

Quick scan of implementation actions for sustainable forest management in The Netherlands

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Samenvatting

Duurzaam bosbeheer (Sustainable Forest Management: SFM) is van groot belang voor de duurzame instandhouding van het bosareaal met de bijbehorende biodiversiteit en ecosysteemdiensten zoals houtproductie, opslag van koolstof en recreatie. Voor de bescherming van bossen en functies zijn in diverse internationale fora afspraken gemaakt over SFM (o.a. het VN-Bossen Forum (UNFF), de UNECE commissie voor Bos en de Houtverwerkende industrie, de FAO Europese Bossen Commissie (FAO-COFO), de Internationale Organisatie voor Tropisch hout (ITTO) en Forest Europe). De Nederlandse regering heeft de afspraken om SFM te stimuleren in het kader van deze fora onderschreven en uitgewerkt in het beleid. Vanwege de vele verdragen, programma's en afspraken ontbreekt momenteel een overzicht van acties die in Nederland daadwerkelijk invulling geven aan (internationale) afspraken over SFM. Om te kunnen verantwoorden hoe Nederland zijn internationale afspraken heeft geïmplementeerd hebben beleidsmakers bij de rijksoverheid behoefte aan meer inzicht in het aantal en het soort implementatieacties met betrekking tot SFM van de Nederlandse bossen.

In deze studie wordt met een quick scan een globaal overzicht gegeven van implementatie acties waarmee de Nederlandse Rijksoverheid invulling geeft aan de internationale afspraken voor SFM in het Forest Europe-proces met betrekking tot bossen en bosbeheer in Nederland.

De implementatieacties op niveau van de rijksoverheid zijn in beeld gebracht door analyse van beleidsdocumenten, andere documenten en informatie op websites van ministeries, overheidsinstanties en internationale organisaties met betrekking tot SFM. Gevonden acties zijn geïmplementeerd naar het soort beleidsinstrument waartoe zij behoren, en naar de zes criteria voor SFM zoals die in het Forest Europe proces worden onderscheiden (Annex 2).

Een van de doelen van het Forest Europe proces is dat voor 2020, alle Europese landen nationale bossen programma's – of gelijkwaardige plannen - hebben opgesteld en geïmplementeerd, in overeenstemming met de gedeelde visie en doelen van pan-Europese aanpak voor nationale bossen programma's (Forest Europe 2011). In Nederland wordt door de rijksoverheid geen afzonderlijk bosbeleid gevoerd. Ook is op nationaal niveau geen afzonderlijk plan voor het Nederlandse bos opgesteld. Bosbeleid maakt in Nederland deel uit van het natuurbeleid, waarvan de uitvoering is gedecentraliseerd naar de provincies. Beheerplannen voor natuur, en beheerplannen voor bos als onderdeel daarvan, worden op regionaal niveau opgesteld door de provincies. Dus, naast implementatie acties van de rijksoverheid, is bekend dat ook de regionale en lokale overheden implementatie acties hebben ingesteld. Een belangrijk voorbeeld daarvan is de subsidie voor Natuur en Landschap (SNL) waarvan de doelstellingen een duurzaam beheer van natuur, bos en landschap beogen. Ook in de bosbouwsector (boseigenaren, houthandelaren, papier- en houtindustrie) zijn implementatie acties doorgevoerd (bijvoorbeeld certificering). In deze quick scan zijn echter alleen de implementatie acties van de rijksoverheid in beeld gebracht.

Er zijn in totaal 44 verschillende implementatie acties gevonden. Voor alle zes SFM criteria zijn implementatie acties gevonden en ook voor alle onderscheiden beleidsinstrumenten zijn implementatie acties gevonden. Van deze implementatie acties hebben 12 actie rechtstreeks betrekking op het Nederlandse bos en bosbeheer. De overige acties worden weliswaar in Nederland uitgevoerd, maar zijn qua werking en toepassingsgebied generiek. Bijvoorbeeld het inkoopbeleid van de overheid stelt wel eisen aan duurzaamheid voor hout, maar niet aan de herkomst. Het werkt dus door naar zowel het Nederlandse bos als bos in het buitenland.

Het grootste deel van de gevonden implementatie acties (36) heeft betrekking op het algemene bosbeheer en klimaatverandering (SFM criterium 1). De minste

implementatie acties hebben betrekking op gezondheid en vitaliteit van bos (SFM criterium 2), de beschermende functies van bossen (SFM criterium 5) en aan de overige sociaal-economische functies (SFM criterium 6) met respectievelijk 10, 14 en 21 implementatie acties. Voor de criteria op de productieve functies (SFM criterium 3) en de biodiversiteit functies van bossen (SFM criterium 4), is een ongeveer gelijk aantal implementatie acties gevonden (respectievelijk 30 en 29 implementatie acties).

Uitgaande van het aantal implementatie acties valt op dat de meeste acties gericht zijn op de algemene aspecten van instandhouding van bos, klimaat, biodiversiteit en de productie functies. Rekening houdend met de drie duurzaamheidspijlers (people, planet, profit) en internationale duurzaamheidsafspraken (o.a. UN Sustainable Development Goals) is het wenselijk dat de implementatie acties een goede balans over de duurzaamheidspijlers weerspiegelen. Er zijn minder implementatie acties gevonden voor de sociaal-economische aspecten van duurzaam bosbeheer dan voor biodiversiteit, productie of instandhouding van bosareaal en klimaataspecten. Of dat betekent dat er ook werkelijk minder aandacht is voor de sociaal-economische aspecten en of ook de impact op dit gebied minder is, is op basis van deze quick scan niet te zeggen. Immers, ook acties gericht op de overige criteria hebben vaak een doorwerking op sociaal-economische aspecten en ook via klimaatbeleid, biodiversiteitsbeleid en grondstoffenbeleid worden vaak sociaal-economische doelen nagestreefd. Aanvullend onderzoek naar de doorwerking en effecten van de implementatie acties voor de specifieke doelen kan daar meer inzicht in geven.

Het zicht op het aantal en type van de implementatie acties volgend uit de internationale verplichtingen voor SFM is beperkt. De implementatie acties en de doorwerking ervan worden niet systematisch in beeld gebracht wat het verkrijgen van een goed overzicht bemoeilijkt. Hierdoor kan ook binnen de genoemde fora voor SFM geen volledig overzicht worden gegeven van de implementatie acties voor SFM in Nederland en de effecten daarvan. Naast de genoemde verdragen maakt duurzaam bosbeheer ook deel uit van andere internationale doelen en afspraken zoals de VN-Doelen voor Duurzame Ontwikkeling (UN Sustainable Development goals). Hiervan heeft doel 15 betrekking op 'Duurzaam bosbeheer, bestrijding van verwoestijning, stoppen en omkeren van landdegradatie, en stoppen van de achteruitgang van biodiversiteit'. Ook voor deze afspraken is het van belang beter inzicht te hebben in de staat van de implementatie en effecten van maatregelen voor SFM in Nederland.

