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# The impact of EU consumption on deforestation: Proposal of specific Community policy, legislative measures and other initiatives for further consideration by the Commission

Final report

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# The impact of EU consumption on deforestation: Proposal of specific Community policy, legislative measures and other initiatives for further consideration by the Commission



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## SUMMARY

### ***The impacts of EU consumption of food and non-food imports on deforestation: Proposing specific Community policy and legislative measures and other initiatives***

The consumption of food and non-food products by the EU27 has an impact on deforestation. To meet its consumption the EU27 not only relies upon its own productive agricultural land and forests, but it also has an impact beyond its borders. In the previous project tasks it was concluded that the EU27 is a large importer of land embodied in commodities and products. In some third countries the expansion of agricultural land and exploitation of forest resources ultimately leads to deforestation. It was quantified how the EU27 imports deforestation embodied in the commodities and products consumed.

Based on the criteria developed in the previous task 3 of this study, it was concluded that deforestation embodied in EU consumption is potentially impacted by the following EU policies: Climate and Renewable energy policy, Common Agricultural Policy, Forestry Strategy, Biodiversity Strategy, Sustainable Production and Consumption Policy, Trade Policy, Investment Policy, Development Cooperation Policy and Research and Innovation policy.

In this report, possible Community policies and legislative measures and initiatives on other levels to address the impact of EU consumption on worldwide deforestation are identified and described. The options cover different types of measures: regulatory measures, voluntary measures, market-based instruments, information and awareness raising, funding mechanism, capacity building and technical assistance.

**It should be noted that the study has only evaluated policy proposals against the criteria of impacts on deforestation, efficiency and side effects; hence options in terms of trade policy considerations, economic impacts and feasibility, including from a legal point of view, have not been assessed in this study.**

The identified options are described using a template which is meant to facilitate a comprehensive description of a policy proposal. This includes its functioning, the actors / entities involved as well as the problem targeted and its objectives.

The identified options are then assessed against a set of three relevant evaluation criteria through a qualitative evaluation method.

In the final section of the report the identified options are prioritised. The prioritisation of the options is complemented by a sensitivity analysis on the basis of which the critical parameters and trade-offs are determined.

A number of policy measures perform well regardless of the weighing options considered. :

- Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials);
- Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities
- Policy proposal 18: Mandatory labelling of the forest footprint of (food) products;
- Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation;
- Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation;

Some other options that are described are also worth considering and studying further.

The results of this prioritisation and ranking exercise are dependent on the subjective evaluation criteria and weights used and the scores attributed to the policy proposals. Furthermore, the performance of a specific proposal depends on the consistency and complementarities of the set of proposals to be installed. The study does not propose a complete set of proposed policy measures, but should be considered as an input in a process that can ultimately result in new policy development, by consulting all stakeholders and using all available tools, such as Impact Assessments.



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**LIST OF ACRONYMS**

ACP	Africa, Caribbean and the Pacific
ASEAN	Association of Southeast Asian Nations
BIT	Bilateral Investment Treaty
CAP	Common Agriculture Policy
CoP	Conference of the Parties
CGIAR	Consultative Group on International Agricultural Research
CSR	Corporate social responsibility
CEP	Country Environmental Profiles
IDH	Dutch Sustainable Trade Initiative
EPA	Economic Partnership Agreement
ESG	Environmental, social and corporate governance
EIB	European Investment Bank
EBA	Everything But Arms regulation
ECA	Export Credit Agency
COMEOS	Federation for Trade and Services
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FAP	Forest Action Plan
FFD	Forest footprint disclosure
FLEGT	Forest Law Enforcement, Governance and Trade
FAP	Forestry Action Plan
FTA	Free Trade Agreement
Mercosur	Free Trade Area among Brazil, Argentina, Paraguay and Uruguay
GSP	Generalized System of Preferences
GIZ	Gesellschaft für Internationale Zusammenarbeit
GRI	Global Reporting Initiative
GRSB	Global Roundtable for Sustainable Beef
GHG	Green House Gas
iLUC	Indirect Land-Use Change
IFC	International Finance Corporation
IIA	International Investment Agreement
LULUCF	Land Use, Land-Use Change and Forestry
LDC	Least Developed Country
MEA	Multilateral Environmental Agreement
NREAP	National Renewable Energy Action Plans
OECD	Organization for Economic Cooperation and Development
PES	Payment for Ecosystem Services
PRI	Principles for Responsible Investment Initiative
REDD+	Reduced Emissions from Deforestation and forest Degradation
RF	Retail forum
RWE	Rheinisch-Westfälisches Elektrizitätswerk
RTRS	Round Table on Responsible Soy
RTRS	Roundtable on Responsible Soy
RSB	Roundtable on Sustainable Biofuels
RSPO	Roundtable on Sustainable Palm Oil
SRI	Socially Responsible Investing
SEA	Strategic Environmental Assessment

## List of Acronyms

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SIA	Sustainability Impact Assessment
SCP	Sustainable Consumption and Production
TFT	Tropical Forest Trust
UNFCCC	United Nations Framework Convention on Climate Change
WRAP	Waste Resources Action Programme
WTO	World Trade Organisation

## CHAPTER 1 INTRODUCTION

---

This report proposes specific Community policy and legislative measures and other initiatives for reducing the impacts of EU consumption of food and non-food imports on deforestation. The analysis presented in this report is based on the results of both Task 2 'Comprehensive analysis of the impact of EU consumption of imported food and non-food commodities and manufactured goods on deforestation' and Task 3 'Identification of the Community policy areas with the greatest potential for reducing pressure on forests in third countries'.

Information on the type and use of imported goods and commodities that are important in terms of embodied deforestation as well as on the EU policies and regulations that are likely to have the highest potential to reduce the impact of EU consumption on deforestation outside the EU are the basis of the identification of possible policies measures. Therefore, this report starts with a brief summary of the key conclusions from Task 2 and Task 3.

After that, possible Community policies, legislative measures and initiatives that can be taken at other levels to address the impact of EU consumption on deforestation in third countries are identified and described. The options cover different types of measures: regulatory measures, voluntary measures, market-based instruments, information and awareness raising, funding mechanism, capacity building and technical assistance.

The identified options are then assessed against a set of three relevant evaluation criteria (impact on deforestation, efficiency and side effects) through a qualitative evaluation method. The performance of an option on the evaluation criteria is translated into a criterion specific score.

**It should be noted that the study has only evaluated policy proposals against the criteria of impacts on deforestation, efficiency and side effects; hence options in terms of trade policy considerations, economic impacts and feasibility, including from a legal point of view, have not been assessed in this study.**

In the final section of the report the identified options are prioritised. The prioritisation of the options is complemented by a sensitivity analysis on the basis of which the critical parameters and trade-offs are determined.





## CHAPTER 2 RESULTS FROM THE PREVIOUS TASKS OF THE STUDY

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The study has four main objectives. The first two objectives were addressed earlier in respectively the task 2 and the task 3 report, the latter two objectives are elaborated in this report.

The objectives are:

- produce a comprehensive analysis of the impacts of EU consumption of imported food and non-food commodities and manufactured goods on deforestation; [task 2 report]
- identify areas where Community policies and where applicable legislation would need to be reviewed in order to support efforts to reduce deforestation; [task 3 report]
- make specific suggestions for how the policies identified could be oriented to reduce EU impacts on deforestation; [task 4]
- list other possible policy measures at other levels (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third [task 4]

In this chapter the main results from the previous tasks are reported and commented upon.

The Task 3 report '**Identification of the Community policy areas with the greatest potential for reducing pressure on forests in third countries**' serves as a basis to the current analysis.

In task 3, criteria have been developed to evaluate the relevance of policies to be capable of achieving a reductive effect on third country deforestation.

For a policy to be relevant, it must be able to satisfy one or more of the following criteria (including its further development, if envisaged):

- Reduce the land use linked to the production of primary commodities at source;
- Reduce the level of deforestation linked to the production of the identified primary commodities;
- Reduce the embedded deforestation of products produced;
- Contribute to the supply chain of commodities, products and services with no or lower deforestation impact;
- Reduce EU consumption (in general, and more specifically of commodities, products and services having deforestation impacts at global scale)

Based on the above criteria the following EU policies and policy areas were identified: Climate and Renewable energy policy, Common Agricultural Policy, Forestry Strategy, Biodiversity Strategy, Sustainable Production and Consumption Policy, Trade Policy, investment Policy, Development Cooperation Policy and Research and Innovation policy.

In this task 4 report, the focus will be on individual policy measures. For this purpose, the same criteria as described above will be used to evaluate the potential impact of individual policy measures.

In task 3, each policy is described individually with a focus on its potential effect on reducing third country deforestation, or in the more negative case on its contribution to increased deforestation. In case different policies may have conflicting effects on deforestation, this is highlighted in the

description. However the study did not address potential conflicts between EU policies. As an example, the Common Agricultural Policy objective to encourage increased EU production could potentially come into conflict with development cooperation activities. In such a case the report only described the potential impact of both policies on deforestation, but made no statements on a 'conflict' between the two, as this is outside the scope of the project.

Task 2, on the other hand, quantifies the impact of EU consumption on worldwide deforestation. It provides the basis for the assessment made in Task 3 and 4. In the next paragraphs, the results of Task 2 are summarized and linked to the follow-up in the Task 3 and 4 reports.

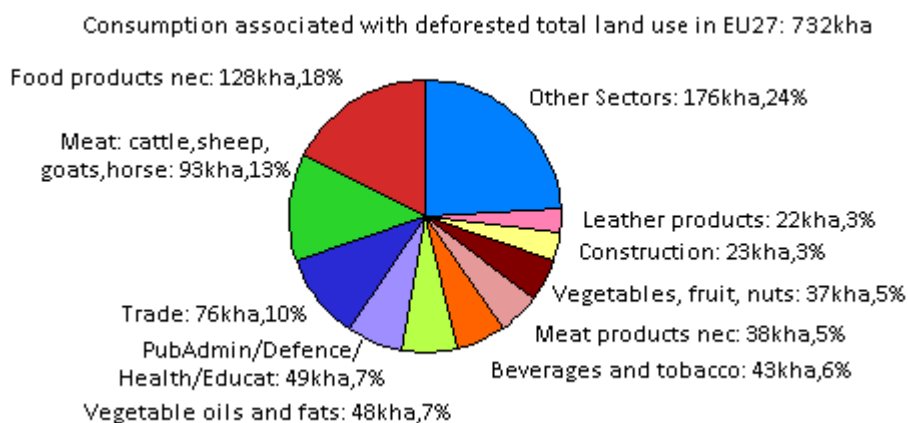
When looking at deforestation embodied in total final consumption, the EU27 is **consuming** 732 kha (2004) or 10% of the global embodied deforestation consumption (7,290 kha per year). Deforestation embodied in EU27 consumption is almost entirely due to imports, as deforestation within the EU is negligible. Therefore Trade Policy and Sustainable Production and Consumption Policy are very important.

Over the period 1990-2008, the EU27 **imported** almost 36% of all deforestation embodied in crop and livestock products **traded** between regions.

The highest share of embodied deforestation was traded through international crop product trade. Consequently, the import of embodied deforestation through the import of crop products was the main cause of the strong link between the EU27 and embodied deforestation. Of the overall deforestation embodied in traded crop products over the period 1990-2008, one third was consumed by the EU economy.

The EU27 imported more than one quarter of the global embodied deforestation in ruminant livestock products during the period 1990-2008. Therefore policy measures targeting imported crop products and meat consumption could potentially have an important impact and could be prioritised.

The EU27 produces a large share of the goods and services consumed in the EU27, while using raw and semi-processed agricultural and forestry commodities imported from other regions. The sectors of final consumption with the largest allocation of embodied deforestation are dominated by agricultural and food products, but processed products are often important, such as furniture and clothing. We found that service sectors (trade, public administration, health, education) had a large impact, due to a high share of expenditure on services and the use of processed products like food and paper in the service sectors. Figure 2—1 shows the relative importance of deforestation embodied in different goods and services sectors of final consumption in the EU27. The main goods and services are those that require food (both food from animal as non-animal origin), but general service sectors like trade, public administration, health and education do not only consume food, but also a wide variety of other products.



*Figure 2—1 Consumption of goods and services associated with deforestation allocated by sector for the EU27 (2004). The pie chart only explicitly shows sectors covering 75% of the total are shown explicitly. The sectors shown represent the goods and services that were consumed in the EU27.*

When aggregated per sector, food dominates the impact (60%, with 18% meat and 42% other food). Food consumption, and to a lesser extent food production, will therefore receive special attention in the policy measures to be proposed. The service sectors are the second most important (22%), although this is mainly due to high expenditure and consumption of food products in addition to paper, furniture, etc. Wood and associated products represent 5%, and also textiles including leather (6%) and manufactured products (3%) are significant.

As illustrated by the Task 2 report, land use associated with the production of goods and services within the EU27 is only half the amount of land use associated with EU consumption, meaning that the other half of the resulting land use impact takes place in third countries. The EU Common Agricultural Policy has a direct impact on land use associated with the production of agricultural commodities in the EU, but also an indirect impact on land use outside the EU, as both variables are linked to each other. EU policy measures could aim at reducing EU consumption of commodities and products with high deforestation impact or at reducing the embedded deforestation of products produced.

The study points towards South America and in particular Brazil and Argentina as the main sources for embodied deforestation associated with the consumption of agricultural and forestry products or goods and services within the EU27. This is mainly due to the import of soybeans and soybean cake used in many EU sectors. The expansion of soybean crops is the largest driver of deforestation in the analysed period.

For the period 1990-2008 amongst all commodities imported in the EU, oil crops are the most important, mainly due to soybeans and soybean products from Brazil, Argentina and Paraguay, and palm oil from Indonesia and Malaysia. Another important group are stimulants. Cocoa bean production has expanded in African countries like Ghana, Nigeria, Cameroon and Togo, but also Indonesia is an important country of origin. Coffee associated with deforestation was mainly imported from Latin American countries like Peru, Honduras, Nicaragua and Colombia, but also from Southeast Asian countries like Indonesia, Vietnam and Laos and some African countries (Kenya, Uganda and Tanzania).

Figure 2—2 gives the order of importance of different combinations of crop products and their country of origin. Only the most important combinations (share > 1%) are shown in detail.

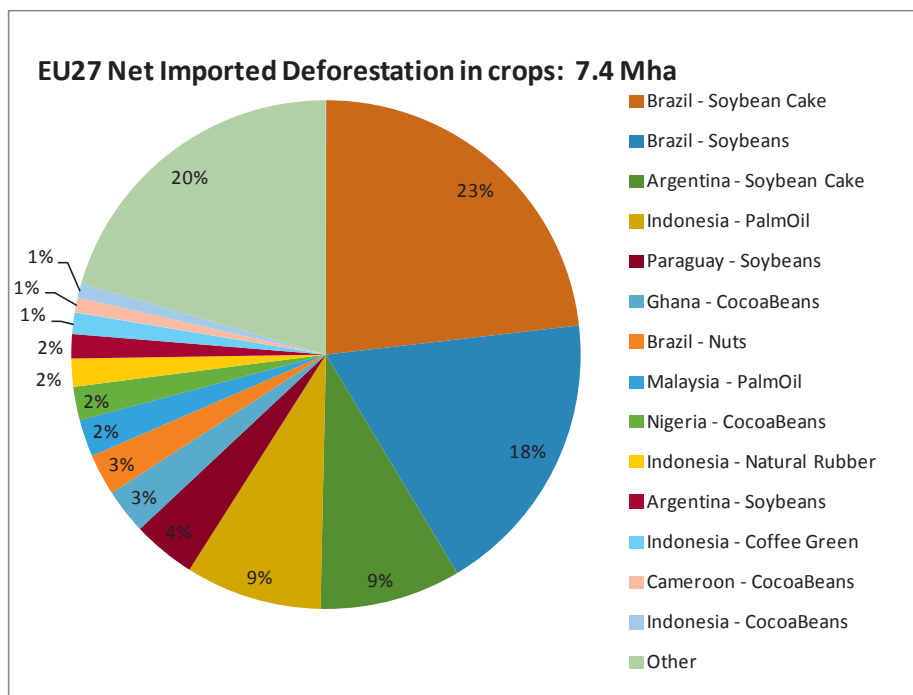


Figure 2—2 Most important crop commodities and countries of origin for deforestation embodied in crop imports into the EU27 (1990-2008)

Livestock products with embodied deforestation are mainly imported from South America and Sub-Saharan Africa.

Policy measures could contribute to the promotion of a supply chain of products with low deforestation impact, e.g. as part of trade policy, investment policy or development co-operation.

Impacts of policy developments that took place after 2008, could not be studied in task 2. Task 3 also looked at recent policy development, but was limited to EU policy. However there was a need to take into account relevant measures at other levels than Community policies (e.g. EU Member State, third countries multilateral, private sector). An overview of such measures will be given in CHAPTER 3.

## **CHAPTER 3 MEASURES AT OTHER LEVELS THAN COMMUNITY POLICIES (E.G. EU MEMBER STATE, MULTILATERAL, PRIVATE SECTOR) THAT COULD SUPPORT THE OVERALL OBJECTIVE OF REDUCING THE LOSS OF FOREST COVER IN THIRD COUNTRIES**

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### **3.1. INTRODUCTION AND APPROACH**

This overview was prepared based on the information obtained during and after a stakeholder workshop on 29 June 2012 and during the Ad Hoc Flegt meeting between the European Commission services and Member States on 19 June 2012. The information was verified and complemented by the Contractor as necessary to provide an updated frame of the recent or ongoing initiatives that are relevant to respond to the objective of this study.

In the table overleaf an overview of policy measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) has been provided.

The items under “Link with policy evaluation criteria” refer to the evaluation criteria that have been used in Task 3 for determining the relevance of a particular policy, i.e. for determining whether they have a potential positive effect on reducing third country deforestation. Specifically, for a policy measure to be capable of achieving a reductive effect on third country deforestation, it must have the potential to satisfy one or more of the following criteria:

- 1.a. Reduce the land use linked to the production of primary commodities at source;
- 1.b. Reduce the level of deforestation linked to the production of the identified primary commodities;
2. Reduce the embedded deforestation of products produced;
3. Contribute to the supply chain of commodities, products and services with no or lower deforestation impact;
4. Reduce EU consumption (in general, and more specifically of commodities, products and services having deforestation impacts at global scale).

