standard are constructed around the Montréal Process criteria endorsed by the Australian Government, providing high-level linkages to the sustainability criteria adopted by Australia's states and territories. Eighty-five per cent of the 12.2 million hectares of plantations and public native forests managed for wood production in Australia is certified by AFS.

Achievements and Challenges

Australian national forest reporting has historically been challenging, largely due to the management responsibility for biologically and geographically diverse forests lying with eight states and territories with varying legislative, institutional and management arrangements.

Agreement on a common framework has curtailed debate about what information should be collected and why, instead focusing discussion on how the information can be most efficiently collected and best collated for reporting against each indicator. A rationale written for each of the Australian indicators has provided guidance on the wide range of social, ecological and economic data required for reporting progress towards sustainable forest management. Forest reporting processes have become more streamlined as familiarity with the C&I framework and its information requirements has developed.

The framework has worked because it has delivered a transparent, consistent and efficient approach to the collection and synthesis of forest-management-related information, and a familiar structure for forest-related reporting. This has also resulted in uniformity of data, and efficiencies in data collection and supply, with much of the data being able to be used

for a range of reporting purposes, including certification, audits, jurisdictional annual summary reports, and longer-term comprehensive reports.

Many of the outcomes resulting from the development and implementation of Australia's C&I framework can be linked to consistency in communication on the collective values that describe sustainable forest management.

The C&I framework has been used to give greater clarity to forest policy and management initiatives. It provides a basis for adaptive management and continual improvement, and underpins government commitments to improve openness, accountability and community engagement in forest management.

Scientific credibility in forest management in Australia has developed through the alignment between on-ground forest management practices undertaken by the states and territories, and national and international sustainable forest management frameworks.

Opportunities remain for further improvement of the implementation of criteria and indicators for forest reporting in Australia.

Canada's Achievements with the Montréal Process

Forests are essential to the well-being of Canada's environment, communities and economy. Because of their critical role, Canadians have a deep commitment to sustainably managing our forest resources. Criteria and indicators are a way of measuring and reporting on the state of our forests to ensure that they maintain their environmental, social and economic values and benefits over time. Along with an extensive framework of federal, provincial and territorial laws and regulations, criteria and indicators are a key strategy in ensuring the long-term sustainability of Canada's forests.

Changes in forestry since 1995

- In 1995, the Canadian Council of Forest Ministers adapted the Montréal Process criteria and indicators framework to reflect our national circumstances and began to use this set for national reporting on progress toward sustainable forest management in Canada.
- Canada's federal, provincial, and territorial and governments shifted to entrench sustainable management into their respective laws, regulations, policies, and guidelines for the management of publically owned forests.
- Canada, through the Canadian Council of Forest Ministers, published two comprehensive national criteria and indicators reports in 2000 and 2005.
- Concurrently and since the 1990s, *The State of Canada's Forests* report began gradually publishing sustainable forest management indicators, and has become Canada's main instrument for reporting on criteria and indicators. The 26th edition of this annual report was released in 2016 and provides a snapshot of the social, economic and environmental status of forests and forestry in Canada.
- In 1997, the Canadian Council of Forest Ministers agreed to the technical details of a new National Forest Inventory. The tool, which was officially launched in 2000, provides data that enable reporting on many of the indicators of sustainable forest management.
- Many provinces and territories adapted the national set of criteria and indicators and began publishing comprehensive reports about the state of provincial forests.
- Criteria and indicators of sustainable forest management were implemented at a local level within Canada's Model Forest Program. The Model Forest approach was first developed and implemented by the Government of Canada and promoted the idea of forming partnerships to provide a neutral forum where a range of values and interests could be represented including environmentalists, governments, indigenous peoples, communities and forest workers. The program has since broadened to an International Model Forest Network encompassing 57 model forests in six regional networks including Montréal Process Working Group member countries such as Argentina, Chile, China, Japan, and Russia.

- Since 1995, there has been a dramatic increase in the area of certified forest in Canada. As of December 2016, Canada had 168 million hectares of forests certified by a third party as being responsibly managed. That represents 37% of all certified forests worldwide, the largest area of third-party-certified forests in any country. Some of these certification systems, such as the Canadian Standards Association, have their roots in the Montréal Process set of criteria and indicators. These certification systems are a touchstone for Canada's forest industry and how we are viewed around the world.
- At an international scale, in 2011, Canada hosted a meeting, inviting the International Tropical Timber Organisation, the Montréal Process, Forests Europe and the Food and Agriculture Organization of the United Nations to try to streamline and harmonize global forest reporting. The result was the *Collaborative Forest Resources Questionnaire*, which collects national forest data once and makes it available for multiple reporting purposes.
- In 2016, the Government of Canada and the Food and Agriculture Organization of the United Nations hosted an international expert workshop on strengthening collaboration on criteria and indicators to promote and demonstrate sustainable forest management which continued the work started in 2011. This led to the *Ottawa Collaborative Action Plan* – six concrete outcomes to advance criteria and indicators that participants felt could be achieved within the next two to three years.

The contribution of the Montréal Process criteria and indicators framework to the changes above

The Montréal Process criteria and indicators framework has provided a shared foundation of values and methods for reporting on forest sustainability. At a sub-national scale, the flexibility and adaptability of the Montréal Process's criteria and indicators framework has meant that its core values and concepts also underpin the forest certification systems used in Canada and provincial reports. This gives Canada a strong set of shared values when reporting on its sustainability record.

