



# **SLOVAK REPUBLIC**

## **information on current and future LULUCF actions to the European Commission**

according to the Article 10 of Decision No 529/2013/EU of the European Parliament and of the Council of 21 May 2013 on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land use, land-use change and forestry and on information concerning actions relating to those activities

**Ministry of Agriculture and Rural Development of the Slovak Republic**  
**Ministry of Environment of the Slovak Republic**

**Bratislava, June 2014**

The information on current and future LULUCF actions of the Slovak Republic was prepared and is submitted pursuant to the Article 10 of Decision No 529/2013/EU of the European Parliament and of the Council of 21 May 2013 on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land use, land-use change and forestry and on information concerning actions relating to those activities.

Report contains information on LULUCF actions required by the Article 10, para 2 of the Decision No 529/2013/EU.

### DETAILS OF PREPARING THIS SUBMISSION

<b>Country:</b>	<b>Slovak Republic</b>
<b>Date of completion:</b>	30 June, 2014
<b>Legal guarantor of report :</b>	<b>Ministry of Agriculture and Rural Development of the SR (the MPRV SR)</b> <b>Ministry of Environment of the SR (the MZP SR)</b>
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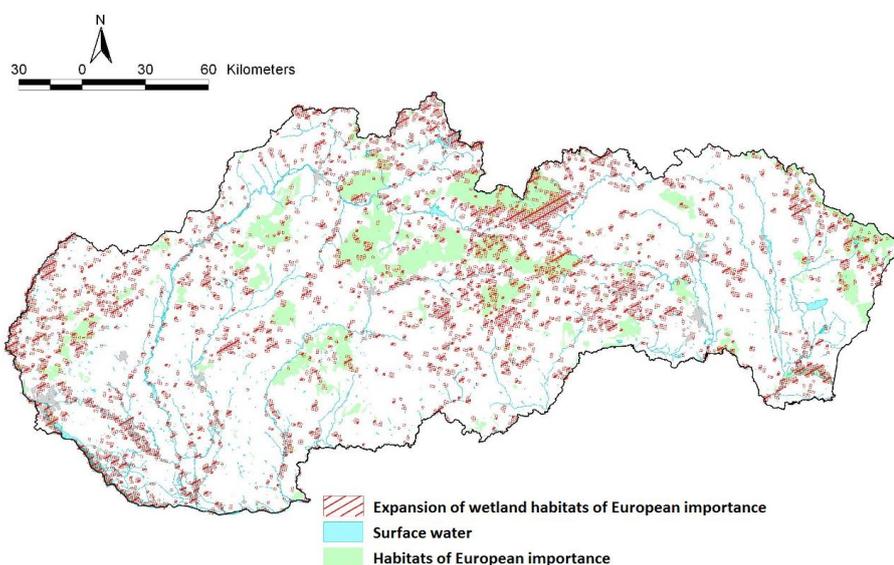
## 1. INFORMATION ACCORDING TO ARTICLE 10.1

The key data source of information on land use categories in Slovakia is the annual report of the Geodesy, Cartography and Cadastre Authority of the Slovak Republic (the GCCA). According to the last report, describing situation in the year 2012, the LULUCF sector in Slovakia is characterized by following structure of land use:

Forest Land (F)	41.1%
Cropland (C)	31.3%
Grassland (G)	17.7%
Wetlands (W)	1.9%
Settlements (S)	4.8%
Other land (O)	3.2%

Slovak Republic (the SR) is a party to the Convention on Wetlands (Ramsar, Iran, 1971) ([www.ramsar.org](http://www.ramsar.org)). Monitoring of wetlands in Slovakia takes place since 1992. State Nature Conservancy of the SR is responsible for the monitoring. There is a list of wetlands of local, regional, national, as well as international importance available at <http://www.sopsr.sk/webs/MokrSlov/index.htm>. According to the data from the cadastre, category of wetlands represents 1.9 % of the Slovak territory (94 kha). This proportion has not changed since 1990.<sup>1</sup>

**Figure 1** *Extension of wetland habitats of European importance<sup>2</sup>*



According to the results of the National Forest Inventory and Monitoring (the NFIM) of the Slovak Republic 2006, which also included the so-called “White areas” (forest according to the definition of the NFIM observed non-forest land), the forest cover in the SR was  $44.3 \pm 0.4\%$ . The forest land has the highest share of all land use categories, however, its distribution

<sup>1</sup> The National Inventory Report of the Slovak Republic in 1990 – 2012, published on April 15, 2014

<sup>2</sup> Saxa, A., Černecký, J. 2010: Mokraďové biotopy na Slovensku v ohrození (Slovak Wetland habitats in danger). In: *Enviromagazín*, 15/2010. p. 10-11

over the country territory is uneven, showing high concentration in mountain areas. All five carbon pools (living biomass – above and below ground, dead organic matter – dead wood and litter, soil carbon) are linked to this category. The processes connected with the land use and land use change have impact mostly on the CO<sub>2</sub> balance.

This report was prepared in coordination with:

- Kyoto requirements
- Low Carbon Development Strategies (under the MM Regulation 525/2013/EU)
- National Communications to the UNFCCC
- Forest Management Reference Level submissions
- National Emission Ceiling Directive 2001/81/EC
- Common Agricultural Policy (the CAP)
- Rural Development Programmes under the CAP Pillar 2
- Implementation of measures under the CAP Pillar 1
- Cross-compliance standards for Good Agricultural and Environmental Condition (the GAEC)
- Integrated Administration and Control (the IACS) system

The report builds on consultations and cooperation between Ministry of Agriculture and Rural Development and Ministry of Environment and the exchange of information on foreseen activities.

## **2. INFORMATION ACCORDING TO ARTICLE 10.2**

### ***a) a description of past trends of emissions and removals including, where possible, historic trends, to the extent that they can reasonably be reconstructed***

Information about the past emissions and removals were extracted from the National Inventory Reports (CRF tables) provided under UNFCCC on April 15, 2014. The Afforestation corresponds to Land converted to Forest land (Table 1), Deforestation corresponds to the Forest land converted to other land categories (Table 2) and Forest management corresponds to Forest land remaining forest land (Table 3). The Reforestation is not considered due to limited occurrence. In general, the removal due to afforestation is recently twice higher than emissions from deforestation, however, the most significant is removal due to forest management.