CHAPTER 3 Measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third countries

**3.2. POLICY MEASURES AT OTHER LEVELS (E.G. EU MEMBER STATE, MULTILATERAL, PRIVATE SECTOR) THAT COULD SUPPORT THE OVERALL OBJECTIVE OF REDUCING THE LOSS OF FOREST COVER IN THIRD COUNTRIES**

Initiative	Brief description, examples	Link with policy evaluation criteria				
		1.a	1b	2.	3.	4.
<b>1. Member state initiatives</b>						
Guide sustainable procurement (Federaal Actieplan Duurzame Overheidsopdrachten) – Belgium	This guide provides practical help in choosing sustainable products and services, with information on environmental and social criteria, labels, and sustainable public procurement. Product categories include leather products, outdoor furniture, wood pellets, and other wood products.				x	x
Sectorial agreement of 1 March 2011 aiming at increasing the supply of wood products sourced from forests that are managed sustainably – Belgium	Agreement signed between the Belgian government and 9 sector federations such as the Federation for Trade and Services (COMEOS), the Wood import Trade Federation, the Federation of Sawing Mills, the Federation of Textile-, Wood- and Furniture Industry, the construction sector, ... The agreement aims at increasing the market share of wood products sourced from sustainably managed forests and at awareness raising. <a href="http://www.health.belgium.be/eportal/Environment/BiodiversityandGMO/Biodiversity/Forests/Usingwoodsustainably/index.htm">http://www.health.belgium.be/eportal/Environment/BiodiversityandGMO/Biodiversity/Forests/Usingwoodsustainably/index.htm</a>			x	x	
Dutch Sustainable Trade Initiative (IDH) – The Netherlands	IDH is initiated and funded by the Dutch government. It is a public-private partnership for accelerating sustainable trade, focusing on among others. cocoa, soy, tropical timber, and cotton. IDH convenes coalitions of front running companies, civil society organizations and governments to transform markets towards sustainable production and consumption worldwide. The scale on which IDH operates derives from the concept of working with private companies who bring in funds, entrepreneurship and procurement power, governments that add legislation, laws, regulations and funds, and civil society that brings in know-how, networks, local expertise and credibility <a href="http://www.idhsustainabletrade.com/">www.idhsustainabletrade.com/</a>		x			
Forest Initiative for Global development / Focali (Forest, Climate, and Livelihood research network) – Sweden	Focali (Forest, Climate, and Livelihood research network) is a Swedish research network focusing on forest/bio-energy, climate change and poverty issues. Focali is a part of the Forest Initiative which is a strategic partnership between Sida, the Swedish Forest Agency and the Swedish Forestry Association. The initiative also supports REDD+ pilots. . <a href="http://www.focali.se">http://www.focali.se</a> and <a href="http://www.skogsinitiativet.se/pub/viewStartPage">http://www.skogsinitiativet.se/pub/viewStartPage</a> .					
Generational goal – Sweden	The objective is to achieve zero deforestation or zero impact on the environment outside Sweden. The overall goal of Swedish environmental policy is to hand over to the next generation a society in which the major environmental problems in Sweden have been solved,				x	x

CHAPTER 3 Measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third countries

Initiative	Brief description, examples	Link with policy evaluation criteria				
		1.a	1b	2.	3.	4.
	without increasing environmental and health problems outside Sweden's borders <a href="http://www.miljomal.se/Environmental-Objectives-Portal/Undre-meny/About-the-Environmental-Objectives/Generation-goal/">http://www.miljomal.se/Environmental-Objectives-Portal/Undre-meny/About-the-Environmental-Objectives/Generation-goal/</a>					
Network on reducing food waste (private sector, governments, knowledge institutions) – Sweden, Denmark, Norway, Finland	The project focuses on reducing the amounts of food waste in the retail and wholesale sector. Financed by the Nordic Council of Ministers (Sweden, Denmark, Norway, Finland) <a href="http://www.ivl.se/download/18.7df4c4e812d2da6a416800089028/B1988.pdf">http://www.ivl.se/download/18.7df4c4e812d2da6a416800089028/B1988.pdf</a>			x	x	
Promotion of environmentally smarter food choices – initiated at EU level by Sweden	The National Food Administration and the Environmental Protection Agency of Sweden jointly drafted guidelines on diet choices for health and the environment, called “Environmentally Effective Food Choices.” Sweden has become the first country to establish new food policies that consider the environmental aspects of human food choices along with individual health matters. <a href="http://www.slv.se/upload/dokument/miljo/environmentally_effective_food_choices_proposal_eu_2009.pdf">http://www.slv.se/upload/dokument/miljo/environmentally_effective_food_choices_proposal_eu_2009.pdf</a>					x
Time-bound voluntary private sector commitments – UK	<ul style="list-style-type: none"> <li>- Voluntary commitment with food retailers and manufacturers on waste reduction targets (Courtauld Commitment 2005-2010; 2010-2012) <a href="http://www.wrap.org.uk/content/courtauld-commitment-2-0">www.wrap.org.uk/content/courtauld-commitment-2-0</a> . Current phase targets include:               <ol style="list-style-type: none"> <li>1. reduce the carbon impact of grocery packaging by 10% by the end of 2012</li> <li>2. reduce UK household food and drink waste by 4% by the end of 2012</li> <li>3. reduce product and packaging waste in the grocery supply chain by 5% by the end of 2012.</li> </ol> </li> <li>- Hospitality and Food Service Agreement on food waste. Launched 27 June 2012, companies have signed up to two targets (<a href="http://www.wrap.org.uk/content/leading-hospitality-and-food-service-companies-sign-waste-agreement">www.wrap.org.uk/content/leading-hospitality-and-food-service-companies-sign-waste-agreement</a>). These targets are for the signatories to meet as a group, not for individual companies to pass and fail individually:               <ol style="list-style-type: none"> <li>1. Reduce food and packaging waste by 5% by 2015</li> <li>2. To manage, by 2015, 70% of the waste that does arise through recycling, composting or anaerobic digestion.</li> </ol> </li> <li>- Work is underway with industry trade associations on a voluntary UK National Statement on a transition to sustainable palm oil. <a href="http://www.dfid.gov.uk/Documents/publications1/press-releases/UK-government-and-business-partnership-to-tackle-deforestation.pdf">www.dfid.gov.uk/Documents/publications1/press-releases/UK-government-and-business-partnership-to-tackle-deforestation.pdf</a></li> </ul>				x	x
Consumer information - UK	- Guidance for industry on the application of date label to food (i.e. best-before and use-by) <a href="http://www.defra.gov.uk/publications/files/pb132629-food-date-labelling-110915.pdf">www.defra.gov.uk/publications/files/pb132629-food-date-labelling-110915.pdf</a>				x	x

CHAPTER 3 Measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third countries

Initiative	Brief description, examples	Link with policy evaluation criteria				
		1.a	1b	2.	3.	4.
Awareness raising (consumers and business) – UK	<ul style="list-style-type: none"> <li>- Waste Resources Action Programme (WRAP) is a public funded body that works with government, business and consumers to reduce waste and promote recycling (including in relation to food). <a href="http://www.wrap.org.uk/content/about-wrap">www.wrap.org.uk/content/about-wrap</a>. One of the key WRAP consumer facing campaigns is love food hate waste campaign <a href="http://www.lovefoodhatewaste.com/">www.lovefoodhatewaste.com/</a></li> </ul>				x	x
Sustainable public sector procurement - UK	<ul style="list-style-type: none"> <li>- UK timber procurement policy, which requires that all timber and wood-derived products bought by central government departments (voluntary for local government, hospitals, schools etc) must be from: i) independently verifiable legal and sustainable sources <a href="http://www.cpet.org.uk/uk-government-timber-procurement-policy/">www.cpet.org.uk/uk-government-timber-procurement-policy/</a>.</li> <li>- Linked to this is the publically funded Central Point of Expertise on Timber which provides advice and training on how public sector buyers and their suppliers can meet the policy requirements of the UK timber procurement policy <a href="http://www.cpet.org.uk/about-cpet/our-services">www.cpet.org.uk/about-cpet/our-services</a>.</li> </ul>				x	x
REDD+ finance – UK	<ul style="list-style-type: none"> <li>- UK has an International Climate Fund (£2.9bn over 2011-2015) aimed at helping developing countries tackle climate change and reduce poverty. Forest finance is one of the key themes of the Fund (accounting for up to 20%) <a href="http://www.decc.gov.uk/en/content/cms/tackling/international/icf/icf.aspx">www.decc.gov.uk/en/content/cms/tackling/international/icf/icf.aspx</a></li> <li>- Forest Governance Markets and Climate programme, which is part of the ICF, aims to support governance and market reforms that reduce the illegal use of forest resources and benefit the poor. This includes support for FLEGT Voluntary Partnership Agreements and looks to extend the experience from the illegal logging regime to commodities such as palm oil, soy and livestock. <a href="http://projects.dfid.gov.uk/project.aspx?Project=201724">http://projects.dfid.gov.uk/project.aspx?Project=201724</a></li> </ul>		x			
R&D - UK	<ul style="list-style-type: none"> <li>- Research into UK palm oil consumption and a review of policy options relating to sustainable palm oil sourcing <a href="http://www.proforest.net/proforest-news/defra-palm-oil-report/defra-report-on-uk-palm-oil-consumption-and-sustainable-policy-options-published">www.proforest.net/proforest-news/defra-palm-oil-report/defra-report-on-uk-palm-oil-consumption-and-sustainable-policy-options-published</a></li> <li>- Co-funded research with industry into environmental consequences of using home grown legumes as a protein source in pig diets (Green Pig Project) <a href="http://www.bpex.org/R-and-D/R-and-D/GreenPig.aspx">www.bpex.org/R-and-D/R-and-D/GreenPig.aspx</a></li> </ul>				x	x
<b>2. Multilateral initiatives</b>						
REDD finance	Comprehensive finance mechanism to support implementation of REDD under the UNFCCC framework. <a href="http://unfccc.int/files/methods_science/redd/application/pdf/tfd-redd-finance-background-paper.pdf">http://unfccc.int/files/methods_science/redd/application/pdf/tfd-redd-finance-background-paper.pdf</a>		x			
(European) Roundtable on Sustainable Consumption and	Initiative coordinated by the European Topic Centre on Sustainable consumption and production <a href="http://scp.eionet.europa.eu/">http://scp.eionet.europa.eu/</a> . Issues include Innovative Policy Instruments and			x	x	x



CHAPTER 3 Measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third countries

Initiative	Brief description, examples	Link with policy evaluation criteria				
		1.a	1b	2.	3.	4.
Production (SCP)	bottom-up initiatives for an SCP action plan, Blueprint on SCP, changing consumer lifestyles, changing lifestyles and creating markets and how to work collectively with the retailer sector for effective communication of product chain information to consumers.					
Partnership to benchmark the environmental performance of livestock food chains – FAO Animal Production and Health Division (AGA) has the lead	Multi-stakeholder initiatives coordinated by FAO to benchmark and monitor the environmental performance of livestock food chains. Range of environmental criteria covered, i.e. GHG emissions, water, nutrient cycles. The partnership will seek to improve the evidence-base for decision making <a href="http://www.fao.org/ag/againfo/home/en/news_archive/AGA_in_action/2011_livestock_food_chains.html">http://www.fao.org/ag/againfo/home/en/news_archive/AGA_in_action/2011_livestock_food_chains.html</a>	x		x		
The United Nations-backed Principles for Responsible Investment Initiative (PRI)	PRI is a network of international investors working together to put the six Principles for Responsible Investment into practice. They reflect the view that environmental, social and corporate governance (ESG) issues can affect the performance of investment portfolios and therefore must be given appropriate consideration by investors. The Principles provide a voluntary framework by which all investors can incorporate ESG issues into their decision-making and ownership practices and so better align their objectives with those of society at large. <a href="http://www.unpri.org">http://www.unpri.org</a>	x	x	x	x	
International Finance Corporation's (IFC's) work on responsible finance. Worldbank	With donor support from the Global Environmental Facility, the IFC started the Biodiversity and Agricultural Commodities Program to promote best environmental and social practices, particularly in the production and overall supply chain of such commodities as palm oil, soybeans, sugarcane, and cocoa. <a href="http://www1.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/home">http://www1.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/home</a>		x			
FAO's Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security	These Guidelines are intended to contribute to the global and national efforts towards the eradication of hunger and poverty, based on the principles of sustainable development and with the recognition of the centrality of land to development by promoting secure tenure rights and equitable access to land, fisheries and forests. The eradication of hunger and poverty, and the sustainable use of the environment, depend in large measure on how people, communities and others gain access to land, fisheries and forests. The livelihoods of many, particularly the rural poor, are based on secure and equitable access to and control over these resources. They are the source of food and shelter; the basis for social, cultural and religious practices; and a central factor in economic growth. <a href="http://www.fao.org/nr/tenure/en/">http://www.fao.org/nr/tenure/en/</a>	x	x			
OECD Guidelines for Multinational Enterprises	The Guidelines are recommendations by governments covering all major areas of business ethics, including corporate steps to obey the law, observe internationally-recognised standards and respond to other societal expectations. The Guidelines were updated in 2011. <a href="http://www.oecd.org/investment/guidelinesformultinationalenterprises/48004323.pdf">http://www.oecd.org/investment/guidelinesformultinationalenterprises/48004323.pdf</a>		x	x		
OECD due diligence guidance for	The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-		x			

CHAPTER 3 Measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third countries

Initiative	Brief description, examples	Link with policy evaluation criteria				
		1.a	1b	2.	3.	4.
responsible supply chains of minerals from conflict affected and high-risk areas	Affected and High-Risk Areas provides step-by-step management recommendations endorsed by governments for global responsible supply chains of minerals in order for companies to respect human rights and avoid contributing to conflict through their mineral or metal purchasing decisions and practices. The Due Diligence Guidance may be used by any company potentially sourcing minerals or metals from conflict-affected and high-risk areas, and is intended to cultivate transparent, conflict-free supply chains and sustainable corporate engagement in the minerals sector. <a href="http://www.oecd.org/daf/internationalinvestment/guidelinesformultinationalenterprises/46740847.pdf">http://www.oecd.org/daf/internationalinvestment/guidelinesformultinationalenterprises/46740847.pdf</a>					
<b>3. Private sector initiatives (some in multi-stakeholder setting)</b>						
Forest Footprint Disclosure (FFD) project (water, forest and carbon will be integrated)	Forest Footprint Disclosure (explain acronym) offers for the private sector a place to collaborate with others in order to understand the reality and the options in global supply chains as well as the opportunities that arise from improved business practices. FFD supports best practice including using global certification standards to help avoid deforestation. FFD acts as a central point of exchange for information, research and best practice case studies on deforestation issues, encouraging innovation through exchange and collaboration with all stakeholders. <a href="http://www.forestdisclosure.com">http://www.forestdisclosure.com</a>	x	x	x		
TFT (tropical forest trust), and Nestlé working together	Partnership between Nestlé and the Tropical Forest Trust to source sustainable palm oil (a.o. not leading to deforestation) and to conserve High Conservation Value Forests. The arrangement also includes regular meetings with Greenpeace to communicate on progress. <a href="http://www.tft-forests.org">http://www.tft-forests.org</a>		x	x	x	
Food waste – voluntary commitments of manufacturers	Manufacturers back the EU measures to halve the food waste by 2025. They are committed to take voluntary efforts to minimize waste. Examples include practices to avoid waste and optimize use of raw materials by recovering parts that do not go into the finished food product, such as by-products like coffee grounds to produce renewable energy or beet pulp to provide sound animal feed.			x	x	
Roundtable on responsible soy (RTRS)	RTRS is an international multi-stakeholder initiative, founded in 2006, that promotes the use and growth of sustainable soy. RTRS sustainable standard and principles were adopted in 2011 <a href="http://www.responsiblesoy.org">http://www.responsiblesoy.org</a>	x	x	x	x	
Roundtable on responsible palm oil (RSPO)	RSPO, established in 2004, is a not-for-profit association that unites stakeholders from seven sectors of the palm oil industry - oil palm producers, palm oil processors or traders, consumer goods manufacturers, retailers, banks and investors, environmental or nature conservation NGOs and social or developmental NGOs - to develop and implement global standards for sustainable palm oil. <a href="http://www.rspo.org">http://www.rspo.org</a>	x	x	X	x	
Global roundtable for sustainable	GRSB is a global, multi-stakeholder initiative founded in February 2012 to advance sustainable	x	x	x	x	

CHAPTER 3 Measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third countries

Initiative	Brief description, examples	Link with policy evaluation criteria				
		1.a	1b	2.	3.	4.
beef (GRSB)	production of beef, through the commitment of stakeholders in the beef value chain.					
Private company standards	A growing number of companies is developing CSR standards, also to comply with the standards and guidelines of GRI (Global Reporting Initiative)	x	x	x	x	
IKEA : zero deforestation policy (due diligence system for timber; certified palm oil; leather due diligence)	IKEA has adopted a zero deforestation policy, aiming to source raw materials and half products that do not cause deforestation. <a href="http://www.ikea.com/ms/en_GB/pdf/people_planet_positive/People_planet_positive.pdf">http://www.ikea.com/ms/en_GB/pdf/people_planet_positive/People_planet_positive.pdf</a>		x	X	x	
Unilever: 2020 Sustainability Plan	Launched in 2010, Unilever plans to improve the health of 1 billion people, to buy 100% of its agricultural raw materials from sustainable sources, and to reduce the environmental impact of everything it sells by one-half, while doubling its revenues. One of the targets is sourcing 100% of agricultural raw materials sustainably by 2015, including 100% sustainable palm oil. <a href="http://www.unilever.com/sustainable-living/uslp/">http://www.unilever.com/sustainable-living/uslp/</a>		x	X	x	
Retail Forum a multi-stakeholder platform deforestation to be addressed in the coming years).	The Retail Forum is a multi-stakeholder platform set up in order to exchange best practices on sustainability in the European retail sector and to identify opportunities and barriers that may further or hinder the achievement of sustainable consumption and production. Under the 2012 – 2014 work plan the Retail Forum will address the issue of deforestation. An issue paper will be drafted that will analyze the EU legislative framework, identify barriers and opportunities, highlight best practices, and suggest possible areas of action for policy-makers, retailers and other actors. <a href="http://ec.europa.eu/environment/industry/retail/index_en.htm">http://ec.europa.eu/environment/industry/retail/index_en.htm</a>		x	X	x	
Leaders For Nature - Netherlands	Leaders for Nature is the IUCN NL business network of twenty multinationals and major Dutch enterprises working together on greening the economy. <a href="http://www.leadersfornature.nl/">http://www.leadersfornature.nl/</a>	x	x	X	x	
The Equator Principles Association (UK based)	The Equator Principles (EP) Association is the unincorporated association of member Equator Principles Financial Institutions and Associates. The Equator Principles is a credit risk management framework for determining, assessing and managing environmental and social risk in Project Finance transactions. Project Finance is often used to fund the development and construction of major infrastructure and industrial projects. <a href="http://www.equator-principles.com/">http://www.equator-principles.com/</a>		x	x		
<b>4. National initiatives (outside EU)</b>						
Moratoria, land use planning and certification –Brazil, Argentina, Indonesia	By setting out moratoria, and developing and implementing a vision on land use planning, national authorities can have a significant positive influence on deforestation. These kinds of initiatives for oil-crops have been developed in Brazil, Argentina and Indonesia and have proven to have positive spill-over effects to other applications. Some of these moratoria have been installed regardless of the final application of the crops These moratoria were established because of the ongoing discussions on deforestation in the RTRS and RSPO, the public debate and especially due to pressure of Greenpeace campaigns.	x	x		x	

CHAPTER 3 Measures at other levels than Community policies (e.g. EU Member State, multilateral, private sector) that could support the overall objective of reducing the loss of forest cover in third countries

Initiative	Brief description, examples	Link with policy evaluation criteria				
		1.a	1b	2.	3.	4.
	<p>Due to these factors multinational companies decided to establish the moratoria. The Brazil soy moratorium is successful and is extended ever since. There is no such moratorium in Argentina. In Paraguay there has been (or still is) a moratorium on tree logging, this is primarily related with the beef industry.</p> <p><b>INDONESIA- TIMBER, PALM OIL:</b> On May 20, 2011, Indonesian President Susilo Bambang Yudhoyono signed a Presidential Instruction (“decree”) putting into effect a two-year moratorium on issuing new permits for use of primary natural forest and peatland. The highly anticipated moratorium is part of a broader \$1 billion Indonesia-Norway partnership to reduce emissions from deforestation and degradation (known as REDD+). Read more at <a href="http://news.mongabay.com/2011/0617-indonesia_moratorium_wri.html#7gAWdyvWMzRWcbul.99">http://news.mongabay.com/2011/0617-indonesia_moratorium_wri.html#7gAWdyvWMzRWcbul.99</a></p> <p><b>BRAZIL – BEEF:</b> Four of the world's largest cattle producers and traders have agreed to a moratorium on buying cattle from newly deforested areas in the Amazon rainforest, reports Greenpeace. JBS-Friboi, Bertin, Minerva and Marfrig will implement certification and monitoring systems to ensure that beef and leather in their supply chains is not being produced as a result of new forest clearing. The companies also agreed to ban buying of cattle from ranches using slave labor or illegally occupying protected areas and indigenous reserves. Read more at <a href="http://news.mongabay.com/2009/1007-greenpeace_cattle.html#mKfsz0V2duW5DEVm.99">http://news.mongabay.com/2009/1007-greenpeace_cattle.html#mKfsz0V2duW5DEVm.99</a></p> <p><b>BRAZIL / SOY</b> The moratorium was established in July 2006 in response to concerns among big soy buyers — notably McDonalds and Carrefour — that soy expansion was driving large-scale destruction of Earth's largest rainforest. Soy producers in the region have since registered their holdings in order to sell their product to major crushers and traders. Registered properties are monitored via satellite, airplane flyovers, and on-the-ground visits for compliance. Read more at <a href="http://news.mongabay.com/2010/0708-amazon_soy_moratorium.html#Qlqbrw9dxxQaHKG5.99">http://news.mongabay.com/2010/0708-amazon_soy_moratorium.html#Qlqbrw9dxxQaHKG5.99</a></p>					

Table 1: Overview of policy measures at other levels (e.g. EU Member State, multilateral, private sector) provided by stakeholders

## CHAPTER 4 IDENTIFICATION OF OPTIONS TO REDUCE THE IMPACT OF EU CONSUMPTION AND POLICIES ON DEFORESTATION

### 4.1. INTRODUCTION AND APPROACH

On the basis of the results gathered in task 2 and task 3 and the overview of policy measures at other levels, recommendations are made in the form of possible Community policy and legislative measures and initiatives that can be taken to address the impact of EU consumption on deforestation in third countries. The options identified cover different types of measures: regulatory, voluntary, market based, awareness raising, information provision

The identified options are described using the template presented in Table 2.

Name	Name of policy proposal	
Problem targeted	Description of the critical area(s) the policy proposal aims to address	
Objective	Brief statement of the objective(s) of the policy proposal	
Description	Description of the way the measure functions and should be implemented	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of commodities and products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	
	Information and awareness raising	X
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	Entity that should initiate the measure	
Target group	Entities / actors the measure is targeted at	
Critical considerations	Indication of critical elements and side conditions with respect to the scope, feasibility, cost-effectiveness, acceptability, etc. of the measure	
Impact on deforestation (*)	Effectiveness	Low / Medium / High
	Description of how the effectiveness of the policy measure has been evaluated with regard to its impact on deforestation	
	Magnitude	Low / Medium / High
	Description of how the magnitude of the impact of the policy measure on deforestation has been evaluated	
Efficiency of the measure (*)	Impact on deforestation	Low / Medium / High
	Resources input	Low / Medium / High
	Description of how the resource inputs needed for the implementation	

	of the measure have been evaluated.
Possible side effects	Indication of possible side effects of the measure that should not be overlooked when evaluating, prioritising and selecting possible measures
Links to other measures and legislation	Indication of the critical links with other measures proposed by the consortium or existing legislation or policies

Table 2: Template for describing policy proposals

(\*) refer to CHAPTER 5 for the methodology

Legend for the “Link with policy evaluation criteria”

D: Direct link

I: Indirect link

The items under “Link with policy evaluation criteria” refer to the evaluation criteria that have been used in Task 3 for determining the relevance of a particular policy, i.e. for determining whether they have a potential positive effect on reducing third country deforestation. These criteria have been described in the Task 3 report.

Under the section “Type of measure” selection fields are foreseen to indicate which type of measure is engaged: regulatory measure, voluntary measure, market-based instrument, information and awareness raising, funding mechanism, capacity building and technical assistance.