The Montréal Process criteria and indicators framework has been an effective communications tool to support policy-making and an informed public. One of the strengths of criteria and indicators of sustainable forest management is its ability to effectively convey complicated, interconnected information to a broad set of audiences, including interested Canadians and policy makers. By providing clear, concise information on the social, economic and environmental aspects of forests in Canada, they support an informed electorate and good decision-making. This has influenced policy and decision-making for forest management in Canada. Additionally, it has influenced the on-going public discourse about forests and forestry in Canada by making factual information and analyses more available.

The Montréal Process criteria and indicators framework has guided improvements in data quality and availability in Canada. Reporting on national-scale criteria and indicators of sustainable forest management has highlighted data gaps and data quality issues in our national forest data. These in turn have influenced our data collection processes. Canada's National Forest Inventory was created in light of national data gaps and the data collected as part of Canada's National Forestry Database have been adjusted over time to better meet Canada's national-scale information needs. Furthermore, having a common set of criteria and indicators facilitated, through the North American Forest Commission, a cross-national North American Forest Database which has helped disseminate regional forest information.

The Montréal Process provides a collaborative platform to enhance Canada's ability to respond to multiple international reporting requirements and improves the utility of global forest data. Internationally, the Montréal Process has helped streamline and harmonize forest reporting by working with other reporting processes and the Food and Agriculture Organization of the United Nations to implement the *Collaborative Forest Resources Questionnaire*. This important questionnaire provides data and information used by the Food and Agriculture Organization of the United Nations' *Global Forest Resources Assessment* and ensures that reporting is done as efficiently as possible by harmonizing global reporting and making it easier for countries to participate. Data and information can be reported once, and used by multiple organizations.

Future aspirations for use of the Montréal Process criteria and indicators framework

Ensure national criteria and indicator reporting is done effectively in an increasingly digital environment. Given the global shift away from paper-based reports and statistics to webpages and databases that can be searched with a few keywords, Canada will be working to ensure our key forest sustainability information is easy to find, easy to use, and meets the needs of a variety of audiences.

Ensure Canada's national criteria and indicators can effectively address new challenges to forest sustainability. Consistently reporting sustainability data and information over time is a key aspect of implementing a system of criteria and indicators. However, circumstances change and new issues or public concerns can arise over time on issues that were not originally considered. Ensuring that Canada's national criteria and indicators address issues such as climate change, invasive species or bioenergy use will be important going forward to ensure the continued relevance of criteria and indicators.

Continue to work on streamlining and harmonizing global forest sustainability reporting. The global context for international reporting has been shifting quickly with the implementation of the United Nations' Sustainable Development Goals. The importance given to forests in achieving these goals is encouraging, but it also means that measuring and reporting on forests is critical. Canada is looking forward to working with the Montréal Process, other nations, other indicator processes, and a variety of organizations to help advance, streamline and harmonize global forest sustainability reporting. Working diligently

toward this goal will hopefully reduce national reporting burdens, while increasing the consistency, utility and quality of global forest data and information.

CHILE. C&I for Conservation and sustainable temperate and boreal forest management.

Changes since 1995

Since 1995 forest changes in Chile shown great progress in matters related to conservation and sustainable forest management. The changeover to a comprehensive understanding and regulation of forest related activities that our country is experimenting, takes in account progressively key dimensions for sustainability, as environment, best practices for conservation and sustainable forest management, and climate change. Also new institutions and policies were created to support sustainable forest management, management of forest resources and native forest legislation, existence of public - private working groups on topics such as small and medium forest enterprises, native forests, boards of protected areas of the National System, special tax regimes for forest management and harvesting. The National Forest Service (CONAF) strengthens work with indigenous people, and created an especial fund for natural forests research. Recently the "Forest Policy Council" considering the participation of forest sector stakeholders produced the Forest Policy 2015-2035.

Chilean forestry sector primary production value raised close to US$ 6,5 million, where 69.2% went to foreign markets and 30.8% remained in the domestic market. Since 2000, production grew by 125%, mainly drove by exports which grew by 154% while the production value for domestic market increased by 80% and production for local markets is lower than 2000. The "Non Wood Forest Products" (NWFP) economic, social and environmental dynamics have experienced significant and sustained growth over the past 15 years. Wood consumption for industrial use and for firewood representing an increase of 50.8%compared to consumption in 2000. Total amount exported, growth between 2000 and 2013 was 142%,

Employment in the forestry sector shows a slight increase between 2000 and 2013 in all activities. The exception is the secondary industry, as a result of the lower export levels presented by the wooden remanufacturing. Rural communities and especially indigenous people associated to native forests situation in southern Chile has developed positively over the past decade. This is mainly due to the increase in the valuation of the multiple uses and services that forests provide for communities welfare beyond income. This is the case of the valuation of symbolic, religious, medicinal, and in general, the environmental benefits provided by forests such as increases in the amount and quality of water and biodiversity. There is also a greater economic value and demand of non-wood products that are extracted and marketed by communities for their livelihood and subsistence. Interest in both recreation and tourism in public protected areas of the National System has significantly increased. Visitations of public protected areas register a yearly average growth rate of 7% for the last 10 years period.

Montréal Process C&I framework contribution

The major contribution of the Montréal Process C&I framework is helping to improve understanding of forest and their role in sustainability. C&I help to expand economic vision of forest to other issues as social benefits and needs, or protective and ecological functions. International linkage through MP is a core element for forest policy in intending to promote regulations improvements, new programs and activities considering sustainable forest development. The 7 Criteria are a key tool to identify clearly in the forest management context new or emerging issues as relates with indigenous people, research and development, innovation and small and medium landowners trade and other social and economic challenges.

