

REPUBLIC OF CROATIA  
MINISTRY OF ENVIRONMENT AND ENERGY

PROGRESS REPORT ON LULUCF  
ACTIONS UNDER ARTICLE 10 OF THE  
LULUCF DECISION

December 2016

Pursuant to the provisions of Article 10 of Decision 529/2013/EU and Article 4 of Regulation 525/2013/EU, EU Member States had to decide on the method of delivery of information on activities in the sector: Land use, land-use change and forestry (i.e. the LULUCF sector), through which they intend to maintain/reduce greenhouse gas emissions and to maintain/increase sinks in this sector by 2020. States were able to submit the requested information as a separate document, as a clearly identifiable part of their development strategy based on low levels of carbon dioxide, or as a clearly identifiable part of other strategies or plans in the LULUCF sector. Croatia decided that the activities in the LULUCF sector shall form an integral part of its Low carbon Development Strategy for the period up to 2030 with a view to the 2050, with Action plan.

According to Article 10, paragraph 4 of the Decision 529/2013/EU Member States shall submit to the Commission, by the date halfway through each accounting period, and by the end of each accounting period specified in Annex I, report describing the progress in the implementation of the LULUCF actions.

At a time when the Republic of Croatia submitted its information relating to LULUCF activities under Article 10 of Decision 529/2013 one of the basic used documents was draft Rural Development Programme of the Republic of Croatia for the period 2014-2020 which has since been revised and adopted.

The basic documents for the implementation of sustainable forest management are plans, which are prepared for this sector on a periodic level and which relate to the sections of each management unit.

The document identified measures that will be implemented during the Second commitment period in areas that are the subject of activities in the agricultural and forestry sectors in the Republic of Croatia.

National inventory arrangements described in the document is the same with minor changes in the name of the involved institutions. In 2015 Croatian Environment Agency changed its name to Croatian Agency for the Environment and Nature and also in 2016 the Ministry of Environmental and Nature Protection changed its name to the Ministry of Environment and Energy.

As for the Croatian forestry, its basic principles remain sustainable management with the preservation of the natural structures and diversity of forests and a permanent increase in the stability and quality of the economic and beneficial functions of forests.

As part of the Common Agricultural Policy 2015 - 2020 the Republic of Croatia has been implementing measures to protect the environment and climate in the framework of cross compliance rules, which sets direct link between the achieving the right to the support in agriculture and complying to the basic rules related to environmental protection, food safety, animal and plant health, animal welfare and the maintenance of agricultural areas of the economy in good agricultural and environmental condition. This applies to all agricultural producers, users of direct support and users of an integrated administrative control system of rural development measures.

During the drafting of the document related to the fulfilment of the obligations set in the Article 10 of Decision No 529/2013/EU in January 2015 was available the draft Rural Development Programme. The following tables list the updated list of measures after the making the final version of the document.

In the tables below the measures are given which are implemented in the Republic of Croatia in order to maintain/reduce greenhouse gas emissions and maintain/increase sinks up to 2020, which are associated with activities in the LULUCF sector. The basic document for identifying and defining measures in this sector is the Rural Development Programme of the Republic of Croatia for the period 2014-2020.

The measures, status of measures, deadlines for implementation and the required funding.

<b>Agricultural land categories – Basic requirements for direct payments</b>						
<b>Measure identification code</b>	<b>Measure name</b>	<b>Status</b>	<b>Implementation deadline</b>	<b>Required public funds for the financial period 2014-2020 in euros</b>	<b>Legal basis</b>	<b>Reduction /maintaining potential</b>
GAEC 4	Minimum soil coverage	In implementation			Ordinance on Cross compliance (OG 32/2013, 45/2016)	*
GAEC 5	Minimum agricultural soil management according to specific soil characteristics	In implementation				**
GAEC 6	Prohibition of burning crop residues	In implementation				**
SMR 1	Standards for nitrates	In implementation				*

