

Estimating Indirect Emissions from Land Use Change

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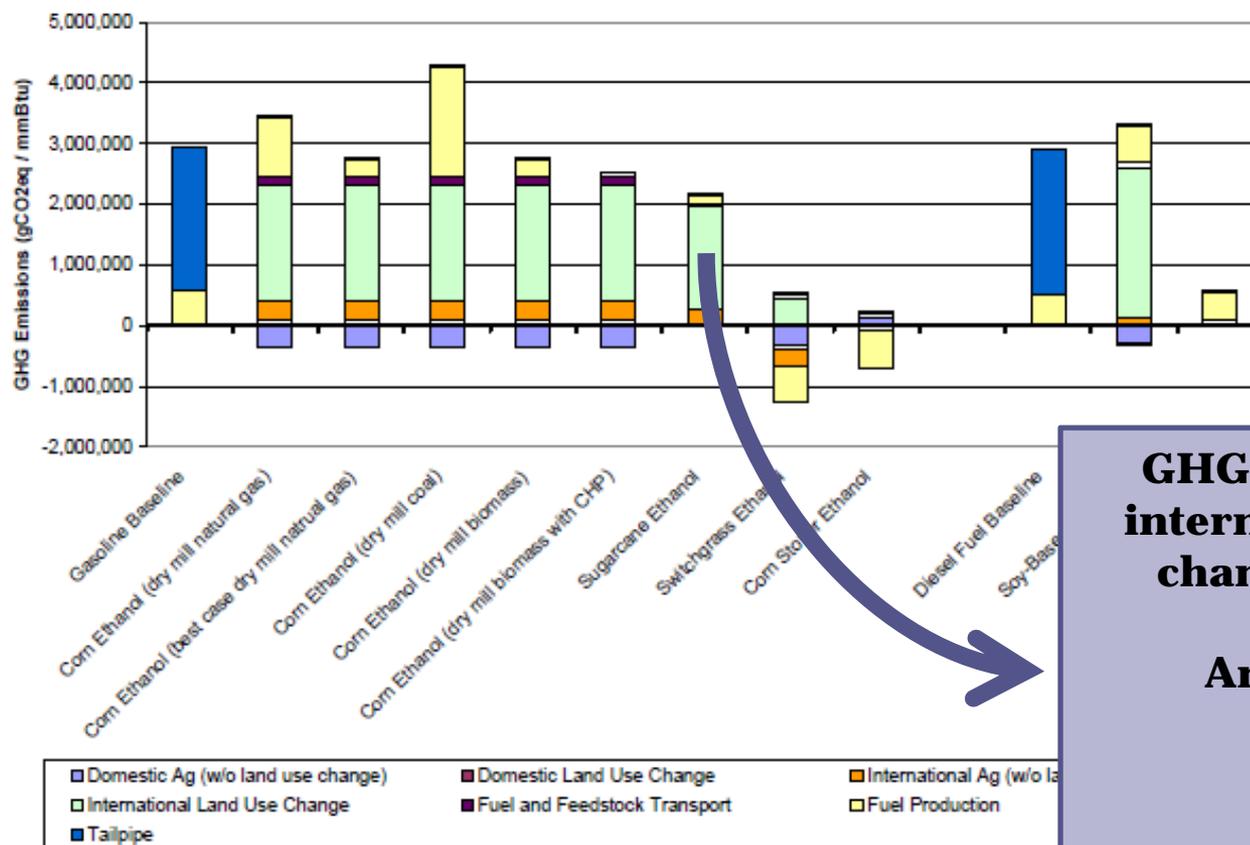


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EPA's Lifecycle Analysis

Figure 2. Net Lifecycle Greenhouse Gas Emissions By Lifecycle Component With 30 Year Time Horizon And 0% Discount Rate.



GHG emissions from international land use change (t CO₂e) =

Area change (ha)

x

Emission factor (t CO₂e /ha)

Area of Land Use Change

- MODIS satellite imagery, 2001-2004
- 1 km x 1 km pixel size
- Change detection
- Land cover change matrices produced for each country

BRAZIL		2004 →						
2001 ↓		Other	Crop	Forest	Grass	Mixed	Savanna	Shrub
	Other	92%	0%	5%	1%	0%	2%	1%
	Crop	0%	40%	1%	4%	18%	36%	0%
	Forest	1%	0%	9%	0%	0%	4%	0%
	Grass	0%	4%	4%	24%	7%	58%	4%
	Mixed	0%	9%	3%	4%	38%	46%	0%
	Savanna	0%	2%	7%	4%	8%	77%	2%
	Shrub	1%	1%	4%	8%	2%	59%	25%

Emission factors

- Immediate, 20-year and 80-year emission factors include:
 - Change in carbon stocks (aboveground, belowground, soil)
 - Foregone forest sequestration
 - Peat drainage (Indonesia, Malaysia)
 - Non-CO₂ emissions: fire, rice cultivation

Immediate Emissions, Forest to Cropland conversion