## 4.2. IDENTIFIED OPTIONS

### 4.2.1. OVERVIEW OF THE IDENTIFIED OPTIONS

34 policy proposals have been developed. An overview of the identified proposals is presented below, organised by policy field: EU Climate and Renewable energy policy, Common Agricultural Policy, EU Forestry Strategy, EU Biodiversity Strategy, Sustainable Production and Consumption Policy, EU Trade Policy, EU investment Policy, EU Development Cooperation Policy and EU research and innovation policy or Policy integration

To provide a structure, the policy proposals have been linked to the “policy evaluation criteria” that have been used in Task 3 for determining the relevance of a particular policy:

- 1.a. Reduce the land use linked to the production of primary commodities at source;
- 1.b. Reduce the level of deforestation linked to the production of the identified primary commodities;
2. Reduce the embedded deforestation of products produced;
3. Contribute to the supply chain of commodities, products and services with no or lower deforestation impact;
4. Reduce EU consumption (in general, and more specifically of commodities, products and services having deforestation impacts at global scale)

The individual policy proposals are described in detail in section 4.2.2 in accordance with the template presented in section 4.1.

Policy proposals	Link with policy evaluation criteria				
	1.a	1b	2.	3.	4.
<b>EU Climate and Renewable energy policy</b>					
Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials) <sup>1</sup>	D	D	D	D	I
Policy proposal 2: Include “indirect land use” (ILUC) in sustainability criteria for biofuels	D	D	D	I	I
Policy proposal 3: Sustainability criteria for solid and gaseous biomass	D	D	D	D	I
Policy proposal 4: Promote Reducing Emissions from Deforestation and forest Degradation (REDD+)		D	I	I	I
<b>Common Agricultural Policy</b>					
Policy proposal 5: Encourage protein crop production in the European Union		D	D	D	I
Policy proposal 6: Include mandatory crop rotation, including minimum levels of legume/protein crops, in the CAP cross-compliance rules		D	I	I	I
Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production potential	D	I	I	I	I
Policy proposal 8: Promote relevant concepts and measures for ‘climate smart agriculture’		D	D	D	I
<b>EU Forestry Strategy</b>					

<sup>1</sup> These are all other uses of crops , except fuel use : food, feed, fibres, but also products, such as lipsticks.

CHAPTER 4 Identification of options to reduce the impact of EU consumption and policies on deforestation

Policy proposals	Link with policy evaluation criteria				
	1.a	1b	2.	3.	4.
Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities	D	D	D	D	I
<b>Sustainable Consumption Policy.</b>					
Policy proposal 10: Raise awareness of the linkage between EU (food) consumption and deforestation	I	I	I	I	D
Policy proposal 11: Targeted awareness raising and information campaigns on food waste production			D	D	D
Policy proposal 12: Develop mandatory Member State specific food waste prevention targets			D	D	D
Policy proposal 13: Increase the clarity and consistency in the use of food date labels					D
Policy proposal 14: Develop mandatory and consistent food storage labels on food products			I	I	D
Policy proposal 15: Promote healthier and diverse food consumption with less emphasis on meat products	I	I	I	I	D
Policy proposal 16: Consumer tax on meat products	I	I	I	I	D
Policy proposal 17: Mandatory labeling of the origin of food products, main ingredients and ingredients that are associated with deforestation			I	D	D
Policy proposal 18: Mandatory labelling of the forest footprint of (food) products	I	I	I	D	D
Policy proposal 19: General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services	I	I	I	I	D



Policy proposals	Link with policy evaluation criteria				
	1.a	1b	2.	3.	4.
<b>Sustainable Production Policy</b>					
Policy proposal 20: Review the current rules and regulations for use of animal by-products	D	D	D	D	D
Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities	I	D			
<b>EU Trade Policy</b>					
Policy proposal 22: Strengthen the environmental provisions in trade agreements	D	D	D	D	
Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation	I	I	I	D	
Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation	I	I	I	D	
<b>EU investment Policy</b>					
Policy proposal 25: Investment tax (for portfolio investors investing in corporations with a 'positive' forest footprint)	I	D	D		
Policy proposal 26: Make the protection of foreign direct investments under Bilateral Investment Treaties (BITs) conditional upon specific deforestation related responsible investment criteria		D	D		
Policy proposal 27: Make the protection of foreign direct investments by export credits dependent on specific deforestation related responsible investment criteria		D	D		
Policy proposal 28: Assist in the development of a responsible investment framework	I	D	D		

Policy proposals	Link with policy evaluation criteria				
	1.a	1b	2.	3.	4.
Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <a href="https://www.responsibleagroinvestment.org/rai/">https://www.responsibleagroinvestment.org/rai/</a> )		I	I	I	
<b>EU Development Cooperation Policy</b>					
Policy proposal 30: Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions	D	D	D		
Policy proposal 31: Raise awareness and develop the capacities of the staff working on the integration of environmental issues in development cooperation	D	D	D		
<b>EU research and innovation policy</b>					
Policy proposal 32: Research to obtain a monitoring tool on the impact of EU consumption on worldwide deforestation	I	I	I	I	I
Policy proposal 33: Research on technologies and policies to reduce the impact of EU consumption on deforestation in third countries	I	I	I	I	I
<b>Policy integration.</b>					
Policy proposal 34: Promote activities, which actively seek for synergies between the CAP and policies aiming at reducing deforestation (REDD+; biodiversity strategy)		I	I	I	

Table 3: Overview of policy proposals, with link to policy evaluation criteria.

Legend for the “Link with policy evaluation criteria”

D: Direct link

I: Indirect link

4.2.2. DESCRIPTION OF THE IDENTIFIED OPTIONS

*Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials)*

Name	Extend the sustainability criteria for biofuels to other uses of the same crops (food, feed, products, materials)	
Problem targeted	By implementing sustainability criteria for other applications (food, feed, products, materials) of the same feed stocks, the effectiveness of the sustainability criteria will increase significantly and a level-playing field for all usages of the same set of crops will be generated. In particular for oil crops this would be relevant, as they were identified in task 2 as a crop with high deforestation impact.	
Objective	Implementation of mandatory sustainability criteria for other than biofuels applications (food, energy, products, materials).	
Description	The sustainability criteria for biofuels (laid down in the Renewable Energy Directive) ensure that the feed stocks/crops are not obtained from areas that are recently deforested or have a high biodiversity value. The set out criteria are equally relevant for other uses of the same feed stocks (food, feed, products, and materials) and could be extended to those.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	x
	Voluntary measure	x
	Market-based instrument	x
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission, National Governments, and Voluntary initiatives: demand driven consumption.	
Target group	Food feed and fibre producers (agricultural sector, forest sector)	
Critical considerations	A possible way to introduce sustainability criteria is to introduce them in combination with financial incentives or make them mandatory. An interesting policy development experienced in the UK is binding reporting criteria as intermediate step, having impacts on the private sector (Implementation of the UK Renewable Transport Fuels Obligation). Moreover, any proposal should be WTO compatible.	
Impact on deforestation	Effectiveness	High
	Sustainability criteria are implemented for biofuels. The effectiveness of these criteria for biofuels is researched in on-going studies (ENER/C1/463-2011 concerning support activities for assessment of	

	<p>progress in renewable energy and sustainability of biofuels, and the transposition of the RES Directive). The effectiveness of sustainability criteria depends on the scope of their application i.e. the market share they cover. When the sustainability criteria of biofuels would be extended to cover also food and other sectors, the possibility of leakage would be reduced, as the whole EU demand for e.g. oil crops would be covered by sustainability criteria.</p>				
	<table border="1"> <tr> <td data-bbox="454 477 890 517">Magnitude</td> <td data-bbox="890 477 1340 517">High</td> </tr> </table> <p>Oil crops represent 70% of deforestation crops imported in the EU.. By targeting all sectors of consumption (not only energy), the magnitude of the deforestation impact can be decreased significantly.</p>	Magnitude	High		
Magnitude	High				
Efficiency of the measure	<table border="1"> <tr> <td data-bbox="454 622 890 663">Impact on deforestation</td> <td data-bbox="890 622 1340 663">High</td> </tr> <tr> <td data-bbox="454 663 890 703">Resources input</td> <td data-bbox="890 663 1340 703">Medium</td> </tr> </table> <p>Sustainability criteria entail resource requirements for: the setting up of the sustainability schemes, the implementation by the private sector, the monitoring and enforcement by the competent authorities, the control mechanisms in the supply chain.</p>	Impact on deforestation	High	Resources input	Medium
Impact on deforestation	High				
Resources input	Medium				
Possible side effects	<p>The implementation of this measure would create a level-playing field for the crops concerned. Nevertheless, leakage would still be possible, as the EU is only responsible for part of the global demand.</p> <p>Important implications could occur in the international market: price levels and competitive disadvantage, depending on the precise measure, compared with other importing countries outside Europe. The cost for European consumers is likely to increase slightly, to cover the cost of certification and the sourcing of sustainable crops.</p>				
Links to other measures and legislation	<p>This measure has critical links with trade policies. The policy proposal to implement sustainability criteria for food, feed and fibres needs to be linked with ongoing trade related forest policy measures (e.g. FLEGT) and to the promotion of implementation instruments such as forest certification in wood exporting developing and emerging countries.</p> <p>Policy proposal 3: Sustainability criteria for solid and gaseous biomass          Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities</p>				

*Policy proposal 2: Include “indirect land use” (ILUC) in sustainability criteria for biofuels*

<b>Name</b>		<b>Include “indirect land use” (ILUC) in sustainability criteria for biofuels</b>	
Problem targeted	Indirect land use change (ILUC) takes place when biofuels are cultivated on existing agricultural land, and as such displace other crop productions, some of which ultimately lead to land use change. .		
Objective	Reduce the use of biofuels with high risk of ILUC.		
Description	Develop a methodology to correctly implement ILUC in the sustainability criteria of biofuels. Research and reports are searching for an acceptable way of incorporating the ILUC effect into the sustainability criteria. As an example of incorporating the ILUC effect we can refer to the introduction of limits to certain types of biofuels, e.g. a cap of the use of 1 <sup>st</sup> generation biofuels.		
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact		D
	1.b. Produce commodities with low deforestation impact		D
	2. Produce products with low deforestation impact		D
	3. Organize supply chain of products with low deforestation impact		I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)		I
Type of measure	Regulatory measure		x
	Voluntary measure		
	Market-based instrument		x
	Information and awareness raising		
	Funding mechanism		
	Capacity building and technical assistance		
Initiator	European Commission		
Target group	Biofuels producers		
Critical considerations	On-going discussion on methodology: ILUC is not incorporated in the current sustainability criteria. One way of incorporating it in the current sustainability criteria is by calculating the impact on GHG-calculations.		
Impact on deforestation	Effectiveness		High
	The research study done by IFPRI (2011: Assessing the Land Use Change Consequences of European Biofuel Policies) clearly states that considering land use change is legitimate.		
	Magnitude		Low
	However the same study also states that by only introducing an ILUC component into the biofuel legislation will lead to the question of why ILUC measurements are not introduced for other policies that can have larger land use impacts (e.g. CAP reform, trade negotiations). Therefore the magnitude of this proposal is regarded as low.		
Efficiency of the measure	Impact on deforestation		Medium
	Resources input		High
	The resources needed will depend on the way the ILUC factor is incorporated into legislation. A cap on the use of certain biofuels will be easier to implement than a calculation method of ILUC which would require a good worldwide monitoring system.		

Possible side effects	LUC is not exclusively a problem of biofuels; the problem will not completely be solved as long as no similar sustainability criteria for other applications are implemented. Depending on the proposed methodology, the choice in biofuels will (temporarily) be smaller.
Links to other measures and legislation	The measure can be imbedded in the existing European Renewable Energy Directive and Fuel Quality Directive. Policy proposal 1: Policies about the CAP reform, trade negotiations where a LUC component could be introduced. iLUC requires also national land use planning. Policy proposal 4: Promote Reducing Emissions from Deforestation and forest Degradation (REDD+)

*Policy proposal 3: Sustainability criteria for solid and gaseous biomass*

Name	Sustainability criteria for solid and gaseous biomass	
Problem targeted	The Renewable Energy Directive will increase the demand for solid biomass. To avoid the risk of forest conversion, and in certain cases deforestation, a set of mandatory sustainability criteria for solid and gaseous biomass similar to the mandatory sustainability criteria of biofuels and bioliquids, would be useful.	
Objective	Avoid risk for forest conversion and deforestation due to the increasing demand for solid biomass for energy purposes.	
Description	This measure could function in a similar way as the obligation for sustainability criteria for biofuels and bioliquids. This includes the specific criterion that solid and gaseous biomass shall not be yielded from land with high biodiversity values, land with high carbon stocks or undrained peat land to the status of January 2008. The criterion of GHG emissions savings is also one of the criteria: here a similar approach can be followed, but specific attention should be paid to the target setting for solid and gaseous biomass. The conversion technologies for producing electricity and heat differ from the biofuel production technologies, so other (higher) GHG savings could be considered. Special attention should be paid to the definitions of waste, especially important for the wood residues used for wood pellets, because waste only needs to fulfil the GHG emission saving criterion.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	x
	Information and awareness raising	
	Funding mechanism	

	Capacity building and technical assistance	
Initiator	European Commission and national authorities	
Target group	Producers of renewable energy out of solid and gaseous biomass. Ultimately, the measure should create public support for the use of sustainable biomass for energy.	
Critical considerations	<p>Critical elements for an effective implementation of the measure include:</p> <p>A similar implementation path needed as for biofuels and bioliquids (cf. Same/similar criteria, use of voluntary schemes, etc.);</p> <p>Take into the consideration the administrative burden for the producers of bio energy: a critical question to be solved is if a minimum threshold should be set on the amount of bio energy produced or the amount of biomass used per installation for the sustainability criteria to be applicable.</p> <p>We don't really know how much biomass that is imported goes to energy purposes. Introducing more detailed custom codes whether it would be used for energy or not could be instrumental to that. Such custom codes could be produced as a part of this PP.</p>	
Impact on deforestation	Effectiveness	High
	The effectiveness of sustainability criteria depends on the scope of its application, i.e. the market share it covers. Calculations in task 2 forecast an extra demand of 318 m <sup>3</sup> RWE by 2020. The impact is related also to the amount of woody biomass for energy use that will be imported by 2020. If sustainability criteria are introduced for solid biomass for energy use only, there is a risk of leakage to other applications of wood. For the targeted biomass (solid biomass for energy production) the impact will be effective because the sustainability criteria will have a direct influence on the biomass production chain.	
	Magnitude	Low
	Because the measure is only targeted at a very specific use of the solid and gaseous biomass, the magnitude will be low.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Low
	A policy framework for sustainability criteria for biofuels already exists. Sustainability criteria for solid and gaseous biomass are already in research and are mentioned in the RE Directive. The biomass supply chain is also very aware of the possible introduction of criteria and some suppliers are already preparing by setting up voluntary schemes.	
Possible side effects	The use of solid and gaseous biomass is not exclusively for bio energy production. A possible side effect of not having similar sustainability criteria for other applications can be that non sustainable solid and gaseous biomass will be used for other applications.	
Links to other measures and legislation	<p>Policy proposal 1: is very strongly related to this policy proposal. Proposal 20 can be considered as the first step to enlarge sustainability criteria for other applications, in this case 'other applications' meaning other energy carriers.</p> <p>The other most important link with other legislation is the sustainability criteria for biofuels and bioliquids.</p>	

*Policy proposal 4: Promote Reducing Emissions from Deforestation and forest Degradation (REDD+)*

Name	Promote Reducing Emissions from Deforestation and forest Degradation (REDD+) <sup>2</sup>	
Problem targeted	Various functions and services of Natural forests are not adequately valued and accounted for in comparison with the crops/commodities that replace them. This is an important factor causing tropical deforestation.	
Objective	The objective of REDD+, a policy approach negotiated under the UNFCCC, is to support developing countries in slowing down, stopping and reversing the loss of forest cover and forest carbon, and in managing their forest resources more sustainably, by rewarding reduced deforestation and forest degradation, to help mitigate climate change.	
Description	A comprehensive EU REDD+ policy should provide a framework to support the full implementation of results-based REDD+ actions, which promote poverty alleviation and biodiversity benefits, ecosystem resilience and the linkages between adaption and mitigation, and should promote and support social and environmental safeguards. EU funding can play a crucial role in the anchoring of REDD+ in a future climate deal and the direction of resources to ensure social and environmental safeguards and develop robust monitoring protocols.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	
	Voluntary measure	x
	Market-based instrument	x
	Information and awareness raising	
	Funding mechanism	x
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Governments in third countries from which the EU is importing deforestation and private sector actors.	
Critical considerations	<p>The successful engagement of the EU in REDD+ is to a great extent dependent on the continued leadership of the EU in the international climate debate, notably under the UNFCCC. Of particular importance are the following overall policy considerations:</p> <p>a: mobilisation of financial sources for the different phases of REDD+</p> <p>b: providing guidance on the methodology to present the information on safeguards</p> <p>c: providing guidance on ways to identify and address the drivers of deforestation and forest degradation</p>	

<sup>2</sup> Based on Schneck et al. (2011); Ring et al. (2011); von Unger et al. (2012).



Impact on deforestation	Effectiveness	Medium
	Depending on the outcome of the UNFCCC discussions and commitment of both donor countries and REDD+ countries. Mechanism could become overly complex.	
	Magnitude	High
Scope for REDD+ is potentially high and can be applied to many countries.		
Efficiency of the measure	Impact on deforestation	High
	Resources input	High
	Potential of REDD+ to halt deforestation is high. Much depends on the actual design of the scheme once established (additionality, avoidance of leakage, permanence and carbon accountability). Potentially high transaction costs.	
Possible side effects	Effectiveness, equity and efficiency of REDD implementation might be affected by issues such as elite capture, corruption and perverse incentives. Payments in compensation for avoided deforestation may 'reward' those that in the past profited from the destruction of forests, while the direction of funds to those that for years protected forests can run into question with regards to 'additionality' as compared to historic or business as usual baselines.	
Links to other measures and legislation	EU climate and energy policies.	

*Policy proposal 5: Encourage protein crop production in the European Union*

Name	Encourage protein crop production in the European Union	
Problem targeted	Soybean expansion induced by rapidly growing feed demand has been a main driver of deforestation. Between 1990 and 2008 we estimate more than half of deforestation attributed to EU consumption are associated with soybean imports from South America. Currently, the EU protein crop production provides only some 30 percent of consumed animal feed proteins, with a decreasing trend. The remainder is imported, especially soybeans from South America.	
Objective	Production increases, especially in Eastern Europe, could help decreasing EU protein deficits and reduce imports of animal feed from South America. If expanding soybean production remains a driver of deforestation as it was in the past two decades, replacing imported soybean with domestically produced protein feed contributes to reducing the impact of EU consumption on deforestation.	
Description	Research and development into breeding and supply of protein crops suitable for European climate; Extension Services for farmers; Financial incentives	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D

	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	X
	Information and awareness raising	X
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission (DG-Research, DG-Environment, DG-Agriculture)	
Target group	Farmers and politicians	
Critical considerations	Imported soybeans and soybean cakes are cheap, valuable protein feed sources. They have long been an integral part of the diverse animal feed ration and are well known to livestock farmers. Economic and agronomic challenges for establishing large-scale plant protein production in the EU include a lack of soybean varieties developed for the European climate, the exclusion of biotech crops (GM crops) in the EU <sup>3</sup> , and strong economic competition for land from other profitable crops (e.g. wheat). The cost-effectiveness of replacing soybean proteins with domestically produced legumes has to be evaluated. High costs might induce opposition from livestock farmers.	
Impact of deforestation on	Effectiveness	Medium
	“Medium” was chosen because of doubts about how much protein feed can be economically produced in the EU.	
	Magnitude	Medium
	It is unlikely that a large fraction of imported soybeans can be replaced in a short time frame.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	High
	Encouraging protein feed crop production in the EU entails resource requirements for: R&D for protein crop breeding adapted to EU biophysical conditions, extension services for farms, and financial incentives to compete with cheaply imported soybeans from South America.	
Possible side effects	Contributes to climate change mitigation of the EU agricultural sector; Increases environmental performance of agricultural production in the EU. Contributes to product diversification and rural development.	
Links to other measures and legislation	WTO Trade Negotiations. Policy proposal 6: Include mandatory crop rotation, including minimum levels of legume/protein crops, in the CAP cross-compliance rules (Member States may provide specific support for protein crop production as part of agro-environmental programmes). Contributes to efforts of greening the first pillar (decoupled payments) in the CAP	

<sup>3</sup> The EU is a major importer of biotech products, primarily soybean and corn products for use in animal feed and human food.