	Minimum conditions of maintenance of agricultural land in the state suitable for grazing	2015			Ordinance on the implementation of direct payments and IACS rural development measures (OG 20/16, 39/16 and 91/16)	*
<b>Agricultural land categories – Additional mandatory requirements for environmentally beneficial measures (<i>Greening</i>)</b>						
Green payments ( <i>Greening</i> )	Crop diversity	In process	2015	30% of funds from direct payment national envelope	Regulation EU 1307/2013 of the EU Parliament and Council.	*
	Permanent grasslands	In process	2015			*
	Ecological focus areas	In process	2015			*
<b>Agricultural land categories – Voluntary measures – Rural Development Programme of the Republic of Croatia for the period 2014-2020 M 10 Agri-environment and climate</b>						
Operation 1.	Tilling and sowing on the terrain with slope for arable annual plants	In process	2015-2020	4,230,000	Article 28. of the Regulation (EU) No. 1305/2013 of the EU Parliament and Council	*
Operation 2.	Grassing of permanent crops	In process	2015-2020	9,930,000		**
Operation 3.	Preservation of high nature value grasslands	In process	2015-2020	5,250,000		**
Operation 4.	Pilot measure for protection of corncrake (lat. <i>Crex crex</i> )	In process	2015-2020	878,400		*

Operation 5.	Pilot measure for protection butterflies	In process	2015-2020	720,000		*
Operation 6.	Establishment of field strips	In process	2015-2020	39,360,000		*
Operation 7.	Maintaining of extensive orchards	In process	2015-2020	17,232,600		*
Operation 8.	Maintaining extensive olive groves	In process	2015-2020	36,180,000		*
<b>Agricultural land categories - Voluntary measures – Rural Development Programme of the Republic of Croatia for the period 2014-2020 M 11 Organic farming</b>						
Sub-measure 11.1	M11.1. Payment to convert organic farming practices and methods	In process	2015-2020	40,913,117	Article 29. the Regulation (EU) no. 1305/2013 of the EU Parliament and Council	**
Sub-measure 11.2.	Payment to maintain organic agricultural practices and methods	In process	2015-2020	87,396,507		**
<b>Proposal of possible measures for further reduction of greenhouse gas emissions and carbon storage</b>						
Proposal 1.	Establishment of agro-forestry systems	Plan	2015-2020		Regulation (EU) no. 1305/2013 of the EU Parliament and Council	**

Proposal 2.	Energy crops sowing	Plan	2015-2020			**
Proposal 3.	Reduced tillage combined with cover crops and crop rotation	Plan	2015-2020			**
Proposal 4.	Raising fire-protective belts along crops and plantations on the sub-Mediterranean and Mediterranean soil	Plan	2015-2020			**

Note: \* limited impact on reducing greenhouse gas emissions and carbon storage

\*\*significant impact on reducing greenhouse gas emissions and carbon storage

Overview of measures, amounts of planned EU co-financing by priorities/focus areas of Croatian RDP related to forests and forest land (amounts and priorities /focus areas which for the most part relate to forestry are indicated in bold type)

Measure	Share of contribution EAFRD 2014-2020	Planned EU co-financing sum for 2014-2020 (€)	Priority / Focus area
M01 - <i>Knowledge transfer and information actions</i> (art 14)	90%	4 000 000,00	2A
		2 000 000,00	2B
		666 666,67	3A
		<b>6 666 666,67</b>	<b>P4</b>
M02 - <i>Advisory services, farm management and farm relief services</i> (art 15)	85%	1 800 000,00	2A
		1 800 000,00	2B
		<b>14 400 000,00</b>	<b>P4</b>
M04 - <i>Investments in physical assets</i> (art 17)	85%	305 046 000,00	2A
		73 710 000,00	3A
		<b>79 947 000,00</b>	<b>5C</b>
		67 473 000,00	5D
		<b>22 680 000,00</b>	<b>P4</b>
M06 - Farm and business development (art 19)	85%	67 800 000,00	2A
		0,00	2B
		<b>113 000 000,00</b>	<b>6A</b>
M08 - <i>Investments in forest area development and improvement of the viability of forests</i> (art 21-26)	85%	0,00	2A
		45 200 000,00	2B
		0,00	6A
		<b>36 705 085,00</b>	<b>2C</b>
		<b>1 595 873,00</b>	<b>6A</b>
		<b>40 699 040,00</b>	<b>P4</b>
M16 - Co-operation	90%	6 750 000,00	2A
		750 000,00	3A
M17 - Risk management (art 36-39)	85%	48 172 367,00	3B

According to the document Information on LULUCF action in accordance with Article 10 of decision no 529/2013/EU from the January 2015 by the Republic of Croatia, the former Ministry of Environment and Nature Protection submitted to the European Commission, the measures in the forestry sector, which retain or increase outflows carbon dioxide, were classified into two main groups:

- A. afforestation, reforestation and deforestation prevention
- B. Forest management

The measures in the forestry sector - report for the period from 2013 until 2015

- A. Afforestation, reforestation and deforestation prevention

A1. Afforestation of environmentally appropriate areas or degraded land (Afforesting environmentally suitable areas or degraded lands)