The National Forestry Service of Chile (CONAF) is leading through the new Forest Policies Council the participation of government agencies, universities, NGOs, private companies and social organizations to think the development and drive actions for the forest sector for the period 2015-2035. This reflects the country's challenge and the opportunity to progress and improve sustainable forest management using as a conceptual basis the criteria and indicators of the Montreal Process.

Future aspirations for use of the Montreal Process C&I framework in Chile

MP C&I also allowed administration and scientists to identified lack ok information in many SFM related issues. The challenge is to increase efforts to monitor new indicators and assessing their changes in time improving the current country effort to cover other than traditional aspect of forests that has been monitored. Technological innovations and access to new technologies will increasingly facilitate more and better data collection, to widest characterization of forests and ecosystems and its biodiversity. Indicator and best knowledge on forest and ecosystems are important to promote awareness challenges on conservation of native forests associated species. Also to monitor political decisions as the implementation of new public protected areas, to accomplish the goals of the Convention on Biological Diversity and prepare information to answer the Sustainable Development Goals requirements.

Forest land uses have changed over time following different driver as products price changes, new products and technology, changes in perception about forests functions. Also threats are always presents as the forest fires, soil erosion, volcanic activity and other biological and no biological agents that can disturb and engender degradation of forest lands. In this context politics decision related with conservation and sustainable forest managements need gradually new, better and more specific data and information, especially to face in global change context major challenges for the country's forests identified in the "Strategy on Climate Change and Vegetation Resources" leaded by CONAF.

MP OVERVIEW REPORT COUNTRY SECTION DURING 1995-2015

(China)

Changes in forest since 1995

Constantly increased amount of forest resources and forest-related production. According to the results of latest 4 times' national forest inventories, forest resources have steadily continued double increase of forest area and forest growing stock volume since 1990s. Forest coverage rises from 16.55% to 21.63%, up to 5.08 percentage points. Forest area was increased by 49 million ha from 159 million ha to 208 million ha, and forest growing stock volume by 3.87 billion m^3 from 11.267 billion m^3 to 15.137 billion m^3. Forest quality also improves continuously, the forest growing stock volume per hectare was enhanced by 7.65 m^3, reaching 89.79 m^3; and the annual increment per hectare by 0.27 m^3, reaching 4.23 m^3. Percentage of coniferous, broadleaved and coniferous-broadleaved mixed forest changes from 50:48:2 to 38:6:56, stand structure has been optimized. China ranks first in terms of the total forest area increase and planted area in the world.

China's total carbon storage in forest vegetation was 7.811 PgC during 2004-2008, and reached 8.427 PgC during 2009-2013. In the five-year interval, the annual increment of forest vegetation carbon storage was about 123 TgC.

Total forest-related product volume has been increased by 15.7 times since 2000 and reached 5.94 trillion RMB in 2015. Non-timber forest-related product volume including cultivation, collection and processing totalled 1.94 trillion RMB in 2015. Forest eco-tourism & leisure developed rapidly, and the product volume ran up to 0.68 trillion RMB in 2015.

Steadily strengthened forest resources management and supervision. China applies strict regulations on managing and monitoring of forest resources to ensure constant and stable increases of forest resources, through implementation of classified management and zoning strategy. Stemmed by the National Forest Law, the system of annual allowed cutting (AAC) was established to put into enforcement in 1987, and update along with 5-years developing plan. SFA has further promoted AAC reform to strengthen forest harvest management aiming at strict control of natural forest and state-owned forest consumption, and motivate planted forest and collective forest development. In 2010, the State Council issued *Planning Outline of National Forest Land Protection and Utilization (2010- 2020)*. System of annual allowed forest land use was established to intensify forest land protection for safeguarding forest cultivation space and ecological safety. Forest inventories at different levels, supervision examination of forest land use and forest harvest, and nationwide forestland mapping have been formed and perfected to reinforce the abilities of detecting forest resources and its dynamics.

Forest fires prevention and insect pest control have been largely strengthened. Annual burned forest area has dropped to 33,077 ha, and harmful rate of main forestry insect & pest has controlled under 4.5‰ in 2015.

China Forest Certification system (CFCS) was established after 2001 and mutually accredited with PEFC in 2014, and national certification specifications of forest management, custody chain and ancillary facilities have successively been released. Forest certification is strongly pushed forward to manage forest sustainably in China.

A series of policies & measures are carried out to speed up forestry. The central government document on *the Decision of Speeding up Forestry Developmen*t was issued in 2003 to guide national forestry & ecological construction till 2050. The central government document on *the Opinion of Overall promoting Collective Forest Ownership Reform* was published in 2008 to clarify proprietary right, contract right, management right and beneficial right of collective forest, boost collective forest cultivation, and raise management profit. Several national key programmes of forestry have been initiated and put into practice in succession since late 1990s, which largely accelerate forest resources growth and ecological restoration with annual average afforested (including planting and aerial seeding) area of more than 4.5 million ha. The comprehensive voluntary tree-planting together with department greening, passageway greening and urban & rural greening effectively drive land greening and forest cover.

Aiming at efficient protection of forest, national funds of forest ecological benefit compensation were set up covering all national-level ecological forest in 2004, and provincial funds were progressively formed covering local ecological forest. Wide-bound construction of nature reserves in forestry sector, forest parks and national forest cities are persistently quickening forest biodiversity protection, afforestation and ecological improvement, of which respectively totalled 2228, 3234 and 96 at the end of 2015.

