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UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

SUBSIDIARY BODY FOR IMPLEMENTATION

Eighteenth session

Bonn, 4–13 June 2003

Item 11 (b) of the provisional agenda

**OTHER MATTERS**

**PROPOSAL BY CROATIA ON LAND USE, LAND-USE CHANGE AND FORESTRY**

**Data and information on land use, land-use change and forestry in Croatia**

**Submission from a Party**

1. The Subsidiary Body for Implementation (SBI), at its seventeenth session, took note of the request by Croatia contained in document FCCC/CP/2001/MISC.6/Add.2, and invited Croatia to provide, by 15 April 2003, country-specific data and information relating to Article 3, paragraphs 3 and 4, of the Kyoto Protocol. The SBI asked that the data and information be provided in accordance with the requirements of decision 11/CP.7, and presented in formats based on those specified in document FCCC/SBSTA/2000/5, annex II.
2. The secretariat has received a submission in response to the above request. In accordance with the procedure for miscellaneous documents, this submission is attached and reproduced\* in the language in which it was received and without formal editing.

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SUBMISSION FROM CROATIA

**LULUCF matters**  
**According to decision FCCC/SBI/2002/L.11\*\***  
**Made in New Delhi, 23-29 October 2002**  
**Agenda item 11(a)**

**1. Croatian Request for LULUCF**

At the resumed session of the Conference of the Parties to UNFCCC in Bonn in July 2001 the omission of the quantitative value for Croatia in Appendix to the document FCCC/CP/2001/L.11/Rev.1 was recognised. Therefore Croatia submitted its value during COP7 meeting in Marrakech. Negotiations started officially at the preparatory SBSTA/SBI meeting in Bonn and followed up at COP8 in New Delhi.

In New Delhi, by its decision FCCC/SBI/2002/L.11 SBI invited Croatia to provide, by April 2003, country specific data information relating to Article 3, paragraph 3 and 4, of the Kyoto Protocol. The data and information to be provided should be based on the requirements of decision 11/CP.7, and presented in formats as those specified in document FCCC/SBSTA/2000/5, annex II.

The SBI decided to continue its consideration of this item at its 18<sup>th</sup> session, with a view to recommending a draft decision for adoption by the Conference of the Parties at its ninth session.

**2. Briefs on Forestry Management Practice in Croatia**

*Forest Land*

The surface area of the Republic of Croatia is 5.7 million ha. Forests cover approximately 36 percent (+/- 2 percent) of the national mainland which is 2.061.509 ha. 84 percent of forests are owned by the state and 16 percent are in private ownership. The forests in the Republic of Croatia that are located in coastal areas are among its most significant natural resources.

14 percent of forestland are covered by evergreen forests and 86 by deciduous. The forestland in Croatia is overgrown with 53 percent of valuable regular high forests (spermatophyte forests), 31 percent low forests (coppice forests), 11.5 percent different degraded forest types and the remaining forests are newly planted forest cultures and plantations.

According to historical data, the total forest area has not been reduced in the last 100 years. In recent times the total forest area has increased by 1 percent in 10 years.

*Forest Management Practices*

The Republic of Croatia has a long and rich legislative tradition in the field of forest management and natural regeneration. The basic principle directing Croatian forestry is **sustainable forest management**, along with the preservation of natural structures, the diversity of forests, permanent increases in stability and quality of economic and overall-benefit functions served by forests. It should be emphasized that **clear-cutting is prohibited by the Law on Forests and natural regeneration of forests is the fundamental approach**. The first regulations relating to sustainable development, and thus the preservation of biodiversity in Croatia, emerged already in the 16<sup>th</sup> century.

The stewardship and management of forests and forestland in the Republic of Croatia is prescribed by the Law on Forests and by secondary legislation (e.g. Ordinance on Silviculture) and other laws and

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\*\* Superseded by FCCC/SBI/2002/17, paragraph 60.

regulations significant for environmental protection (e.g. Environmental Protection Act, Vegetation Protection Act, Act on Forest Seeds and Seedlings, etc.).

The Law on Forests establishes that the forests and forestland and the management thereof is of general social interest. In order to guarantee an integrated and sustainable forest management in Croatia, one single forest management area has been established for the entire national territory.