Een monitoringprogramma dat systematisch de implementatie acties voor de verschillende overheidsniveaus en bossen sector in beeld brengt kan tot een aanzienlijke verbetering leiden van het overzicht en de doorwerking van de implementatie acties. Een goed overzicht kan ook de synergie tussen implementatie acties bevorderen. Zo'n monitoring programma kan deel uitmaken van een nationaal bos of natuurplan maar kan ook een op zich staand programma vormen. Een monitoringprogramma hoeft overigens niet per se enkel de verantwoordelijkheid te zijn van de rijksoverheid. Ook andere actoren in de beleidsketen en bosbouwsector (o.a. provincies, bouseigenaren, houthandelaren, papier- en houtindustrie etc.) zijn gebaat bij een goed overzicht van maatregelen voor duurzaam bosbeheer en kunnen substantieel bijdragen aan het opstellen van een dergelijk programma.

Summary

Sustainable forest management (SFM) is of great importance for the sustainable conservation of forest areas, its biodiversity and the forest ecosystem services such as timber production, carbon storage and recreation. In various international forums member states have made agreements on SFM (such as the UN Forum on Forests (UNFF), the UNECE Committee on Forest and Woodworking industry, the FAO European Forest Commission (FAO COFO), the International Tropical Timber Organisation (ITTO) and Forest Europe). The Dutch government has endorsed the agreements to promote SFM in the framework of these forums. Because of the large number of fora, programmes and agreements, there is only a limited overview of implementation actions that contribute to the agreements of SFM in the Netherlands. To be accountable on the implementation of international agreements for SFM in the Netherlands, policymakers need a better understanding of the number and type of implementation actions regarding SFM of the Dutch forests.

In this study, a quick scan is performed to draft a rough overview of implementation actions of the Dutch government with regard to forests and forest management in the Netherlands, that fulfil the international agreements on SFM as agreed in the Forest Europe process.

An overview of implementation actions on SFM was compiled by analysing policy documents, other documents and information on websites of ministries, government agencies and international organizations. Actions were classified according to the type of policy instrument to which they belong and by the six criteria for SFM as drafted in the Forest Europe process.

One of the European targets from the Forest Europe process is that, by 2020, 'All European countries have developed and are implementing national forest programmes, or its equivalent, in line with the shared vision and goals and the pan-European approach to national forest programmes' (Forest Europe 2011). In the Netherlands no separate forest policies are drafted at the level of the national government. Forest policy is a part of nature policy of which the implementation is decentralized to the provinces. Nature management plans, and consequently forest management plans as a part thereof that, are drafted at the regional level by the provinces. So, besides implementation actions of the national government it is known that also at the regional and local level implementation actions are in place. One of the most important examples is the subsidy on Nature and Landscape (SNL) which regulates objectives for nature and sustainable forest management. Also the forest sector (forest owners, timber traders, paper and wood industries) have implemented actions, sometimes on a voluntary base. In this quick scan only the implementation actions at the level of the national government are listed.

A total of 44 different implementation actions were found. For all the six SFM criteria implementation actions were found, and also for all distinguished policy instruments implementation actions were found. Of these 44 implementation actions 12 actions are specific targeted at the Dutch Forest. The other actions are more generic. For example the procurement policy of the Dutch government sets requirements to the sustainability of timber, but not to the origin of the timber. So it may come from tropical forests as long as the management of these forests is rated as sustainable.

The majority of the implementation actions (36) relates to actions on maintenance of forest resources and climate change (SFM criterion 1). The fewest number of implementation actions are related to health and vitality of forests (SFM criterion 2), the protective functions of forests (SFM criterion 5) and the other socio-economic functions (SFM criterion 6) with 10, 14 and 21 implementation actions respectively. For criteria on the productive functions (SFM criterion 3) and biodiversity functions of

forests (SFM criterion 4), an approximately equal number of implementation actions were found (respectively 30 and 29 implementation actions).

Based on the number of implementation actions, it can be concluded that most actions are targeted at the maintenance of the forest area and forest resources, climate, biodiversity and productive functions, while the number of implementation actions relating to socio-economic aspect is lower than for other aspects. Considering the three principles of sustainable development (people, planet, profit) and international agreements on sustainable development, e.g. the UN Sustainable Development Goals, a well-balanced ratio of the different sustainability principles is desirable. Whether the fewer number of implementation actions for the socio-economic aspects are also reflected in the impact of the implementation actions on SFM cannot be concluded on the basis of this study. Additional research on the number and effects of the implementation actions can provide more insight into the impact.

Getting a clear view on the number and type of implementation actions that meet the international commitments for SFM is limited by the absence of a monitoring programme for these actions and their impact. SFM is also part of wider agreements such as those made within the framework of the UN Sustainable Development Goals. Goal number 15 refers to 'Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss'. Insight in the level and effects of the implementation actions in the Netherlands is also important for these agreements.

A monitoring programme, which can be part of a national forest programme but which can also be a separate programme, could substantially improve the insight in implementation actions at all governmental levels and the voluntary actions of the forest sector. A complete overview can also improve mutual synergy of the implementation actions. A monitoring programme on SFM does not necessarily have to be the sole responsibility of the national government. Also other actors in the forest sector (e.g. provinces, forest owners, timber traders, paper and wood industries etc.) have interest in SFM and may have their share in developing such a programme.

1 Introduction

Background and problem

Sustainable forest management is of great importance for sustainable provision of forest resources and conservation of biodiversity. Forests provide resources such as timber, but also non-timber products and services such as drinking water, food and amenity for living and tourism are provided. Hence forests houses many ecological, economic and social functions that are essential for human well-being. To protect and sustainably use forests and its values, the Dutch government stimulates sustainable forest management (SFM).

Dutch policies promotes SFM in the Netherlands itself, but also in other parts of the world because the Netherlands are importing most of its timber from abroad. About 70% of the imported timber volume comes from European forests, some 25% from North and South America, and about 5% from the rest of the world of which about 4% from tropical forests (Probos, 2014).

Through the large volumes, timber import has impact on forest areas in the production regions from which the timber originates. Because of this impact, the Netherlands pursue an active foreign policy on SFM. Due to this foreign oriented focus, little explicit attention has been paid to get an overview of implementation actions in the Netherlands. As a result currently no clear overview exists of the implementation actions on these agreements in the Netherlands. Policymakers have the need to get more insight in this number and type of implementation actions in the Netherlands related to the Dutch forests.

In several international fora on forest, agreements are made for SFM. For example in 2002 the Conference of the Parties (COP) adopted the expanded programme of work on forest biological diversity ([decision VI/22](#)). The forest work programme constitutes a broad set of goals, objectives and activities aimed at the conservation of forest biodiversity, the sustainable use of its components and the fair and equitable use of the benefits arising from the utilization of forest genetic resources (CBD 2002). The UN Forum on Forests (UNFF) has adopted in 2007 the UN Forest Instrument (UN, 2008), which articulates a series of agreed policies and measures at the international and national levels to strengthen forest governance, technical and institutional capacity, policy and legal frameworks, forest sector investment and stakeholder participation. Also the UNECE Committee on Forest and the forest industry, the FAO European Forestry Commission, Forest Europe and the International Tropical Timber Organisation (ITTO, 2015) are very much engaged in issues related to SFM. Regulations and protocols that are discussed and agreed or adopted in these fora often stand alone, but are increasingly being matched in order to increase synergy and impact.