Bilateral and multilateral collaboration continuously promote SFM. International cooperation on forestry developed rapidly. International organizations such as FAO、GEF、ITTO and so on support Chinese SFM and forest certification through technical assistance and projects cooperation. SFM becomes the important item of bilateral forestry cooperation agreements. Management ideas such as ecosystem management, healthy management, near-nature management and target tree management are introduced by means of typical demonstration and technical innovation of forest management. NGOs are also playing positive role in management technical progress and forest quality improvement.

The contribution of the Montréal Process criteria and indicators framework to the changes above

The Montréal Process C&I has framed national SFM reporting. China has finished the national reports on SFM three times respectively in 1998, 2013 and 2016, using MP C&I as reporting framework. National reports have become the main windows of comprehensive

understanding major progress in SFM and national status of forest. MP C&I has significantly improved data availability both at the national and regional levels.

The Montréal Process C&I framework has provided a foundation for developing SFM C&I at national and local levels. The industry specification of national C&I of SFM was issued as the guideline for forest management in the whole country in 2000. The five regional C&Is covering Northeast forest area, Northwest area, Southeast forestry area, tropical and subtropical area were separately released considering the various forest types, growing stage and climate conditions in 2007.

The Montréal Process C&I framework has greatly pushed forward the achievements of SFM. MP C&I disseminates the concept and idea of SFM to all of stakeholders including forestry agencies, technician and social public. Sustainable approaches are widely adopted to manage forest meeting the needs from current generation as well as the next and future generations, combining multiple functions. The legal system in China's forestry sector has been further advanced. A series of forestry development plans, such as *13th Five-Year Plan for Forestry Development*, *Planning Outline of Under-forestry Economic Development in Collectively Owned Forest Land* (2014-2020), *Preventing and Controlling Plan on Harmful Organisms* (2011-2020) set up long-term direction of forestry development in China.

Future aspirations for use of the Montréal Process criteria and indicators framework

The Montréal Process C&I will be the derivers of SFM in the future. State Forestry Administration has launched a series of pilot sites in varies of forest management units to improve forest management level in line with the C&I of MP since 2004. Great progresses have been achieved through development and implement C&I at local level, typical technical models and experiences are widely expanded for local forestry bureau, forest farms and forest farmers. C&I will be the guideline of the national report to meet the different objectives such as forest biodiversity, climate change, UN forestry strategy plan as well as the United Nations forest instrument.

The Montréal Process C&I will be the theoretical framework to instruct the national ecological protection and restoration. China forestry persists in the developing strategy centered on ecological protection and restoration to safeguard national ecological security of forest. Important policies and actions in terms of forest resources preservation, large-scale afforestation & greening and precise promotion of stands quality are put into practice to continuously increase the quantity, quality and functions of forest, marching sustainable development, which closely link with forest ecological, economic, social and cultural functions.

In Japan, forests cover two thirds of the national land area and contribute to providing security for people's living conditions and developing national economy through the fulfillment of their multiple functions such as disaster risk reduction, headwater conservation, timber and non-wood forest products supply, biodiversity conservation as well as climate change mitigation and adaptation.

This report highlights some major events, albeit not exhaustive, that have made great impacts on Japan's forestry sector in the past 20 years in relation to the development of the Montréal Process Criteria and Indicators framework.

(a) Since 1999 **nationwide Forest Resources Monitoring Program**, currently called Forest Ecosystem Diversity Basic Survey Program, has been implemented to collect detailed data on the state of forest, based on about 15.7 thousand fixed plots all over Japan.

(b) In 2001, **Forest and Forestry Basic Act** was enacted as a comprehensive revision of the previous act of 1964, shifting policy focus from wood production to multiple functions of forests.

(c) Forest certification has been conducted by the two international schemes, FSC and PEFC, with the latter applied only to CoC, and one domestic scheme, SGEC. The forest area certified accounts for 7 percent of the total forest area as of 2015. In 2016, the PEFC's endorsement was given to SGEC.

(d) The **growing stock** of planted forests increased from 1.89 billion m^3 in 1995 to 3.04 billion m^3 in 2012 while the total growing stock went up from 3.48 billion m3 to 4.90 billion m3 during the same period.

(e) On the other hand, the **wood demand** in Japan dropped to 75.3 million m^3 in 2015, about 66 % of the level in 1995, which is mainly attributed to changing economic conditions and a decline in housing starts along with the total population peaking out in 2010.

(f) **Plywood production from domestic Sugi** logs has been made possible since the early 2000s, bringing about a major breakthrough in expanding the utilization of low-grade wood and facilitating thinning practices, which is an indispensable management process to maintain the quality of planted forests.

(g) Act for **promotion of use of wood in public buildings** has been in force since 2010, which has triggered several innovations on the use of wood such as cross laminated timber (CLT) and wooden fire-proof materials as well as increasing private investment for wooden facilities in urban areas.

(h) In addition to pine beetles, increasing population of **deer** has emerged as the major threat to the forest health causing serious damage by eating seedlings, saplings and other undergrowth vegetation leading to soil erosion.

(i) With increasing frequency of extreme weather events such as torrential rainfall, the risk on **rain-induced mountain disasters** such as landslides, debris flows, sediment discharges and hillside collapse remains high or even higher in recent years.