**Table 1 Afforestation (Land converted to Forest land) - Net emissions/removals**

Year	CO <sub>2</sub> (Gg)	Year	CO <sub>2</sub> (Gg)	Year	CO <sub>2</sub> (Gg)
2012	-343.61	2004	-765.88	1996	-1 544.96
2011	-337.97	2003	-792.31	1995	-1 613.84
2010	-351.21	2002	-798.03	1994	-1 953.35
2009	-358.25	2001	-824.78	1993	-2 090.03
2008	-472.66	2000	-887.86	1992	-2 140.55
2007	-512.33	1999	-1 396.20	1991	-2 173.93
2006	-536.52	1998	-1 465.93	1990	-2 217.83
2005	-736.86	1997	-1 530.86		

**Table 2 Deforestation (Forest land converted to other land categories) - net emissions/removals**

Year	CO <sub>2</sub> (Gg)	Year	CO <sub>2</sub> (Gg)	Year	CO <sub>2</sub> (Gg)
2012	159.03	2004	101.56	1996	355.06
2011	75.17	2003	231.83	1995	256.11
2010	180.28	2002	172.72	1994	347.22
2009	252.16	2001	266.19	1993	358.64
2008	190.24	2000	213.78	1992	353.09
2007	250.40	1999	276.15	1991	563.17
2006	173.08	1998	306.31	1990	524.36
2005	321.74	1997	323.56		

**Table 3 Forest management (Forest land remaining forest land) - net emissions/removals**

Year	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO	Year	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	NO <sub>x</sub>	CO
	Gg						Gg				
2012	-6 879.84	0.64	0.01	0.32	5.60	2000	-7 759.83	0.70	0.01	0.35	6.17
2011	-4 994.92	1.03	0.01	0.51	9.05	1999	-7 861.18	0.60	0.01	0.30	5.25
2010	-4 431.85	1.07	0.01	0.53	9.36	1998	-7 998.03	0.53	0.01	0.26	4.63
2009	-5 186.73	0.98	0.01	0.48	8.53	1997	-7 219.48	0.55	0.01	0.27	4.78
2008	-4 698.70	0.99	0.01	0.49	8.66	1996	-7 551.45	0.51	0.01	0.25	4.48
2007	-5 635.83	0.91	0.01	0.45	8.00	1995	-7 525.30	0.50	0.01	0.25	4.40
2006	-5 850.79	0.88	0.01	0.44	7.70	1994	-7 819.49	0.39	0.01	0.19	3.43
2005	-3 204.62	1.11	0.02	0.55	9.68	1993	-8 442.85	0.76	0.01	0.38	6.65
2004	-6 826.41	0.78	0.01	0.39	6.79	1992	-8 406.20	0.89	0.01	0.44	7.75
2003	-7 458.91	0.70	0.01	0.35	6.10	1991	-7 819.52	0.45	0.01	0.22	3.96
2002	-7 858.28	0.65	0.01	0.32	5.70	1990	-6 637.86	0.52	0.01	0.26	4.58
2001	-7 811.94	0.66	0.01	0.33	5.80						

Emissions from cropland and grazing land management are annually estimated for the National Inventory Reports, according to the IPCC Guidelines, Chapter N<sub>2</sub>O emissions. National Inventory Reports, see: <http://ghg-inventory.shmu.sk/documents.php>.

The annual balance of emissions and removals regarding LULUCF for croplands and grazing land will be provided from the year 2022. From the year 2016, Slovakia will report on the systems in place to estimate emissions and removals from cropland management and grazing land management.

The SR does not have a database of past trends of emissions and removals from wetland drainage and rewetting activities. State Nature Conservancy of the SR maintains a database of wetlands in Slovakia, but without data on emissions and removals.

The SR does not include information on CO<sub>2</sub> emissions from peatlands (organic soils) in the National Inventory Report to the UNFCCC, because the current size of peatlands is negligible (2,773 ha)<sup>3</sup> and it is located mostly in protected areas. The area of wetlands in Slovakia is not huge enough to significantly affect the balance of emissions and removals of greenhouse gases. Moist forest soils are classified as peatlands and therefore protected and without active management. In Slovakia, the fertilizers are not used in forests.<sup>4</sup>

### ***b) projections for emissions and removals for the accounting period***

The emission and removal projections in the LULUCF sector were based on sectoral strategy document Rural Development Programme of the Slovak Republic 2007-2013, taking into account adopted National Forest Program (NFP) of the SR as well as the Action Plan of NFP for 2009-2013. Emission and sink projections consider all scenarios (without measures, with existing measures and with additional measures) and projection parameters (area of managed forest). The base year for projection was the year 2010.

Projections of GHG emissions/removals in sector LULUCF were prepared based upon following measures:

- Afforestation of non-forested areas,
- Grassing of arable soil,
- Increasing protection against forest fires.

**Scenario without measures (WOM)** – corresponds to the current status of forest management and land use in the context of current legislation. The development of forests is estimated according to effective forest management plans without an introduction of any specific measure.

**Scenario with existing measures (WEM)** – represents the effect of considered measures realized by the year 2010. The scenario is practically equal with the scenario without measures. In 2004-2006, only minimal specific mitigating measures were implemented in forest management and land use. In this period the afforestation of agricultural land was supported by the Rural Development Programme and Sector Operational Programme Agriculture and Rural Development. The conversion of agricultural land to forest land (afforestation) was approved within these programmes for 15 projects covering 100 ha in total. Such kind of conversion was not of interest for farmers due to unbalanced application of direct support schemes between agricultural and forestry sectors. Further limitation was in forestry legislation setting obligations related to forest management without any compensation of related expenses.

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<sup>3</sup> Stanová, V. et al. 2000. *The Central European Peatland Project – National Report for Slovak Republic – Final Report, May 2000. Report to Wetlands International, prepared by DAPHNE Centre for Applied Ecology in co-operation with Slovak Environmental Agency.*

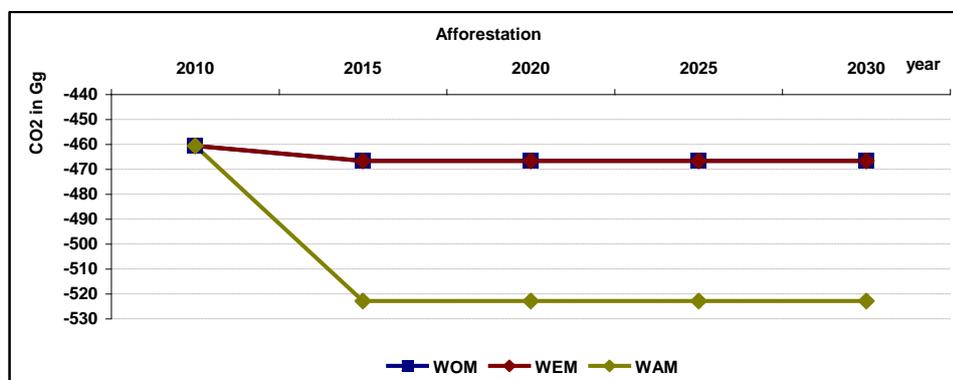
<sup>4</sup> *Report of the individual review of the annual submission of Slovakia submitted in 2012 – FCCC/ARR/2012/SVK*

**Scenario with additional measures (WAM)** – corresponds to the measures foreseen after the year 2010. The Rural Development Programme (2007-2013) can be considered as the main instrument for mitigation measures of which following have been reflected in the scenario:

- Afforestation of 800 ha of low productive soil by fast growing trees and the first afforestation of 600 ha of agricultural land by 2015;
- Grassing of 50 000 ha of arable land by 2015;
- Afforestation of 23 000 ha of agricultural land by 2020;
- Effect of Regulation no. 2152/2003/EC Forest Focus in relation to forest fires estimates the reduction of risk of forest fires to 90% compared to the period of 2000-2003.