As a party in these fora, and signatory to several conventions, The Netherlands has agreed to stimulate SFM for the protection of biodiversity and ecosystem services, economic importance and the livelihoods of local people. Dutch forest related policies have a strong focus on stimulating SFM in countries outside the EU.

Aim

In this study, a quick scan is performed to draft a rough overview of implementation actions of the Dutch government with regard to forests and forest management in the Netherlands, that fulfil the international agreements on SFM as agreed in the Forest Europe process.

2 Method

As a first step of this quick scan, we assessed a common base of all agreements on sustainable forest management. There are a significant number of international agreements or resolutions related to sustainable forest management, all having their own actions and intentions. Given the available time for this research we therefore searched for a common base of the most important agreements. The common base was found in the six forest principles used in many of the agreements. The 'Forest Principles' is an informal name given to the *Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests* (UNCED 1992), a document produced at the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit. It is a non-legally binding document that makes several recommendations for conservation and sustainable development forestry. The forest principles are now widely adopted as base for sustainable forest management. They are also reflected in the UN Forest Instrument that refers to the seven thematic elements of sustainable forest management which are drawn from the criteria identified by existing criteria and indicators processes, as a reference framework for sustainable forest management. The elements are (a) extent of forest resources; (b) forest biological diversity; (c) forest health and vitality; (d) productive functions of forest resources; (e) protective functions of forest resources; (f) socio-economic functions of forests; and (g) legal, policy and institutional framework. Further, the Voluntary guidelines for the sustainable management of natural tropical forests (ITTO, 2015) provide guidelines for the development and improvement of national and subnational guidelines for the sustainable management of natural tropical forests. In the Forest Europe process the criteria and indicators for sustainable forest management (SFM) were adopted in the Lisbon conference in 1998 (Forest Europe 1998), further improved in Vienna (Forest Europe 2003), and updated and endorsed by the ministers at the 7th Ministerial Conference in Madrid 2015. In this process 46 European countries and the EU are involved.

The six criteria for sustainable forest management (Forest Europe 2015b) are:

1. **Maintenance and appropriate enhancement of forest resources** and their contribution to **global carbon cycle**
2. Maintenance of forest **ecosystem health and vitality**
3. Maintenance and encouragement of **productive functions of forests** (wood and non-wood)
4. Maintenance, conservation, enhancement of **biological diversity in forest ecosystems**
5. Maintenance and appropriate enhancement of **protective functions in forest management**
6. Maintenance of other **socio-economic functions** and conditions

The six criteria are further elaborated in 45 indicators (Forest Europe 2015b). These indicators were used to adjudge the implementations actions to the SFM criteria. An overview of the indicators is given in Annex 2. These criteria were used as a common base to assess how the Netherlands has implemented and ensured SFM in its national and international policy instruments to contribute to SFM.

As a second step we listed the individual commitments adopted on the different Forest Europe Ministerial Conferences (Madrid 2015, Oslo 2011, Warsaw 2007, Vienna 2003, Lisbon 1998, Helsinki 1993, Strasbourg 1990). For each of these commitments we searched for implementation actions in policy documents, ministerial letters to the parliament, and documents of the different forestry fora.

Many of the documents were found on the website of the national government (www.rijksoverheid.nl) and the Netherlands Enterprise Agency (www.rvo.nl). All documents in which the implementation actions are described are listed in Annex 1.

All implementation actions found were listed in an excel table. For each action it was determined to which commitment and to which SFM criterion it contributes. This can be more than one commitment and more than one principle. Some implementation actions, e.g. green education, contribute to all six SFM criteria. In fact all implementation actions for SFM finally intent to contribute to all the SFM criteria. We tried however, to relate the actions to the criteria that they are primarily targeted at or to which they contribute most dominantly. The allotment of the implementation actions to the SFM criteria is done on the base of expert-judgement.

As a third step we analysed all implementation actions found and defined summarizing topics. This was done because the same implementation actions were found to contribute to different individual commitments. To avoid duplications, we grouped the implementation actions per topic and pointed out to which forest principle they contribute on the base of expert judgement. This has a somewhat arbitrary character because, in principle implementation action for sustainable forestry do finally contribute to all the criteria of sustainable forest management. Therefore an estimation was made to which sustainable forest criteria the action contributes the most. The results were put in a table (table 1).

As a last step we used table 1 to give insight in the implementation actions found and to which forest principle they contribute (table 2). On the base of table 2 it was derived to what extend and for what subjects the implementation actions contribute to the forest principles.

3 Results

The results of the analysis are presented in table 1. The table shows that for each instrument and each criterion implementation actions are found.

Table 1 Implementation actions undertaken by the Dutch government to promote sustainable forest management grouped by policy instrument and topic. The contribution to the criteria for sustainable forest management for each implementation action is indicated in the last 6 columns. The number between brackets is referring to the document or website where information on this implementation action is found listed in Annex 1. Rows with grey shade concerns actions specific related to forest in the Netherlands

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Education	Stimulating forest education and knowledge development	Stimulation of broad forest knowledge through <u>green education institutes</u> with a forest department(49): <ul style="list-style-type: none"> • Wageningen University; • Van Hall Larenstein University of applied science, • In Holland university of applied science, • Helicon secondary school, • Groenhorst practical school 	x	x	x	x	x	x
Timber Procurement policy	Stimulating the use of SFM certified wood through procurement	The national government's has a commitment to procure 100% sustainable timber through a <u>set of clear criteria for procurement</u> . The Dutch Timber Procurement Assessment Committee (TPAC) <u>assesses timber certification systems</u> and advises the Dutch Ministry of Infrastructure and Environment (I&M) on the outcome. Three certification systems have been accepted at this moment: PEFC, FSC and MTCS (6).	x		x	x		

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Communication and Information	Awareness of Natural Capital	Information for the broad public on ecosystem services, and as part of that, information on some forest ecosystem services. <u>Maps and information on Ecosystem Services and Natural Capital</u> : The Dutch Atlas Natural Capital is introduced in 2015; valid for all ecosystems, not specific for forests. A section with a short description of sustainable forest is given (8).	x	x	x	x	x	x
	Awareness of Certification	www.Consuwijzer.nl is a <u>Website</u> of the national government with information on many subjects for consumers. One subject is about control marks and within that the PEFC mark is explained (4)	x	x	x	x	x	x
	Preventing trade of illegal harvested wood	The <u>Guidance document</u> of the EU-TR is translated in Dutch so national timber trading companies can easily inform themselves with this regulation (26)				x	x	x
	Preventing trade and import of protected species	CITES: <u>website with information</u> on CITES and a tool to determine whether a species is a CITES species and the limitations that are applicable for trade or import (27)	x			x		
	Awareness of Biodiversity	www.biodiversiteit.nl <u>Website</u> of the Dutch government with information on biodiversity and policy on biodiversity in The Netherlands. It contains a specific page with information on forest related policies and sustainable forest management. The website is the Dutch node of the CBD Clearing House Mechanism (53)	x	x	x	x	x	x

