7th Ministerial Conference
Madrid 20-21 October 2015

Annex 1 to Madrid Ministerial Declaration:

UPDATED PAN-EUROPEAN INDICATORS FOR SUSTAINABLE FOREST MANAGEMENT

as adopted by the
FOREST EUROPE Expert Level Meeting
30 June – 2 July 2015, Madrid, Spain

Introduction

This document contains the updated set of pan-European indicators for sustainable forest management (SFM) both quantitative and qualitative.

Since the first set of pan-European indicators for sustainable forest management in 1998 and its improvement in 2003, experience has shown that criteria and indicators are a very important tool for European forest policy. Based in the improvement of knowledge and data collection systems as well as the current and upcoming information needs an update of the indicators is needed. Thus, the Expert Level Meeting (ELM) on January 2015 decided to update the existing set of pan-European indicators for SFM.

An Advisory Group, representing countries and relevant organizations expertise in Europe, was set up to facilitate the updating process, a participatory process to consult with countries and stakeholders was established (through two online consultations and a workshop) and a wide range of experts were consulted. The first online consultation was conducted from mid-December 2014 to end of January 2015, the second online consultation on March 2015 and the FOREST EUROPE Workshop on Updating the Pan-European Indicators for SFM was held on April 2015 in Madrid.

The updated list of indicators, as presented, is the result of this participatory process and the work of the Advisory Group. It is presented in the framework of the existing criteria and structured following a linkage between the qualitative and the quantitative indicators' proposal.

The new indicators (2.5 Forest land degradation, 4.7 Forest fragmentation, 4.10 Common forest bird species) need to be further elaborated before implementation, and measurement methods should be subject to an in-depth review and discussion at the implementation stage. During the next reporting period, pilot projects to check the availability, feasibility and reliability of data of the referred indicators should be carried out.

Additional information on rationales, international data providers, measurement units, current periodicity of data availability as well as underlying definitions, as contained in the supplementary documents "Background Information for the Updated Pan-European Indicators for Sustainable Forest Management" and "Relevant Definitions Used for the Updated Pan-European Indicators for Sustainable Forest Management"[5], to be further developed.

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[5] The final report of the Advisory Group, the supplementary documents and related information of the updating process can be found at: http://www.foresteurope.org/content/updating-pan-european-set-indicators-sfm.

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	No.	Indicator
Forest policy and governance	1	National Forest Programmes or equivalent
	2	Institutional frameworks
	3	Legal/regulatory framework: National (and/or sub-national) and International commitments
	4	Financial and economic instruments
	5	Information and communication

Criteria	No.	Indicator	Full text
Criterion 1: Maintenance and Appropriate Enhancement of Forest Resources and their Contribution to Global Carbon Cycles	C.1		Policies, institutions and instruments to maintain and appropriately enhance forest resources and their contribution to global carbon cycles
	1.1	Forest area	Area of forest and other wooded land, classified by forest type and by availability for wood supply, and share of forest and other wooded land in total land area
	1.2	Growing stock	Growing stock on forest and other wooded land, classified by forest type and by availability for wood supply
	1.3	Age structure and/or diameter distribution	Age structure and/or diameter distribution of forest and other wooded land, classified by availability for wood supply
	1.4	Forest carbon	Carbon stock and carbon stock changes in forest biomass, forest soils and in harvested wood products
Criterion 2: Maintenance of Forest Ecosystem Health and Vitality	C.2		Policies, institutions and instruments to maintain forest ecosystems health and vitality
	2.1	Deposition and concentration of air pollutants	Deposition and concentration of air pollutants on forest and other wooded land
	2.2	Soil condition	Chemical soil properties (pH, CEC, C/N, organic C, base saturation) on forest and other wooded land related to soil acidity and eutrophication, classified by main soil types
	2.3	Defoliation	Defoliation of one or more main tree species on forest and other wooded land in each of the defoliation classes
	2.4	Forest damage	Forest and other wooded land with damage, classified by primary damaging agent (abiotic, biotic and human induced)
	2.5	Forest land degradation[6]	Trends in forest land degradation

[6] Requires to be further developed and checked under which Criterion (2 or 5) better fits.

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Criteria	No.	Indicator	Full text
Criterion 3: Maintenance and Encouragement of Productive Functions of Forests (Wood and Non-Wood)	C.3		Policies, institutions and instruments to maintain and encourage the productive functions of forests
	3.1	Increment and fellings	Balance between net annual increment and annual fellings of wood on forest available for wood supply
	3.2	Roundwood	Quantity and market value of roundwood
	3.3	Non-wood goods	Quantity and market value of non-wood goods from forest and other wooded land
	3.4	Services	Value of marketed services on forest and other wooded land
Criterion 4: Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems	C.4		Policies, institutions and instruments to maintain, conserve and appropriately enhance the biological diversity in forest ecosystems
	4.1	Diversity of tree species	Area of forest and other wooded land, classified by number of tree species occurring
	4.2	Regeneration	Total forest area by stand origin and area of annual forest regeneration and expansion
	4.3	Naturalness	Area of forest and other wooded land by class of naturalness
	4.4	Introduced tree species	Area of forest and other wooded land dominated by introduced tree species
	4.5	Deadwood	Volume of standing deadwood and of lying deadwood on forest and other wooded land
	4.6	Genetic resources	Area managed for conservation and utilisation of forest tree genetic resources (in situ and ex situ genetic conservation) and area managed for seed production
	4.7	Forest fragmentation[7]	Area of continuous forest and of patches of forest separated by non-forest lands
	4.8	Threatened forest species	Number of threatened forest species, classified according to IUCN Red List categories in relation to total number of forest species
	4.9	Protected forests	Area of forest and other wooded land protected to conserve biodiversity, landscapes and specific natural elements, according to MCPFE categories
	4.10	Common forest bird species[8]	Occurrence of common breeding bird species related to forest ecosystems
Criterion 5: Maintenance and Appropriate Enhancement of Protective Functions in Forest Management (notably soil and water)	C.5		Policies, institutions and instruments to maintain and appropriately enhance of the protective functions in forest management
	5.1	Protective forests – soil, water and other ecosystem functions - infrastructure and managed natural resources	Area of forest and other wooded land designated to prevent soil erosion, preserve water resources, maintain other protective functions, protect infrastructure and managed natural resources against natural hazards

[7] Requires to be further developed and tested.

[8] Requires further development and testing for consideration.

Criteria	No.	Indicator	Full text
Criterion 6: Maintenance of other Socioeconomic Functions and Conditions	C.6		Policies, institutions and instruments to maintain other socioeconomic functions and conditions
	6.1	Forest holdings	Number of forest holdings, classified by ownership categories and size classes
	6.2	Contribution of forest sector to GDP	Contribution of forestry and manufacturing of wood and paper products to gross domestic product
	6.3	Net revenue	Net revenue of forest enterprises
	6.4	Investments in forests and forestry	Total public and private investments in forests and forestry
	6.5	Forest sector workforce	Number of persons employed and labour input in the forest sector, classified by gender and age group, education and job characteristics
	6.6	Occupational safety and health	Frequency of occupational accidents and occupational diseases in forestry
	6.7	Wood consumption	Consumption per head of wood and products derived from wood
	6.8	Trade in wood	Imports and exports of wood and products derived from wood
	6.9	Wood energy	Share of wood energy in total primary energy supply, classified by origin of wood
	6.10	Recreation in forests	The use of forests and other wooded land for recreation in terms of right of access, provision of facilities and intensity of use

Σ = 34 quantitative indicators + 11 qualitative indicators (total 45 indicators)