The public utility Hrvatske Šume (Croatian Forests) manages state-owned forests and forestland in the Republic of Croatia.

The management of forests and forestland in a forest management area is carried out pursuant to the Forest Management Area Plan approved by the Ministry of Agriculture and Forestry, which will be effective until the year 2005. It also relies on management projections until the year 2025, which represent a constituent part of the Plan.

The Forest Management Area Plan is a strategic stronghold of Croatian forestry and is subject to renewal every ten years. It prescribes long-term spatial and time management of forests and forestland in the territory of the Republic of Croatia. The programme outlines the condition of forests and defines management objectives, as well as types and scope of work and measures and methods to be implemented in order to meet management targets.

The Forest Management Area Plan classifies forests and forestland in the territory of the Republic of Croatia into 657 forest management units, and management units are further divided into permanent units and temporary units. Each management unit has its own Forest Management Plan developed in accordance with the Forest Management Area Plan. More significant parts of every management plan of individual management units are: detailed description of forest stands divided into permanent and temporary units, presentation of areas, tables showing age and thickness classes, presentation of growing stock and annual cut, plan of silvicultural operations, plan of harvest cut and intermediate cut, analysis of management in the preceding period.

#### ***Growing Stock, Increment and Annual Cut***

In the forest area of 2,061,509 ha, the total growing stock (synonyms: timber mass, timber volume, volume) in Croatian forests amounts to 324,257,000 m<sup>3</sup>. It consists of approximately 84 percent of deciduous trees and 16 percent of conifers. The most represented tree species are pedunculate oak, common fir, sessile flowered oak, and other types of broadleaf and evergreen trees. The average growing stock in state-owned forests is 202 m<sup>3</sup>/ha, and in private forests 82 m<sup>3</sup>/ha.

The forests in the Republic of Croatia have an annual increment about 9.643,000 m<sup>3</sup> of timber. The increment is an increase in timber stock in a particular forest within a specified time period. It is calculated as annual, periodical or average. Different methods have been developed in forest management practice, which are used for determining the increment. In Croatia, control method and the Pressler increment borer method are the most frequently applied. Different silvicultural operations can contribute to improved forest increment in terms of quality and quantity.

Annual cut represents a part of growing stock anticipated for harvesting in the management plan over a particular period (annual, 10-years, 20-years) and is expressed in timber volume (m<sup>3</sup>, m<sup>3</sup>/ha) or surface area (ha). In order to meet the basic principle of forest management, the principle of sustained yield, annual cut in Croatia must be lower than annual volume increment. Average annual cut in Croatia is 5.354,000 m<sup>3</sup> or 56 percent of increment volume.

### **3. GHG Removal by Forest Sink in the year 1990 and in future**

Based on data on total annual increment of 9,643,000 m<sup>3</sup>, and annual cut of 5,354,000 m<sup>3</sup>. Total removal is calculated according to IPCC methodology and gives the value of 6,505 Mt CO<sub>2</sub> annually (1,772 MtC/y).

In presenting emission in the period from the year 1990 to 1995, in the First National Communication, removal through all six years was unchanged. The same value of forest sink could be extended in future till beginning of the first commitment period, in regard to Article 3.4.

### **4. Explanation of submitted data in Annex II ( FCCC/SBSTA/2000/5) tables**

#### ***Table 1 – Article 3.3***

From the year 1990 till 1995 a very small area has been afforested and reforested. Total area and carbon stock are given in table 1. It should be noted, since it was a very small area, it was not taken into account in calculation of emission inventory in the First National Communication.

For the future, there are relatively high potential for afforestation and reforestations activities. In Croatia about 315,000 ha of non-stocked productive forestland are available for afforestation or reforestation. The carbon stock could be increased by three main measures: 1) reforestation of productive bare forestland, 2) increase in forest land to be managed by thinning and 3) planting of pioneer wood species. It is yet not possible to estimate to what extent the implementation of these measures will be started till the first commitment period.