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Funding programs and projects	Stimulation use of biomass and reduction of greenhouse gas emissions	<u>Investment subsidy</u> sustainable energy (ISDE) (41) <ul style="list-style-type: none"> • Stimulation sustainable energy production (SDE+) (42) • Investment rabat sustainable energy (EIA) • Subsidy of biomass fuelled boilers (ISDE) (44) 	x		x			x
	Stimulate a green environment and carbon sequestration	<u>Funding projects</u> through the Groenfonds. Stimulation of green projects in general, among which also forest management projects (45)	x	x	x	x	x	x
Law and Regulation	Preventing illegal cutting	EU FLEGT (10) and EU-TR (11): The Netherlands food and consumer product safety authority (NVWA) <u>enforces the EU-TR</u> in the Netherlands, and can give <u>penalties</u> to companies that are breaking the EU-TR (26)	x		x			
	Education	Education on nature in general is incorporated in <u>the Dutch Education Acts</u> : <ul style="list-style-type: none"> - Education about nature in general: Primary education Act (12a) - Biology education including knowledge of nature: Secondary Education Act (12b) - Development of education on the natural environment: Higher and Scientific Education Act (12c) 	x	x	x	x	x	x

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Law and regulation - continued	Protection of biodiversity	<u>Designation of 162 EU-Natura 2000 sites</u> amongst which a large number forest sites (19), (20) to protect species and habitats				x		
	Protection of biodiversity	protection of N2000 species and habitats <u>implemented in national acts</u> , Flora and Fauna act (1998), and Nature conservation act (1998) respectively (22)				x		
	Protection of biodiversity	<u>Designation of the National Ecological Network</u> , including most of the forest area in the Netherlands (21)				x		
	Protection of forest areas	The Dutch forest area is protected by the <u>Forest Act</u> (1961) (22)	x		x	x		
	Protection of endangered species	Protection of endangered species (CITES) is implemented in the <u>Flora and Fauna Act</u> (22b)				x		
	Protection of endangered species	A <u>permit</u> is required for import/export of species (or parts of it) of the CITES list. Through the website of RVO information is provided on the CITES regulation and procedures (26)				x		
	Protection of illegal cutting and fencing of illegal or stolen wood	<u>Criminal Act</u> : prosecution of laundering of illegal wood (art 420bis); theft of wood (art 310); fencing of illegal or stolen wood (art 416) (29) This act is the base for implementation of the EU-Timber regulation (11b)	x					

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Law and regulation - continued	Conservation of nature estates	<u>Nature estate Act (Natuurschoonwet)</u> , for conservation of nature areas on a (former) estates (54)	x			x		x
	Sustainable management of nature and forest areas of the State Forest Service	<u>Act privatization of the State Forest service</u> , mandatory sustainable management and development of nature scientifically, silvicultural, scenically, recreational, archeological, geological, cultural historical values of areas and objects managed by the state forest service (56)	x	x	x	x	x	x
Monitoring	Reducing greenhouse gas emissions	implementation UNFCCC agreement and of agreements of the Kyoto protocol: <u>monitoring and reporting landuse and land use change</u> by the National Inventory Entity (LULUCF reporting conform decision no 525/2013/EU and no 529/2013/EU) (17)	x					
	Monitoring certification	TPAC (6): <ul style="list-style-type: none"> - <u>Monitoring of % SFM timber in wood chain</u> - <u>Voluntary Licensing System</u> through commitment of wood chain business actors 	x	x	x	x	x	x
	Protection of endangered species	CITES: the Dutch CITES-Office is <u>monitoring the compliance of the CITES regulation</u> , the NVWA and the Police are authorized to fine offenders (27)				x		

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Monitoring-continued	Monitoring forest area and standing wood volume	<u>The forest area, tree species and timber volumes are monitored</u> in a periodic NFI (23)	x		x	x		
	Insight in forest sector characteristics	<u>Annual report on forest sector characteristics</u> (Probos Kerngegevens bos) (48)	x		x	x		x
Policy Documents	National Nature Policy	Vision on Nature: policy document with call to sector and society to work cross sectoral and more participation from all layers of society (30)	x	x	x	x	x	x
	Stimulating renewable resources	Stimulating use of renewable resources: <u>Knowledge- and Innovation agenda</u> Biobased Economy (2)	x		x			x
	Emission reduction and use of sustainable energy (biomass)	<u>Climate Agenda</u> (9) <ul style="list-style-type: none"> Stimulating use of biomass for energy and emission reduction International forest policy (afforestation, preventing deforestation and desertification) 	x		x			
	Stimulating renewable energy	<u>National Action plan</u> on renewable energy (38) <ul style="list-style-type: none"> Criteria for sustainable use of biomass Stimulation of (forest) biomass for energy 	x		x			
	Stimulating renewable energy	<u>National Energy Agreement</u> for sustainable growth: stimulating use of wood for energy production (47)	x		x			

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
	Stimulating SFM	<u>Action plan Natural Capital</u> (7) <ul style="list-style-type: none"> • Stimulation sustainable timber on the Dutch market • Organization of round table meetings Sustainable Timber • Fair agreements on use of plant genetic resources • Sustainable production of biomass for energy purposes • Map ecosystem services and assess the economic value 	x		x	x		
Partnerships	Biomass availability	<u>Covenant on clean agri sectors</u> (including forest sector) dealing mainly with sustainable sources of biomass for energy applications (9)			x			
	Preventing biodiversity loss, stimulating sustainable use of natural resources	<u>Participating in Platform Biodiversity, Ecosystems and Economy</u> : Initiated by the Dutch Confederation of Industries and Employers (VNO-NCW) and IUCN-NL. Partners are committed to preserving and restoring biodiversity and ecosystems as a prerequisite for a strong economy and a healthy environment. Partnerships enterprises supported by the Ministry of Economic affairs (25) <u>Stimulating business initiatives</u> on REDD-projects: REDD Business Initiative / Platform BEE (15)	x		x	x		x
	Sustainable Energy supply with sustainable use of biomass	<u>National Energy Agreement</u> (agreement of government, social partners, and business) : Criteria are developed and applied to ensure only sustainable wood products are used for energy production (46)	x		x			

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Partnerships - continued	Sustainable Energy supply with sustainable use of biomass	<u>Agreements of government and energy sector</u> on National Action plan on energy from renewable resources (38)	x		x			
	Stimulating sustainable Timber production and trade	<u>Round table meetings</u> of the Dutch government and IDH and Tropenbos International with all partners from the timber chain and NGOs to come to an agreement on production and consumption of sustainable timber. The European Sustainable Tropical Timber Coalition (STTC) is an alliance of industry, business, government and NGOs (including IDH) dedicated to increase European demand for sustainably sourced tropical timber(52).	x		x			x
	Stimulating sustainable forestry	Green deal Stimulating Sustainable Forest Management <u>through pilot projects, information exchange, procurement</u> . Participation of 27 actors from the Timber chain amongst which Dutch ministry of Economic affairs, Infrastructure and Environment, social partners, wood processing industry, construction industry, furniture and retail etc.(13)	x		x	x		
	Sustainable management and development of areas and objects of the State Forest Service	<u>Convenant Netherlands Ministry of Economic Affairs and State Forest Service 'Staatsbosbeheer'</u> : mandatory sustainable management and development of nature scientifically, silvicultural, scenically, recreational, archeological, geological, cultural historical values of areas and objects managed by the state forest service (57)	x	x	x	x	x	x