The contribution of the Montreal Process Criteria and Indicators to the development of forest policy and programs include the followings.

(a) The national reporting based on the set of criteria and indictors as well as annually published White Paper on Forests and Forestry have helped the public deepen their understanding on what sustainable forest management is meant.

(b) Forest resources monitoring program started in 1999 was designed primarily to meet the data requirements of the Montréal Process C&I.

(c) The Forest and Forestry Basic Act enacted in 2001 set the milestone to pursue the fulfilment of multiple functions covering all the seven Montreal Process criteria as the overarching policy objective relating to forest sector.

(d) SGEC, a domestic forest certification scheme led by the private sector, has based its criteria on those of the Montréal Process.

(e) Through the FAO trust fund, the project on improved information to promote forest management for the protection of soil and water was completed in 2016, which produced a policy guideline to assess the protective function of forests in a scientific and cost-effective manner based on the methodology used in the forest resources monitoring program and helped some developing countries concerned improve the national forest inventory to that end.

Sustainable Forest Management in Korea

Since the concept of sustainable forest management (SFM) was introduced in the 1992, SFM has been one of the most important objectives of forest policy in Korea. A lot of political and academic efforts have been invested in implementing SFM in Korea. The primary objective of the '4th National Forest Plan' (1998-2007) was to build a foundation for SFM in Korea. Throughout the 4th National Forest Plan, legal and institutional frameworks for SFM were established and a set of criteria and indicators suitable for Korea was developed. The '5th National Forest Plan' (2008-2017), which is currently underway, aimed to achieve a 'Sustainable Green Welfare Nation' through the effective implementation of SFM in Korea. A Forest Sustainability Index (FSI) was developed to evaluate the statues of SFM and to promote implementation of SFM at the local level.

Development of SFM Criteria & Indicators in Korea

In 1994, National Institute of Forest Science (NIFOS) suggested a need to develop criteria and indicators (C&I) for SFM. Since then, many academic efforts were made to identify the C&I suitable for Korea. As member countries might have a wide range of natural, social, and technical conditions, the Montreal Process assumed that there would be differences among the countries in the application of the original set of C&I. In this regard, the NIFOS conducted a number of practical studies to examine the applicability of Montreal Process C&I. As a result, the NIFOS finally suggested 7 criteria and 28 indicators in 2005

National Reports on SFM in Korea

As one of MP member countries, Korea has agreed to monitor and report the status and trends of the SFM C&I. In 2004, a pilot report was prepared by using the original set of the MP C&I. However, it was hard to monitor and report the all MP C&I because of limited data availability. In 2009, the 1st 'National Report on Sustainable Forest Management in Korea 2009' was published by using the 7 criteria and 28 indicators that were suggested in 2005. The report present a wide range of data and information describing the state of forests and national progress toward the SFM in Korea. In 2014, the 2nd 'National Report on Sustainable Forest Management in Korea 2014' was published with a revised set of C&I. In the revised set of C&I, 8 new indicators were adopted after reexamination of the original set of MP C&I and their applicability.

Development of Forest Sustainability Index

Since the 7 criteria and 28 indicators were developed in 2005, public awareness and demands for implementation of SFM have been increased in Korea. However it was not an easy to describe the overall status or condition of SFM at the local and national level, because the C&I address an extensive range of elements related to forest management. Thus, it was necessary to develop an index that could clearly inform the trends and conditions of SFM in Korea.

In 2006, the “Act on Promotion and Management of Forest Resources” (Act No. 8852) was enacted in Korea. The Article 7 of the Act mandates the development and implementation of a Forest Sustainability Index (FSI) to indicate the nationwide status of sustainable forest management. The FSI is a quantitative score indicating the overall forest sustainability. It takes into consideration the economic, social, and environmental aspects of forest management at the local and national levels.

Current Challenges for SFM in Korea

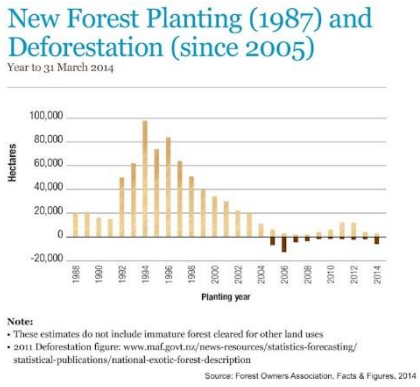
Economic sustainability is a challenging issue in Korea. As rehabilitated in 1970s and 1980s by the national reforestation project, most of Korean forests are not mature to provide enough timbers required for forest industries. Forest industries still depends on imported timbers and forest owners struggle with low revenue from forest management. In recent, many efforts are ongoing to enhance economic sustainability of forest management through increment of revenues from non-timber products or forest-ecosystem services such as forest recreation or carbon sequestration.

The other big issue in Korea is forest insect outbreaks. As spotted in 1988, pine wilt disease caused by pine wood nematode (*Bursaphelenchus xylophilus*) has become major threat to pine trees in Korea. Tremendous efforts were made to combat the threat by pine wood nematodes and the outbreak areas have decreased since 2006. Recently, the pine wood nematodes are spreading again throughout the Korean peninsula. Korea Forest Service and NIFOS try to develop measures preventing the outbreak of the pine wood nematode.