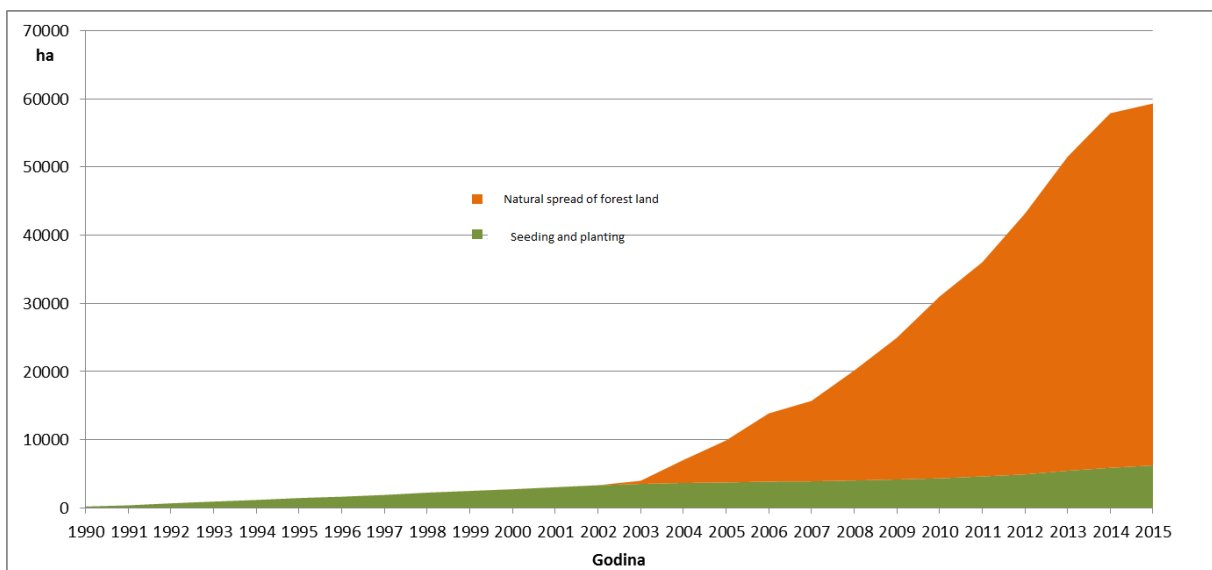


Figure 1 Graphic scheme of increase in forest area in „Afforestation“ category from 1990 until 2015

As Figure 1 shows, the continued growth of forest area in the category of "Afforestation", although there is considerably slower growth from the 2014.

Detailed data on emissions from the LULUCF sector for the period 1990 - 2014 can be found in NIR2016 since the calculation of the emissions for the period 1990 - 2015 is still under preparation.



Scenario for 2020.	Increase in new areas	1990-2012.		Projections for 2013 - 2020		Total 1990-2020.	
		Deciduous trees	Coniferous trees	Deciduous trees	Coniferous trees	Deciduous trees	Coniferous trees
		ha					
Without measures	Sowing and planting	1295,13	3622,51	88,66	247,98	1383,79	3870,49
	Natural expansion	34808,56	3440,39	3028,66	299,34	37837,22	3739,73
With measures	Sowing and planting	1295,13	3622,51	478,15	1337,41	1773,28	4959,92
	Natural expansion	34808,56	3440,39	12070,94	1193,06	46879,50	4633,45
With additional measures	Sowing and planting	1295,13	3622,51	996,57	2787,43	2291,70	6409,94
	Natural expansion	34808,56	3440,39	24214,68	2393,32	59023,24	5833,71

Table 1 – Afforestation“ category under 3 scenarios

The increase in forest area occurred in combination of two scenarios. For the years 2013 and 2014 could be said happend under higher scenario, while in 2015 certain limitations already began to happen, which is likely to continue until 2020 (legal restrictions regarding the demarcation of forest from agricultural land<sup>1</sup>, following with restrictions in nature protection given to areas under Natura 2000<sup>2</sup> and the conservation of rare and endangered habitats<sup>3</sup>).

Based on the Forest management plan for the Republic of Croatia for the period from 2016 until 2025, which is in the process of final approval (strategic environmental impact assessment is in preparation), afforestation is planned by sowing and planting on 3 400 hectares for the duration of the plan. We believe that the total area of the category "afforestation" at the end of the period will be provided between the two scenarios "with measures" and "additional measures", although it could be considered that everything was done according to the existing measures with occasional limitations.