*Policy proposal 6: Include mandatory crop rotation, including minimum levels of legume/protein crops, in the CAP cross-compliance rules*

Name	Include mandatory crop rotation, including minimum levels of legume/protein crops, in the CAP cross-compliance rules	
Problem targeted	Imported protein crops (soybeans) have directly or indirectly contributed to deforestation in the countries of origin.	
Objective	Improve soil health and increase EU domestic protein production.	
Description	Cross-compliance is a mechanism that links direct payments to compliance by farmers with basic standards concerning the environment, food safety, animal and plant health and animal welfare, as well as the requirement of maintaining land in good agricultural and environmental condition. Since 2005, all farmers receiving direct payments are subject to compulsory cross-compliance.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	X
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	
	Funding mechanism	X
	Capacity building and technical assistance	
Initiator	European Commission (DG-ENV, DG-AGRI)	
Target group	European Commission	
Critical considerations	Opposition from countries exporting soy to the EU (US, Brazil, Argentina); Conflicts with existing trade agreements; Costs; Farmers may resist additional rules.	
Impact on deforestation	Effectiveness	Low
	This measure is considered a good agronomic practice but is not directly targeted to boost protein production in the EU27. Therefore the impact on deforestation, by substituting imported protein feeds, is to be considered relatively low.	
	Magnitude	Low
	Even when protein crop production is mandatory in crop rotation, only a small fraction of animal feed is likely to be replaced of the imported soybeans from South America.	
Efficiency of the measure	Impact on deforestation	Low
	Resources input	Low
	The cross compliance is a well established mechanism in the CAP and implementation and monitoring would require only modest resources.	
Possible side effects	Leguminous fodder crops (Lucerne, clover) and seed crops (pea, soya, lupine, horse bean, and vetch) assimilate and fixate nitrogen into the soil. Protein crops in crop rotation improve soil fertility and structure.	

	GHG emission reduction by reducing the use of synthetic nitrogen fertilizer, a major source of N <sub>2</sub> O emissions.
Links to other measures and legislation	Article 68 of Council Regulation (EC) No 73/2009 allows Member States to grant support for protein crops on their territory. This has been used in particular by France, Spain, Poland and Finland. Policy proposal 5: (Member States may provide specific support for protein crop production as part of agro-environmental programmes).

*Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production potential*

<b>Name</b>	<b>Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production potential</b>	
Problem targeted	Crop- and pasture land expansion are major causes of deforestation.	
Objective	Foster intensification of agricultural production on existing cropland and pastures rather than further expanding current agricultural land causing land-use changes including deforestation.	
Description	<p>Cropland productivity depends on biophysical endowment, access to agro-research knowledge through extension services, availability of agro-inputs, applied land management and local socio-economic circumstances. For instance in Sub-Saharan Africa limited access to agricultural input (especially fertilizer) is believed the main cause for prevailing low crop productivity; e.g., significantly below biophysical potential.</p> <p>Improvements in pasture land biomass productivity or improved grazing management may allow higher livestock stocking densities. Research should be concentrated on the provision of adapted legumes and grasses, the correction of soil nutrient deficiencies, and the efficient utilization of pasture by grazing animals.</p> <p>Promoting higher efficiency in using certified sustainable wood energy and timber products will contribute to maintaining natural forest landscapes</p>	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
Type of measure	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	
	Information and awareness raising	X
Initiator	Funding mechanism	X
	Capacity building and technical assistance	
Initiator	European Commission (DG-Research; DG-Environment; DG-Agriculture;	

	DG-Development) and extension services for farmers in developing countries.	
Target group	Farmers	
Critical considerations	Intensification needs to be integrated into a larger strategy for land-use planning including support for medium sized and small farms.	
Impact on deforestation	Effectiveness	High
	International studies show that currently achieved production is well below the sustainable agronomic potential of land in many regions, e.g. Sub-Saharan Africa, but also in countries of Eastern Europe. In such cases, sustainable intensification of agricultural production on existing cropland and pastures can create an economic and environmental win-win situation, producing better incomes for farmers and avoiding land conversion, including deforestation, for agriculture.	
	Magnitude	High
Efficiency of the measure	Given the current large extents of cultivated land and pastures with significant apparent yield gaps, effectively addressing a narrowing of yield gaps would have a high impact on land use efficiency and result in less deforestation	
	Impact on deforestation	High
	Resources input	High
Possible side effects	Successful implementation of this development option will require substantial resource inputs and careful investment strategies. Main resource inputs include: R & D for best agronomic crops and practices in a variety of tropical and sub-tropical agro-ecological environments; extension services for farmers, transport and irrigation infrastructure; effective organizational structures for agricultural input and output markets;	
	Food security improvements. Overall as well as rural development. GHG emission reductions. Reduced land conversions.	
Links to other measures and legislation	Policy proposal 8: Promote relevant concepts and measures for 'climate smart agriculture'. Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <a href="https://www.responsibleagroinvestment.org/rai/">https://www.responsibleagroinvestment.org/rai/</a> ). Policy proposal 30: Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions.	

*Policy proposal 8: Promote relevant concepts and measures for ‘climate smart agriculture’*

Name	Promote relevant concepts and measures for ‘climate smart agriculture’	
Problem targeted	Agricultural expansion is a major driver of deforestation.	
Objective	‘Climate neutral’ agriculture (includes ending agricultural expansion being a source of anthropogenic GHG emissions).	
Description	Climate smart agriculture addresses and finds solutions for the joint objectives of food security, development, and climate change mitigation and adaptation.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D
Type of measure	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	
	Information and awareness raising	X
	Funding mechanism	
Initiator	European Commission (DG-ENV, DG-AGRI)	
Target group	Farmers, farmers associations and policy makers.	
Critical considerations	The FAO projects a 70% higher food demand by 2050. Historic experience has shown that especially fast demand growth has usually been realized by land expansion (including into forests) rather than yield improvements.	
Impact on deforestation	Effectiveness	Medium
	As avoiding deforestation is only one element of climate smart agriculture its effectiveness for reducing deforestation was judged as medium.	
	Magnitude	Medium
Efficiency of the measure	See above	
	Impact on deforestation	Medium
	Resources input	High
Possible side effects	Avoiding deforestation must be an integral part of climate smart agriculture; therefore at least a medium impact is to be expected. Will require substantial resources on the R&D side, for investments in mitigation and adaptation, possibly for monitoring, and for creating and administering effective incentives and measures.	
	Somewhat higher agricultural prices. Positive effects on the environment, especially GHG emission reductions.	

Links to other measures and legislation	The CGIAR <sup>4</sup> Research Program on Climate Change, Agriculture and Food Security <sup>5</sup> promotes ‘climate smart’ agriculture. Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production potential (sustainable intensification of agricultural production is a primary goal of ‘climate smart agriculture’).
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*Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities*

Name	Promote and strengthen FLEGT, and expand to other commodities	
Problem targeted	Illegal logging has a devastating effect on some of the world’s valuable forests. It can have not only serious environmental, but also economic and social consequences. Illegal timber logging often precedes the development of plantations for export crops (e.g. soy and oil palm). Similar illegal practices occur in development and production of other commodities.	
Objective	The objective of FLEGT (Forest Law Enforcement, Governance and Trade), a flagship approach of the EU, is to exclude illegal timber from markets, to improve the supply of legal timber and to increase the demand for responsible wood products. An important element is to strengthen the forest governance in partner countries from where the EU is sourcing. The objective of this specific proposal is to further promote and extend the FLEGT approach, both to other partner countries and to other commodities. The mechanism should contribute to sustainable (forest) land and commodity governance.	
Description	A central element of the EU’s strategy to combat illegal logging are trade accords with timber exporting countries, known as <b>Voluntary Partnership Agreements</b> , to ensure legal timber trade and support good forest governance in the partner countries. As a second element, the EU created legislation to ban illegally-produced wood products from the EU market, known as the <b>EU Timber Regulation</b> . A similar approach could be duplicated to commodities such as soy, palm oil and meat.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D
Type of measure	4. Consume commodities and products with low deforestation impact	I
	Regulatory measure	x
Note: FLEGT is a policy package of various	Voluntary measure	x
	Market-based instrument	x
	Information and awareness raising	x

<sup>4</sup> Consultative Group on International Agricultural Research (CGIAR), for more information see: <http://cgiar.org>

<sup>5</sup> see <http://ccaafs.cgiar.org>

types of measures	Funding mechanism Capacity building and technical assistance	
Initiator	EU – targeted policy: EU trade policy	
Target group	Governments in partner countries; local stakeholders	
Critical considerations	Legality is certainly an important requirement, and intermediate step. However, the ultimate goal should be sustainability. Most benefits probably through overall strengthening of forest governance.	
Impact on deforestation	Effectiveness	High
	FLEGT has proven to be an effective mechanism to improve the legality in the timber trade chain, both at the production side and in trade and procurement.	
	Magnitude	Medium
	FLEGT itself is focusing on timber, which constitutes a small part of deforestation linked to EU consumption.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Medium
	Overall efficiency is assessed as medium, but may be considerably increased when FLEGT-like measures are adopted in other commodity chains	
Possible side effects	Positive experiences with FLEGT and achievements may be duplicated to other commodities. At the negative side, legality could draw attention away from sustainability.	
Links to other measures and legislation	Certification, labelling and trade measures Policy proposal 22: Strengthen the environmental provisions in trade agreements. Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities	

*Policy proposal 10: Raise awareness of the linkage between EU (food) consumption and deforestation*

Name	Raise awareness of the linkages between EU consumption and deforestation
Problem targeted	There is insufficient knowledge about the impact of (e.g. food) consumption on the environment in general, and on deforestation more specifically.
Objective	Economic actors should understand that their consumption is associated with land use which might either directly or indirectly impact on forests. Economic actors should be aware of what they can do to reduce the impact of their consumption on deforestation: (1) reduce their consumption, (2) reduce the land use footprint of their consumption (e.g. substituting meat based diets), and (3) consume products that meet (deforestation related) sustainability standards.
Description	Development of coherent awareness raising and information campaigns tailored to specific target groups.



	Support non-governmental organisations to develop complementary initiatives.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of measure	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	
	Information and awareness raising	X
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission together with EU Member States and non-governmental bodies.	
Target group	General public, farmers, food manufacturers, wholesalers and retailers.	
Critical considerations	Even when people are aware of the impact of their consumption on deforestation and willing to change their consumption behaviour, there might still be various other barriers (like the availability of information on the impact of products on deforestation) that prevent people to consume more sustainably. Therefore, stimulating awareness will need complementary policies in order to invoke a genuine change in behaviour.	
Impact on deforestation	Effectiveness	Low
	Awareness raising alone is not sufficient and therefore not very effective. People also need to be willing, motivated and able to change their behaviour.	
	Magnitude	High
	This proposal covers the consumption of products that are linked to all major commodities that are associated with deforestation. The scope of this proposal is thus large.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Medium
	In order to be successful awareness raising has to be both sustained and targeted (simple enough, provided at the right time and place, etc.). Because of this the resource input for this proposal will be relatively high. Awareness raising requires resource for: developments of a coordinated strategy, development of various, targeted actions, which then have to be implemented and sustained.	
Possible side effects	Increased awareness of the impact of consumption on deforestation might spill over to other environmental problems.	
Links to other measures and legislation	Policy proposal 17: Mandatory labeling of the origin of food products, main ingredients and ingredients that are associated with deforestation.	

*Policy proposal 11: Targeted awareness raising and information campaigns on food waste production*

Name	Targeted awareness raising and information campaigns on food waste production <sup>6</sup>	
Problem targeted	A lot of food produced for human consumption is wasted, either directly or indirectly triggering deforestation through demand for land. The causes of food that is wasted at the household level mainly relate to a lack of awareness about food waste production and the related environmental consequences, lack of knowledge about food waste prevention techniques, insufficient purchase planning by households, misinterpretation of or confusion over 'best-before-dates', consumer preferences and attitudes, etc.	
Objective	Trigger behaviour change to realise long term reduction in food waste production. Optimise processes of manufacturers, retailers and caterers.	
Description	Member States develop information and awareness raising campaigns that are tailored to Member State specific circumstances, addressing the critical areas where consumer behaviour triggers food waste production: <ul style="list-style-type: none"> <li>• lack of awareness about food waste production and the related environmental consequences;</li> <li>• lack of knowledge about food waste prevention techniques;</li> <li>• insufficient purchase planning by households;</li> <li>• misinterpretation of or confusion over 'best-before-dates';</li> <li>• consumer preferences and attitudes.</li> </ul> Next to campaigns directed to the households other campaigns could be geared to caterers, retailers and food manufacturers.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of measure	Regulatory measure	
	Voluntary measure	x
	Market-based instrument	
	Information and awareness raising	x
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	EU Member States	
Target group	Households, caterers, retailers and food manufacturers	
Critical considerations	Even when people are aware of the large amounts of food waste they produce and willing to change their consumption behaviour, there might still be various other barriers (like the information on food labels as well as the interpretation of this information) that prevent people to	

<sup>6</sup> Based on Monier et al. (2010)

	effectively reduce the food waste they generate. Therefore, stimulating awareness will need complementary policies in order to invoke a genuine change in behaviour.	
Impact on deforestation	Effectiveness	Low
	Awareness raising alone is not sufficient and therefore not very effective. People also need to be willing, motivated and able to change their behaviour.	
	Magnitude	Medium
	According to Gustavsson et al. (2011) around one third of food produced for human consumption is wasted globally. Monier et al., (2010) attribute around 42% of this food waste to household consumption and some 39%, 14% and 5% to the manufacturing, catering and retailing/wholesaling sectors respectively. Households might, according to WRAP (2010), be able to reduce their food waste by some 60%. Knowing that about 60% of deforestation embodied in EU consumption is associated to the food sector (cf. Task 2), there is a large potential for reducing deforestation through reducing food waste.	
Efficiency of the measure	Impact on deforestation	Low
	Resources input	Medium
	In order to be successful awareness raising has to be both sustained and targeted (simple enough, provided at the right time and place, etc.). Because of this the resource input for this proposal will be relatively high. The UK's best practice awareness campaign 'Love Food Hate Waste' provides a concrete indication of the financial resources required for conducting a targeted awareness campaign about food waste. Next to the initial cost of about 750,000 € spend on research the running costs of the campaign are around 2,400,000 €/year. (Monier et al., 2010)	
Possible side effects	Increased awareness on food waste production might spill over to other environmental problems where behaviour might have a key role in reducing the root of the problem. Increased available household budget due to a lower consumption of food (because of the avoidance of food waste). Economic impact of the reduction in food sales.	
Links to other measures and legislation	The Roadmap to a Resource Efficient Europe. EU Regulation 1169/2011 of 25 October 2011 on the provision of food information to consumers. The revised Waste Framework Directive 2008/98/EC of 19 November 2008 which foresees the possibility to set waste prevention and decoupling objectives for 2020 by the end of 2014. Policy proposal 10: Raise awareness of the linkage between EU (food) consumption and deforestation Policy proposal 12: Develop mandatory Member State specific food waste prevention targets Policy proposal 13: Increase the clarity and consistency in the use of food date labels. Policy proposal 14: .	

*Policy proposal 12: Develop mandatory Member State specific food waste prevention targets*

Name	Develop mandatory Member State specific food waste prevention targets <sup>7</sup>	
Problem targeted	<p>Food produced for human consumption is wasted, either directly or indirectly triggering deforestation through demand for land. Although a lot of food waste can be avoided, food waste prevention is not yet well-established.</p> <p>In the vast majority of Member States, no clear and measurable steps have been taken to increase bio-waste prevention . This is partly due to the lack of clear guidance, including measurable quantitative targets.</p> <p>Being effective in preventing food waste requires solid quantitative information on food waste generation. Some data on food waste generation by Member States is available (the principle source of data on food waste generation is EUROSTAT), but there are a number of problems with respect to the quality, consistency, comparability, and level of detail of the data.</p>	
Objective	<p>Prevent the production of food waste at the Member State level through the installation of food waste reporting requirements and the development of a mandatory method for calculating/measuring food waste quantities at Member State level that allows setting Member State specific waste prevention targets as well as monitoring Member State progress in this respect. The system or method has to overcome current problems with respect to the quality, consistency, comparability, availability and level of detail of the data.</p>	
Description	<p>This policy proposal is about the creation of specific food waste prevention targets for Member States by 2014 in the framework of the revised Waste Framework Directive 2008/98/EC of 19 November 2008. Practically, this proposal should result in setting Member State specific percentage targets for food waste reduction on the basis of knowledge about the existing level of food waste within a Member State.</p> <p>To facilitate setting food waste prevention targets and monitor progress, Member States will have to disclose more and better quality data on food waste generation to EUROSTAT making use of a mandatory method for calculating/measuring food waste quantities at Member State level. This requires amongst others:</p> <ul style="list-style-type: none"> <li>• definition of additional mandatory reporting categories for food waste;</li> <li>• development of a clear, standardised definition of food waste (clearly excluding by-products);</li> <li>• provision of a clear and practical method for calculating/measuring food waste quantities in each sector.</li> </ul>	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D

<sup>7</sup> Based on Monier et al. (2010)

	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of measure	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	EUROSTAT and EU Member States, who will measure food waste and develop food waste prevention plans targeting different economic actors (like households, food manufacturers, wholesalers, retailers and catering services).	
Critical considerations	n.a.	
Impact on deforestation	Effectiveness	Medium
	Mandatory food waste reduction targets are potentially effective. Although target setting alone does not lead to waste reduction it does set the scene for developing a comprehensive strategy and a concrete action plan. The mandatory character of the targets is an important key to success.	
	Magnitude	Medium
	According to Gustavsson et al. (2011) around one third of food produced for human consumption is wasted globally. Monier et al., (2010) attribute around 42% of this food waste to household consumption and some 39%, 14% and 5% to the manufacturing, catering and retailing/wholesaling sectors respectively. Households might, according to WRAP (2010), be able to reduce their food waste by some 60%. Knowing that about 60% of deforestation embodied in EU consumption is associated to the food sector, there is a large potential for reducing deforestation through reducing food waste.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Low
	The European Commission will have to develop a method for calculating/measuring the food waste quantities at the Member State level. This is a one-off cost and will not require many resources. The most important costs involved are the costs for calculating or measuring the amount of food waste. These costs are situated at the Member State level. Depending on the method chosen the burden might vary and shift between the Member State governments and the economic actors that might have to report the amount of food waste produced or collected. As an example, an analysis commissioned by the Danish government about the content of household waste in Denmark costed about 270.00 €. In sum, the required resource input is relatively low. (Monier et al., 2010) The costs related to the development of the targets and the monitoring of the progress are limited.	
Possible side effects	Separate food waste calculation and reporting increases awareness of the issue and will allow for a better understanding and consequently	

	management of food waste related issues. Increase of the administrative burden for companies.
Links to other measures and legislation	The Roadmap to a Resource Efficient Europe. The revised Waste Framework Directive 2008/98/EC of 19 November 2008 which foresees the possibility to set waste prevention and decoupling objectives for 2020 by the end of 2014.

*Policy proposal 13: Increase the clarity and consistency in the use of food date labels*

Name	Increase the clarity and consistency in the use of food date labels <sup>8</sup>	
Problem targeted	Food produced for human consumption is wasted, either directly or indirectly triggering deforestation through demand for land. Part of the problem is due to the misinterpretation of and confusion over food date labels by consumers. In many Member States the use of the terms 'best before', 'use by', 'sell by' and 'display until' lacks consistency and the consumers tend to treat all terms equally.	
Objective	Reduce food waste produced due to date label confusion.	
Description	<p>Increase the clarity and consistency in the use of EU mandated food date labels, like 'best before', 'use by' and 'sell by', and voluntary date labels, such as 'display until'.</p> <p>Support business with proper guidance on how to ensure food label compliance and good practice in using date labels consistently.</p> <p>Abolish the use of 'best before' food label dates to products that show visible signs of decay and do not pose a safety risk, like bread or potatoes.</p> <p>Disseminate information on harmonised food labels to the general public so everyone understands their meaning.</p>	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	
	2. Produce products with low deforestation impact	
	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of measure	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	x
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Food manufacturers (responsible for setting date labels), retailers (responsible for setting 'display until' labels and own brand date labels) and households (who frequently decide whether or not food is edible based on its date label).	