MEXICO

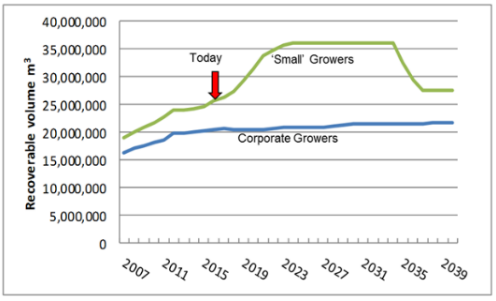
Changes in Forests and Forestry in New Zealand since 1995

Large changes to ownership of New Zealand's forests occurred in the later 1980's with the privatisation of the planted forests and the transfer of all publicly owned natural forests into the conservation estate. The period from 1995 on () has seen a number of trends and issues. The conservation estate has remained stable in terms of area but the planted forest area saw a rapid expansion in the 1990s with a large investment boom. However this trend reversed and some area was lost as land was converted to more profitable dairy enterprise in the late 2000s.



The NZ government was involved in the Montreal Process and other international initiatives (United Nation Forum on Forests, Convention on Biological Diversity) from the beginning (late 1980s, early 1990s) and the story of the early days of NZ's international SFM activities is well summarized by Wijewardana (2016).

NZ forest companies became involved in forest certification in the late 1990s and the first company was certified in 1998. Today 67% of the planted forests are certified under FSC and in 2016 PEFC also became available in NZ. The harvest from planted forests has been increasing since the early 2000s and will peak at an annual rate of about 35 million m^3 in the 2020s. Forest Products are NZ's third ranked exports sector, contributing ~3% to NZs GDP.



Issues facing NZ's forests today include biodiversity loss from the natural forests, the impacts of climate change on all forests, and concerns about the environmental impacts of clearfell harvesting systems in the exotic planted forests. With the increasing harvesting rate, availability of skilled workers, machinery and transport infrastructure is also of concern.

New (2014) legislation to protect freshwater resources - the National Policy Statement for Freshwater Management (NPS-FM) and a new National Environmental Standard for Plantation Forests (NES-PF) (2018) will complement NZ's foundation environmental legislation the Resource Management Act (RMA) (1991) and ensure continued progress towards Sustainable Management of New Zealand's forests

The contribution of the Montréal Process C&I framework

National state of forest reporting. The main use of the framework in New Zealand has been in reporting on New Zealand's progress towards Sustainable Forest Management. This has been done through 3 'country reports' in 2003, 2008, and 2015 (MAF, 2002; MAF, 2009; MPI, 2015). This has led to a wider understanding of NZ forestry internationally. Since the first report when data was available for only approximately one third of indicators coverage has expanded greatly and in the most recent report NZ was able to report to some degree on all indicators. Having completed three rounds of national reporting it is becoming possible to evaluate progress towards SFM and trends in indicator values. The national picture (Figure X) shows improving (48%) or stable (41%) trends in 89% of the 54 indicators, with only 9% showing a declining trend between 2003 and 2014.

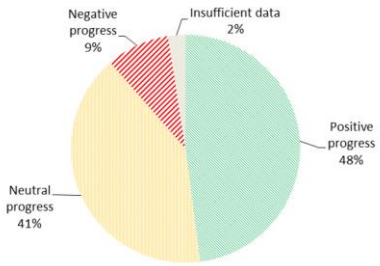


Figure 1. Combined average percentage of indicators deemed to be showing either positive, negative or neutral progress towards sustainability in the 2008 and 2014 New Zealand Montreal Process Country Reports. For several indicators in the 2008 report there was insufficient data to make a comparison. Note the 2003 Country Report did not include indicator progress assessments so has been excluded.

However, reporting is not the only use of the framework. Elements of the Montréal Process framework have been used in a variety of contexts in New Zealand over the past 20 years, including (but not limited to) the following:

Forest Sector C&I adoption. Three of the larger commercial forestry companies have incorporated MP C&I into their forest monitoring and management plans in both natural and planted forests. Timberlands West Coast Ltd. (TWCL) incorporated MP C&I in the development of its beech management plan in the late 1990s to monitor changes to biodiversity and other ecological characteristics over time as a result of proposed Nothofagus harvesting. Nelson Forests and Timberlands use the C&I as the basis for their environmental monitoring and to provide evidence in support the FSC certification status of their planted forests.

The NZ Forest Owners Association who represents all planted forest owners in New Zealand (www.nzfoa.org) have used the C&I framework to structure a planted forests information portal (http://www.nzplantedforests.org/) to make what was often diverse, disparate and fragmented information readily accessible in one location. The C&I have also been used to inform the design of a national research programme for sustainable management of planted forests and to structure the New Zealand Journal of Forestry Science to cover all 7 criteria.

The New Zealand sustainable forest management standard NZS AS 4708:2014 was adapted from the Australian Forestry Standard (AS 4708:2013), which was developed within the framework of the MP C&I. The NZ standard has been subsequently endorsed by the "Programme for the Endorsement of Forest Certification" (PEFC) and has provided a second option (with FSC) for NZ forestry to demonstrate its sustainability credentials to markets and consumers.

Contribution to primary sector and rural development initiatives

In 2014 Scion, working with several researchers from an indigenous Maori tribe developed a modelling tool to quantify the impact of climate change on sustainable livelihood capitals of the community within the Waiapu Catchment on the East Coast of New Zealand (Warmenhoven *et al* 2014). The Montréal Process C&I formed the basis of the 25 indicators used to define the status of each capital included in the model.

Montréal Process C&I were reviewed in 2013 along with a range of other local and international monitoring initiatives to inform the design of the New Zealand Sustainability Dashboard (NZSD) an environmental monitoring framework for primary industries (MacLeod and Moller 2013).