<sup>1</sup> Agriculture Land Act (OG,39/13, 48/15)

<sup>2</sup> Regulation on the ecological network (OG, 124/13; 105/15)

<sup>3</sup> Ordinance on the list of habitat types, habitat map, and threatened and rare habitat types (OG, 88/14)

increase of new areas	Godina 2013.		Godina 2014.		Godina 2015		Total 2013-2015.		
	DECIDUOUS	CONIFEROUS	DEC	CON	DEC	CON	DEC	CON	total
	ha								
seeding and planting	165,20	372,47	85,22	341,99	84,53	260,02	334,95	974,48	1309,43
natural expansion	6916,73	893,30	5812,75	139,76	1080,46	2,47	13809,94	1035,53	14845,47
total	7081,93	1265,77	5897,97	481,75	1164,99	262,49	14144,89	2010,01	16154,90

Table 2 „Afforestation“ by years

Scenario for 2020	Period 1990-2012	Projections for 2013 - 2020	Total 1990-2020.	Accomplished 1990-2015	
	ha			ha	%
Without measures	43166,59	3664,64	46831,23	59321,49	127%
With measures	43166,59	15079,56	58246,15		102%
With additional measures	43166,59	30392,00	73558,59		81%

Table 3 – Increase in forest areas in comparison with projections up to now

## A2. Deforestation prevention

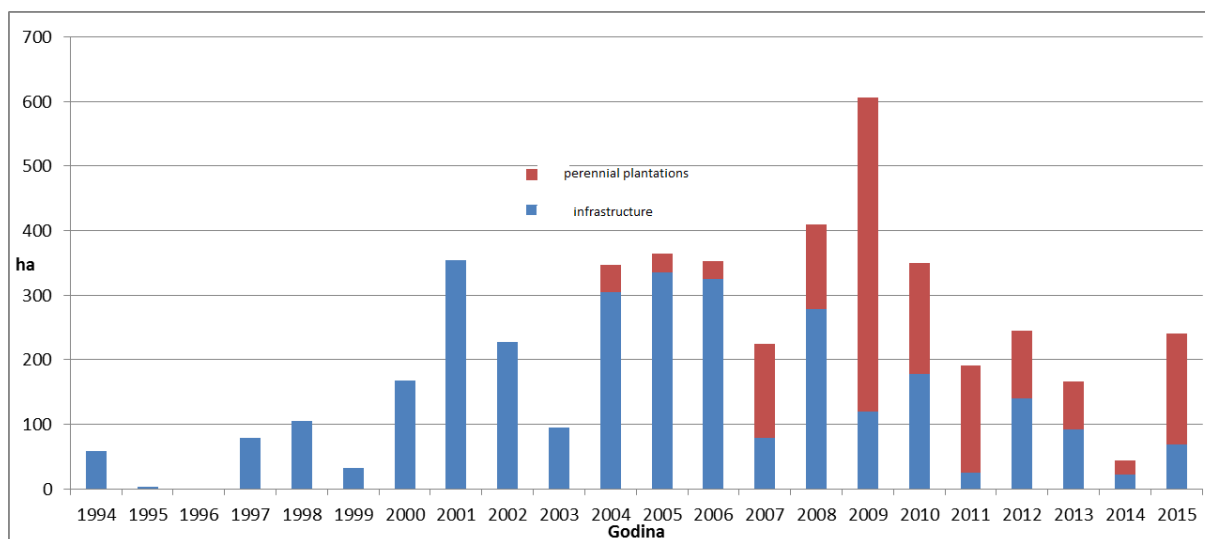


Figure 2 –Graphical scheme of deforested areas by use, in period from 1990 to 2015.

Deforestation prevention took place under existing measures. Among the new measures which should further affect the prevention of unauthorized deforestation, clear cutting, damaging forests, lack of implementation of measures to protect forests from fire and pests, etc., criminal provisions in the latest legal amendments to the existing the Forestry Act have been tightened and expanded (Official Gazette 140/05, 82/06, 129/08, 80/10, 124/10, 25/12, 68/12, 148/13, 94/14), especially in terms of Article 85.

