

CM & GM Reporting for Cyprus

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- Land use data for Cyprus are sourced from the CORINE land cover (CLC) inventory (<http://land.copernicus.eu/pan-european/corine-land-cover/view>) data.
- Three CORINE data sets covering the years 2000, 2006 and 2012 are included in the preparation of the latest NIR (2000, 2006 & 2012). Also two CORINE Land Change data sets are available for years 2000-2006 and 2006-2012.
- In order to retain consistency among GHG estimates reported for different years the total land area for 2000 and 2006 was adjusted using a proportional approach to the area covered by the 2012 CORINE data set. The adjusted data allowed for establishment of two land use matrixes 2000 – 2006 and 2006 - 2012. Both matrixes were linearly interpolated/extrapolated to obtain annual land use change data for all individual years within these periods.
- The 2000 – 2006 annual land use change data were extrapolated backwards to obtain annual land use change data for the period 1990 – 2000 (due to lack of measured data, it was assumed that for all reported lands the pre-1990 land uses were not different from the land use in 1990). The 2006 – 2012 annual land use change data were extrapolated forwards to obtain annual land use change data for the period 2012 to the reported year. The latter extrapolated data will be replaced/supplemented by the measured data if acquired in the future.
- The surface area of the smallest unit mapped in the CORINE project is 25 hectares however, the sensitivity for land cover change is 5 ha. As the first approximation, it is assumed that the possible overestimation and underestimation of the individual land use categories and land use changes among these land use categories within the smallest units mapped in the CORINE nullify within the reporting unit. This assumption will be checked against other data of sensitivity comparable to the threshold area used in the definition of forest when the data are available.



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LULUCF Land-Use Categories	CORINE land cover	CLC code
Broadleaved Forest	Broad leaved forest	311
Coniferous Forest	Coniferous forest	312
Coniferous Forest	Mixed forest	313
Coniferous Forest	Transitional woodland/shrub	324
Woody CL	Vineyards	221
Woody CL	Fruit trees and berry plantations	222
Woody CL	Olive groves	223
Woody CL	Complex cultivation	242
Woody CL	Land principally occupied by agriculture, with significant areas of natural vegetation	243
Annual CL	Non-irrigated arable land	211
Annual CL	Permanently irrigated land	212
Annual CL	Annual crops associated with permanent crops	241
Woody GL	Sclerophyllous vegetation	323
Grass GL	Pastures	231
Grass GL	Natural grassland	321
Grass GL	Scarcely vegetated areas	333
SL	Continuous urban fabric	111
SL	Discontinuous urban fabric	112
SL	Industrial or commercial units	121
SL	Road and rail networks and associated land	122
SL	Port areas	123
SL	Airports	124
SL	Mineral extraction sites	131
SL	Dump sites	132
SL	Construction sites	133
SL	Green urban areas	141
SL	Sport and leisure facilities	142
WL	Inland marshes	411
WL	Salt marshes	421
WL	Water courses	511
WL	Water bodies	512
OL	Beaches, dunes and sand plains	331
OL	Bare rock	332
	Burnt areas*	334

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The IPCC 2006 land-use sub/categories data based on the raw data from the CORINE annual land use data set (k ha). Resolution for detection of individual land uses is 25 ha. The data refer to the Government Controlled Areas.

Government Controlled Area	Year 2000	Year 2006	Year 2012
	k ha	k ha	k ha
Broadleaved Forest	0.763	0.608	0.608
Coniferous Forest	154.720	158.204	158.252
Annual Cropland	124.182	121.845	121.507
Woody Cropland	126.103	128.095	127.083
Grass Grassland	26.444	23.725	23.395
Woody Grassland	112.921	107.504	107.453
Wetland	3.382	3.864	3.968
Settlements Land	48.460	54.319	55.898
Other Land	4.821	3.633	3.632
Total Land Area (k ha)	601.796	601.796	601.796

Year	Total	FL	CL	GL	WL	SL	OL	HWP
1990	-268	-95	-138	-134	-1	2	96	3
1991	-263	-100	-138	-133	-1	2	96	11
1992	-270	-106	-140	-132	-2	3	96	11
1993	-285	-107	-143	-131	-3	5	96	-1
1994	-268	-93	-145	-130	-4	6	96	3
1995	-288	-113	-148	-129	-5	8	96	4
1996	-295	-117	-151	-128	-6	9	96	2
1997	-264	-95	-153	-127	-7	11	96	12
1998	-189	-12	-156	-126	-8	12	96	5
1999	-367	-185	-158	-125	-9	14	96	2
2000	62	229	-161	-124	-10	15	96	17
2001	-192	-31	-163	-123	-11	17	96	25
2002	-341	-181	-166	-122	-12	18	96	26
2003	-354	-193	-169	-121	-13	20	96	27
2004	-348	-186	-171	-120	-14	21	96	27
2005	-376	-214	-174	-119	-15	23	96	27
2006	-451	-195	-173	-123	-15	23	6	27
2007	-207	54	-173	-123	-16	24	6	21
2008	-507	-245	-173	-123	-16	24	6	20
2009	-536	-280	-173	-124	-16	25	6	26
2010	-482	-228	-173	-124	-16	25	6	26
2011	-555	-303	-170	-124	-15	24	6	26
2012	-536	-285	-168	-124	-14	23	6	26
2013	-572	-324	-165	-124	-13	22	6	26
2014	-571	-323	-163	-124	-13	21	7	25
2015	-567	-322	-161	-124	-12	20	7	25
2016	83	325	-158	-124	-11	20	7	25