Instrument	Topic	Implementation action	Sustainable Forest Criteria					
			C1	C2	C3	C4	C5	C6
Research and Knowledge	Knowledge on valorising SFM Forest products	Stimulating more efficient use of biomass resources through <u>research</u> : Knowledge- and Innovation agenda Biobased Economy 2015-2027 (2)	x		x			x
	Knowledge on Ecosystem services and PES	<u>Program Natural Capital</u> of the Netherlands Environmental Assessment Agency. With some examples of sustainable timber trade chains (31) Some <u>ad hoc research</u> has been done on PES by WUR. With a section on FSC timber production(14a)	x		x	x	x	x
	Knowledge on Natural Capital accounting	Work in progress on a framework for Natural Capital Accounting by CBS and WUR (7). General approach for nature, not specific on forests.	x		x	x	x	x
Subsidy	Promoting Sustainable wood	<u>Fiscal instrument</u> MIA (Environmental Investment Rebate) and Vamil (Arbitrary depreciation of environmental investments) (37)	x		x			
	Promoting use of wood residues for renewable energy	<u>Subsidy</u> SDE: Stimulation of renewable Energy (39) <u>Fiscal instrument</u> EIA: Energy Investment Rebate (40)	x		x			
	Promoting conservation of estates	<u>Fiscal instrument</u> Rebate on taxes for real estate, ground, income, transfer tax, inheritance tax. For this, the estate has to be classified under the Scenery Act (Natuurschoonwet 1928) (54)	x			x		x

Table 1 shows that for all instruments and SFM criteria implementation actions are found. However, the number of implementation actions per instrument and per sustainable forest criterion found are quite different (Table 2).

Table 2 Number of implementation actions for sustainable forestry per instrument and sustainable forest criterion; C1: maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycle, C2: forest ecosystem health and vitality, C3: productive functions of forests, C4: biological diversity in forest ecosystems, C5 protective functions in forest management, C6 other socio-economic function (see also Annex 2).

Instrument	Sustainable Forest Criteria						Total of different implementation actions per instrument (between brackets the number that specifically is targeted at Dutch forests and management of Dutch forests)
	C1	C2	C3	C4	C5	C6	
Education	1	1	1	1	1	1	1 (0)
Timber procurement policy	1			1	1		1 (0)
Communication and Information	4	3	3	5	4	4	5 (1)
Funding programs and projects	2	1	2	1	1	2	2 (0)
Law and Regulation	6	2	4	9	2	3	11 (7)
Monitoring	4	1	3	4	1	2	5 (2)
Policy Documents	6	1	6	2	1	2	6 (0)
Partnerships	6	1	7	3	1	3	7 (1)
Research and Knowledge	3		3	2	2	3	3 (0)
Subsidy	3		2	1		1	3 (1)
Total of different implementation actions per criterion	36	10	30	29	14	21	Total different implementation actions 44 (12)

The most implementation actions were classified for the instruments Law and regulation (11). For Partnerships 11 implementation actions were found. Education (1) Timber procurement policy (1), Funding programs and projects (2), Research and knowledge (3) and Subsidy (3) have only a few implementation actions. Communication and Information (5), Monitoring (5), and Policy documents (6) have 5 to 6 implementation actions per instrument.

The Sustainable forest criterion with the most implementations actions is criterion C1 *Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycle*. For this criterion 36 implementation actions were found. All implementation actions that concern the general stimulation of sustainable forest management, as well as implementation actions concerning climate change, are allotted to this criterion. Within criterion C1 partnerships, policy documents, and law and regulation are the most applied instruments.

Second most implementation actions were found for the criterion C3 *Maintenance and encouragement of productive functions of forests (wood and non-wood)*, to which 30 implementation actions contribute. Partnerships and policy documents are the instruments with the most implementation actions within this criterion.

On the third place, as far as the number of implementation actions concerned, for criterion C4 *Maintenance, conservation, enhancement of biological diversity in forest ecosystems*, 29 implementation actions were found. Law and regulation, Communication and information and Monitoring are the instruments with the most implementation actions within this criterion.

To criterion C6 *Maintenance of other socio-economic functions and conditions* 21 implementation actions contribute. Communication and information is the instruments with the most implementation actions.

For Criterion C5 *Maintenance and appropriate enhancement of protective functions in forest management* 14 implementation actions were found. Within this criterion Communications and information is the instrument with the most implementation actions.

Criterion C2 *Maintenance of forest ecosystem health and vitality* has the least implementation actions found, namely 12. Within this criterion, the instrument Communication and information has the most implementation actions.

Of the 36 different implementation actions, 12 are specifically related to Dutch forest and forest management (gray shaded lines in table 1). All 24 other actions are related to forest and forest management in general, being applicable to the Dutch forest but also to forest and forest management abroad. For instance the timber procurement policy of the Dutch government prescribes that governmental organisations are only allowed to use wood and wood products from certified sources such as FSC and PEFC. The origin of the wood however, can be from Dutch forests as well from forests abroad.

From the 12 implementation actions relating to the Dutch forest or forest management, 7 actions concerns specific Dutch Acts and regulations. 2 monitoring actions, 1 communication action, 1 partnership, and 1 action concerns a financial implementation action.

4 Discussion

Policy documents founds, show a strong attention towards foreign oriented policies on SFM (e.g. Kamerbrief 2015, Kamerbrief 2016, Uitvoeringsagenda 2013). This is related to the large volumes of timber import in the Netherlands. About 70% of the imported timber volume comes from European forests, some 25% from North and South America, and about 5% from the rest of the world of which about 4% from tropical forests (Probos, 2014). Due to this foreign oriented focus, little explicit attention has been paid to get an overview of implementation actions in the Netherlands. As a result currently no clear overview exists of the implementation actions on these agreements in the Netherlands. Policymakers have the need to get more insight in the number and type of implementation actions in the Netherlands related to the Dutch forests.

Implementation actions on SFM in the Netherlands take place on different governmental levels. The national government works on implementation, but also provinces and local authorities take their part in the implementation. This is due to the different responsibilities at the different levels. In the Netherlands forest policy is part of the nature policy which is decentralized to the provinces. Appointments about decentralization are made in the so called 'Natuurpact' (Natuurpact, 2013). As a result of this 'Natuurpact', each province is drafting a nature management plan for the nature areas in its own territory. Owners of nature areas within the designated areas of the provincial nature management plans can request subsidy for the management of nature and forest areas (SNL). Sustainable conservation and management of these areas and its flora and fauna is a conditional part of these management plans to be eligible for subsidy. On the local level, municipalities are drafting regional plans for spatial planning (omgevingsplannen). In these plans the legal designation of land use is arranged such as forest, nature and urban areas. Also the forest sector (forest owners, timber traders, paper and wood industries) have implemented actions, sometimes on a voluntary base. In this quick scan only the implementation actions at the national level are listed. The fact that at the level of the national government no substantive forest policy is conducted and that provinces and (partly also) municipalities are responsible for the implementation of the nature policy, has its influence on the number and type of implementation actions at the national level.

In the Netherlands there is no programme for monitoring the implementation of international commitments on SFM. Due to the absence of such a monitoring programme there is a limited overview for these actions and their impact. Hence, also a limited insight can be generated on the state of implementation of the international agreements. Besides the relevance for international agreements on SFM, SFM is also important with respect to other international agreements such as made within the frame of the UN Sustainable Development Goals. Goal number 15 refers to 'Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss'. Insight in the level and effects of the implementation actions in the Netherlands is also important for these agreements.