<sup>8</sup> Based on Monier et al. (2010)

Critical considerations	The primary goal of food labelling, which is to ensure consumer safety, should not be touched upon.	
Impact on deforestation	Effectiveness	Medium
	According to Monier et al. (2010) the contribution of increasing food date label clarity and consistency to food waste prevention at the household level is moderate to significant. In the UK nearly 60% of the avoidable food is wasted because it has not been used in time. Confusion over date labels is believed to be an important reason for food not being used in time.	
	Magnitude	Medium
Efficiency of the measure	According to Gustavsson et al. (2011) around one third of food produced for human consumption is wasted globally. Monier et al., (2010) attribute around 42% of this food waste to household consumption. Households might, according to WRAP (2010), be able to reduce their food waste by some 60%. Knowing that about 60% of deforestation embodied in EU consumption is associated to the food sector, there is a large potential for reducing deforestation through reducing food waste.	
	Impact on deforestation	Medium
	Resources input	Medium
Possible side effects	The resource input for this measure is estimated to be relatively limited. Changing legislation at EU or Member State level will not be a major cost. Most important are the implementation costs for food manufacturers. The magnitude of the costs involved depends on the changes that are required to packaging. The cost for the manufacturers can be reduced when they get enough time to make the changes along with other periodic packaging updates. Also, time is needed for staff to familiarise themselves with the new requirements. For the UK as whole this familiarisation cost is estimated to be in the order of 180.000 € (Monier et al., 2010). All costs involved are one-off costs. This proposal also encompasses an awareness raising component, which drives up the required resource input. This leads us to classify the required resource input as medium.	
	A more consistent labelling approach at EU level minimises the burden on manufacturers who often operate in multiple Member States. Increased available household budget due to a lower consumption of food (because of the avoidance of food waste). Economic impact because of the reduction in food sales.	
Links to other measures and legislation	<p>The Roadmap to a Resource Efficient Europe.          EU Regulation 1169/2011 of 25 October 2011 on the provision of food information to consumers.</p> <p>The revised Waste Framework Directive 2008/98/EC of 19 November 2008 which foresees the possibility to set waste prevention and decoupling objectives for 2020 by the end of 2014.</p> <p>Policy proposal 11: Targeted awareness raising and information campaigns on food waste production.</p> <p>Policy proposal 12: Develop mandatory Member State specific food waste prevention targets</p>	

Policy proposal 14: Develop mandatory and consistent food storage labels on food products

Name	Develop mandatory and consistent food storage labels on food products <sup>9</sup>	
Problem targeted	Food produced for human consumption is wasted, either directly or indirectly triggering deforestation through demand for land. Inappropriate storage conditions lead to food waste throughout the supply chain and are no less important in the household. Premature food spoilage is due to a lack of consistency in food storage labels, the absence of storage guidance and a lack of consumer attention to labels where provided.	
Objective	Reduce food waste produced by promoting optimal storage conditions.	
Description	Increase the consistency and comprehensiveness of food storage labels by tightening EU regulations. Raise consumer awareness on the importance of optimal food storage conditions in order to prevent premature food spoilage and draw consumer attention to the information that is provided to them by food storage labels.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
Type of measure	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	x
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Food manufacturers (responsible for providing food storage labels), retailers (responsible for providing own brand food storage labels) and households (who have to store food in optimal conditions).	
Critical considerations	Optimal storage conditions vary according to climate and indoor conditions.	
Impact on deforestation	Effectiveness	Medium
	People need to know how they best store food products. Simply providing information on how to store a product via a specific food storage label, however, does not guarantee that people will effectively change their current practices. Therefore, consumer awareness has to be raised on the importance of optimal food storage conditions consumer attention has to be drawn to the information that is provided to them by food storage labels.	
	Magnitude	Medium
According to Gustavsson et al. (2011) around one third of food		

<sup>9</sup> Based on Monier et al. (2010)



	<p>produced for human consumption is wasted globally. Monier et al., (2010) attribute around 42% of this food waste to household consumption. Households might, according to WRAP (2010), be able to reduce their food waste by some 60%. Knowing that about 60% of deforestation embodied in EU consumption is associated to the food sector, there is a large potential for reducing deforestation through reducing food waste. The amount of food that is wasted because of improper food storage practices is a fraction of the total food consumption in the EU.</p>	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Medium
	<p>The cost of changing storage labels is highest at the level of the food manufacturers and distributors. The burden can, however, be limited when these actors get enough time to make the changes along with other periodic packaging updates. This proposal also encompasses an awareness raising component, which drives up the required resource input. This leads us to classify the required resource input as medium.</p>	
Possible side effects	<p>Increased available household budget due to a lower consumption of food (because of the avoidance of food waste). Economic impact of the reduction in food sales.</p>	
Links to other measures and legislation	<p>The Roadmap to a Resource Efficient Europe. EU Regulation 1169/2011 of 25 October 2011 on the provision of food information to consumers. The revised Waste Framework Directive 2008/98/EC of 19 November 2008 which foresees the possibility to set waste prevention and decoupling objectives for 2020 by the end of 2014. Policy proposal 11: Targeted awareness raising and information campaigns on food waste production. Policy proposal 12: Develop mandatory Member State specific food waste prevention targets</p>	

*Policy proposal 15: Promote healthier and diverse food consumption with less emphasis on meat products*

<b>Name</b>	<b>Promote healthier and diverse food consumption with less emphasis on meat products</b>
Problem targeted	<p>The overconsumption of animal derived protein is particularly problematic (in 2007 the EU27 average per capita protein intake was about 70% higher than the WHO recommended amount). High meat consumption has negative effects on the environment and on human health. As the production of meat requires a lot of land per unit of output, meat consumption increases the demand for land and thus the pressure on forests. In task 2 it was estimated that 80% of the world's agricultural land is used for meat production.</p>
Objective	<p>Consumers should know more about the effects of high meat consumption on their health and on the environment and the advantages of eating less meat.</p>

Description	Awareness rising by information and education.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of measure	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	
	Information and awareness raising	X
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission (DG-Research, DG-Environment, DG-Agriculture, DG-Sanco).	
Target group	General public, politicians.	
Critical considerations	This policy proposal might engender opposition from the livestock sector.	
Impact on deforestation	Effectiveness	Low
	Awareness raising alone is not sufficient and therefore not very effective. People also need to be willing, motivated and able to change their behaviour.	
	Magnitude	Medium
	Of the 60% of the deforestation embodied in EU consumption and associated to the food sector, 18% is linked to meat. Given (1) the amount of land use embedded in a meat based diet on the one hand and (2) the enormous amount of domestic land used for supporting our meat based diets, reducing meat consumption also has a large potential for indirectly reducing the pressure on forests.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Medium
	In order to be successful, awareness raising has to be both sustained and targeted (simple enough, provided at the right time and place, etc.). Because of this the resource input for this proposal will be relatively high. This leads us to classify the required resource input as medium.	
Possible side effects	The overconsumption of meat is associated with various health problems and obesity. Reducing meat consumption will bring health benefits.	
Links to other measures and legislation		

Policy proposal 16: Consumer tax on meat products

Name	Consumer tax on meat products	
Problem targeted	The overconsumption of animal derived protein is particularly problematic (in 2007 the EU27 average per capita protein intake was about 70% higher than the WHO recommended amount). High meat consumption has negative effects on the environment and on human health. As the production of meat requires a lot of land per unit of output, meat consumption increases the demand for land and thus the pressure on forests. It is estimated that 80% of the world's agricultural land is used for meat production.	
Objective	The objective of the tax is to divert consumption away from animal proteins, which should lessen the pressure on forests outside the EU.	
Description	<p>Economic, market based policies to influence consumption behaviour are common policy instruments. They include price-based mechanisms, either in the form of positive or negative pricing stimuli. The proposed policy option involves a negative pricing mechanism. The assumption is that a differentiated tax on meat will be better able to stimulate consumers to consume either less meat and / or choose meat that has a lower impact on the environment, specifically deforestation. Differentiation in taxes could take place along the following lines (from higher to lower preference):</p> <ul style="list-style-type: none"> <li>• level of the tax set on the basis of the environmental impact / forest footprint that is associated with a specific piece of meat;</li> <li>• level of the tax set on the basis of the type of meat to which an average environmental impact is assigned. For instance, beef requires more land use and therefore might have a higher forest footprint than e.g. chicken;</li> <li>• undifferentiated tax: all types of meat are subject to the same tax.</li> </ul>	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of policy measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	x
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	EU Member States –national law.	
Target group	Consumers with a meat based diet.	
Critical considerations	Scope / feasibility: differentiating taxes according to environmental impacts of meat products is still a challenge, as their origin is often not known. This is also relevant in light of WTO rules. Transparency in	

	production and trade chain is an important precondition. Public acceptance: the policy will not appeal to the consumer.	
Impact on deforestation	Effectiveness	Medium
	The measure works very indirect at the consumption end, and the actual effectiveness of taxation on consumer behaviour is uncertain.	
	Magnitude	Medium
	The magnitude is medium as the livestock sector is a substantial factor in relation to deforestation.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Low
	The assessed impact on deforestation is assessed as medium, due to the aspects elaborated under effectiveness and magnitude.	
Possible side effects	<p>Question is to what extent consumer taxes in EU countries will lead to reduction in meat production and associated deforestation worldwide. A reduced EU demand could lead to a price reduction in world market which might trigger demand in other countries/regions. Social and economic consequences for EU livestock sector, which will be depend on the level of the tax and the price-elasticity of the demand for meat.</p> <p>The burden of a tax on meat will hit the less wealthy part of the population harder.</p> <p>The overconsumption of meat is associated with various health problems and obesity. Reducing meat consumption will bring health benefits.</p>	
Links to other measures and legislation	<p>Policy proposal 15: Promote healthier and diverse food consumption with less emphasis on meat products.</p> <p>Policy proposal 18: Mandatory labelling of the forest footprint of (food) products.</p> <p>Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities.</p>	

*Policy proposal 17: Mandatory labeling of the origin of food products, main ingredients and ingredients that are associated with deforestation*

Name	Mandatory labelling of the origin of food products, main ingredients and ingredients that are associated with deforestation
Problem targeted	<p>Current labelling requirements in the EU for meat other than beef do not include its place of origin, allowing imports packaged in Europe to be labelled as European (Forest Footprint Disclosure, 2011). The statement 'produced in the EU' does not mean that no imported ingredients have been used.</p> <p>Product labels do not always mention all ingredients or remain general (e.g. 'vegetable oils'). Similarly, the provenance of beef produced on deforested land can be concealed within ready meals.</p>
Objective	Enable consumers to make well-informed choices on the basis of information on the origin of products and their ingredients.
Description	The new EU Regulation 1169/2011 on the provision of food information to consumers considerably changes existing legislation on the labelling

	<p>of the origin or place of provenance of food. From 13 December 2014 the indication of the country of origin or place of provenance shall be mandatory:</p> <ul style="list-style-type: none"> <li>• where failure to indicate this might mislead the consumer as to the true country of origin or place of provenance of the food;</li> <li>• for swine, sheep, goat and poultry meat (the labelling of beef and beef products is already regulated by Regulation N° 1760/2000);</li> <li>• for the primary ingredient of a food (commonly a primary ingredient is defined as representing more than 50% of that food) when its origin or place of provenance is different from the food itself.</li> </ul> <p>The exact provisions of the latter two bullet points still need to be defined. The common definition of ‘primary ingredient’ could e.g. be extended to ‘any ingredient that might be associated with deforestation’. Given the importance of the deforestation associated with the import of feed that is used for feeding animals in the EU, the definition of ingredient should also cover feed fed to animals.</p> <p>The Commission also committed itself to assess the necessity/feasibility of the mandatory labelling of the country of origin or place of provenance for:</p> <ul style="list-style-type: none"> <li>• types of meat other than beef, swine, sheep, goat and poultry;</li> <li>• milk and milk used as an ingredient in dairy products;</li> <li>• unprocessed foods;</li> <li>• single ingredient products;</li> <li>• ingredients that represent more than 50% of a food;</li> <li>• meat used as an ingredient.</li> </ul> <p>The Commission should take this opportunity to make sure these provisions are defined in a way that is most meaningful with respect to providing people with information on the origin of food and its ingredients that might be associated with deforestation.</p>																		
Link with policy evaluation criteria	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">1.a.</td> <td style="width: 85%;">Produce commodities with low land use impact</td> <td style="width: 10%;"></td> </tr> <tr> <td>1.b.</td> <td>Produce commodities with low deforestation impact</td> <td></td> </tr> <tr> <td>2.</td> <td>Produce products with low deforestation impact</td> <td>I</td> </tr> <tr> <td>3.</td> <td>Organize supply chain of products with low deforestation impact</td> <td>D</td> </tr> <tr> <td>4.</td> <td>Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)</td> <td>D</td> </tr> </table>	1.a.	Produce commodities with low land use impact		1.b.	Produce commodities with low deforestation impact		2.	Produce products with low deforestation impact	I	3.	Organize supply chain of products with low deforestation impact	D	4.	Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D			
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Information and awareness raising		x																	
Funding mechanism																			
Capacity building and technical assistance																			
Initiator	European Commission																		
Target group	Food manufacturers (responsible for setting origin labels), retailers (responsible for setting origin labels of own brands) and households (who might decide whether or not to buy a food based on information on its origin).																		

Critical considerations	<p>The provision of information on the origin of products is certainly interesting, but might still be less tangible to most people than a sustainability label as people e.g. still need to know that meat from Brazil might be associated with deforestation. Information on the origin of products or its ingredients is only an indicator, but does not establish a one on one relationship with (un)sustainability.</p> <p>Providing too much information on food product labels might lead to disinformation.</p>	
Impact of deforestation on	Effectiveness	Low
	<p>The mandatory labelling of the origin of food products, main ingredients and ingredients that are associated with deforestation alone is not sufficient and therefore not very effective on its own. People also need to understand the information that is offered to them. To most people the link between the origin of products (and their ingredients) and deforestation might be very indirect. Also, they need to be willing, motivated and able to change their behaviour on the basis of the information that is offered to them.</p>	
	Magnitude	Medium
<p>60% of the deforestation embodied in EU consumption is associated to the food sector (task 2 results).</p>		
Efficiency of the measure	Impact on deforestation	Low
	Resources input	Medium
	<p>The scope of the mandatory labelling of the origin of food products, main ingredients and ingredients that are associated with deforestation is uncertain so are the associated costs.</p> <p>The burden is highest for the food manufacturers and retailers. The below information is taken from the impact assessment report on general food labelling issues accompanying the proposal for a regulation on the provision of food information to consumers (European Commission, 2008b).</p> <p>Companies labelling food products that would fall in the scope of the regulation and do not yet provide a proper country of origin labelling will have to collate the country of origin information of its products. The cost in acquiring this information depend on the actual definition of country of origin used and the extent, to which country of origin information of single and compound ingredients has to be traced back. If the regulations require labelling the origin according to the origin of the ingredients, information costs are likely to rise, depending on whether the information is already available using established information systems or whether these have to be established. Companies also will incur one off costs for changing their labels to include the information.</p> <p>Country of origin labelling might have a cost driving effect by requiring an increased frequency of labelling changes. If country of origin labelling is extended to cover single ingredients, changes in recipes and sourcing require changes on the label to adequately cover the origin of the product.</p> <p>According to a study from New Zealand the existing tracking and tracing systems which would allow generating country of origin information, cost increase could be estimated in between 0,11% and 0,86% of food</p>	

	turnover (Nzier, 2005). Evidence from an SME Panel conducted by EICN (2006) suggests that about 70% of companies already indicate the country of origin on at least some of their products, and that around half of these companies provide country of origin information on a voluntary basis.
Possible side effects	n.a.
Links to other measures and legislation	Regulation 1169/2011 on the provision of food information to consumers

*Policy proposal 18: Mandatory labelling of the forest footprint of (food) products*

Name	Mandatory labelling of the forest footprint of (food) products	
Problem targeted	Consumers need to be able to make well-informed consumer choices. There are a host of certification schemes that provide information on the environmental performance and/or footprint of products, but the impact on deforestation is barely taken into consideration. The current proliferation of certification schemes might even add to the general disinformation. As a consequence, consumers simply do not know which criteria these schemes are looking at. At the moment, the provision of information to consumers on the impact of products on deforestation or embedded land use is nonexistent.	
Objective	Provide consumers with easy to understand information on the forest footprint of products so they can take this into account when buying (food) products.	
Description	All (food) products that might be associated with deforestation (scope to be defined) need to carry a label indicating whether it has been causing deforestation or not. For reasons of clarity and effectiveness, (food) products will carry either the label 'No deforestation' or 'This product might be associated with deforestation'. In order to be eligible for the 'No deforestation' label, products must be certified as deforestation-free by a recognised certification body, using a scheme that has been approved by the European Commission.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	D
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of measure	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	x
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	All actors in the supply chain: voluntary certification initiatives, farmers, traders, food manufacturers and processors, retailers (responsible for	

	labelling own brands) and households (who frequently decide whether or not to buy a (food) product based on its label).				
Critical considerations	<p>The footprint information provided to consumers must be easy to understand by all consumers.</p> <p>Mandatory labelling and certification requirements fall under the scope of WTO TBT Agreement.</p> <p>This policy proposal can be a critical building block for other policy proposals aimed at reducing the impact of EU consumption on deforestation.</p>				
Impact on deforestation	<table border="1"> <tr> <td>Effectiveness</td> <td>Medium</td> </tr> </table> <p>The mandatory labelling of the forest footprint of products could be effective if the message is conveyed in a simple way: products either carry the label 'No deforestation' or 'This product might be associated with deforestation'. Of course, this is only the case when consumers are aware of the (importance) of the deforestation problem, and are willing, motivated and able to change their behaviour.</p>	Effectiveness	Medium		
	Effectiveness	Medium			
	<table border="1"> <tr> <td>Magnitude</td> <td>High</td> </tr> </table> <p>The scope of this proposal is potentially very large and may encompass all products associated with deforestation and all countries of origin.</p>	Magnitude	High		
Magnitude	High				
Efficiency of the measure	<table border="1"> <tr> <td>Impact on deforestation</td> <td>High</td> </tr> <tr> <td>Resources input</td> <td>Medium</td> </tr> </table> <p>Mandatory labelling of the forest footprint of (food) products requires that all producers of commodities that might be associated with deforestation need to obtain a certificate stating that their production activities are not associated with deforestation if they want that products put on the EU market containing their commodities as an ingredient can carry the 'No deforestation' label.</p> <p>Manufacturers and retailers will also incur costs for changing their labels to include the information. Labelling the deforestation footprint of products might have a cost driving effect by requiring an increased frequency of labelling changes. Changes in recipes and sourcing require changes on the label to adequately cover the deforestation footprint of a product.</p> <p>In order to allow for the labelling of the forest footprint of products the quality of the existing (voluntary) labels has to be improved as they currently cannot provide proof that a commodity has been produced 100% deforestation free.</p>	Impact on deforestation	High	Resources input	Medium
	Impact on deforestation	High			
	Resources input	Medium			
Possible side effects	<p>Administrative burden for certification may be high, which might put smallholders at a disadvantage.</p> <p>Disinformation because product labels contain too much information.</p> <p>Certification requirements should not be biased against countries with weak state capacities.</p>				
Links to other measures and legislation	<p>Policy proposal 10: Raise awareness of the linkage between EU (food) consumption and deforestation</p> <p>Policy proposal 16: Consumer tax on meat products</p> <p>Policy proposal 18: Mandatory labelling of the forest footprint of (food) products.</p> <p>Policy proposal 21: Strengthen voluntary initiatives certifying</p>				



	sustainably produced (deforestation-free) commodities. Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation.
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*Policy proposal 19: General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services*

Name	General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services	
Problem targeted	To date, Member States are greening their procurement practices and fostering the uptake of sustainable products and services. The criteria that products and services have to meet, however, vary from country to country. In addition, the potential of green public procurement has only been marginally exploited. (European Commission, 2008)	
Objective	Public administrations and services only source deforestation-free (food) products.	
Description	Public administrations and services only source deforestation-free (food) products. Standardised terms of reference are available for the procurement of deforestation-free (food) products making reference to the forest footprint of (food) products as certified by a recognised certification body, using a scheme that has been approved by the European Commission to certify the forest footprint of (food) products.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
Type of measure	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	x
	Information and awareness raising	x
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission or EU Member States	
Target group	Public administrations and services, all actors in the supply chain and the general public (which should be inspired by the exemplary role of public administrations and services).	
Critical considerations	Public procurement practices might be construed as discrimination and thus be subject to trade agreements administered by the WTO.	
Impact on deforestation	Effectiveness	Medium
	Public procurement is generally considered as a powerful tool to green the supply of products and services.	
	Magnitude	Medium
	The scope of this proposal is very large and encompasses all products associated with deforestation and all countries of origin. The demand	

	for commodities and products that might be associated with deforestation by public authorities is a fraction of the entire demand.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Low
	The required resource input for this measure is relatively low if the labelling of the forest footprint of (food) products is already well established or will become mandatory in the near future. If not, the resource input associated with this measure will increase considerably.	
Possible side effects	Stringent public procurement requirements with respect to the forest footprint of (food) products might trigger market actors to also become more sustainable in terms of other environmental and social sustainability issues.	
Links to other measures and legislation	Policy proposal 18: Mandatory labelling of the forest footprint of (food) products. Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities.	

*Policy proposal 20: Review the current rules and regulations for use of animal by-products*

Name	Review the current rules and regulations for use of animal by-products	
Problem targeted	The termination of animal waste protein as livestock feed (e.g. bone meal) after the BSE crisis resulted in increased imports of protein feed, especially soybeans from South America.	
Objective	Rational use of animal proteins from slaughter offal for production of feed for pigs and poultry.	
Description	Review rules and explore potential for the use of processed animal proteins from slaughter offal for the production of feed for pigs and poultry.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D
Type of measure	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	D
	Regulatory measure	X
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	X
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission (DG-AGRI)	
Target group	European Commission	
Critical considerations	Resistance by the general public resulting from the historic BSE crisis.	
Impact on deforestation	Effectiveness	Low
	Resistance by consumers and the food industry will likely cause significant implementation barriers, which in turn may limit the	

	effectiveness of this option.	
	Magnitude	Low
	The expected amount of animal wastes and by-products that could be mobilized will probably be insufficient to substitute for a significant fraction of current protein imports.	
Efficiency of the measure	Impact on deforestation	Low
	Resources input	Low
	Efficiency was judged to be low because both implementation difficulties and limited amounts of economically viable animal by-products will limit the likely impacts of this policy.	
Possible side effects	Resistance by consumers and food industry. Follows the principle of efficient use of valuable resources.	
Links to other measures and legislation	n.a.	

*Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities*

Name	Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities	
Problem targeted	Voluntary multi-stakeholder sustainable certification initiatives like the Roundtable on Sustainable Palm Oil (RSPO), Round Table on Responsible Soy (RTRS) and the Roundtable on Sustainable Biofuels (RSB) assist businesses in the supply chain to find standards to achieve their environmental and social goals. The standards and monitoring and verification practices of these initiatives currently cannot ensure that the goods they certify as 'sustainable' are effectively deforestation-free. (Calen May et al., 2012)	
Objective	Strengthen certification schemes to ensure that certification means that the produced, processed or traded commodities are deforestation-free.	
Description	Support the development of existing (or new) certification schemes to ensure that certification by these schemes means that the produced, processed or traded commodities are effectively deforestation-free.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	
	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	
	Funding mechanism	
	Capacity building	X
Initiator	European Commission	
Target group	Voluntary multi-stakeholder sustainable certification initiatives and	

	supply chain actors.	
Critical considerations	As many of the existing initiatives have been initiated and/or designed by those private companies that are already dominating the market one should make sure smallholders can also access to such schemes.	
Impact on deforestation	Effectiveness	Low
	The fact that there exist certification schemes that can effectively ensure that certification means the produced, processed or traded commodities are deforestation-free does not mean that absolute deforestation is lowered. Strong sustainability certification schemes are, however, a tool to demonstrate a particular company produces commodities that are not associated with deforestation. Such certification schemes are an indispensable building block of other identified policy proposals.	
	Magnitude	High
Efficiency of the measure	The product and geographical scope of the certification schemes is potentially very broad.	
	Impact on deforestation	Medium
	Resources input	Low
The resource input required to strengthen existing certification schemes is relatively limited.		
Possible side effects	n.a.	
Links to other measures and legislation	<p>Policy proposal 16: Consumer tax on meat products</p> <p>Policy proposal 18: Mandatory labelling of the forest footprint of (food) products.</p> <p>Policy proposal 19: General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services.</p> <p>Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials).</p> <p>Policy proposal 4: Promote Reducing Emissions from Deforestation and forest Degradation (REDD+)</p> <p>Policy proposal 25: Investment tax (for portfolio investors investing in corporations with a 'positive' forest footprint).</p> <p>Policy proposal 26: Make the protection of foreign direct investments under Bilateral Investment Treaties (BITs) conditional upon specific deforestation related responsible investment criteria.</p> <p>Policy proposal 27: Make the protection of foreign direct investments by export credits dependent on specific deforestation related responsible investment criteria.</p> <p>Policy proposal 22: Strengthen the environmental provisions in trade agreements.</p> <p>Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation.</p> <p>Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation.</p>	

*Policy proposal 22: Strengthen the environmental provisions in trade agreements*

Name	Strengthen the environmental provisions in trade agreements	
Problem targeted	There can/could be more (effective) environmental provisions (specifically concerning deforestation) in trade agreements.	
Objective	Increase environmental standards in partner countries and enhance effective co-operation on environmental matters and deforestation issues.	
Description	The environmental provisions included in the new generation of free trade agreements comprise the reaffirmation by the parties to effectively implement their commitments in the framework of the Multilateral Environmental Agreements (MEAs) to which they are party. The provision in free trade agreements in which the parties to the agreement also commit themselves to initiate co-operation on trade related measures to tackle deforestation, including addressing problems regarding illegal logging, should be more specific in terms of scope (also refer to soy, meat and palm oil) and objectives.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	D
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	x
	Voluntary measure	x
	Market-based instrument	
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Third countries with which the EU is negotiating free trade agreements.	
Critical considerations	It seems to be rather difficult to integrate (ambitious) environmental provisions and concerns in trade agreements. It might be wise to extend the scope of more ambitious environmental provisions beyond the problem of deforestation.	
Impact on deforestation	<b>Effectiveness</b> Medium	
	Enhancing the environmental standards applicable in countries from which the EU imports products and services that are associated with deforestation is potentially effective. The effectiveness of calling countries to enhance their environmental standards through trade agreements, however, remains uncertain. The effectiveness of this proposal is therefore evaluated as moderate.	
	<b>Magnitude</b> Medium	
	The magnitude of this proposal is potentially very large, but actually limited to those regions the EU is currently (planning to) negotiate (new) trade agreements with. Also, the thematic and product scope of these trade negotiations might be limited.	
Efficiency of the measure	<b>Impact on deforestation</b> Medium	
	<b>Resources input</b> Low	
	Negotiating new trade agreements is time consuming. Environmental	

	provisions only make up a small part of trade agreements, but effectively strengthening environmental provisions in trade agreements might take a lot of time as well. As such negotiations are conducted for the EU as a whole important economy of scale can be realised, this may drive the necessary resource input down.
Possible side effects	Smallholder farmers have not the same capacity and ability to fulfil environmental criteria than large scale industrial farmers, and hence are more likely to be discriminated by 'green protectionism'.
Links to other measures and legislation	Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities

*Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation*

Name	Increase the import tariffs of commodities that are associated with deforestation	
Problem targeted	Generally speaking, the commodities that are associated with deforestation can freely (or very easily) enter the EU market. To the extent that the market price of these commodities is below their real economic cost over-consumption and deforestation are promoted.	
Objective	Discourage the import of commodities that are associated with deforestation.	
Description	Increase (or introduce) import tariffs on commodities that are (imported from countries where the production of these commodities is at risk of being) associated with deforestation (like soybeans, soybean cake, meat products, palm oil and cocoa). Concretely, importers have to demonstrate that the commodities they are importing are deforestation-free. To this end, commodities need to be certified by a recognised certification body, using a scheme that has been approved by the European Commission to certify the forest footprint of (food) products. Commodities that are not certified will be subject to an (increased) import tariff.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	D
Type of measure	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
	Regulatory measure	
	Voluntary measure	
	Market-based instrument	X
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Farmers in third countries (where the production of commodities like	

	soybeans, soybean cake, meat products, palm oil and cocoa is at risk of being associated with deforestation).	
Critical considerations	<p>The political feasibility of increasing the import tariffs of commodities that are associated with deforestation might be low.</p> <p>This policy proposal might conflict with international trade rules. Although WTO rules provide scope for its members to pursue environmental objectives and adopt trade-related measures aimed at protecting the environment, the WTO rules aim to ensure that environmental measures are not applied arbitrarily or as hidden protectionism.</p> <p>Ideally the tariff equals the external cost that is associated with deforestation and possibly also other unsustainable practices.</p> <p>This proposal addresses the deforestation that is directly associated with EU consumption. From a macro point of view this proposal, however, does not necessarily limit the pressure on forests. The production that is associated with deforestation can simply be diverted to other markets.</p> <p>The certification scheme(s) on which this proposal build(s) should ideally also address indirect land use changes a major driver of deforestation.</p>	
Impact on deforestation	Effectiveness	High
	Changing the terms on which commodities, products and services that are associated with deforestation enter the EU market is potentially very effective to halt the import of goods that are associated with deforestation, and hence the deforestation that is directly associated with EU consumption.	
	Magnitude	Medium
Efficiency of the measure	Impact on deforestation	High
	Resources input	Medium
	The resource input required by the Union is relatively low. Companies that want to export commodities, products or services from countries where the production of these goods and services is at risk of being associated with deforestation will have to demonstrate their goods and services are not associated with deforestation. Obtaining the necessary certificates might require some resources. However, in case a flat tariff, which does not differentiate between goods and services that are associated with deforestation and those that are not, is applied the resource input needed is low. This proposal, however, does not propose a flat tariff. The required resource input might however rise because of trade related lawsuits.	
Possible side effects	<p>This policy proposal might trigger substitution effects in terms of both products and exporting countries. It must be safeguarded that the costs that might be associated with the possible negative effects of this shift do not outweigh the benefits that are targeted with the introduction of the tariff.</p> <p>The price of commodities, products or services that are associated with</p>	

	<p>deforestation might go up so also the EU industry and EU consumers might find themselves less well off.</p> <p>Smallholder farmers have not the same capacity and ability to fulfil environmental criteria than large scale industrial farmers, and hence are more likely to be discriminated by 'green protectionism'.</p>
Links to other measures and legislation	<p>This policy option could have an alternative for (or complement) Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation.</p> <p>Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities.</p>

*Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation*

Name	Attach sustainability criteria to the import of commodities that are associated with deforestation	
Problem targeted	Generally speaking, commodities that are associated with deforestation can freely (or very easily) enter the EU market. To the extent that the market price of these commodities is below their real economic cost, over-consumption and deforestation are promoted.	
Objective	Prevent the import of commodities that are associated with deforestation while deforestation-free commodities can still access the EU market.	
Description	Introduction of sustainability criteria to the import of commodities that are at risk of being associated with deforestation (like soybeans, soybean cake, meat products, palm oil and cocoa). Concretely, importers have to demonstrate that the commodities they are importing are deforestation-free. To this end, commodities need to be certified by a recognised certification body, using a scheme that has been approved by the European Commission to certify the forest footprint of (food) products. Commodities that are not certified cannot enter the EU.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	D
Type of measure	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	
Initiator	Funding mechanism	
	Capacity building and technical assistance	
Target group	European Commission	
Target group	Farmers in third countries (where the production of commodities like soybeans, soybean cake, meat products, palm oil and cocoa is at risk of	



	being associated with deforestation).				
Critical considerations	<p>The political feasibility of installing sustainability criteria for commodities that are associated with deforestation might be low. This policy proposal might conflict with international trade rules. Although WTO rules provide scope for its members to pursue environmental objectives and adopt trade-related measures aimed at protecting the environment, the WTO rules aim to ensure that environmental measures are not applied arbitrarily or as hidden protectionism.</p> <p>An important condition for the broad acceptance and implementation of sustainability criteria is traceability (which might be problematic for certain bulk commodities), and the existence of reliable certification systems.</p> <p>The certification scheme(s) on which this proposal build(s) should ideally also address indirect land use changes as a major driver of deforestation.</p>				
Impact on deforestation	<table border="1"> <tr> <td>Effectiveness</td> <td>High</td> </tr> </table> <p>This proposal is highly effective to prevent the import of goods and services that are associated with deforestation on the EU market and hence the deforestation directly associated with EU consumption.</p>	Effectiveness	High		
	Effectiveness	High			
	<table border="1"> <tr> <td>Magnitude</td> <td>High</td> </tr> </table> <p>The possible product and geographical scope of this proposal is very broad.</p>	Magnitude	High		
Magnitude	High				
Efficiency of the measure	<table border="1"> <tr> <td>Impact on deforestation</td> <td>High</td> </tr> <tr> <td>Resources input</td> <td>Medium</td> </tr> </table> <p>The resource input required by the union is relatively low. Companies that want to export commodities, products or services from countries where the production of these goods and services is at risk of being associated with deforestation will have to demonstrate their goods and services are not associated with deforestation. Obtaining the necessary certificates might require some resources.</p>	Impact on deforestation	High	Resources input	Medium
	Impact on deforestation	High			
Resources input	Medium				
Possible side effects	<p>This policy proposal might trigger substitution effects in terms of both products and exporting countries. It must be safeguarded that the costs that might be associated with the possible negative effects of this shift do not outweigh the benefits that are targeted with the introduction of the sustainability criteria.</p> <p>The price of commodities, products or services that are associated with deforestation might go up so also the EU industry and EU consumers might find themselves less well off.</p> <p>Smallholder farmers have not the same capacity and ability to fulfil environmental criteria than large scale industrial farmers, and hence are more likely to be discriminated by 'green protectionism'.</p>				
Links to other measures and legislation	<p>This policy option could have an alternative for (or complement)</p> <p>Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation.</p> <p>Policy proposal 18: Mandatory labelling of the forest footprint of (food) products</p> <p>Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities could provide</p>				

	the objective knowledge to define which products meet the sustainability criteria.
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*Policy proposal 25: Investment tax (for portfolio investors investing in corporations with a 'positive' forest footprint)*

Name	Investment tax (for portfolio investors investing in corporations with a 'positive' forest footprint)	
Problem targeted	Portfolio investors control large amounts of money. Currently these investors have little incentive to refrain from investing this money in equity, bonds or investment projects of corporations whose activities are associated with deforestation, directly and/or indirectly.	
Objective	Encourage portfolio investors to invest in corporations whose activities are not associated with deforestation. The idea is to use the market power of portfolio investors as leverage to influence how businesses operate abroad.	
Description	Portfolio investments in corporations whose activities are associated with deforestation are subject to a tax. This tax is a percentage of the initial investment and is collected upon investment. It might also be possible to tax investment gains which can take the form of capital gains and/or dividends. Whether a corporation's activities are associated with deforestation or not is determined by means of its forest footprint. A corporation's forest footprint is assessed and certified by a (voluntary) certification initiative that has been approved by the European Commission.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	x
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Portfolio investors (entities like pension funds, insurance companies, asset managers and sovereign wealth funds that pool or manage financial resources with the aim to invest them in equity, bonds or other investment projects).	
Critical considerations	Scope: focus on deforestation alone or extend the scope of the investment tax to environmental sustainability or even social responsibility in the broad sense? Feasibility: is it feasible to develop a screening framework (e.g. certified forest footprinting of the operations of corporations) to decide	

	whether an investment has to be taxed (the investment flow to corporations with a 'positive' forest footprint) or not?	
Impact on deforestation	Effectiveness	Medium
	The effectiveness of this proposal depends amongst others on (1) the height of the investment tax, (2) the costs for obtaining a certificate stating a companies' operations are not associated with deforestation, (3) the availability of alternative capital without severe deforestation related standards, (4) the quality of the certification system, and (5) the enforceability of the tax by the competent authorities. The effectiveness of this proposal is evaluated as moderate. If you make the investment tax a dedicated tax than the revenue could e.g. be re-invested in re-forestation projects. The latter would have a positive impact on the effectiveness of the measure.	
	Magnitude	Medium
	EU portfolio investors participate in equity, bonds or investment projects of corporations whose activities might be associated with deforestation, directly and/or indirectly. The extent to which they are involved is not known. The magnitude of this proposal is evaluated as moderate.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Medium
	The required resource input for this proposal will place a burden on both companies attracting finance (who will have to proof their activities are not associated with deforestation) and a Member State governments or the Commission (who will have to set up the proper mechanisms to collect the investment tax and make sure investors play by the rules). The burden on the companies attracting finance may be relatively low if most of these companies already engaged in the labelling of the forest footprint of their products and services or if this labelling will become mandatory in the near future. If not, the resource input associated with this measure will increase considerably. The resources needed by the competent authorities might be considerable if cheating the system is possible. The required resource input of this proposal is evaluated as moderate.	
Possible side effects	Places a burden on small and medium sized enterprises supplying corporations that are certifying their forest footprint.	
Links to other measures and legislation	Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <a href="https://www.responsibleagroinvestment.org/rai/">https://www.responsibleagroinvestment.org/rai/</a> ). Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities (to be extended to the certification of the forest footprint of corporations/activities).	

*Policy proposal 26: Make the protection of foreign direct investments under Bilateral Investment Treaties (BITs) conditional upon specific deforestation related responsible investment criteria*

Name	<b>Make the protection of foreign direct investments under Bilateral Investment Treaties (BITs) conditional upon specific deforestation related responsible investment criteria</b>	
Problem targeted	BITs only assign obligations to the host state and not to the investor or the home state. Especially EU Member States barely have any treaty with specifically dedicated environmental language.	
Objective	Encourage direct investors to make sure their actions are not associated with deforestation. The idea is to use the advantages BITs offer to investors in terms of protecting their investments <sup>10</sup> as leverage to influence how businesses operate abroad.	
Description	Softer language on the environmental and deforestation has to be included in BITs so that it is clear that a BIT aims to promote investment, but in the wider framework of sustainable development and the combat against deforestation. In case of dispute, the arbitral tribunal will look at whether the investor in question was conducting the type of activities that the BIT aimed to protect. Investors whose activities are associated with deforestation could then lose protection offered to their foreign investments under a BIT. Whether a corporation's activities are associated with deforestation or not is determined by means of its forest footprint. A corporation's forest footprint is assessed and certified by a (voluntary) certification initiative that has been approved by the European Commission.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	x
	Voluntary measure	
	Market-based instrument	x
	Information and awareness raising	
	Funding mechanism	
Initiator	European Commission (which now has the sole competence of concluding investment treaties), will attach a higher priority to balancing the environment and the protection of foreign investment.	
Target group	Direct investors (private entrepreneurs as well as state-owned	

<sup>10</sup> De Schutter et al. (2009, page 161-162) state BITs typically contain (1) clauses guaranteeing that investments covered by the BIT will not be discriminated against domestic investments ('national treatment') or of investments from other countries ('most favored nation treatment'), (2) a clause prohibiting uncompensated expropriation or nationalization of the investment, and defining the conditions in which such operations ought to take place, (3) a clause guaranteeing that the investor will be granted 'fair and equitable treatment', that is, that it will be treated by the authorities with a reasonable degree of propriety, and 'full protection and security', that is, that the authorities of the host state will use sufficient law enforcement and police resources to protect the investor from wrongful interference from third parties, and (4) a clause allowing the investor to bring a claim before an arbitral tribunal in case of alleged violation of its rights under the BIT by the host government.

	companies and multilateral institutions which invest capital to establish, expand or (partly) acquire an undertaking).		
Critical considerations	<p>Scope: focus on deforestation alone or extend the scope to environmental sustainability or even social responsibility in the broad sense?</p> <p>Scope: focus on the cultivation, processing and/or trade of commodities that are often associated with deforestation or also include other activities?</p> <p>Feasibility: is it feasible to develop a screening framework (e.g. certified forest foot printing of the operations of corporations) that provides information on the basis of which one can decide whether an investor loses some or all protection clauses that are offered to their foreign investments under BITs?</p>		
Impact on deforestation	<table border="1"> <tr> <td>Effectiveness</td> <td>Medium</td> </tr> </table> <p>The effectiveness of this proposal depends amongst others on (1) the value of the protection clauses that are offered to foreign investments under BITs, (2) the costs for obtaining a certificate stating a companies' operations are not associated with deforestation, (3) the quality of the certification system, and (a) the enforceability of the conditional protection of foreign direct investments under BITs. The effectiveness of this proposal is evaluated as moderate.</p>	Effectiveness	Medium
	Effectiveness	Medium	
	<table border="1"> <tr> <td>Magnitude</td> <td>Medium</td> </tr> </table> <p>Direct investments by EU corporations might be associated with deforestation, directly and/or indirectly. The extent to which the investments by EU corporation are effectively associated with deforestation is not known. The magnitude of this proposal is evaluated as moderate.</p>	Magnitude	Medium
Magnitude	Medium		
Efficiency of the measure	<table border="1"> <tr> <td>Impact on deforestation</td> <td>Medium</td> </tr> </table>	Impact on deforestation	Medium
	Impact on deforestation	Medium	
	<table border="1"> <tr> <td>Resources input</td> <td>Medium</td> </tr> </table> <p>The required resource input for this proposal will place a burden on both companies making direct investments (who will have to proof their activities are not associated with deforestation) and responsible authorities (who will have to verify whether companies that effectively want to make use of the protection offered to them under BITs can demonstrate whether their activities are not associated with deforestation).</p> <p>The burden on the companies attracting finance may be relatively low if most of these companies already engaged in the labelling of the forest footprint of their products and services or if this labelling will become mandatory in the near future. If not, the resource input associated with this will be considerably higher. The resources needed by the competent authorities are relatively low as only a fraction of the companies will effectively make use of the protection offered to them under BITs.</p> <p>The required resource input of this proposal is evaluated as moderate. However, if most companies already engaged in certifying the deforestation footprint of their activities, the resource input can be evaluated as low.</p>	Resources input	Medium
Resources input	Medium		
Possible side effects	Reduced economic development and integration as EU investors might become more reluctant to invest abroad.		

Links to other measures and legislation	<p>Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <a href="https://www.responsibleagroinvestment.org/rai/">https://www.responsibleagroinvestment.org/rai/</a>).</p> <p>Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities (to be extended to the certification of the forest footprint of corporations/activities).</p>
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*Policy proposal 27: Make the protection of foreign direct investments by export credits dependent on specific deforestation related responsible investment criteria*

Name	Make the protection of foreign direct investments by export credits dependent on specific deforestation related responsible investment criteria	
Problem targeted	A lack of environmental conditions tied to obtaining support from export credit agencies (ECAs) and development banks (e.g. the EIB) as well as a varying quality of the environmental review systems of the lenders might have an impact on forests in third countries.	
Objective	Encourage direct investors to make sure their actions are not associated with deforestation. The idea is to use the advantages ECAs and development banks offer to investors (investment insurance, investment guarantees and/or credit) as a leverage to influence how businesses operate abroad.	
Description	Investors whose activities are associated with deforestation can lose the advantages that are offered to them. Whether a corporation's activities are associated with deforestation or not is determined by means of its forest footprint. A corporation's forest footprint is assessed and certified by a (voluntary) certification initiative that has been approved by the European Commission.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	x
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	EU Member States in collaboration with their ECAs.	
Target group	Direct investors (private entrepreneurs as well as state-owned companies which invest capital to establish, expand or (partly) acquire an undertaking).	
Critical considerations	Scope: focus on deforestation alone or extend the scope to environmental sustainability or even social responsibility in the broad	

	<p>sense?</p> <p>Scope: focus on the cultivation, processing and/or trade of commodities that are often associated with deforestation or also include other activities?</p> <p>Feasibility: is it feasible to develop a screening framework (e.g. certified forest foot printing of the operations of corporations) that provides information on the basis of which one can decide whether an investor loses some or all protection clauses that are offered to their foreign investments by export credits?</p>		
Impact on deforestation	<table border="1"> <tr> <td>Effectiveness</td> <td>Medium</td> </tr> </table> <p>The effectiveness of this proposal depends amongst others on (1) the value of the protection of investments by export credits, (2) the costs for obtaining a certificate stating a companies' operations are not associated with deforestation, (3) the quality of the certification system, and (a) the enforceability of the 'conditional' protection of foreign direct investments by export credits. The effectiveness of this proposal is evaluated as moderate.</p>	Effectiveness	Medium
	Effectiveness	Medium	
	<table border="1"> <tr> <td>Magnitude</td> <td>Low</td> </tr> </table> <p>Direct investments by EU corporations might be associated with deforestation, directly and/or indirectly. The extent to which direct investments by EU corporations that might be associated with deforestation are making use of export credits is not known. The magnitude of this proposal is evaluated as low.</p>	Magnitude	Low
Magnitude	Low		
Efficiency of the measure	<table border="1"> <tr> <td>Impact on deforestation</td> <td>Low</td> </tr> </table>	Impact on deforestation	Low
	Impact on deforestation	Low	
	<table border="1"> <tr> <td>Resources input</td> <td>Medium</td> </tr> </table> <p>The required resource input for this proposal will place a burden on both companies making direct investments (who will have to proof their activities are not associated with deforestation) and responsible authorities (who will have to verify whether companies that effectively want to make use of the protection offered to them by export credits can demonstrate whether their activities are not associated with deforestation).</p> <p>The burden on the companies attracting finance may be relatively low if most of these companies already engaged in the labelling of the forest footprint of their products and services or if this labelling will become mandatory in the near future. If not, the resource input associated with this will be considerably higher. The resources needed by the competent authorities are relatively low as only a fraction of the companies will effectively make use of the protection offered to them by export credits.</p> <p>The required resource input of this proposal is evaluated as moderate. However, if most companies already engaged in certifying the deforestation footprint of their activities, the resource input can be evaluated as low.</p>	Resources input	Medium
Resources input	Medium		
Possible side effects	Reduced economic development and integration as EU investors might become more reluctant to invest abroad.		
Links to other measures and legislation	Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <a href="https://www.responsibleagroinvestment.org/rai/">https://www.responsibleagroinvestment.org/rai/</a> ).		

	Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities (to be extended to the certification of the forest footprint of corporations/activities).
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*Policy proposal 28: Assist in the development of a responsible investment framework*

Name	Assist in the development of a responsible investment framework	
Problem targeted	As overall quality of the responsible investment policies for the biofuel, forest and agricultural sector that are developed by financial institutions is fairly poor with respect to (1) the measurability, reportability and verifiability of the principles and criteria used, (2) the use of principles and criteria that are based on international accepted standards and (3) the availability of mechanisms for internal monitoring and for external compliance, opportunities are missed with respect to channelling the expansion of the biofuel and agricultural sector to already deforested lands. (van Gelder and German, 2011)	
Objective	Development of a good quality responsible investment framework to facilitate the screening of investment proposals in the biofuel, forest and agricultural sector that is widely used.	
Description	Assist in the development of a good quality responsible investment framework, which (1) uses criteria that are measurable, reportable and verifiable, and are based on international standards, (2) encompasses mechanisms for internal monitoring and external compliance, and (3) can be applied to all forms of financing and all types of companies and activities in the biofuel, forestry and agriculture sector.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	
	Voluntary measure	x
	Market-based instrument	
	Information and awareness raising	
	Funding mechanism	
	Capacity building and technical assistance	x
Initiator	European Commission	
Target group	Portfolio investors (entities like pension funds, insurance companies, asset managers and sovereign wealth funds that pool or manage financial resources with the aim to invest them in equity, bonds or other investment projects),intermediaries (entities like governments providing development aid, (soft) loans, technical assistance or investment incentives, development banks and multilateral institutions providing loans and technical assistance, commercial banks providing loans and export credit agencies and direct investors).	



Critical considerations	In order to be effective in leveraging sustainable investments in the biofuel, forestry and agriculture sector, it is critical that a good quality responsible investment framework is adopted by a significant number of financial institutions.	
Impact on deforestation	Effectiveness	Low
	Providing assistance in the development of a good quality responsible investment framework does not mean this framework will effectively be used and/or lead to more responsible practices straight away. The effectiveness of this proposal is evaluated low.	
	Magnitude	Medium
Efficiency of the measure	The magnitude of this proposal dependent on the adoption of the proposed good quality responsible investment framework by a large number of portfolio investors and intermediaries. The magnitude of the use of such an investment framework is potentially moderate.	
	Impact on deforestation	Low
	Resources input	Low
Possible side effects	Assisting in the development of a good quality responsible investment framework will generate advantages of scale as individual organisations might not need to invest (much resources) anymore in developing their own framework.	
	n.a.	
Links to other measures and legislation	Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <a href="https://www.responsibleagroinvestment.org/rai/">https://www.responsibleagroinvestment.org/rai/</a> ).	

*Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <https://www.responsibleagroinvestment.org/rai/>)*

<b>Name</b>	<b>Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led initiative (see <a href="https://www.responsibleagroinvestment.org/rai/">https://www.responsibleagroinvestment.org/rai/</a>)</b>	
Problem targeted	Unfair, inequitable and environmentally destructive investment strategies and practices.	
Objective	EU investment in countries exporting to the EU follows guidelines for responsible foreign investments. Fundamental principles include: <ul style="list-style-type: none"> <li>• existing rights to land and natural resources are recognised;</li> <li>• investments enhance food security;</li> <li>• investments are transparent and monitored;</li> <li>• investment projects respect the rule of law, reflect best practice and are economically viable;</li> <li>• investments foster social and distributional impacts;</li> <li>• encourage sustainable resource use and monitor environmental impacts.</li> </ul>	
Description	<p>Certain agricultural crops are not produced domestically in the EU due to climatic constraints or because of a serious comparative disadvantage. In this case, potential EU foreign investments should follow the rules of responsible agricultural investments.</p> <p>Develop and promote rules for foreign investment in agriculture, especially in land tenure, where agricultural investments result in mutually beneficial local community and private sector partnerships. Particular attention is given to the needs of the poor and vulnerable in the specific context.</p>	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	
	Information and awareness raising	X
	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission (DG-DEV, DG-AGRI, DG-ENV)	
Target group	Farmers, direct investors, the European Commission and the OECD.	
Critical considerations	n.a.	
Impact on deforestation	Effectiveness	Medium
	Promoting responsible foreign investments in agriculture is not specifically focussed on avoiding deforestation but addresses a broad range of issues which include sustainable resource use.	

	<b>Magnitude</b>	<b>Low</b>
	Foreign investment covers only a fraction of land development in each country and therefore its direct impact on reducing deforestation will be limited.	
Efficiency of the measure	<b>Impact on deforestation</b>	<b>Low</b>
	<b>Resources input</b>	<b>Low</b>
	Resource inputs for developing and promoting guidelines for responsible foreign investments in agriculture are low; drafts of such guidelines were already developed by international organizations. As long as such guidelines are voluntary only this measure will probably be insufficient for achieving a high impact on deforestation.	
Possible side effects	n.a.	
Links to other measures and legislation	Guidelines for responsible investments are promoted by the FAO and the OECD and the Worldbank. See also 'Knowledge Exchange Platform for Responsible Agro-Investment (RAI). Policy proposal 25: Assist in the development of a responsible investment framework.	

*Policy proposal 30: Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions*

<b>Name</b>	<b>Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions</b>	
Problem targeted	There is margin for improving the integration of environmental aspects in development cooperation. The actual use of the existing tools for facilitating the integration of environmental issues into development cooperation remains limited. The same holds for the actual use of the recommendations resulting from these tools. Additionally, the increased use of budget support as a method for aid delivery poses specific challenges for environmental mainstreaming. Despite outspoken recommendations, the use of Strategic Environmental Assessments (SEAs) in sectoral budget support programmes where significant environmental effects might be expected, it is not yet common practice.	
Objective	Enhance the quality of development actions with respect to environmental issues: <ul style="list-style-type: none"> <li>• identify and avoid harmful environmental impacts (which could undermine achieving the other objectives of development cooperation);</li> <li>• identify and seize the opportunities for enhancing environmental conditions.</li> </ul>	
Description	Develop processes and tools that are tailored to integrate the environment in development cooperation. The use of these processes and tools should be mandated at the right moment in the policy process.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D

	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	x
	Funding mechanism	
	Capacity building and technical assistance	x
Initiator	European Commission and/or EU Member States.	
Target group	Development actions by all types of development actors (European Commission, development banks, EU Member States, NGOs, etc.).	
Critical considerations	The problem with the use of SEAs in sectoral budget support is not only a lack of capacity and knowledge at the level of the receiving country, but also weak ownership.	
Impact on deforestation	Effectiveness	High
	Facilitating and supporting the mandatory integration of environmental issues (among which deforestation) into development actions will help to make sure development actions do not trigger deforestation, but are more effective in reducing the pressure on forests.	
	Magnitude	Low
	The magnitude of this proposal is limited, at least directly, as the countries from which the EU imports most deforestation (like Brazil) do not receive much development assistance. However, this proposal also addresses assistance to regions which currently do not export a lot of deforestation to the EU today, but might do so in the future.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Low
	This proposal wants to make sure that existing commitments are effectively implemented. In this sense, the majority of the resource input required for this proposal (e.g. costs for mainstreaming the environment into all sorts of development actions) is actually at the account of earlier regulatory initiatives.	
Possible side effects	The capacity of integrating environmental issues into development cooperation might prove helpful to better integrate environmental considerations in other policy areas as well, enhancing the quality of decision making.	
Links to other measures and legislation	Policy proposal 31: Raise awareness and develop the capacities of the staff working on the integration of environmental issues in development cooperation.	

*Policy proposal 31: Raise awareness and develop the capacities of the staff working on the integration of environmental issues in development cooperation*

Name	<b>Raise awareness and develop the capacities of the staff working on the integration of environmental issues in development cooperation</b>	
Problem targeted	The tools that are available to facilitate the integration of environmental issues into development cooperation are not commonly used. The same holds for the actual use of the recommendations resulting from these tools. Also, the increased use of budget support as a method for aid delivery constitutes an additional challenge.	
Objective	The staff dealing with the integration of environmental issues is aware of the importance of their task and is trained to effectively account for environmental issues.	
Description	Staff working on the integration of environmental issues in development cooperation is made aware of the importance of their task. Next, these people are trained to use the processes and tools that have been developed to facilitate a better integration of environmental issues in development cooperation.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	D
	1.b. Produce commodities with low deforestation impact	D
	2. Produce products with low deforestation impact	D
	3. Organize supply chain of products with low deforestation impact	
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
Type of measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	x
	Funding mechanism	
	Capacity building and technical assistance	x
Initiator	EU Member States and other development actors.	
Target group	Staff (people developing the main strategies, people supporting their colleagues with respect to environmental issues, programme managers and project managers) dealing with the integration of environmental issues in development cooperation, at the donor side as well as at the side of the receiving country.	
Critical considerations	Commitment and ownership are key.	
Impact on deforestation	<b>Effectiveness</b>   <b>Medium</b>	
	Raising awareness and developing the capacities of the staff working on the integration of environmental issues in development cooperation will help to make sure development actions do not trigger deforestation, but are more effective in reducing the pressure on forests. Awareness raising and capacity development are important, but not sufficient to make sure environmental issues are effectively integrated in development actions.	
	<b>Magnitude</b>   <b>Low</b>	
	The magnitude of this proposal is limited, at least directly, as the countries from which the EU imports most deforestation (like Brazil) do	

	not receive much development assistance. However, this proposal also addresses assistance to regions which currently do not export a lot of deforestation to the EU today, but might do so in the future.	
Efficiency of the measure	Impact on deforestation	Low
	Resources input	Low
	This proposal does not come on top of existing training and awareness raising initiatives, but could be integrated in regular training and awareness raising activities. As such the required resource input is relatively low.	
Possible side effects	n.a.	
Links to other measures and legislation	Policy proposal 30: Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions.	

*Policy proposal 32: Research to obtain a monitoring tool on the impact of EU consumption on worldwide deforestation*

<b>Name</b>	<b>Research to obtain a monitoring tool on the impact of EU consumption on worldwide deforestation</b>	
Problem targeted	In modern societies production of agricultural commodities often takes place far away from final consumption, which makes it difficult for consumers to understand and appreciate the linkages and environmental consequences of consumption decisions. Except for this study, research on the impact of EU consumption on deforestation is lacking to a great extent.	
Objective	Research on the deforestation impact of food and non-food consumption in the EU should provide a basis for policy making at different levels. To facilitate the setting of targets for the EU deforestation impact, information on its evolution is indispensable. This should include support and strengthening of ongoing activities of monitoring and reporting on land use changes, especially in identified deforestation hot spot regions of major EU trade partners. A monitoring tool assists policy makers with up-to-date information on the evolution of the impact of EU consumption on deforestation in third countries.	
Description	A research call (e.g. as part of Horizon 2020) to provide a monitoring and evaluation system on the evolution of the deforestation impact of food and non-food consumption in the EU.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	X

	Funding mechanism	x
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Research institutions, software developers	
Critical considerations	Full information on the deforestation impact of all goods and services in the EU27 is impossible to obtain, but the main goal could be to monitor the progress in certain fields and the downfall in others. What products with deforestation impact are consumed more/less, what are the underlying motives and how are they replaced?	
Impact on deforestation	Effectiveness	Low
	Information alone is not enough to reach a real change, but it is a solid basis for effective policy measures.	
	Magnitude	Low
	This proposal covers a research study (e.g. Horizon 2020) to develop a EU27-wide monitoring system on the deforestation impact of EU consumption.	
Efficiency of the measure	Impact on deforestation	Low
	Resources input	Low
	A research study is a relatively inexpensive way to assure that all policy measures are more focused on the actual problems and can be adapted when the situation is altering. However, implementation of the monitoring and evaluation system will require substantial resources.	
Possible side effects	Increased information on EU27 consumption of food and non-food products Increased information on deforestation and products that enhance deforestation	
Links to other measures and legislation	<p>Policy proposal 12: Develop mandatory Member State specific food waste prevention targets</p> <p>Policy proposal 14: Develop mandatory and consistent food storage labels on food products</p> <p>Policy proposal 18: Mandatory labelling of the forest footprint of (food) products.</p> <p>Policy proposal 19: General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services.</p> <p>Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials).</p> <p>Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation.</p> <p>Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities.</p> <p>Policy proposal 34: Promote activities, which actively seek for synergies between the CAP and policies aiming at reducing deforestation (REDD+; biodiversity strategy).</p>	

*Policy proposal 33: Research on technologies and policies to reduce the impact of EU consumption on deforestation in third countries*

Name	Research on technologies and policies to reduce the impact of EU consumption on deforestation in third countries	
Problem targeted	Except from this study, research on the impact of EU consumption on deforestation is lacking to a great extent. Technological and policy innovation could reduce the EU deforestation impact substantially.	
Objective	Technological and policy innovation in diverse fields could contribute to reducing the deforestation impact of EU consumption. Research and development can target technologies and policies to reduce the land use and deforestation impact of the production of primary commodities and the further processing to food- and non-food products and services (e.g. local products replacing imported commodities with embodied deforestation; increase production of primary commodities per unit area without increasing the cost of work/equipment; sustainable supply chains).	
Description	A research call (e.g. Horizon 2020) to stimulate the development and deployment of technologies and policies that could reduce the impact of EU consumption on deforestation in third countries.	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	I
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	I
Type of measure	Regulatory measure	
	Voluntary measure	
	Market-based instrument	
	Information and awareness raising	X
	Funding mechanism	X
	Capacity building and technical assistance	
Initiator	European Commission	
Target group	Research institutions, industry, SMEs	
Critical considerations	The development of technology will not be effective without giving attention to the effective deployment, combined with the relevant policy measures.	
Impact on deforestation	Effectiveness	Medium
	Innovative technologies could directly lower the impact of EU consumption on deforestation, but the distance from research to marketable technologies is long.	
	Magnitude	Medium
	New technologies can take a long time before they are employed at a large scale.	
Efficiency of the measure	Impact on deforestation	Medium
	Resources input	Low



	A research call is a relatively inexpensive way to stimulate the development and deployment of appropriate innovative technologies.
Possible side effects	Increased information on EU27 consumption of food and non-food products Increased information on deforestation and products that enhance deforestation Increased information on related technologies. Knock-on effects on other aspects of sustainability of products and services.
Links to other measures and legislation	Policy proposal 6: Include mandatory crop rotation, including minimum levels of legume/protein crops, in the CAP cross-compliance rules Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials). Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation. Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities.

*Policy proposal 34: Promote activities, which actively seek for synergies between the CAP and policies aiming at reducing deforestation (REDD+; biodiversity strategy)*

Name	Promote activities, which actively seek for synergies between the CAP and policies aiming at reducing deforestation (REDD+; biodiversity strategy)	
Problem targeted	While REDD+ aims at reducing deforestation, the ongoing CAP reform may result in increasing agricultural imports from countries with significant deforestation and may cause further agricultural expansion in these countries. Especially increased agricultural imports from South America and Southeast Asia are of concern (soybean, and potential future meat or biodiesel imports).	
Objective	Consistency between CAP, REDD+ and biodiversity strategy and identification of potential synergies and conflicting objectives.	
Description	Assess the possible implications of the CAP reform on deforestation and biodiversity in countries outside the EU27. Foster interaction and cooperation between concerned DGs (e.g. roundtable discussions concerning consistency and synergies of policy measures on deforestation and biodiversity).	
Link with policy evaluation criteria	1.a. Produce commodities with low land use impact	
	1.b. Produce commodities with low deforestation impact	I
	2. Produce products with low deforestation impact	I
	3. Organize supply chain of products with low deforestation impact	I
Type of measure	4. Reduce EU consumption (in general, and more specifically of commodities and products having deforestation impacts)	
	Regulatory measure	
	Voluntary measure	X
	Market-based instrument	
	Information and awareness raising	X

	Funding mechanism	
	Capacity building and technical assistance	
Initiator	European Commission (DG-ENV, DG-AGRI, DG-DEV)	
Target group	European Commission, WTO and IPCC	
Critical considerations	When the co-operation across the different DGs becomes stuck in the discussion phase without reaching substantive conclusions on the implementation and enforcement of synergies, effects on halting deforestation may diminish.	
Impact on deforestation	Effectiveness	Medium
	Does not directly address deforestation but will enhance effectiveness of REDD+ by avoiding inconsistencies among CAP and REDD+ measures.	
	Magnitude	Low
	This measure can only indirectly help to reduce deforestation.	
Efficiency of the measure	Impact on deforestation	Low
	Resources input	Low
	Some resources at administrative level will be required to consider and actively seek consistency between CAP and REDD+ measures.	
Possible side effects	Only positive.	
Links to other measures and legislation	<p>Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production potential.</p> <p>Policy proposal 8: Promote relevant concepts and measures for ‘climate smart agriculture’.</p> <p>Close links to WTO free trade agreements and on-going negotiations.</p>	

### 4.3. CONCLUSIONS

The policy proposals address critical areas in multiple policy domains: energy, agriculture, sustainable consumption and production, trade, biodiversity, forestry, foreign investment and development cooperation. The identified options intervene at different stages in the causal chain from consumption to foreign land demand: they target consumption, production (both domestically and abroad) as well as trade, which links up consumption and production. Different strategies are used: reducing consumption, reducing the waste generated by consumption, reducing the land use footprint of consumption, increasing the sustainability of the remaining consumption, increasing the resource efficiency of production, increasing the re-use of waste, improving the sustainability of production activities, and finally discouraging or preventing the trade of commodities that are associated with deforestation. Also, the proposals make use of different policy instruments: regulatory (regulations, legal instruments like orders and prohibitions, standards, etc.), market based (economic stimuli such as taxes, payment for environmental services, certification and labelling, conditions tied to public finance, assistance, etc.), information and awareness raising (social instruments like awareness raising, information, education, promotion of good practices, provision of guidelines, etc.), research, voluntary (self regulation), funding mechanisms, capacity building and technical assistance, etc.

A critical issue is to ensure the consistency between the different policy proposals. Even more challenging is the co-ordination of existing policies and their objectives. With respect to the need for more policy integration there is an issue of scope. The question concerns the standards applying to those proposals that, either directly or indirectly, built upon sustainability standards or criteria. Two options are available: either they focus on deforestation only, or they encompass environmental sustainability or even social responsibility in the broad sense. In response to that type of considerations two policy proposals have been developed that explicitly aim at ensuring policy consistency.

It should also be considered that, even when people are aware of the impact of their consumption on deforestation and willing to change their consumption behaviour, there might still be various other barriers (like the availability of information on the impact of products on deforestation) that prevent people to consume more sustainably. Therefore, stimulating awareness will need complementary policies in order to invoke a genuine change in behaviour. Another example is that, in order to increase the resource efficiency of the European economy, policies should not only act on the supply side but also address the demand side (e.g. via green public procurement, the provision of better information to consumers, etc.) and the other way around. In that respect, the identified policy proposals should therefore be considered as building blocks, which can/should be combined to form a set of measures that is both consistent and complete. Concretely, raising awareness of the linkages between EU (food) consumption and deforestation (Policy proposal 10) is critical with respect to the effectiveness of most other proposals addressing consumption behaviour and ensuring public support (or at least preventing resistance).



## CHAPTER 5 ASSESSMENT OF THE IDENTIFIED OPTIONS

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### 5.1. INTRODUCTION AND APPROACH

The identified options are assessed against a set of evaluation criteria through a qualitative evaluation method. The assessment is entirely based on expert knowledge and does not consider stakeholder input at this stage. Therefore, the results can be influenced by expert subjectivity and some policy areas may need specific expertise to be assessed fully.