Methodical procedure used for calculations has been based on mathematical relations as defined in the basic instrument for balance of greenhouse gas emissions – The IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry, 2003 – IPCC 2003 GPG LULUCF. The procedures referred to in Chapter 3 and sub-chapters 3.2 Forest Land, 3.3 Cropland, 3.4 Grassland, 3.6 Settlements and 3.7 Other Land were used for calculation of GHG. The values of the emission factors and conversion/expansion factors used for the projections are identical with the values applied in the emission inventories for the LULUCF sector in the 2012 and published in the Slovak National Inventory Report 2014.

**Figure 2** *Projections of CO<sub>2</sub> (in Gg) emission/removal from land converted to forest land (afforestation)*



**Figure 3** *Projections of CO<sub>2</sub> (in Gg) emission/removal from forest land remaining forest land (forest management)*

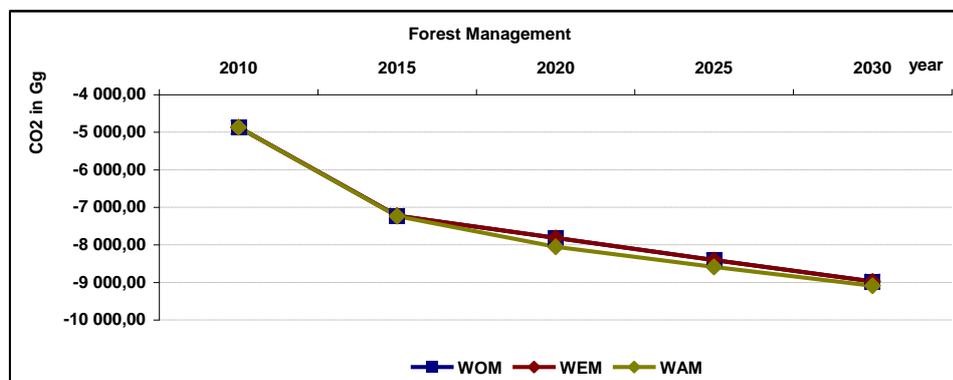


Table 4 shows results of modelling CO<sub>2</sub> emission/removal in LULUCF sector. The scenarios without measures and with existing measures do not differ as there are not considered any significant measures and the evolution of emissions and removals by sinks of CO<sub>2</sub> has the same course as the LULUCF sector reports in the period from 1990 to 2012, when the whole period shows a sink of CO<sub>2</sub> in the range 4 600-9 000 Gg of CO<sub>2</sub>. The increased of CO<sub>2</sub> removal in 2015 compared to 2010 is due to the decrease in the harvest volume in particular planned for this year and unchanged area of forest plantations. Projections of CO<sub>2</sub> removals in the period 2015-2030 show increasing trend. Scenario with additional measures reflects the development of emissions after the afforestation of 23 000 ha of grassland by 2020 and grassing 50 000 ha of cropland by 2015. Based on such assumption the scenario shows a rise of CO<sub>2</sub> removals in forests and in cropland and slight decrease in meadows and pastures and likewise an increase of emissions from Settlements and Other land categories.

**Table 4** *Projections of CO<sub>2</sub> emission/removal in LULUCF sector (Gg)*

<b>WOM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>-6 115.98</b>	<b>-8 461.40</b>	<b>-9 052.62</b>	<b>-9 643.77</b>	<b>-10 211.41</b>
Forest Land	-5 332.61	-7 688.69	-8 279.91	-8 871.05	-9 438.70
Forest Land remaining Forest Land	-4 872.00	-7 222.08	-7 813.31	-8 404.45	-8 972.09
Land converted to Forest Land	-460.61	-466.60	-466.60	-466.60	-466.60
Cropland	-714.79	-721.59	-721.59	-721.59	-721.59
Cropland remaining Cropland	-853.69	-859.60	-859.60	-859.60	-859.60
Land converted to Cropland	138.90	138.01	138.01	138.01	138.01
Grassland	-325.94	-324.72	-324.72	-324.72	-324.72
Settlements	119.44	124.47	124.47	124.47	124.47
Other Land	137.92	149.13	149.13	149.13	149.13
<b>WEM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>-6115.98</b>	<b>-8 461.40</b>	<b>-9 052.62</b>	<b>-9 643.77</b>	<b>-10 211.41</b>
Forest Land	-5332.61	-7 688.69	-8 279.91	-8 871.05	-9 438.70
Forest Land remaining Forest Land	-4872.00	-7 222.08	-7 813.31	-8 404.45	-8 972.09
Land converted to Forest Land	-460.61	-466.60	-466.60	-466.60	-466.60
Cropland	-714.79	-721.59	-721.59	-721.59	-721.59
Cropland remaining Cropland	-853.69	-859.60	-859.60	-859.60	-859.60
Land converted to Cropland	138.90	138.01	138.01	138.01	138.01
Grassland	-325.94	-324.72	-324.72	-324.72	-324.72
Settlements	119.44	124.47	124.47	124.47	124.47
Other Land	137.92	149.13	149.13	149.13	149.13
<b>WAM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>-6 115.98</b>	<b>-8 529.25</b>	<b>-9 404.26</b>	<b>-9 936.50</b>	<b>-10 442.23</b>
Forest Land	-5 332.61	-7 703.06	-8 578.07	-9 110.31	-9 616.04
Forest Land remaining Forest Land	-4 872.00	-7236.46	-8 055.22	-8 587.46	-9 093.19
Land converted to Forest Land	-460.61	-466.60	-522.85	-522.85	-522.85
Cropland	-714.79	-721.59	-721.59	-721.59	-721.59
Cropland remaining Cropland	-853.69	-859.60	-859.60	-859.60	-859.60
Land converted to Cropland	138.90	138.01	138.01	138.01	138.01
Grassland	-325.94	-324.72	-324.72	-324.72	-324.72
Settlements	119.44	124.47	124.47	124.47	124.47
Other Land	137.92	149.13	149.13	149.13	149.13

\* Base year for projections, not corresponded to the inventory year 2010 submitted in 2014



**Projections of CH<sub>4</sub> emissions from forest fires:** The same procedure was used in modelling CH<sub>4</sub> emissions as it was used in the projections of CO<sub>2</sub> sinks. The projections of CH<sub>4</sub> emissions from forest fires are shown in the following table.