Due to the fact that there is no separate forest policy in the Netherland, many of the implementation actions on sustainable forestry, arise from other policy fields, like environmental policy in which renewable energy and climate change are important issues. Sustainable use of biomass is an important issue in the discussion of generating renewable energy. Impact of biomass supply on sustainable forest management is regulated through special sustainability criteria for biomass for

energy applications. Further, climate change is an important policy factor influencing sustainable forest management because the carbon sink function of forests. This is underlined in the Paris Agreement of the UNFCCC convention of 2016 but has yet to be elaborated in an action plan or other implementation actions. Climate aspects are reflected in the type of implementation actions under criterion C1. An important implementation action on this subject is the monitoring of the land use and the land use change as part of the LULUCF reporting activities.

5 Conclusions and recommendations

Conclusions

A total of 44 different implementation actions was found. For all the six SFM criteria implementation actions were found, and also for all distinguished policy instruments implementation actions were found. The majority of the implementation actions (36) relates to actions on maintenance of the forest resources and the global carbon cycle (SFM criterion 1). The fewest number of implementation actions are related to health and vitality of forests (SFM criterion 2), the protective functions of forests (SFM criterion 5) and the other socio-economic functions (SFM criterion 6) with 10, 14 and 21 implementation actions respectively. For the criteria on the productive functions (SFM criterion 3) and on the biodiversity functions of forests (SFM criterion 4), an approximately equal number of implementation actions were found (respectively 30 and 29).

On base of the number of implementation actions, it can be concluded that most actions are targeted at the maintenance of the forest area and forest resources, climate, biodiversity and productive functions. Considering the three principles of sustainable development (people, planet, profit) and international agreements on sustainable development, e.g. the UN Sustainable Development Goals, a well-balanced ratio of the different sustainability principles is desirable. On the basis of the results of this quick scan, it can be concluded that fewer implementation actions are focused primarily on socio-economic aspects of SFM than on other aspects. Whether this is also be reflected in the impact of implementation actions on SFM cannot be assessed on the base of this study. Additional research on effects of the implementation actions can provide more insight into their impact.

The absence of a monitoring programme evaluating the accomplishment of the implementation of international agreements on sustainable forest management limits a clear and coherent overview of the level of implementation. Because the Netherlands has no separate forest policy and no separate Forest programme, such a monitoring programme can make part of the nature policies or can be a stand-alone programme.

The implementation actions contribute to both the conservation of the forest area and of its biodiversity. Major implementation actions specifically focused at conservation of the forest area in the Netherlands are the Forest act, the designation of the National Nature Network, and monitoring of the forest area trough e.g. the national forest inventory, and the LULUCF reporting in the context of the Kyoto Protocol on Climate Change of UNFCCC and adopted by the European Commission and parliament (decision no 525/2013/EU and no 529/2013/EU) and the Paris Agreement.

Most of the implementation actions that stimulate sustainable forest management are related to the instruments Law and regulation, and Partnerships. Law and regulation is referring mainly to the Forest Act, the Flora and Fauna Act, and the Nature Conservation Act. In January 2017, The Forest Act, the Nature Conservation Act and the Flora- and Fauna Act are being replaced by the new Nature Conservation Act.

The partnerships include mainly the energy, biomass and timber sector, mainly for knowledge exchange, capacity building and pilot projects. Timber traders are mainly selected for partnerships because of the international nature of their business. Major topics dealt with in the partnerships are discouragement of illegal logging, preventing trade of endangered species, and combating deforestation, mainly with focus abroad. Protection of forest is regulated by the Forest Act and of endangered species by the

Flora and Fauna Act. The Netherlands Enterprise Agency (RVO) is monitoring the CITES agreements on trade of endangered species. The Netherlands Food and Consumer Product Safety Authority (NVWA) is monitoring trade of illegal logged timber and can give fines when necessary.

Partnerships in the Netherlands are, for instance, the green deal Sustainable Forestry, in which 27 partners from the forest sector are united, and have agreed upon commitments to stimulate sustainable timber trade, with a focus on tropical countries. In the Platform BEE, an partnership of business partners is made upon stimulation of REDD+ projects to mitigate climate change through deforestation projects abroad.

Since the use of wood as energy source is increasing, also agreements with the timber and energy sector are drafted to make sure only sustainable produced wood is used. To stimulate use of sustainable wood for energy purposes, special sustainability criteria for the use of biomass for energy purposes are drafted.

For criterion C1 *Maintenance and appropriate enhancement of forest resources and their contribution to global carbon cycle* the largest number of implementation actions of all criteria was found, namely 36. The type of implementation actions are general actions and the ones that are related to climate change, mostly through the carbon sequestration function of forests. Besides the attention for climate change, also the attention for energy and biomass for both energy and the biobased economy is reflected in this criterion.

For criterion C2 *Maintenance of forest ecosystem health and vitality* the lowest number of implementation actions was found of all criteria, namely 10. Forest health and vitality was a rather prominent topic in the 80s and 90s of the last century. Since then forest health has improved and consequently attention has shifted to other topics like climate change and decrease of biodiversity, and more recently also to biomass for energy. This is reflected in the number of implementation actions found for criteria C1, C3 and C4.

An about equal number of implementations actions was found for criterion C3 *Maintenance and encouragement of productive functions of forests (wood and non-wood)* and criterion C4 *Maintenance, conservation, enhancement of biological diversity in forest ecosystems*. So, considering this number of implementation actions, the attention to the productive and nature/biodiversity functions of forest seem to be equivalent.

Regarding criterion C5 *Maintenance and appropriate enhancement of protective functions in forest management* most of the current forests in The Netherlands are not especially managed in the light of protective functions. In the 19th and 20th century some forest areas are planted to combat drift-sands (local desertification). This has succeeded and drift-sands are no longer seen as problem. Nowadays they are even seen as valuable nature areas and are protected areas. In quite some forest areas drinking water is pumped up. Protection of the areas for drinking water is a task of the provinces through the designation of areas and regulation of management of these areas. No regulative forest management is set in these areas.

Implementation actions within criterion C6 *Maintenance of other socio-economic functions and conditions* do mainly relate to combatting illegal cutting, trade of illegal timber, certification of sustainable timber, and sustainable use of forest resources for energy and biobased products. Within this criterion, most implementation actions pay attention to the physical (natural capital, emission reduction) and economic importance of forests (timber volumes) and only few to the social importance of forests to local populations (livelihoods).

Recommendations

A programme monitoring the implementation actions and their impact would substantially improve insight into the extend of implementation of international agreements followed up at all governmental levels and the voluntary actions of the forest sector. Good insight of all implementation actions can also improve mutual synergy of the implementation actions and their effectiveness. Such a monitoring programme does not per se has to be the sole responsibility of the national government. Also other actors in the forest sector (e.g. provinces, forest owners, timber traders, paper and wood industries etc.) may have a share in drafting such a programme.

