ERRATUM

Erratum to: Updated and harmonised greenhouse gas emissions for crop inventories

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This is a corrigendum and clarification of behalf of the authors. The error concerns the GHG emissions of sugarcane cultivation in Brazil given per hectare. The value in Fig. 9 given per kilogram of crop is correct but was aggregated to 1 ha on the basis of an erroneous yield. The corrected GHG emissions of sugarcane cultivation amount to 5.7 instead of 3.5 t CO₂ eq. ha⁻¹.

Figure 8 and Table 7 in the original version of the article have been corrected accordingly, and the changes in the text and in Table 7 are in italics.

The corrected GHG emissions change the discussions concerning sugarcane as follows.

On page 1371: “Regarding sugarcane, GWP increases by a factor of 4 mainly because the emissions from LUC were not considered in version 2.2.”

On page 1374: “For sugarcane cultivation in Brazil, the results of Ponsioen & Blonk (2012) are 45 % higher.”

The online version of the original article can be found at <http://dx.doi.org/10.1007/s11367-014-0712-7>

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Fig. 8 Comparison of the updated LUC emissions (in kg CO₂ eq. ha⁻¹) for selected crops to the values in ecoinvent v2.2

Table 7 Comparison of the LUC climate change impact of the updated inventories with the values reported by other studies. In the column “Geo. avg.,” we distinguish between two different types of scenarios: [x] means that the modelled LUC type represents a geographical average; [s] means that the values represent a specific LUC type. The column “Temp. avg.”

indicates whether the study models a temporal average, i.e. the difference between the standing stock at the baseline period (e.g. 1990) and the final period (e.g. 2009) is used to identify the annual increment of an average hectare [x], or whether the study assumes that the modelled hectare is at the margin, i.e. realized fully at the expense of natural areas [m]

Source	Country, region, (LUC type)	Geo. avg.	Temp. avg.	Soybean Metric tons	Oil palm CO ₂ eq. ha ⁻¹	Sugarcane year ⁻¹
Castanheira and Freire (2013)	Brazil, Central-West (100 % rain forest) ^a	s	m	42.0		
	Brazil, Central-West (100 % cerrado) ^a	s	m	11.0–17.0		
	Brazil, South (100 % perennial cropland) ^a	s	m	8.5		
	Brazil, South (100 % grassland) ^a	s	m	2.0–6.0		
BSI (2011a)	Brazil, worst case example (47 % arable, 53 % rain forest)	s	x	19.6		
Schmidt (2007)	Brazil, (95 % cerrado, 5 % rain forest)	x	m	16.4		
	Malaysia, (50 % grassland, 50 % rain forest)	x	m		10.1	
Reijnders and Huijbregts (2008)	Malaysia, (100 % rain forest, peat soil) ^b	s	m		70.0–91.0	
	Malaysia, (100 % rain forest, mineral soil) ^b	s	m		35.0	
Wicke et al. (2008)	Malaysia, (100 % logged-over forest, mineral soil)	s	m		10.0	
	Malaysia, (100 % natural rain forest, peat soil)	s	m		61.3	
Ponsioen and Blonk (2012)	Brazil, (69 % arable, 31 % average forest) ^c	x	x	10.4		
	Indonesia, (67 % arable, 33 % average forest) ^c	x	x		12.4	
	Brazil, (68 % arable, 32 % average forest) ^c	x	x			8.3
Jungbluth et al. (2007), ecoinvent v.2.2	Brazil (57 % arable, 26 % cerrado, 16 % rain forest) ^d	x	x	2.9		
	Malaysia (100 % rain forest) ^e	x	m		6.7	
Our study	Brazil, (50 % arable, 38 % cerrado, 12 % rain forest)	x	x	10.4		
	Malaysia, (51 %/22 % arable/perennial), 28 % rain forest (14 % on peat land)	x	x		23.1	
	Brazil, (49 % arable, 51 % cerrado)	x	x			5.7

^a Values were coarsely estimated from Fig. 2, in (Castanheira and Freire 2013)

^b LUC allocation period amounts to 25 years, i.e. the values are underestimated in the context of our study

^c LUC is also allocated between agricultural and forest land use activities. The allocation fraction to agriculture amounts to 0.65 for Brazil and 0.45 for Indonesia (Ponsioen and Blonk 2012)

^d The share of the LUC types represents the LUC pattern for the period 1999–2004. Only half of the expansion into natural areas is actually allocated to soybean because of its annual occupation time of 0.5 years

^e This LUC type is allocated over a period of 25 years