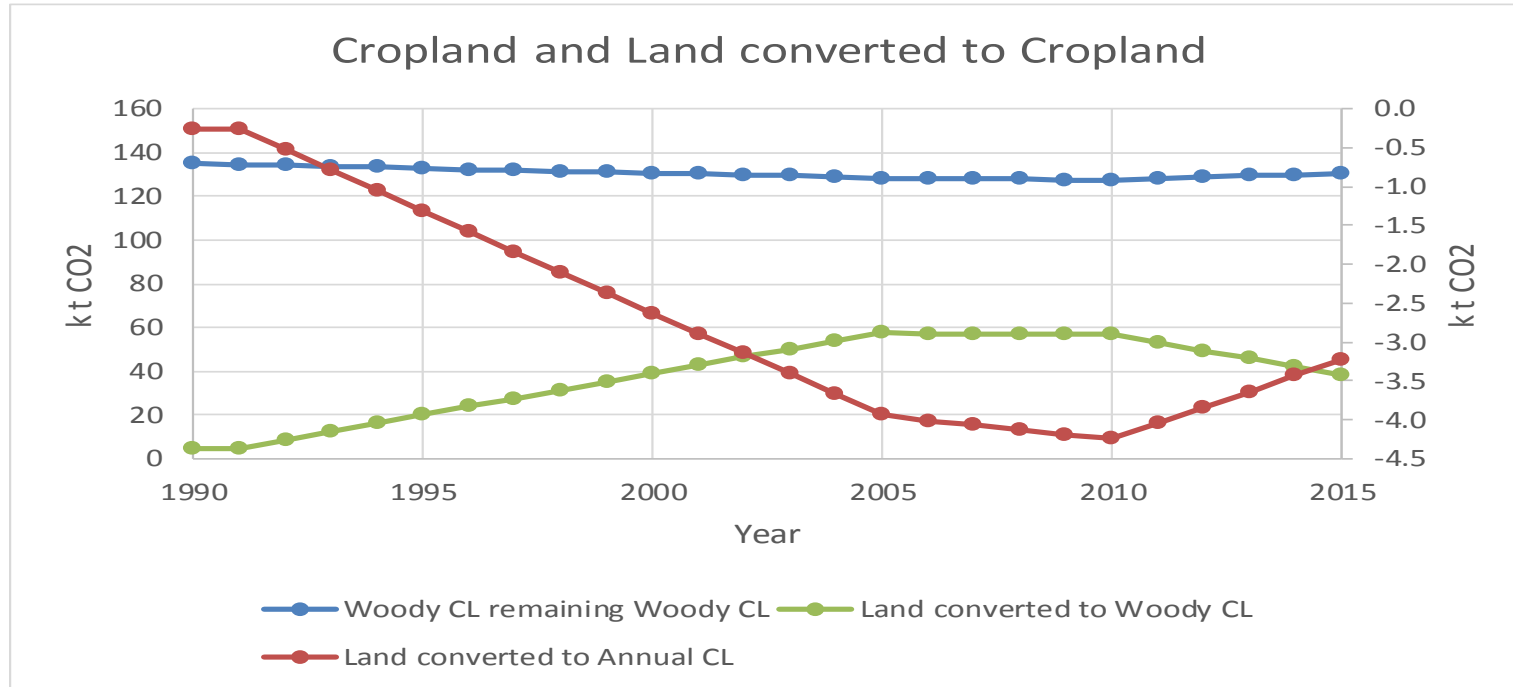
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- The Cropland remaining Cropland, Land converted to Cropland, Grassland remaining Grassland and Land converted to Grassland categories are all sinks over the entire period 1990 – 2016. National data on these categories are limited to area only hence, all emission/removal factors used in calculations of the GHG sources/sinks estimates are default data of unknown error.
- The Forest Land remaining Forest Land and Land converted to Forest Land categories are important contributors to the sink in the LULUCF sector. The categories represent sink for all years except years when forest fires affect significantly great areas.
- The Wetlands remaining Wetlands and Lands converted to Wetlands represent minor sink, while Settlements and Lands converted to Settlements represent minor source, during the entire period 1900 – 2016.
- The Other Land remaining Other Land and Land converted to Other Land categories represent GHG source during the entire period 1990 – 2016. The source is significant until 2005 and then decreases to a minor value.