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Annex 1 List of documents and websites with information on the implementation actions named in Table 1

- 1) Agenda voor het Nederlandse bos tot 2020:
<http://www.avih.nl/pdf/DeAgenda.pdf>
- 2) Kennis en Innovatieagenda Biobased : <http://topsectorenergie.nl/wp-content/uploads/2015/06/Kennis-en-Innovatie-agenda-2016-2019-Biobased-Economy.pdf>
- 3) Green deals biobased economy: <http://www.greendeals.nl/themas/biobased-economy/>
- 4) Consuwijzer: <https://www.consuwijzer.nl/keurmerken/pefc-voor-duurzaam-bosbeheer>
- 5) TPAC: <http://www.tpac.smk.nl/32/home.html>
- 6) Dutch Timber Procurement Policy:
http://www.tpac.smk.nl/Public/TPAC%20documents/DutchFrameworkforEvaluatingEvidenceofCompliancewithTimberProcurementRequirements_AUG2014_FINAL.pdf
- 7) Uitvoeringsagenda Natuurlijk Kapitaal:
<https://www.rijksoverheid.nl/documenten/kamerstukken/2013/06/22/kamerbrief-over-uitvoeringsagenda-natuurlijk-kapitaal>
- 8) Atlas Natural Capital: <http://www.atlasnatuurlijkkapitaal.nl/>
- 9) Klimaatagenda:
<https://www.rijksoverheid.nl/onderwerpen/klimaatverandering/documenten/rapporten/2013/10/04/klimaatagenda-weerbaar-welvarend-en-groen>
- 10) EU-FLEGT Action plan: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52003DC0251>
- 11) EU-Timber regulation:
 - a. Timber Regulation no 995/2010:
 - b. Guidance document 2016:
http://ec.europa.eu/environment/forests/pdf/eutr_guidance.zip
- 12) Onderwijs wetten
 - a. Primary education: <http://wetten.overheid.nl/BWBR0030280/2016-01-18>
 - b. Secondary education:
<http://wetten.overheid.nl/BWBR0002399/2016-01-18>
 - c. Higher and Scientific education:
<http://wetten.overheid.nl/BWBR0005682/2016-01-01>
- 13) Green Deal Stimulating Sustainable Forest Management:
 - a. <http://www.greendeals.nl/wp-content/uploads/2015/06/GD150-samenvatting-Bevorderen-Duurzaam-Bosbeheer.pdf>
 - b. <https://www.rijksoverheid.nl/actueel/nieuws/2013/06/20/overheid-en-bedrijfsleven-gaan-voor-hout-uit-duurzaam-beheerd-bos>
- 14) Research on PES:

- a. Sustainable use of ecosystem services by the private sector: https://www.wageningenur.nl/upload_mm/b/5/7/56e64d42-7fa2-4951-be35-a77c1fba9e07_WOt-werkdocument%20342%20webversie.pdf
- b. Knowledge overview PES: https://www.wageningenur.nl/upload_mm/b/5/7/56e64d42-7fa2-4951-be35-a77c1fba9e07_WOt-werkdocument%20342%20webversie.pdf
- c. Program natural Capital: <http://themasites.pbl.nl/natuurlijk-kapitaal-nederland/resultaten/verdienmodellen-voor-natuur-leren-van-cultuur-onderwijs-en-zorg>
- d. Examples of PES: <http://www.innovatieagroennatuur.nl/>
- 15) REDD Business Initiative: <http://www.platformbee.nl/redd/over-ons/>
- 16) Financial contribution to the Readiness Fund of the Forest Carbon Partnership Facility (FCPF): <https://www.forestcarbonpartnership.org/about-fcpf-0>
<https://www.rijksoverheid.nl/documenten/toespraken/2010/02/10/launch-of-the-world-bank-forest-carbon-partnership-facility>
- 17) Implementation of the Kyoto Protocol: National Inventory Entity: <http://www.rvo.nl/onderwerpen/duurzaam-ondernemen/energie-besparen/national-inventory-entity>
- 18) Climate Investment Fund: <https://www.rijksoverheid.nl/documenten/rapporten/2013/08/30/scorecard-climate-investment-funds>
- 19) Natura 2000: <http://www.synbiosys.alterra.nl/natura2000/gebiedendatabase.aspx?subj=procedure>
- 20) Forest Habitat: <http://www.synbiosys.alterra.nl/natura2000/gebiedendatabase.aspx?subj=habetypen&groep=9>
- 21) National Nature Network: <https://www.rijksoverheid.nl/onderwerpen/natuur-en-biodiversiteit/documenten/kamerstukken/2015/12/18/kamerbrief-over-voortgangsrapportage-natuur-in-de-provincie>
- 22) Forest and Nature Acts
 - a. Forest act: <http://wetten.overheid.nl/BWBR0002357/2015-01-01>
 - b. Flora and Fauna act: <http://wetten.overheid.nl/BWBR0009640/2015-01-01>
 - c. Nature Conservation Act: <http://wetten.overheid.nl/BWBR0009641/2015-07-01>
- 23) National Forest Inventory: funded in Nature conservation act Planbureau obligation to report on the state of nature, forest, and landscape see 22c
- 24)
 - a. Policy and programmes in support of the African region: <http://www.unccd.int/RegionalReports/netherlands-eng2004.pdf>
 - b. Policy and programmes in support of the Asia, Latin America and the Caribbean, Central and Eastern Europe regions: <https://www.google.nl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKewjQ1uzJzJDMAhXCqA4KHepfBqQQFgq4MAM&url=http%3A%2F%2Fwww.unccd-prais.com%2Fuploads%2FGetReportPdf%2Fceff5a62-d709-450f-a4f8-a0fc010e3a23&usq=AFOjCNEW0pUtERNfkoXD1LmGUW4ocOOtBw&ad=rja>
- 25) Platform BEE: <http://www.platformbee.nl/>
- 26) Implementation of EU Timber Regulation in Dutch regulation:
 - a. Information on the EU Timber Regulation: <https://www.nvwa.nl/onderwerpen/consumentenartikelen/dossier/hout-importeren/europese-houtverordening>