The performance of an option on the evaluation criteria is translated into a criterion specific score. The evaluation criteria, evaluation methods and the criteria specific scoring systems are presented hereafter. A “weighted summation multicriteria analysis” was used, a fairly simple MCA method. The standardised effect scores are multiplied by the matching effect weights and then summed for each policy option. The method used corresponds to the one the Institute for Environmental Studies applies in its decision software DEFINITE<sup>11</sup> (decisions on a finite set of alternatives) which has been developed to improve the quality of environmental decision making. Of course other MCA methods are available<sup>12</sup>

#### 5.1.1. EVALUATION CRITERIA

Three criteria were selected for which the performance of the identified options was assessed. These criteria relate to the core objective of reducing the impact of EU consumption on deforestation on the one hand and complementary issues that are critical to both policy makers and stakeholders.

**Impact on deforestation:** the extent to which the impact of EU consumption on deforestation in third countries can be reduced.

**Efficiency** (or cost-effectiveness): the extent to which the impact of EU consumption on deforestation in third countries can be reduced for a given level of resource input (financial, personnel and time).

**Side effects:** the net extent and direction of the effects, both positive and negative, a policy proposal is likely to generate beyond its actual objective which is reducing the impact of EU consumption on deforestation in third countries.

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<sup>11</sup> <http://www.ivm.vu.nl/en/projects/Projects/spatial-analysis/DEFINITE/index.asp>; accessed on 3 Dec. 2012

<sup>12</sup> [http://eprints.lse.ac.uk/12761/1/Multi-criteria\\_Analysis.pdf](http://eprints.lse.ac.uk/12761/1/Multi-criteria_Analysis.pdf)

**5.1.2. EVALUATION METHOD**

A key feature of MCA is its emphasis on the judgement of the decision making team, in establishing objectives and criteria, estimating relative importance weights and, to some extent, in judging the contribution of each option to each performance criterion. The subjectivity that pervades this can be a matter of concern. Its foundation, in principle, is the decision makers’ own choices of objectives, criteria, weights and assessments of achieving the objectives<sup>13</sup>.

The assessment of the options on the criterion ‘impact on deforestation’ is — also based on the task 2 and task 3 results.

In the policy proposal fiches in section 4.2.2 the scores and evaluation method have been described according to the format overleaf:

Impact on deforestation	Effectiveness	Low / Medium / High
	Description of how the effectiveness of the policy measure has been evaluated with regard to its impact on deforestation	
	Magnitude	Low / Medium / High
	Description of how the magnitude of the impact of the policy measure on deforestation has been evaluated	
Efficiency of the measure	Impact on deforestation	Low / Medium / High
	Resources input	Low / Medium / High
	Description of how the resource inputs needed for the implementation of the measure have been evaluated.	

**5.1.3. SCORING OF THE IDENTIFIED OPTIONS**

A criterion specific approach is chosen to score the identified options. The scores provide a scoping of the performance of these options on the evaluation criteria. The approach used is based on the EU Impact Assessment Guidelines (European Commission, 2009b) and is described below. It is a commonly used techniques to scope the performance of policy options.

→ **Impact on deforestation**

The impact of the identified options on deforestation is evaluated taking into account two parameters: (1) the likely effectiveness of the policy proposal and (2) the likely magnitude of the impact of the policy proposal on deforestation. While effectiveness is about the capability of a policy proposal to succeed in lowering deforestation, the magnitude is about the absolute scope/coverage of the policy proposal. E.g. a proposal which addresses the consumption of soy originating from Brazil, which is by far the single most important ‘commodity - country of origin’ pair for imported deforestation by the EU27, might have no impact on deforestation if it is totally ineffective.

The likely effectiveness of the policy proposal will be scored using a three points scale: low, medium or high.

<sup>13</sup> [http://eprints.lse.ac.uk/12761/1/Multi-criteria\\_Analysis.pdf](http://eprints.lse.ac.uk/12761/1/Multi-criteria_Analysis.pdf)

The likely magnitude of the impact of the policy proposal on deforestation will be scored using a three points scale: low, medium or high.

The impact on deforestation of the identified options is derived by combining the scores of the two preceding elements (e.g. from low effectiveness/low magnitude through to high effectiveness/high magnitude). These nine possible combinations are converted into a three points scale (low, medium, high) using the conversion rules provided in Table 4.

Impact on deforestation		Likely magnitude		
		Low	Medium	High
Likely effectiveness	Low	low	low	medium
	Medium	low	medium	high
	High	medium	high	high

*Table 4: Three points scale for scoring the impact on deforestation*

As the evaluation methods for “magnitude” and “effectiveness” have been described in the policy proposal fiches, there was no need to describe the evaluation method for “impact on deforestation”, which follows automatically from the conversion rules in the above table.

#### → Efficiency

The efficiency of the identified options is evaluated taking into account two parameters: (1) the impact on deforestation of the identified options (the first evaluation criterion) and (2) the resource input that is required to develop and operate the identified policy proposals.

The impact on deforestation of the policy proposals is scored using a three points scale: low, medium or high.

The level of resource input required to develop and operate the policy proposals is scored using a three points scale: low, medium or high.

The efficiency of the identified options is derived by combining the scores of the two preceding elements (e.g. from low impact on deforestation/low level of resource input through to high impact on deforestation/high level of resource input). These nine possible combinations are converted into a three points scale (low, medium, high) using the conversion rules provided in Table 5.

Efficiency		Resource input		
		Low	Medium	High
Impact on deforestation	Low	medium	low	low
	Medium	high	medium	low
	High	high	high	medium

Table 5: Three points scale for scoring a policy options' cost-effectiveness

### → Side effects

Side effects can be both positive and negative. In contrast to what the term might evoke, side effects can be important. Side effects and tradeoffs are dealt with in a descriptive way, without quantitative scoring, which would introduce additional subjectivity in the assessment.

## 5.2. ASSESSMENT OF THE IDENTIFIED OPTIONS

The policy options that were identified and described in the previous chapter have been scored, (ref. to Annex 1: Assessment of the identified options). These scores provide an indication of the performance of these options on the different evaluation criteria: 'impact on deforestation', 'efficiency', and 'side effects'.

## 5.3. CONCLUSIONS

A critical element that determines the likely impact of a proposal on deforestation is the fact whether a measure addresses deforestation directly or indirectly. The effectiveness of indirect interventions is more likely to be challenged by various factors. The complexity and length of a supply chain is one such factor. Related to that, a number of (more or less critical) conditions may have to be fulfilled. This might take the form of complementary measures that have to be installed, inconsistencies that need to be removed, quality of the policies, instruments or initiatives that need to be safeguarded and/or actors that need to be involved. Finally, it goes without saying that the fact whether a proposal is voluntary or mandatory is also a decisive factor.

Policy proposal 10: and Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities both score high on the magnitude of impact on deforestation, but low on the effectiveness. This is because both proposals can potentially cover all important 'commodity - country of origin' pairs for imported deforestation, but are dependent on several other initiatives to be effective. Even when people are aware of the impact of their consumption on deforestation and willing to change their consumption behaviour, there might still be various other barriers (like the availability of information on the impact of products on deforestation) that prevent people to consume more sustainably. Therefore, stimulating awareness will need complementary policies (like the labelling of the forest footprint of (food) products) in order to invoke a genuine change in behaviour. Besides, the need for voluntary initiatives certifying sustainably produced (deforestation-free) commodities requires the right economic actors to be on board and, most importantly, that there is demand for sustainably produced commodities and products. In this respect, green public procurement could make a clear difference together with a



thorough greening of the consumption by households. As it has been highlighted already, the latter would require awareness raising, information provision as well as the labelling of the forest footprint of (food) products.

The actual outcome or impact on deforestation of a proposal remains relatively uncertain altogether. Policy proposals that we think will perform very well, both in terms of the effectiveness and magnitude, are Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production potential and Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation. However, also the performance of these measures remains conditional.

As a concluding remark on the impact of deforestation we wish to highlight that if the land associated with EU consumption is not reduced (either by decreasing consumption or increasing the efficiency of production) or sourced to an increasing extent from within the EU27, the impact of most policy proposals may be undone. In that case EU consumption will continue to indirectly cause deforestation: pushing other activities to clear forests and/or direct commodities that have been produced on deforested land to local, national or regional markets.

The performance of the policy proposals in terms of their efficiency, combining their impact on deforestation and the resource input that is required to develop and operate them, varies greatly. Policy proposals that require a low resource input are diverse: abolishing or reviewing rules (making life easier for many economic actors), obligations (that require a change in behaviour), the installation of a flat tax or tariff, assistance with the development of voluntary guidelines and frameworks and the promotion of policy consistency (through study and analysis). There are few policies that are expected to stand out, both in terms of their impact on deforestation and their (limited) resource use. One such measure is Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation. However, this is only the case when a flat tariff is installed. In case of a differentiated tariff that is related to the forest footprint (or any other sustainability criteria) of the imported commodities the required resource input will be much higher, driving down the efficiency of the measure. A critical insight in this respect is the availability of economies of scale. Many policy proposals build, either directly or indirectly, upon the services performed by voluntary initiatives certifying sustainably produced (deforestation-free) commodities. The critical issue is that certification, as well as regular monitoring, requires substantial resources. However, if various proposals that build upon these certification schemes are implemented, costs of certification can to a large extent be pooled, which reduces the costs to be assigned to a single proposal. As a consequence, the efficiency of the policy proposals considered is increased.

## CHAPTER 6 PRIORITISATION OF THE IDENTIFIED OPTIONS

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### 6.1. INTRODUCTION AND APPROACH

After the scoring of the identified options in relation to the evaluation criteria, the options are ranked. The actual ranking, which is based on the weighed summation of the scores of the options for each evaluation criterion, was preceded by two operations: (1) the standardisation of the scores attributed to the options and (2) the attribution of weights to the evaluation criteria.

Firstly, the options are ranked using equal weights for each of the evaluation criteria. That initial ranking is complemented by a number of alternative rankings which are derived by altering the weights attributed to the criteria. That exercise can be considered as a sensitivity analysis on the basis of which the critical parameters and trade-offs are determined. A fairly simple sensitivity analysis was applied for testing whether the outcome (ranking of options) is robust, i.e. whether or not the order changes if variations occur in certain input values. The method used corresponds to the one the Institute for Environmental Studies applies in its decision software DEFINITE (decisions on a finite set of alternatives) which has been developed to improve the quality of environmental decision making<sup>14</sup>.

### 6.2. PRIORITISATION OF THE IDENTIFIED OPTIONS

The procedure of the sensitivity analysis consisted of two prioritisation steps. First, the options were ranked using equal weights for the evaluation criteria (each evaluation criterion is attributed 50% of the total weight). Secondly, the sensitivity of the ranking is assessed, using two different weighing options. In weighting options 2 and 3 weight sets (85%/15%) and (15%/85%) are attributed to the respective criteria "Impact on deforestation" and "Efficiency".

The results presented in this section are hypothetical in the sense that the researchers do not attach a value judgement to any of the prioritisations. The function of the exercise is to illustrate the sensitivity of the results.

#### 6.2.1. EQUAL WEIGHTS

When every criterion is equally important, the following 5 policy proposals rank first:

- Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials)
- Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities
- Policy proposal 18: Mandatory labelling of the forest footprint of (food) products;
- Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation;
- Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation;

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<sup>14</sup> <http://www.ivm.vu.nl/en/projects/Projects/spatial-analysis/DEFINITE/index.asp>; accessed on 3 Dec. 2012.

Among the least ranked , given the evaluation criteria and weights used and the scores attributed, are:

- Policy proposal 11: Targeted awareness raising and information campaigns on food waste production
- Policy proposal 15: Promote healthier and diverse food consumption with less emphasis on meat products;
- Policy proposal 17: Mandatory labeling of the origin of food products, main ingredients and ingredients that are associated with deforestation
- Policy proposal 27: Make the protection of foreign direct investments by export credits dependent on specific deforestation related responsible investment criteria;

#### **6.2.2. IMPACT ON DEFORESTATION**

When the impact on deforestation is deemed most important, the 5 top ranked and the 5 least attractive policy options remain the same as with the (50%/50%) weight set. This is normal, because the minimum and maximum scores are not influenced by the weight set. The additional options that now become very attractive with a score of 0,95 are:

- Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production potential;
- Policy proposal 4: Promote Reducing Emissions from Deforestation and forest Degradation (REDD+)

### 6.2.3. EFFICIENCY

When efficiency is given a higher importance the 5 top ranked and the 5 least ranked policy options also remain the same. The additional options that now become very attractive with a score of 0,95 are many:

- Policy proposal 3: Sustainability criteria for solid and gaseous biomass
- Policy proposal 12: Develop mandatory Member State specific food waste prevention targets
- Policy proposal 19: General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services
- Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities
- Policy proposal 22: Strengthen the environmental provisions in trade agreements
- Policy proposal 30: Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions
- Policy proposal 33: Research on technologies and policies to reduce the impact of EU consumption on deforestation in third countries

These “additional options that become highly ranked for efficiency” and the “additional options that become highly ranked for deforestation impact” from the previous section, all perform equally well in the with the (50%/50%) weight set, with a score of 0,83.

### 6.2.4. SIDE EFFECTS

Side effects and tradeoffs have been dealt with in a descriptive way only, without quantitative scoring.

## 6.3. CONCLUSIONS

A number of policy measures perform well regardless of the weighing options considered. :

- Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials);
- Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities;
- Policy proposal 18: Mandatory labelling of the forest footprint of (food) products;
- Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation;
- Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation;

All other options that are mentioned under sections 6.2.2 and 0 are also worth considering and studying further.

As highlighted before, the results of this prioritisation/ranking exercise are dependent on the subjective evaluation criteria and weights used and the scores attributed to the policy proposals. Furthermore, the performance of a specific proposal depends on the consistency and complementarities of the set of proposals to be installed. A well-designed set of policy proposals might positively influence the performance of single proposals and the other way around.

The study does not propose a complete set of proposed policy measures, but should be considered as an input in a process that can ultimately result in such a programme, using the input of all stakeholders and the available tools, such as Impact Assessments

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**ANNEXES**

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## Annex 1: Assessment of the identified options

Basic decision matrix				
Policy proposals	Evaluation criteria and scores			
	Impact on deforestation		Efficiency	
	Effectiveness	Magnitude	Impact on deforestation	Resource input
Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials)	high	high	high	medium
Policy proposal 2: Include "indirect land use" (ILUC) in sustainability criteria for biofuels	high	low	medium	high
Policy proposal 3: Sustainability criteria for solid and gaseous biomass	high	low	medium	low
Policy proposal 4: Promote Reducing Emissions from Deforestation and forest Degradation (REDD+)	medium	high	high	high
Policy proposal 5: Encourage protein crop production in the European Union	medium	medium	medium	high
Policy proposal 6: Include mandatory crop rotation, including minimum levels of legume/protein crops, in the CAP cross-compliance rules	low	low	low	low
Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production	high	high	high	high
Policy proposal 8: Promote relevant concepts and measures for 'climate smart agriculture'	medium	medium	medium	high
Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities	high	medium	high	medium
Policy proposal 10: Raise awareness of the linkage between EU (food) consumption and deforestation	Low	high	medium	medium
Policy proposal 11: Targeted awareness raising and information campaigns on food waste production	low	medium	low	medium
Policy proposal 12: Develop mandatory Member State specific food waste prevention targets	medium	medium	medium	Low
Policy proposal 13: Increase the clarity and consistency in the use of food date labels	medium	medium	medium	medium
Policy proposal 14: Develop mandatory and consistent food storage labels on food products	medium	medium	medium	medium
Policy proposal 15: Promote healthier and diverse food consumption with less emphasis on meat products	low	medium	low	medium
Policy proposal 16: Consumer tax on meat products	medium	medium	medium	low
Policy proposal 17: Mandatory labeling of the origin of food products, main ingredients and ingredients that are associated with deforestation	low	medium	low	medium
Policy proposal 18: Mandatory labelling of the forest footprint of (food) products	medium	high	high	medium
Policy proposal 19: General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services	medium	medium	medium	low
Policy proposal 20: Review the current rules and regulations for use of animal by-products	low	low	low	low
Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities	low	high	medium	low
Policy proposal 22: Strengthen the environmental provisions in trade agreements	medium	medium	medium	low
Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation	high	medium	high	medium
Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation	high	high	high	medium
Policy proposal 25: Investment tax (for portfolio investors investing in corporations with a 'positive' forest footprint)	medium	medium	medium	medium
Policy proposal 26: Make the protection of foreign direct investments under Bilateral Investment Treaties (BITs) conditional upon specific deforestation related responsible	medium	medium	medium	medium
Policy proposal 27: Make the protection of foreign direct investments by export credits dependent on specific deforestation related responsible investment criteria	medium	low	low	medium
Policy proposal 28: Assist in the development of a responsible investment framework	low	medium	low	low
Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led	medium	low	low	low
Policy proposal 30: Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions	high	low	medium	low
Policy proposal 31: Raise awareness and develop the capacities of the staff working on the integration of environmental issues in development cooperation	medium	low	low	low
Policy proposal 32: Research to obtain a monitoring tool on the impact of EU consumption on worldwide deforestation	low	low	low	low
Policy proposal 33: Research on technologies and policies to reduce the impact of EU consumption on deforestation in third countries	medium	medium	medium	low
Policy proposal 34: Promote activities, which actively seek for synergies between the CAP and policies aiming at reducing deforestation (REDD+; biodiversity strategy)	medium	low	low	low

## Annex 2: Prioritisation of the identified options

Weighing options			
Evaluation criteria	Weight 1	Weight 2	Weight 3
Impact on deforestation	50,00%	85,00%	15,00%
Efficiency	50,00%	15,00%	85,00%
Rankings			
Policy proposal	Total score	Total score	Total score
Policy proposal 1: Extend the sustainability criteria for biofuels for other uses of the same crops (food, feed, products, materials)	1,00	1,00	1,00
Policy proposal 2: Include "indirect land use" (ILUC) in sustainability criteria for biofuels	0,50	0,62	0,38
Policy proposal 3: Sustainability criteria for solid and gaseous biomass	0,83	0,72	0,95
Policy proposal 4: Promote Reducing Emissions from Deforestation and forest Degradation (REDD+)	0,83	0,95	0,72
Policy proposal 5: Encourage protein crop production in the European Union	0,50	0,62	0,38
Policy proposal 6: Include mandatory crop rotation, including minimum levels of legume/protein crops, in the CAP cross-compliance rules	0,50	0,38	0,62
Policy proposal 7: Promote sustainable intensification of agricultural and forest production in areas where current production is well below the agronomic and silvicultural production	0,83	0,95	0,72
Policy proposal 8: Promote relevant concepts and measures for 'climate smart agriculture'	0,50	0,62	0,38
Policy proposal 9: Promote and strengthen FLEGT, and expand to other commodities	1,00	1,00	1,00
Policy proposal 10: Raise awareness of the linkage between EU (food) consumption and deforestation	0,67	0,67	0,67
Policy proposal 11: Targeted awareness raising and information campaigns on food waste production	0,33	0,33	0,33
Policy proposal 12: Develop mandatory Member State specific food waste prevention targets	0,83	0,72	0,95
Policy proposal 13: Increase the clarity and consistency in the use of food date labels	0,67	0,67	0,67
Policy proposal 14: Develop mandatory and consistent food storage labels on food products	0,67	0,67	0,67
Policy proposal 15: Promote healthier and diverse food consumption with less emphasis on meat products	0,33	0,33	0,33
Policy proposal 16: Consumer tax on meat products	0,83	0,72	0,95
Policy proposal 17: Mandatory labeling of the origin of food products, main ingredients and ingredients that are associated with deforestation	0,33	0,33	0,33
Policy proposal 18: Mandatory labelling of the forest footprint of (food) products	1,00	1,00	1,00
Policy proposal 19: General requirement to apply stringent public procurement principles with respect to the deforestation impact of products and services	0,83	0,72	0,95
Policy proposal 20: Review the current rules and regulations for use of animal by-products	0,50	0,38	0,62
Policy proposal 21: Strengthen voluntary initiatives certifying sustainably produced (deforestation-free) commodities	0,83	0,72	0,95
Policy proposal 22: Strengthen the environmental provisions in trade agreements	0,83	0,72	0,95
Policy proposal 23: Increase the import tariffs of commodities that are associated with deforestation	1,00	1,00	1,00
Policy proposal 24: Attach sustainability criteria to the import of commodities that are associated with deforestation	1,00	1,00	1,00
Policy proposal 25: Investment tax (for portfolio investors investing in corporations with a 'positive' forest footprint)	0,67	0,67	0,67
Policy proposal 26: Make the protection of foreign direct investments under Bilateral Investment Treaties (BITs) conditional upon specific deforestation related responsible	0,67	0,67	0,67
Policy proposal 27: Make the protection of foreign direct investments by export credits dependent on specific deforestation related responsible investment criteria	0,33	0,33	0,33
Policy proposal 28: Assist in the development of a responsible investment framework	0,50	0,38	0,62
Policy proposal 29: Promote guidelines for Responsible Agricultural Investments (RAI) including criteria for safeguarding environmental and social sustainability, building on a World Bank led	0,50	0,38	0,62
Policy proposal 30: Facilitate and support the mandatory integration of environmental issues (among which deforestation) into development actions	0,83	0,72	0,95
Policy proposal 31: Raise awareness and develop the capacities of the staff working on the integration of environmental issues in development cooperation	0,50	0,38	0,62
Policy proposal 32: Research to obtain a monitoring tool on the impact of EU consumption on worldwide deforestation	0,50	0,38	0,62
Policy proposal 33: Research on technologies and policies to reduce the impact of EU consumption on deforestation in third countries	0,83	0,72	0,95
Policy proposal 34: Promote activities, which actively seek for synergies between the CAP and policies aiming at reducing deforestation (REDD+; biodiversity strategy)	0,50	0,38	0,62





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