#### ***Table 2 – Article 3.4***

Total carbon stock for the year 1990 is given in table 2, based on assumption given in the previous text. It includes entire above ground biomass. ***Table 3 – Article 3.4***

Supposing the same management practice in the land area of 2,061,509 ha that was used till the year 1999, in the first commitment period accumulated carbon stock will be 8,86 MtC.

### **5. Value for the LULUCF Appendix Table**

Starting from the total net carbon removal of 1,772 MtC/y (6,505 MtCO<sub>2</sub>/y), to obtain the value of the cap for forest management activities under Article 3.4 of Kyoto Protocol, if applying an 85 per cent discount factor, we obtain the value of 0,265 MtC/y for the Appendix table.

The value of 0,620 MtC/y that was proposed by Croatia in its Marrakech COP6 submission, could be derived by applying the 85 percent factor to the annual increment, supposing that Croatia will not cut any forests.

The difference between 0,62 MtC/y and 0,265 MtC/y was attributed to the Croatian difficulties to meet Kyoto commitments, refer to footnote of the LULUCF Appendix Table.

#### **Enclosures:**

Table 1

Table 2

Table 3

**Table I - Preliminary data and information provided by Annex I Party on carbon stock changes and areas related to Article 3.3 activities**

Article 3.3 Country specific data	Definitions	Accounting framework	a <sub>I</sub> (ha)	DC <sub>I</sub> (t C)	a <sub>II</sub> (ha)	DC <sub>II</sub> (t C)	a <sub>cp</sub> (ha)	DC <sub>cp</sub> (t C)	Methods and approaches	Data sources, data quality, and uncertainty (e.g. ranges)	Other information relevant to decision-making
Afforestation Reforestation	IPCC	Activity based			17794	37190				Forest Management Plan	
		Land based			1132	2370				Forest Management Plan	
Afforestation Reforestation	FAO	Activity based									
		Land based									
Reforestation	FAO	Activity based									
		Land based I									
		Land based II									
Afforestation Reforestation	Other	Activity based									
		Land based									
Deforestation	IPCC/FAO	Activity based									there is no deforestation in Croatia
		Land based									
	Other	Activity based									
		Land based									

**Table II - Preliminary data and information provided by Annex I Party on carbon stocks and area estimates (First sentence of Article 3.4)**

<i>Land system</i>	<i>Area (ha)</i>	<i>Carbon stock in 1990 (t C)</i>
Forest lands	2061509	123708950
Agriculture lands		
Rangelands/grasslands		
Wetland/tundra		
Other		
Total (as listed above)		

**Table III - Preliminary data and information provided by Annex I Party on Article 3.4 activities, related net GHG emissions, involved areas, and projected carbon stock changes (additional activities under Article 3.4)**

Article 3.4 Country specific data	Accounting framework	a <sub>I</sub> (ha)	CO <sub>2, I</sub> (tCO <sub>2</sub> )*	CH <sub>4, I</sub> (tCO <sub>2</sub> equiv.)* <sup>\$</sup>	N <sub>2</sub> O <sub>1, I</sub> (tCO <sub>2</sub> equiv.)* <sup>\$</sup>	a <sub>II</sub> (ha)	CO <sub>2, II</sub> (tCO <sub>2</sub> )*	CH <sub>4, II</sub> (tCO <sub>2</sub> equiv.)* <sup>\$</sup>	N <sub>2</sub> O <sub>2, II</sub> (tCO <sub>2</sub> equiv.)* <sup>\$</sup>	a <sub>cp</sub> (ha)	DC <sub>cp</sub> (t C)	CO <sub>2, cp</sub> (tCO <sub>2</sub> )*	CH <sub>4, cp</sub> (tCO <sub>2</sub> equiv.)* <sup>\$</sup>	N <sub>2</sub> O <sub>cp</sub> (tCO <sub>2</sub> equiv.)* <sup>\$</sup>	Methods and approaches	Data sources, data quality, and uncertainty (e.g. ranges)
Activity 1	Land based	2061509	32525			2061509	58545			2061509	8862.39782	32525			IPCC	medium
	Activity based															
Activity 2	Land based														IPCC	medium
	Activity based															
Activity 3	Land based															
	Activity based															
....																