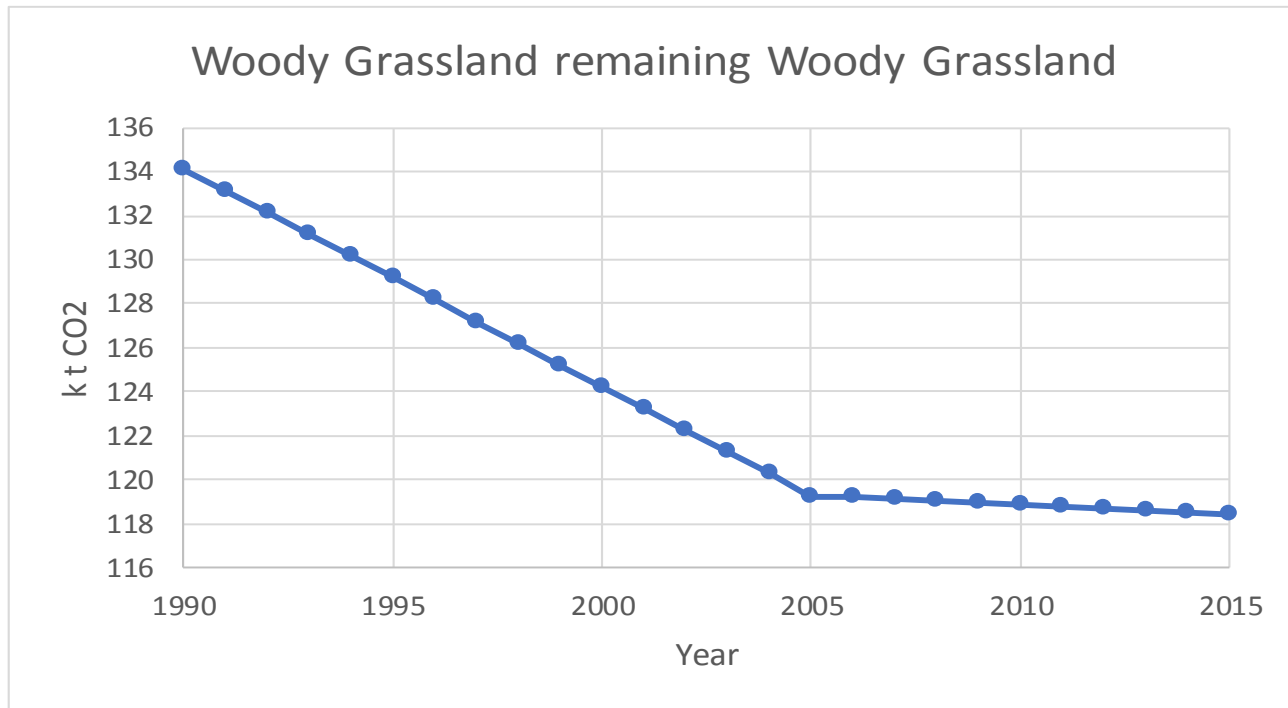
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Figure 1: Woody Cropland remaining Woody Cropland, Land converted to Annual Cropland (brown line, secondary/right axis) and Land converted to Woody Cropland: CO2 emissions/removals during the period 1990 – 2015.



Time series presented in Figure 1 are consistent. The changes in 2005 and 2010 reflect changes in data (the CORINE data are available for 2000, 2006 and 2012 only, the remaining data are interpolated or extrapolated) or the specificity of the 2006 IPCC guidelines (the end of the first 20 year transition period occurs in 2010).

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The IPCC 2006 default reference value for soil organic C stocks in high activity clay mineral soils (warm temperate dry climate region) $SOC_{REF} = 38 \text{ t C/ha}$ (Table 2.3, pg.2.31, Vol.4, IPCC 2006) is selected for all calculations involving soil carbon in Annual Cropland and Woody Cropland.

	Relative stock change factor	Error	Remarks on the default values read from Table 5.5, p.5.17
Annual CL	Land use FLU= 0.58	+/- 61%	tropical dry moisture regime, long term annual cultivation
Annual CL	Tillage FMG= 1.0	NA	full level tillage
Annual CL	Input FI= 1.0	NA	medium level residue return for tropical dry climate
Woody CL	Land use FLU= 1.0	+/- 50%	all temperature regimes, long term perennial tree crops
Woody CL	Tillage FMG= 1.0	NA	reduced level tillage
Woody CL	Input FI= 1.04	+/- 13%	high level w/o manure residue return for tropical dry climate



Thank you for your attention!

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