**Table 5** *Projections of CH<sub>4</sub> emissions in sector LULUCF from forest fires (Gg).*

<b>WOM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>1.09</b>	<b>0.92</b>	<b>0.92</b>	<b>0.92</b>	<b>0.92</b>
Forest Land	1.09	0.92	0.92	0.92	0.92
Forest Land remaining Forest Land	1.09	0.92	0.92	0.92	0.92
<b>WEM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>1.09</b>	<b>0.92</b>	<b>0.92</b>	<b>0.92</b>	<b>0.92</b>
Forest Land	1.09	0.92	0.92	0.92	0.92
Forest Land remaining Forest Land	1.09	0.92	0.92	0.92	0.92
<b>WAM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>1.09</b>	<b>0.88</b>	<b>0.87</b>	<b>0.87</b>	<b>0.87</b>
Forest Land	1.09	0.88	0.87	0.87	0.87
Forest Land remaining Forest Land	1.09	0.88	0.87	0.87	0.87

\* Base year for projections, not corresponded to the inventory year 2010 submitted in 2014

**Projections of N<sub>2</sub>O emissions from forest fires:** Projections of N<sub>2</sub>O emissions have been modelled similarly to the projections of CO<sub>2</sub> emission/removal, results are in next table.

**Table 6** *Projections of N<sub>2</sub>O emissions in sector LULUCF from forest fires (Gg).*

<b>WOM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>0.015</b>	<b>0.012</b>	<b>0.012</b>	<b>0.012</b>	<b>0.012</b>
Forest Land	0.015	0.012	0.012	0.012	0.012
Forest Land remaining Forest Land	0.015	0.012	0.012	0.012	0.012
<b>WEM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>0.015</b>	<b>0.012</b>	<b>0.012</b>	<b>0.012</b>	<b>0.012</b>
Forest Land	0.015	0.012	0.012	0.012	0.012
Forest Land remaining Forest Land	0.015	0.012	0.012	0.012	0.012
<b>WAM</b>	<b>2010*</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>	<b>2030</b>
<b>Land Use, Land-Use Change and Forestry</b>	<b>0.015</b>	<b>0.011</b>	<b>0.011</b>	<b>0.011</b>	<b>0.011</b>
Forest Land	0.015	0.011	0.011	0.011	0.011
Forest Land remaining Forest Land	0.015	0.011	0.011	0.011	0.011

\* Base year for projections, not corresponded to the inventory year 2010 submitted in 2014

Projections for CH<sub>4</sub> and N<sub>2</sub>O emissions, which are caused by biomass burning after logging show decreasing trend in the scenario with the additional measures, especially as a result of increasing share of shelterwood system in forestry.

Slovakia has not so far estimated emissions and removals from activities wetland drainage and rewetting, there is a lack of information on which the projections of emissions and removals for the accounting period could be modelled.

***c) an analysis of the potential to limit or reduce emissions and to maintain or increase removals***

There is some potential for removals increase in relation to **forestry activities**. It is mainly related to:

- afforestation of agricultural land with low productivity and/or on steep slopes,
- support of agro-forestry (which is still very limited),
- extension of wood production on agricultural land (cropland, grassland) for energy purposes.

**Cropland, grazing land:** There is a potential in the reduction of emission and removal increase in the LULUCF sector in implementing new measures of Common agricultural policy in 2014-2020.

**Wetland:** So far, the SR has not specifically evaluated the impact of wetlands on the quantity of emitted, respectively removed greenhouse gases. According to the available data, it could be assumed that there will be no significant change in the potential of wetlands in relation to the formation of emissions in the future. An increase in seizures could be rather expected with regard to the management and localities.

***d) a list of the most appropriate measures to take into account national circumstances, including, as appropriate, but not limited to the indicative measures specified in Annex IV, that the Member State is planning or that are to be implemented in order to pursue the mitigation potential, where identified in accordance with the analysis referred to in point (c)***

Measures related to **forestry activities** are to be implemented in line with the strategic policy documents that are in place at a national level. Identified measures with their relationship to existing policies are as follows:

Measure	National policy document	Description of relationship
Implementing sustainable forest management, including through optimising tree species composition, tending and thinning, and thus enhancing production of goods and services in existing forests.	National Forest Programme	Fundamental objectives of the NFP are to implement sustainable forest management (SFM) and to enhance multi-functionality of forests. The NFP defines overall objectives and priority areas for action.
Protection of existing forests against natural disturbances (as an integral part of sustainable forest management)	National Forest Programme National Rural Development Programme 2014-2020	
Preventing deforestation (as an integral part of sustainable forest management)	National Forest Programme	Fundamental objectives of the NFP are to implement the SFM and to enhance multi-functionality of forests. The NFP defines overall objectives and priority areas for action.
Identifying agricultural land not suitable for agricultural production (marginal agricultural land), i.e. land potentially suitable for afforestation	National Programme for Wood Potential Utilization	The Programme identifies 5 main objectives in the area of promoting better utilization of wood for industrial and energy purposes in a framework of sustainable forest management.
Enhancing production and consumption of wood products, thus promoting substitution of intensive GHG materials with wood		
Increasing complex utilization of forest biomass for energy purposes		

The measures applied in cropland and grazing management are summarised in Table 7.

**Wetland:** Measures proposed for the period 2012-2014 (tasks still continue up to the end of 2014) are included in the Action Plan to the Program for Preservation of Wetlands in Slovakia (Table 8)<sup>5</sup>. The total estimated costs for the implementation of the Action Plan are listed in Table 9. Further measures will be included in the action plans for the next periods.

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<sup>5</sup> Action Plan for 2012-2014 on the updated Program for Preservation of Wetlands in Slovakia for 2008-2014