Future aspirations for use of the Montreal Process C&I framework

There is increasing interest and demand for data and information on New Zealand's forests. As NZ grapples with the challenges of climate change, global markets, and other pressures the comprehensive reporting framework that the MP C&I offers will become even more important.

There is growing interest in incorporating an indigenous people's perspective in the C&I approach and there are some new studies looking at how we might include indigenous knowledge frameworks within the MP C&I framework specifically for use in NZ.

With the build-up of forest information from the three national reports and from various other national forest reporting initiatives there is an increasing opportunity to evaluate trends in data and gain a robust view of the state of the forests and how they have arrived at this state. Much more value could be gained from analysis of this information and use of it for analysis of future forest strategies – for example responses to climate change.

Acknowledgement: This summary of achievements draws strongly upon a past summary paper: Payn T.W., Barnard, T.D., Cox, S., Millard, L., Novis, J., Reid, A. 2015. Sustainable Forest Management Developments in New Zealand seen through the lens of the Montréal Process Criteria and Indicators (C&I) framework. XIV World Forestry Congress, Durban, South Africa.
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RUSSIAN FEDERATION

Conservation of forests is the guarantee of supplying community with forest products and jobs, guarantee of biodiversity conservation, mitigation of climate change, protection soil and water resources, and improving air quality. The maintenance of sustainable management of 1/5 of all Earth forests under jurisdiction of Federal Forestry Agency is a global scale task.

The Federal Forestry Agency follows in its work the principles of organic unity of ecological, historical and cultural, social and economical priorities in forest land management. This means that Russian forests are considered not only as base for wood industry, but also as the centuries-long living environment of the people of Russia. Russian forests provide environmental security for the population of Russia and neighbouring countries.

Russia has an active stand in the development of new approaches to the sustainable management of forests resources, based on national and international experiences. That is the reason for the Montreal Process criteria and indicators of sustainable management of boreal and temperate forests have great importance. Russia was one of the first Montreal Process members (joined in 1993). Russia presented three National Reports prepared according to the MP set criteria and indicators (2003-2008-2013).

Russia is the biggest forest country in the world. The total area of the Russian Federation land covered with forest, as of 01.01.2016, is 1 183,2 million ha, and among them about 8 million km2 is area covered with forest vegetation (forested area), which is 0.8 ha of forest per capita. 25% of the world's timber stock is located in Russia. The Russian forests play a key role in the environment and stabilization of the negative changes in climate. The boreal forests of Russia contain about 60% of the world boreal forests and 95% of Russian forests. Russia has a significant experience in forest resources management and has become a recognized world leader in the cultivation and preservation of forests, as well as in the silvicultural research, and development of Forestry.

- **Changes in Forestry since 1995**

Currently the main information on forests and forest management in the Russian Federation is collected within the State Forest Register (SFR) and the system of forest monitoring/ In Russia the Forest Monitoring System (FMS) includes all operating types of forest monitoring of: forest pathology condition;• early warning system of forest fire;• forest fire danger;• detection and monitoring of active fires and estimating burned areas;• forests use within the state inventory of forests, carried out by remote monitoring• methods; radiation monitoring of the forests.• Besides the task collecting data on separate types of forest monitoring, FMS provides forecasting of state and dynamics of various indicators of forest fund land (i.e. all forest and non-forest land serving management of the forest e.g. forest roads, rides, etc.) for the purpose of improvement of state administration in the field of use, protection and reproduction of forests and preservation of their ecological functions. On the

basis of the information collected, the Federal State Unitary Enterprise (Roslesinforg) annually publishes the electronic report “The Basic Parameters of Silvicultural Activity” (restricted: for official use only). The actual consumers of SFR and FMS information are the decision makers in the field of forest management and this information allows detailed analysis for the purpose of the further organization of use of the state forestry fund lands and other forested lands.

Since the adoption of the Forest Code (2006) in Russia, very serious changes have been made to the Forest Code of the Russian Federation. 37 legislative acts have been adopted to amend the Forest Code. The last edition of the Forestry Code was adopted on 01.07.2017 N 143-FZ. In preparing amendments to the Forest Code, the experience of the MP Working group were taken into account.

Federal Law No. 415-FZ of December 28, 2013, introduced several new chapters to the Forest Code of the Russian Federation, which defined the legislative foundations for a unified state automated information system for timber accounting and transactions with it: Chapter 2.1. (Accounting and labeling of wood), chapter 2.2. (Transportation of wood and accounting of transactions with it), chapter 2.3. (Unified State Automated Information System for Accounting for Wood and Transactions with It).

Decree of the Government of the Russian Federation No. 318 of April 15, 2014 approved the State Program of the Russian Federation "Forestry Development" for 2013-2020 "

Directive of the Government of the Russian Federation No. 1724-r of September 26, 2013 approved the Fundamentals of State Policy in the Field of Use, Protection and Reproduction of Forests in the Russian Federation for the period until 2030.

- **The contribution of the Montréal Process C&I framework to the Changes above**

Russia historically used own principle to create the system of national indicators. In the Russian Federation national principles and the approaches developed within the Montreal processes on SFM criteria and indicators were used for develop the national “Criteria of assessing the efficiency of activity of public authorities of constituent entities of the Russian Federation for exercise of delegated powers in the field of forest relations “. On the base C&I at the federal level the Forestry Agency develops the “Annual Report of Condition and Use of Forests of the Russian Federation” (http://www.rosleshoz.gov.ru/docs/other/77).