Scenario	Deforestation 1990-2012			Projections 2013-2020			Total 1990-2020		
	DT	CT	Total	DT	CT	Total	DT	CT	Total
	ha								
Without measures	3534,34	680,25	4214,59	4214,00	811,00	5025,00	7748,34	1491,25	9239,59

With measures	3534,34	680,25	4214,59	2107,00	405,00	2512,00	5641,34	1085,25	6726,59
With additional measures	3534,34	680,25	4214,59	1053,00	203,00	1256,00	4587,34	883,25	5470,59

Table 4 – Deforestation projection to 2020

decreasing of forest areas deforestation	Godina 2013.		Godina 2014.		Godina 2015		total 2013-2015.		
	DEC	CON	DEC	CON	DEC	CON	DEC	CON	total
	ha								
	<b>163,20</b>	<b>3,39</b>	<b>43,71</b>	<b>0,81</b>	<b>233,03</b>	<b>8,02</b>	<b>439,94</b>	<b>12,22</b>	<b>452,16</b>

Table 5 – Deforestation by years for the period from 2013 to 2015

Deforestation for the period from 2013 to 2015 in average is less than in the previous ten-year period. We can expect that deforestation occur within two projections, "with existing measures" and "with additional measures".

Scenario for 2020	Period 1990-2012	Projections 2013-2020	Total 1990-2020.	Deforestation in 1990-2015	
	ha			ha	%
Without measures	4214,59	5025,00	9239,59	4666,75	51%
With measures	4214,59	2512,00	6726,59		69%
With additional measures	4214,59	1256,00	5470,59		85%

Table 1 –The relation between deforestation area in the period 1990-2015 in comparison with projections by 2020

## B. Forest management

Scenario	Group	Area	Condition 2013		Condition 2020	
			Growing stock	Increment	Growing stock	Increment
			ha	m3	m3	m3
Existing	Deciduous	1658419,77	359680715	9068108	370000000	8800000
	Coniferous	205912,66	53047076	1175974	54300000	1200000
	Total	1864332,43	412727791	10244082	424300000	10000000
Lower	Deciduous	1658419,77	359680715	9068108	364000000	8650000
	Coniferous	205912,66	53047076	1175974	53600000	1200000
	Total	1864332,43	412727791	10244082	417600000	9850000

Table 7 - Overview of Initial and projections of final state of growing stock and increment

Comparing the areas according to the listed groups, we can see that there has been some "reshuffling" as a result of the determination of the new state of part of the private forests during the development of the Forest Management Plan. Also, minor changes

to the stand with predominantly coniferous and deciduous species are possible for one part of mixed stands of beech and fir with about an equal share in the growing stock.

Group	Area		Difference	
	2013	2015		
	ha	ha	ha	%
Deciduous	1658419,77	1593345,83	-65073,94	-3,9%
Coniferous	205912,66	210911,20	4998,54	2,4%
Maquis and shrubs	445445,04	507036,21	61591,17	13,8%
Total	2309777,47	2311293,24	1515,77	0,1%

Table 8 –Comparison of areas under group of stands

Group	Growing stock		Difference	
	2013	2015		
	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>	%
Deciduous	359680715	363370485	3689770	1,0%
Coniferous	53047076	52917516	-129560	-0,2%
Maquis and shrubs				
Total	412727791	416288001	3560210	0,9%

Table 9 –Comparison of growing stock under group of stands

Group	Increment		Difference	
	2013	2015		
	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>	%
Deciduous	9068108	8993750	-74358	-0,8%
Coniferous	1175974	1132307	-43667	-3,7%
Maquis and shrubs				
Total	10244082	10126057	-118025	-1,2%

Table 10 - Comparison of wood stock under group of stands

Harvested growing stock is for now moving in the framework of the existing scenario. We think that it will continue to move towards to the framework which set Forest Management plan up to 8 million by 2025 (total realization will largely depend on the implementation of the etat in the private sector).

Group	Felling			Annual average
	2013	2014	2015	
	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>	m <sup>3</sup>
Deciduous	5039718	5155472	5411195	5202128
Coniferous	913868	996610	961952	957477
Maquis and shrubs	0	0	0	0
Total	5953586	6152082	6373147	6159605

Table 11 –Realized cut by years in the period from 2013 to 2015

### Other measures in forest sector

Other measures relate to changes in the legislation in terms of improvements in future reporting.

Thus, the Ordinance on forest management (NN 79/15), Article 45, prescribes obligation of marking stands in forest management plans under the provisions of the Kyoto Protocol, United Nations Framework Convention on Climate Change and the Decision 529/2013/EU of the European Parliament and the Council. The aim is to facilitate reporting in the forestry sector and more easily keep track of all the impacts and changes occurring in forest stands. This obligation will be, for the first time, included in the forest management plans for all management units, entering into force in 2017.