**Table 7** *Planned measures regarding Article 3, 2 (a) – (b)-Cropland, grazing land*

Measure	Objective	Type of Measure	Implementing Body	Quantitative Impact on Emissions
Cross-cutting tools – Good Agricultural and Environmental Conditions	Protect the soil by suitable measures (minimal soil cover, maintenance of terraces) Maintenance of organic matter in soil (diversified crop rotation, preventing stubble field burning) Maintenance of soil structure Minimal intensity of breeding, protection of permanent grassland, maintenance of landscape elements, preventing penetration of undesirable vegetation on cropland. Water protection against pollution and run-off Groundwater protection against pollution, environment protection when using sewage sludge and nitrates from agriculture.	Common agricultural policy (CAP)	MPRV SR	Lower emissions N <sub>2</sub> O a CH <sub>4</sub> – reducing or optimising use of fertiliser, plant protection products.
Integrated farming	To ensure whole year green cover of soil by herbal or grassy mixtures, straw, hay or mulch material.	Common agricultural policy (CAP)	MPRV SR	Lower emissions N <sub>2</sub> O a CH <sub>4</sub> – reducing or optimising use of fertiliser, plant protection products.
Integrated farming in vineyards	To ensure whole year green cover of soil using grass, flowers.	Common agricultural policy (CAP)	MPRV SR	Lower emissions N <sub>2</sub> O a CH <sub>4</sub> – reducing or optimising use of fertiliser, plant protection products.
Protection of biotopes of natural and non-natural grassland	Reducing or optimising use of nitrogen fertiliser, plant protection products, haying 1-2 per year, mild pasture and paddock manuring of pastures.	Common agricultural policy (CAP)	MPRV SR	Lower emission N <sub>2</sub> O a CH <sub>4</sub> – reducing or optimising use of fertiliser, plant protection products.
Preventing erosion – creating buffer strips	Dividing the field to small areas by 10m wide stripes distant from each other max. 200m (sown by grass, trifolium, lucern on level lines) Minimal area of stripe - 0,3 ha.	Common agricultural policy (CAP)	MPRV SR	Lower emissions N <sub>2</sub> O a CH <sub>4</sub> – reducing or optimising use of fertiliser, plant protection products.
Multifunctional field edges	Bio stripes on cropland without fertilisers, mechanisation, plant protection.	Common agricultural policy (CAP)	MPRV SR	Higher removals
Adoption of Organic farming	Maintenance of biodiversity and natural state of soil and water.	Common agricultural policy (CAP)	MPRV SR	Lower emission N <sub>2</sub> O a CH <sub>4</sub> – reducing or optimising use of fertiliser, plant protection products.
Maintenance of Organic farming	Maintenance of biodiversity and natural state of soil and water.	Common agricultural policy (CAP)	MPRV SR	Lower emissions N <sub>2</sub> O a CH <sub>4</sub> – reducing or optimising use of fertiliser, plant protection products.

\*MPRV SR – Ministry of Agriculture and Rural Development of the Slovak Republic

**Table 8 Strategic objectives of the Action Plan for the years 2012-2014<sup>5</sup>**

<b>Strategic Objective No. 1 - Sustainable Use of Wetlands</b>	
Task 1.1	Create a database of wetlands and ensure its continuous update.
Task 1.2	Develop, revise, edit and apply national and transnational strategies, legal instruments, institutions and practices, if necessary suggest amendments in the legislation for the protection and sustainable use of wetlands.
Task 1.3	Raise awareness about wetlands and their importance in the development of water resources, flood protection, ensuring crops in agriculture, the protection of cultural heritage, focusing on under-represented types of wetland ecosystems.
Task 1.4	Integrate strategies for the conservation and sustainable use of wetlands in the planning activities and decision-making processes at national, regional and local level regarding land use planning, groundwater management, river basin management - all in the context of the implementation of integrated water resources management.
Task 1.5	Identify priority wetlands, in which revitalization would be beneficial and of which would be long-term environmental, social or economic benefits and to implement the necessary measures to restore these sites.
Task 1.6	Develop guidelines and develop activities to prevent penetration, reducing the incidence or eradication of invasive alien species in wetland ecosystems.
<b>Strategic Objective No. 2 - Maintenance of Wetlands of International Importance</b>	
Task 2.1	Use Strategic Framework and guidelines for the future development of the List of Wetlands of International Importance when designing new sites, regularly update and complete standard forms of Ramsar sites by available data.
Task 2.2	Maintain the ecological character of Ramsar sites and other areas of international importance.
Task 2.3	Monitor the conditions in Ramsar sites and without delay, in accordance with Article 3.2 of the Convention, notify the Secretariat of the Ramsar Convention any amendments significantly affecting Ramsar sites and use the registry of Montreux Record and Ramsar Advisory Mission as tools to address the serious problems of the Ramsar sites.
<b>Strategic Objective No. 3 - Development of International Cooperation</b>	
Task 3.1	Support existing regional initiatives under the Ramsar Convention.
Task 3.2	Ensure effective coordination with other international and regional multilateral environmental conventions and agencies, mutually exchange information and expertise and harmonize management and reporting systems under various conventions and neighbouring countries.
<b>Strategic Objective No. 4 - Capacity Building for Implementation of the Convention</b>	
Task 4.1	Promote the active participation of local and regional authorities, owners (managers, tenants), the private sector and stakeholders in the conservation and sustainable use of wetlands.
Task 4.2	Identify training needs of organizations and individuals concerned with the conservation and sustainable use of wetlands and promote cooperation between them.

**Table 9 Estimated cost of implementing the Action Plan for Wetlands in Slovakia for 2012-2014 (in €)<sup>5</sup>**

Year	State Budget	EU Resources*	Extra Budgetary Resources**	Total
2012	105 000	1 223 000	115 000	<b>1 443 000</b>
2013	208 000	728 000	80 000	<b>1 016 000</b>
2014	221 000	588 000	89 000	<b>898 000</b>
<b>Total</b>	<b>534 000</b>	<b>2 539 000</b>	<b>284 000</b>	<b>3 357 000</b>

\* Operational Program Environment Quality, Operational Program South-Eastern Europe/BIOREGIO, Cross Border Cooperation Program

\*\* Carpathian Wetlands Initiative, Swiss contribution

*e) existing and planned policies to implement the measures referred to in point (d), including a quantitative or qualitative description of the expected effect of those measures on emissions and removals, taking into account other policies and measures relating to the LULUCF sector*

Existing policies and legislative acts:

- The **Act No. 326/2005 Coll.** on forests as amended is the main national legislative act defining rules for forest management and some related activities. According to the act, forest land is protected against conversion to other land use. Moreover, the act lays

down rules for forest management, including protection, harvesting, and forest regeneration. Competences and responsibilities of state (governmental) forest authorities are defined as well. The main aim of the act is to implement sustainable forest management (the SFM). The SFM concept is defined in the paragraph 2 of the act. The definition of SFM is identical with the international definition as agreed by the Ministerial Conference on the Protection of Forests in Europe (MCPFE).

- The **National Forest Program (the NFP)** and its Action Plan (2008-2013).<sup>6</sup> The NFP was adopted by the Government on 27<sup>th</sup> June 2007 (Resolution No. 549/2007). The NFP is based on the current relevant forest policy documents, processes and commitments that have been adopted at national and international levels. It updated forest policy priorities and provides a framework for relations and impacts of other sectors on forests and forestry. Fundamental objectives of the NFP are to implement the SFM and to enhance multi-functionality of forests in the Slovak Republic. Sustainable forest management, as defined by the pan-European forest policy process (MCPFE/Forest Europe), is a fundamental principle of the programme. The Action Plan of the National Forest Program identifies concrete measures and actions to implement overall objectives and priorities of the National Forest Program. It was adopted by the Government on 11<sup>th</sup> June 2008 (Resolution No. 380/2008).