Also the Montreal processes on SFM criteria and indicators were used by the Russian office of the World Bank and WWF Russia for the development of diagnostics of forest management quality in the forest sector. The World Bank developed the PROFOR/Bank’s approach to create a governance diagnostics tool and indicators measuring governance in a broad sense3 . It has field implementation results in Russia, which are high relevant to the ongoing work of the Montréal Process on developing criteria and indicators for SFM, in particular Criterion 7.

WWF Russia has developed a technique for rating public administration of forests in the

constituent entities of the Russian Federation. The development of the criteria for this rating relied on Russian and international C&I for SFM. The Russian and international approaches were also used during the creation of system of Model Forests of Russia - in particular, Pskov Model Forest and Priluzye's Model Forest.

- **Future aspirations for use of the Montreal Process C&I framework**

Positive trend of the last years is the harmonization of the national Russian system of C&I with the international systems of SFM assessment. This is promoted by joint work on a conceptual framework within the Montréal Process, FOREST EUROPE and FAO. Harmonization of SFM reporting was discussed at the MP meetings.

URUGUAY

Montréal Process 2 Page Country Achievement Report—USA

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Changes in Forests and Forestry in the U.S. Since 1995

Forest conditions

Following steep declines in the 1800s and increases in the first half of the 1900s, the area of forests in the U.S. has remained stable to slightly increasing over the last 50 years. The total area of U.S. forests now stands at approximately 320 million hectares. These long-term changes in forest area have resulted from changing patterns of land-use and land productivity, particularly the regeneration of forests following the clearing and latter abandonment of agricultural lands as well as the establishment of highly productive planted forests in the southeastern states and elsewhere. As forests in many parts of the U.S. mature, the total volume of wood in them has increased, nearly doubling since 1953. These trends (stable forest area and increasing stocking) are still very much in evidence today, and they provide a strong indication of forest sustainability, at least in specific regard to these simple measures.

Although forest area is stable and stocking volumes increasing, forest health has emerged as a major threat to sustainability in the United States. Disturbance processes are increasing in terms of both severity and extent, including sharp increases in pest-induced tree mortality and the size and severity of forest fires. The loss or fragmentation of intact forest ecosystems is occurring in more populous areas as a result of human development. Both forest disturbance and development are driving a loss of forest biodiversity. And, in the socioeconomic realm, forest dependent people and communities suffer from long-term declines in forest employment punctuated by sharp economic fluctuations. These changes are at least partially due to exogenous forces (including climate change and economic globalization) that are beyond the direct control of forest policy and management, and they are cause for considerable concern (USDA Forest Service, 2011).

Policy developments

In the 1990s, forest policy and management decisions in the United States were the focus of considerable debate, particularly in the context of public lands management. Much of the conflict was between forest preservation interests on the one hand, and forest utilization interests on the other. While these conflicts continue to be expressed in policy discussions, the growing abundance of wood fiber available from private lands and the increasingly urgent need to address forest health and disturbance issues has partially shifted debate to a search for more efficient management solutions and away from bipolar opposition between preservation and development interests. Major policy changes in the last 15 years include

the Healthy Forests Restoration Act of 2003, which aims to accelerate forest health treatments on fire-prone forest lands, and the 2012 Planning Rule released by the U.S. Forest Service, which provides a more flexible and collaborative process for updating forest plans for the forests in the National Forest System.

As an indication of changing conditions and growing challenges, the U.S. Forests Service now spends almost half of its budget on wildland fire management, and a significant proportion of its forest management activities are focused on restoring forest health on fire-prone or otherwise compromised forest lands. Moreover, timber harvest from National Forest System lands has fallen almost 80 percent from its peak in 1987, marking a shift in National Forest System policy away from timber production and to the provision of a broader set of forest outputs associated with healthy forests. Timber production on private forest lands, particularly the highly productive forests in the southeastern United States, has largely compensated for the decline in public harvests, indicating the dynamic nature of American forests and forest products markets. These shifts, however, have also resulted in considerable disruptions of rural incomes, particularly in the western states where public forests predominate.

The contribution of the Montréal Process C&I framework

The Montréal Process C&I framework influences forest policy and management in the United States primarily through the National Report on Sustainable Forests, the last edition of which was published in 2011. There are no direct linkages between the Montréal Process C&I and specific policy actions. Rather, the C&I and related reporting mechanisms are used to inform debate under the dictum that better data leads to better discussions and thereby better decisions. The U.S. experience shows that the C&I framework is an excellent way to deliver information to policymakers and the public in a clear and accessible fashion. We achieve this through hard copy publication of the National Report and the web-based delivery of the individual indicator reports (see www.fs.fed.us/research/sustain/). More recently, we have expanded the use of the C&I framework to the examination of agricultural and urban forest resources (USDA Forest Service, 2016) and tropical forests on U.S. territories and affiliated jurisdictions in the Caribbean and Pacific (USDA Forest Service, 2017 [in press]).

Future aspirations for use of the Montreal Process C&I framework

In addition to producing the next edition of the National Report on Sustainable Forests in the coming year, we plan to further leverage the information organization and delivery strengths of the Montréal Process C&I framework through a more thorough integration of our reporting activities with web-based delivery systems based on further development of the sustainability program website. This will allow us to provide more timely updates of key indicators (for example on an annual or biannual basis) and explore new ways of communicating summary assessments and topical interpretations of the indicators.

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