- b. Translation of the Guidance document of the EU Timber Regulation: http://ec.europa.eu/environment/eutr2013/_static/files/guidance/guidance-document-5-feb-13_nl.pdf
- 27) Implementation of CITES in Dutch regulation: <https://mijn.rvo.nl/cites-soorten-de-eu-invoeren-of-weder-uitvoeren>
 - 28) Implementation of CITES in Flora and Fauna Act: <http://www.probos.nl/images/pdf/bosberichten/bosberichten2008-02.pdf>
 - 29) Criminal Act: http://wetten.overheid.nl/BWBR0001854/2016-04-20#BoekEersteTiteldeelII_Artikel23
 - 30) Vision on Nature <https://www.rijksoverheid.nl/onderwerpen/natuur-en-biodiversiteit/inhoud/natuurvisie>
 - 31) Program Natural Capital PBL (Netherlands Environmental Assessment Agency) <http://themasites.pbl.nl/natuurlijk-kapitaal-nederland/>
 - 32) Alterra Research report on Forest management and climate change: <http://edepot.wur.nl/257950>
 - 33) Alterra research report on biomass for energy <http://edepot.wur.nl/42477>
 - 34) Probos report on biomass potential of the forest and nature sector <https://www.rvo.nl/sites/default/files/2014/11/Rap2014%20Biomassapotentieel%20NBLH%20sector%202020%20en%202050.pdf>
 - 35) Alterra report on Motives of stakeholders in the Timber supply chain http://www.wur.nl/upload_mm/a/7/4/27ed5093-de0f-489a-bb54-d7e8024850bf_WOt-technical%20report%2021%20webversie.pdf
 - 36) Least developed countries fund <http://fiftrustee.worldbank.org/Pages/ldcf.aspx>
 - 37) MIA (Environmental Investment Rebate) and Vamil (Arbitrary depreciation of environmental investments) <http://www.rvo.nl/subsidies-regelingen/milieulijst-en-energielijst/miavamil/duurzaam-hout-onderdelen-van-een-werk-product>
 - 38) Nationaal Actieplan Hernieuwbare Energie <https://www.rijksoverheid.nl/documenten/rapporten/2010/06/23/rapport-nationaal-actieplan-voor-energie-uit-hernieuwbare-bronnen>
 - 39) SDE+ Stimulering Duurzame Energie: http://www.rvo.nl/subsidies-regelingen/stimulering-duurzame-energieproductie-sde?ns_source=google&ns_mchannel=cpc&ns_campaign={campaign}&ns_linkname={adgroup}&qclid=CNq6ltOnxNACFUu6GwodTbkOTw
 - 40) EIA: Energy Investment Rebate http://www.rvo.nl/subsidies-regelingen/energie-investeringsaftrek-eia?ns_source=google&ns_mchannel=cpc&ns_campaign={campaign}&ns_linkname={adgroup}&qclid=CIminZ-oxNACFUY8GwodQJMjpg
 - 41) Investment subsidy for sustainable energy http://www.rvo.nl/subsidies-regelingen/investeringsubsidie-duurzame-energie?ns_source=google&ns_mchannel=cpc&ns_campaign={campaign}&ns_linkname={adgroup}&qclid=CPSTv8SmztACFRYTGwodc7AB-g
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 - 43) Energy Investment rabat: rabat for investments on sustainable energy http://www.rvo.nl/subsidies-regelingen/energie-investeringsaftrek-eia?ns_source=google&ns_mchannel=cpc&ns_campaign={campaign}&ns_linkname={adgroup}&qclid=CMOYyfumztACFZEW0wodNUgOIA
 - 44) Subsidy of biomass fuelled boilers <http://www.rvo.nl/subsidies-regelingen/investeringsubsidie-duurzame-energie/voor-welke-apparaten/biomassaketels>
 - 45) Stimulation of green projects in general, among which also forest management projects <https://www.nationaalgroenfonds.nl/>

- 46) Sustainability criteria for solid biomass <http://english.rvo.nl/subsidies-programmes/sde/sustainability-criteria>
- 47) Energy agreement for sustainable growth: <https://www.government.nl/topics/energy-policy/contents/energy-agreement-for-sustainable-growth>
- 48) annual report on forest characteristics by Probos <http://www.probos.nl/images/pdf/kerngegevens/kerngegevens2014.pdf>
- 49) Stimulation of green education <https://www.rijksoverheid.nl/actueel/nieuws/2016/10/26/groen-onderwijs-internationaler-en-meer-gericht-op-innovatie>
- 50) Kamerbrief Voortgang duurzaam bosbeheer 2015 <https://www.rijksoverheid.nl/documenten/kamerstukken/2015/07/13/ontwikkelingen-internationaal-duurzaam-bosbeheer-en-verduurzaming-van-de-handel-in-hout>
- 51) Kamerbrief over mondiaal actieplan duurzaam bosbeheer <https://www.rijksoverheid.nl/documenten/kamerstukken/2016/01/26/kamerbrief-over-actieplan-mondiaal-duurzaam-bosbeheer>
- 52) EU Sustainable Timber Coalition: <http://www.europeansttc.com/>
- 53) Website with information on biodiversity relating to The Netherlands with a special section on sustainable forest management <http://www.biodiversiteit.nl/nederlandse-overheid-biodiversiteit/biodiversiteitsbeleid-vanaf-2012/hoe-willen-we-de-biodiversiteitsdoelen-bereiken/duurzaam-beheer-van-natuurlijk-kapitaal/duurzame-productie-en-consumptie-duurzame-ketens/bossen-en-hout>
- 54) Scenery Act (Natuurschoonwet 1928) <http://www.rvo.nl/onderwerpen/agrarisch-ondernemen/beschermde-planten-dieren-en-natuur/natuur-en-landschap/landgoed-als-natuurschoon>
- 55) Natuurpact: appointments between national government and provinces on responsibilities of nature management in the Netherlands <https://www.rijksoverheid.nl/actueel/nieuws/2013/09/18/economie-en-natuur-hand-in-hand-in-natuurpact>
- 56) Act privatization State forest service (Wet verzelfstandiging Staatsbosbeheer) <http://wetten.overheid.nl/BWBR0008904/2009-02-01>
- 57) Covenant Netherlands Ministry of Economic Affairs and the State Forest Service 'Staatsbosbeheer' <https://www.rijksoverheid.nl/documenten/convenanten/2014/04/08/convenant-ministerie-van-economische-zaken-en-staatsbosbeheer>

999) Forest Europe Criteria Sustainable Forest Management : http://www.foresteurope.org/sites/default/files/Updated_panEuropean_Indicators_SF_M_2015.pdf

Annex 2 Updated set of Pan-European Indicators for sustainable forest management

(source: www.foresteurope.org)

Updated set of Pan-European Indicators for SFM 2015

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

1. Forest Resources & Carbon Cycles

- C.1 Related policies, institutions & instruments
- 1.1 Forest area
- 1.2 Growing stock
- 1.3 Age structure &/or diameter distribution
- 1.4 Forest carbon

2. Forest Health and Vitality

- C.2 Related policies, institutions & instruments
- 2.1 Deposition & concentration of air pollutants
- 2.2 Soil condition
- 2.3 Defoliation
- 2.4 Forest damage
- 2.5 Forest land degradation

3. Productive Functions

- C.3 Related policies, institutions & instruments
- 3.1 Increment and fellings
- 3.2 Roundwood
- 3.3 Non-wood goods
- 3.4 Services

4. Biological Diversity

- C.4 Related policies, institutions & instruments
- 4.1 Diversity of tree species
- 4.2 Regeneration
- 4.3 Naturalness
- 4.4 Introduced tree species
- 4.5 Deadwood
- 4.6 Genetic resources
- 4.7 Forest fragmentation
- 4.8 Threatened forest species
- 4.9 Protected forests
- 4.10 Common forest bird species

5. Protective Functions

- C.5 Related policies, institutions and instruments
- 5.1 Protective forests - soil, water and other ecosystem functions - infrastructure and managed natural resources

6. Socio-economic

- C.6 Related policies, institutions & instruments
- 6.1 Forest holdings
- 6.2 Contribution of forest sector to GDP
- 6.3 Net revenue
- 6.4 Investments in forests and forestry
- 6.5 Forest sector workforce
- 6.6 Occupational safety and health
- 6.7 Wood consumption
- 6.8 Trade in wood
- 6.9 Wood energy
- 6.10 Recreation in forests