The NFP and its **Action Plan** provide the overview of specific measures for forestry sector, inter alia, in relation to climate change mitigation:

- the increase of carbon stocks in forest ecosystems the energetic use of wooden biomass specifically in rural regions,
  - support of cooperation and organization of small-sized forest owners , including education activities on forest management oriented to climate change mitigation and its benefits,
  - protecting forests and thus enhancing provision of forest ecosystem services (including carbon sequestration in forest ecosystem),
  - complex forest monitoring.
- The **National Programme for Wood Potential Utilization in the SR** and its Action Plan (2014-2020)<sup>7</sup> provide an overview of foreseen trends in measures for forestry and wood industry sector. Comprises of 5 objectives:
    - wood supply in changing climatic and social conditions based on sustainable management of forests (includes measures on adaptation of forests on changing climate conditions, support of better structure of forests, diversification of forest management supporting intensive plantations on forest land, reconstruction of forests with low productivity, forest protection against pests, analysis of use of

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<sup>6</sup> The Action Plan expired at the end of 2013. Implementation of the Action Plan during 2008-2013 is being reviewed at the moment. Based on results of the review, a new/revised Action Plan may be developed in the future. NFP is available on the website: <http://www.mpsr.sk/index.php?navID=796&navID2=796&slD=37&id=481>

<sup>7</sup> The Programme is available on the website: <http://www.mpsr.sk/index.php?navID=913&navID2=913&slD=37&id=7913>

- existing forest stands on non-forested land, program of afforestation of marginal agricultural land, revision of protected areas;
- effective use of wood and support of employment in forestry and wood-industry sector (includes measures for profitable and competitive forestry, technological development, support of innovations, research for Forest-based Sector Technology Platform, diversification in forestry and payments/compensations for ecological and social services, increasing added value through industrial processing of wood in the rough, support for domestic wood processing, improvement of cross-sector relations, improvement of relations between forestry and wood-industry sector),
  - support of wood potential valuation in the local SMEs (conception for hardwood processing, complex wood processing );
  - improvement of domestic demand on wood products (support of wood products, extension of certification, eliminating illegal logging, public procurement policies for wood and wood products, promotion of forestry and wood-processing sector, improvement of forestry information system, specific education);
  - increasing utilization of woody biomass for energy purposes (complex use of wood, support of sustainable production of energetic biomass , support of energy production from wooden biomass, strategy of wooden biomass use).

Foreseen policies:

- The **Rural Development Program (the RDP)** for the period of 2014-2020. The preparation of RDP for new programming period is in progress.

Above mentioned forest-related policies support implementation of sustainable forest management in existing forests and, where appropriate, create conditions for extending forest land. Thus, they support increasing overall forest production, protection of forests against natural disturbances, building infrastructure in forests and intensification of utilizing wood products and have positive impact on GHGs removals by forestry sector.

Measures for cropland and grazing land management are listed in table 7. For wetlands, in Slovakia, there are a number of documents dealing with the objectives and measures concerning maintenance of wetlands (Table 10).

Protection, management, sustainable use and restoration of wetlands and their renaturation was taken into account, and is also being taken into account when preparing the new strategic documents (e.g. National Strategy for Invasive Alien Species, the Rural Development Program for 2015-2020).

Qualitative and quantitative effects of such policies on emissions and removals of greenhouse gases have not been evaluated in Slovakia yet.

**Table 10 Policies and measures in the field of wetlands maintenance**

Document	Legal Framework	Objectives and Measures
Program for Preservation of Wetlands in Slovakia for 2008-2014 and Action Plan for 2008-2011 on the updated Programme for Preservation of Wetlands in Slovakia	Resolution of the Government of the Slovak Republic no. 848/2007, October 3, 2007 ( <a href="http://www.rokovania.sk/Rokovanie.aspx/BodRokovaniaDetaA?idMaterial7914">http://www.rokovania.sk/Rokovanie.aspx/BodRokovaniaDetaA?idMaterial7914</a> )	
Action Plan for 2012 - 2014 on the updated Program for Preservation of Wetlands in Slovakia for 2008 - 2014	Resolution of the Government of the Slovak Republic no. 588/2011, September 7, 2011 ( <a href="http://www.rokovania.sk/Rokovanie.aspx/BodRokovaniaDetaA?idMaterial20186">http://www.rokovania.sk/Rokovanie.aspx/BodRokovaniaDetaA?idMaterial20186</a> )	
Prioritized action framework for financing of Natura 2000 in the Slovak Republic in the EU programming period 2014-2020	State Nature Conservancy of the Slovak Republic and the Ministry of Environment of the Slovak Republic published it according to the format approved by the European Commission (Bratislava, April 15, 2013).	Improvement of habitats' condition, especially grasslands habitats, bogs, fens and spring areas, as well as selected forest habitats;
		preservation of wetland habitats of Slovakia;
Operational Program Environment Quality for 2014-2020		support and restoration of green infrastructure by encouraging appropriate land management and revitalization of degraded ecosystems.
Updated National Strategy for the Protection of Biodiversity by 2020 (2014)		<b>Specific objective: To provide conditions for the conservation of biodiversity and improvement of the ecosystems' condition in the country:</b> conservation and restoration of biodiversity and ecosystems and their services through their revitalization, rehabilitation and construction of green infrastructure and the elimination of non-native and invasive species.
		<b>Specific objective: To reduce the negative impacts of climate change by implementation of adaptation measures, particularly preventive measures for flood Protection:</b> preventive measures for flood protection connected with a watercourse preventive measures to protect against floods realized outside of watercourses in the rural areas.
SR Strategy for Adaptation to the Adverse Effects of the Climate Change	approved by the Government on March 26, 2014 ( <a href="http://www.rokovania.sk/Rokovanie.aspx/RokovanieDetail/737">http://www.rokovania.sk/Rokovanie.aspx/RokovanieDetail/737</a> )	Ensure integrated management of significant areas based on an ecosystem approach through the development and implementation of management plans and their integration into sectoral policies and strategies;
		develop a strategic framework for setting priorities for ecosystem restoration and to prepare and implement a program of revitalization of wetlands and river ecosystems as a contribution to reduction of the climate change effects;
		ensure full coordination of the implementation of actions the implementation of the Water Framework Directive order to create conditions for the development of aquatic habitats and species and revitalization of river ecosystems.
Action plan for the implementation of measures resulting from an updated National Strategy for the Protection of Biodiversity by 2020	currently being prepared	Restoration of degraded wetlands (bogs revitalization, restoration of water regime ...) and floodplains, allowing the natural flow dynamics; creation of wetlands.



***f) indicative timetables for the adoption and implementation of the measures referred to in point (d)***

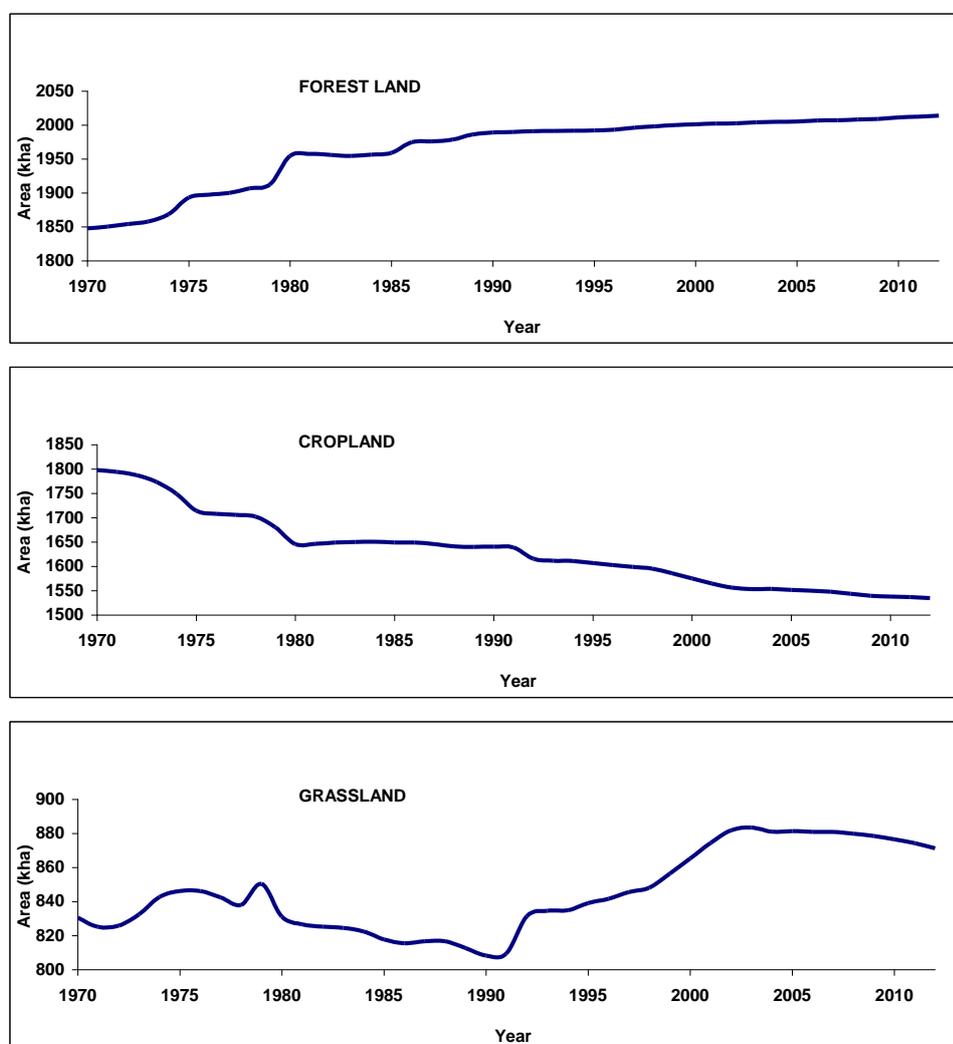
The measures are expected to be applied in the period 2014-2020. The financing sources are limiting factors for the prioritization, intensity and time of application of measures.

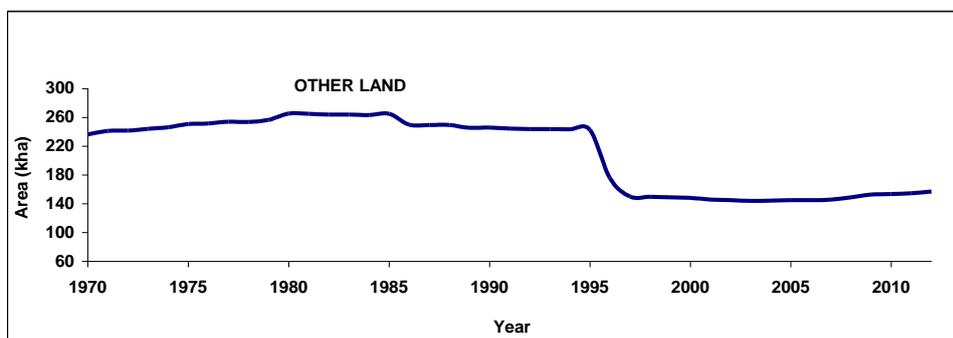
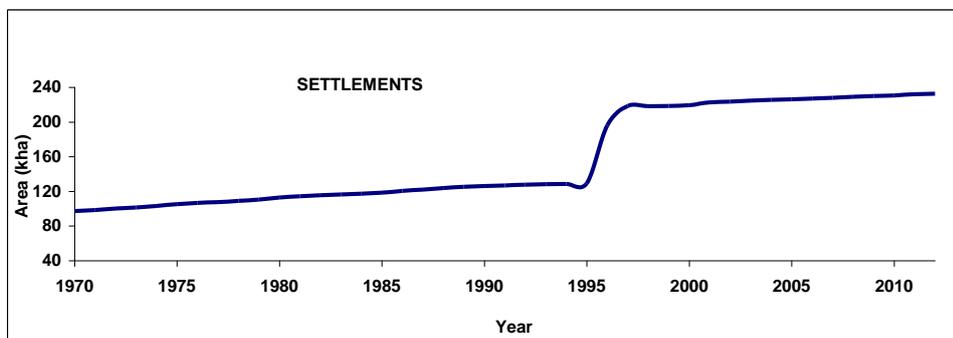
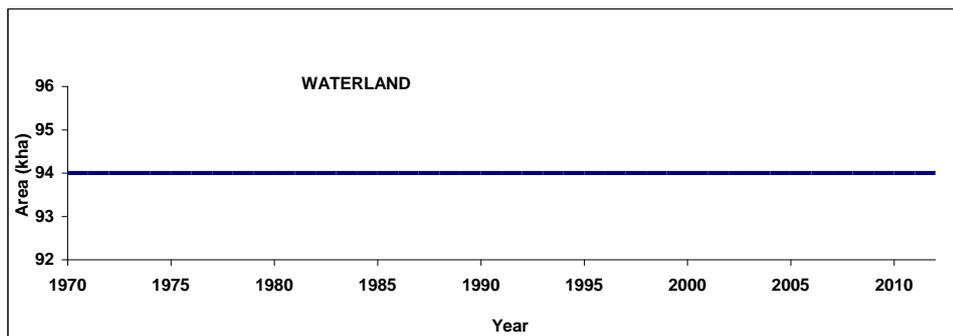
Timetables of the measures for cropland and grassland will follow the timetables determined in the RurL development program 2014-2020.

Timelines for each action for wetlands are drawn up in the Action Plan to the Program for Preservation of Wetlands in Slovakia. In the course of 2014, a new Program for Preservation of Wetlands in Slovakia for the period 2015-2020, the Action Plan for the years 2015-2018 and evaluation of the Action Plan of 2012-2014 will be prepared.

### 3. ANNEX

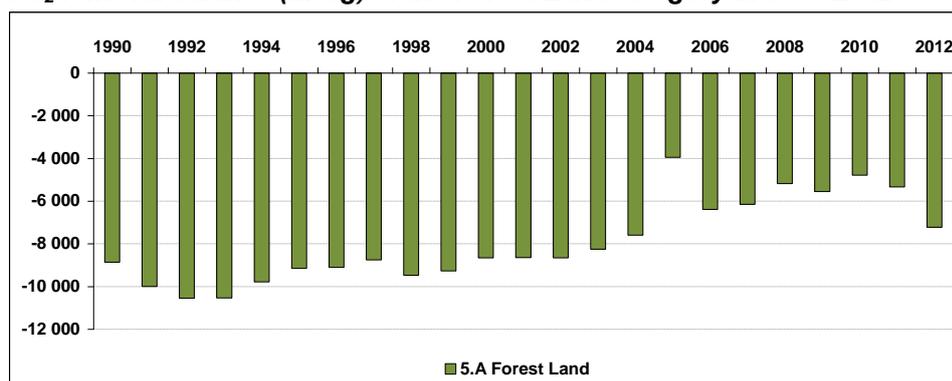
**Figure 4 Overall trends in the areas of the land-use categories from 1970-2012 (based on information from the GCCA of the Slovak Republic)**





**Table 11** Summary of GHG emissions and removals (in Gg) according to the categories in the period 1990-2012 submitted on April 15, 2014

Year	Net CO <sub>2</sub>					CH <sub>4</sub>	N <sub>2</sub> O	
	(Gg)							
	Forest land	Cropland	Grassland	Settlements	Other land	LULUCF		
1990	-8 855.70	-373.03	-226.83	82.08	289.31	-9 248.62	0.5229	0.0072
1991	-9 993.44	-344.35	-177.97	87.27	173.74	-10 394.47	0.4524	0.0062
1992	-10 546.75	-337.49	-1 250.85	88.24	154.51	-12 122.89	0.8862	0.0122
1993	-10 532.88	-273.73	-462.76	87.40	151.89	-11 223.17	0.7602	0.0105
1994	-9 772.83	-359.76	-259.12	61.58	143.44	-10 286.83	0.3920	0.0054
1995	-9 139.14	-450.47	-442.59	62.33	110.78	-10 037.39	0.5025	0.0069
1996	-9 096.41	-482.18	-302.28	68.44	111.67	-9 866.09	0.5118	0.0070
1997	-8 750.34	-485.51	-346.18	76.09	121.36	-9 614.00	0.5466	0.0075
1998	-9 463.97	-411.81	-317.70	46.76	119.41	-10 288.95	0.5287	0.0073
1999	-9 257.37	-418.39	-592.07	62.88	147.59	-10 266.12	0.5997	0.0082
2000	-8 647.68	-579.64	-735.93	58.67	108.19	-10 001.55	0.7047	0.0097
2001	-8 636.72	-381.41	-729.18	70.18	123.34	-9 771.43	0.6633	0.0091
2002	-8 656.31	-622.72	-636.68	46.90	92.26	-9 953.87	0.6515	0.0090
2003	-8 251.22	-701.88	-400.79	67.48	85.86	-9 385.50	0.6970	0.0096
2004	-7 592.29	-686.57	-371.04	55.56	54.75	-8 728.52	0.7757	0.0107
2005	-3 941.47	-714.05	-239.64	58.87	185.33	-4 913.20	1.1064	0.0152
2006	-6 387.31	-815.11	-282.92	56.78	114.29	-7 525.29	0.8805	0.0121
2007	-6 148.16	-714.31	-265.38	63.09	139.35	-7 146.17	0.9146	0.0126
2008	-5 171.36	-757.16	-273.02	72.87	173.87	-6 201.82	0.9901	0.0136
2009	-5 544.97	-743.32	-307.45	154.67	198.84	-6 483.56	0.9752	0.0134
2010	-4 783.06	-795.29	-234.73	92.75	99.80	-5 881.05	1.0697	0.0147
2011	-5 332.88	-785.10	-275.38	61.70	92.70	-6 496.54	1.0340	0.0142
2012	-7 223.46	-874.34	-232.50	96.11	105.83	-8 290.42	0.6398	0.0088

**Figure 5** CO<sub>2</sub> removal balance (in Gg) of the Forest Land category in 1990-2012

**Table 12** Areas (kha/year) of land-use categories remaining into category since 1990

Year	Area (kha) per CRF categories				
	5.A.1 FL remaining FL	5.B.1 CL remaining CL	5.C.1 GL remaining GL	5.E.1 S remaining S	5.F.1 OL remaining OL
1990	1 809.15	1 492.51	685.50	97.22	193.00
1991	1 813.81	1 500.65	688.06	96.71	194.42
1992	1 817.65	1 481.64	692.80	98.39	195.15
1993	1 822.29	1 480.78	702.77	99.63	197.60
1994	1 833.68	1 486.74	718.89	101.37	200.08
1995	1 861.77	1 502.51	741.05	103.38	205.46
1996	1 868.44	1 506.22	746.36	104.93	139.05
1997	1 873.39	1 512.60	750.97	105.77	115.93
1998	1 881.17	1 517.93	754.52	106.80	117.16
1999	1 887.29	1 512.52	769.80	108.30	120.82
2000	1 929.76	1 517.74	767.08	110.44	130.45
2001	1 935.71	1 513.56	765.63	112.12	128.92
2002	1 938.38	1 508.66	765.14	113.18	129.28
2003	1 939.25	1 509.67	765.75	114.59	128.86
2004	1 942.12	1 511.55	762.70	115.40	129.28
2005	1 945.27	1 514.54	762.73	118.02	130.84
2006	1 962.09	1 517.88	763.27	119.96	129.92
2007	1 964.04	1 518.45	765.98	121.45	131.40
2008	1 968.41	1 517.92	767.70	123.01	133.26
2009	1 978.59	1 514.12	768.26	124.48	134.33
2010	1 982.03	1 512.31	766.66	123.58	133.58
2011	1 983.91	1 510.99	767.13	124.20	133.40
2012	1 985.25	1 508.99	786.60	123.46	133.16

FL = Forest land, CL = Cropland, GL = Grassland, OL = Other land, S = Settlements