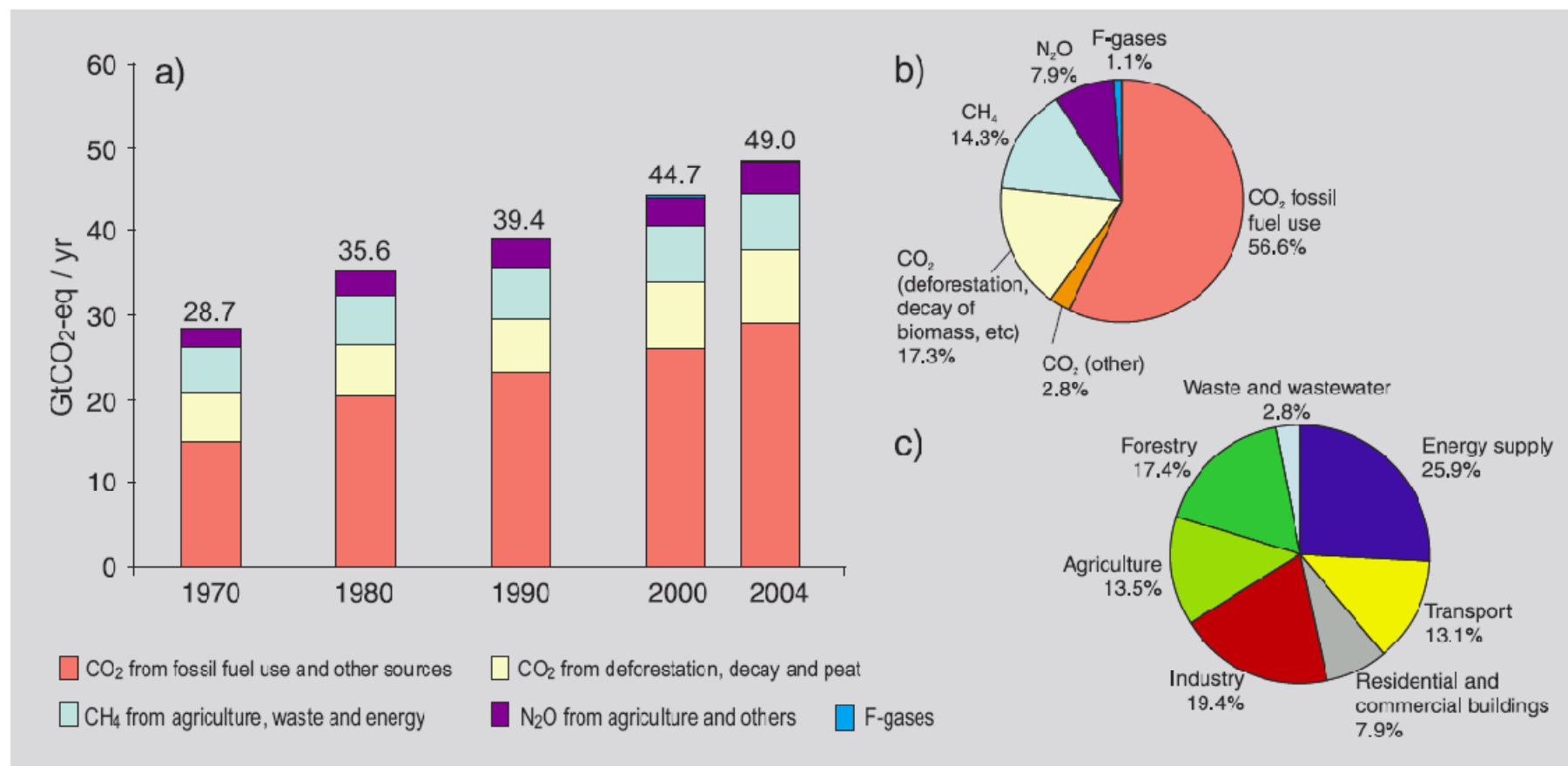


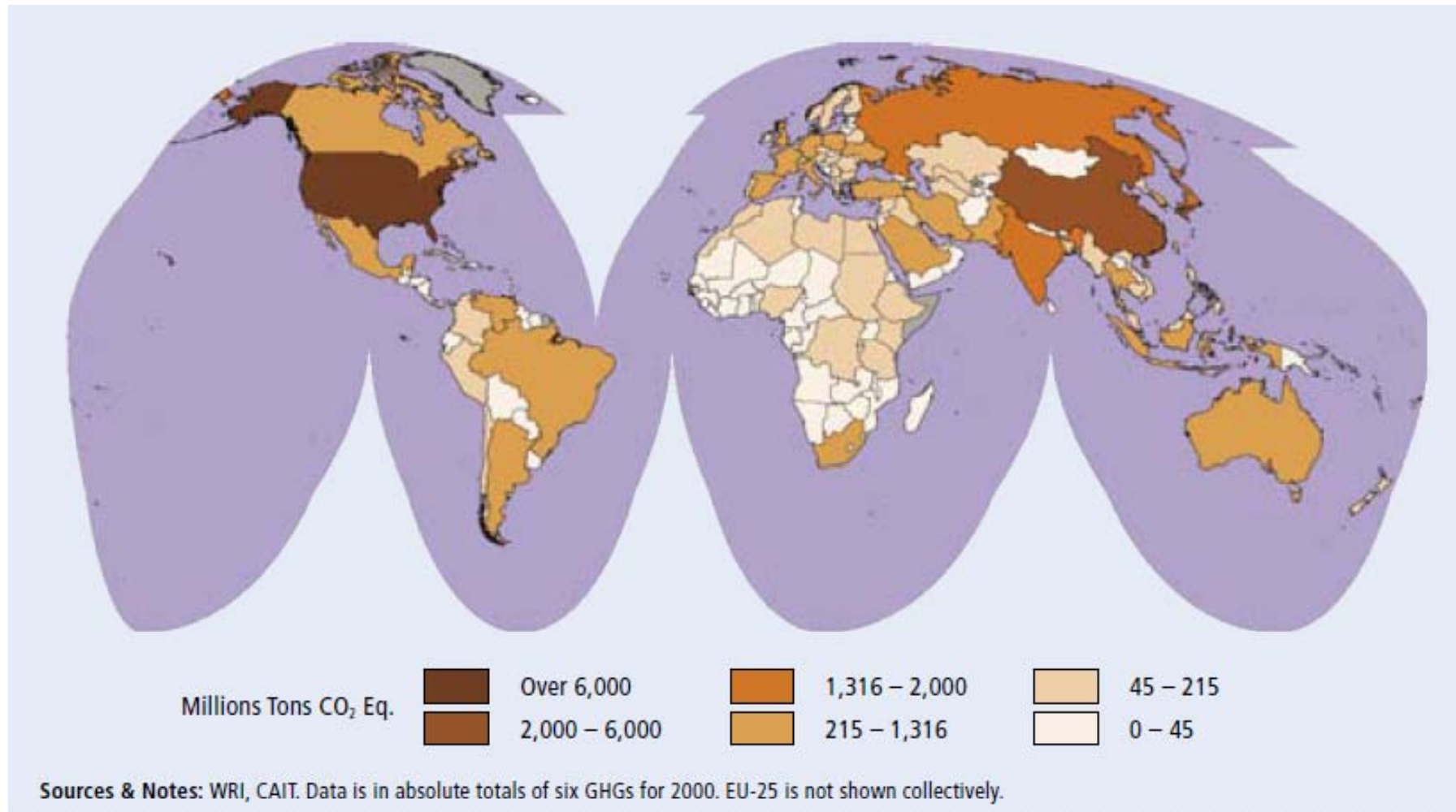
Basic facts on Emissions

Global Anthropogenic GHG Emissions



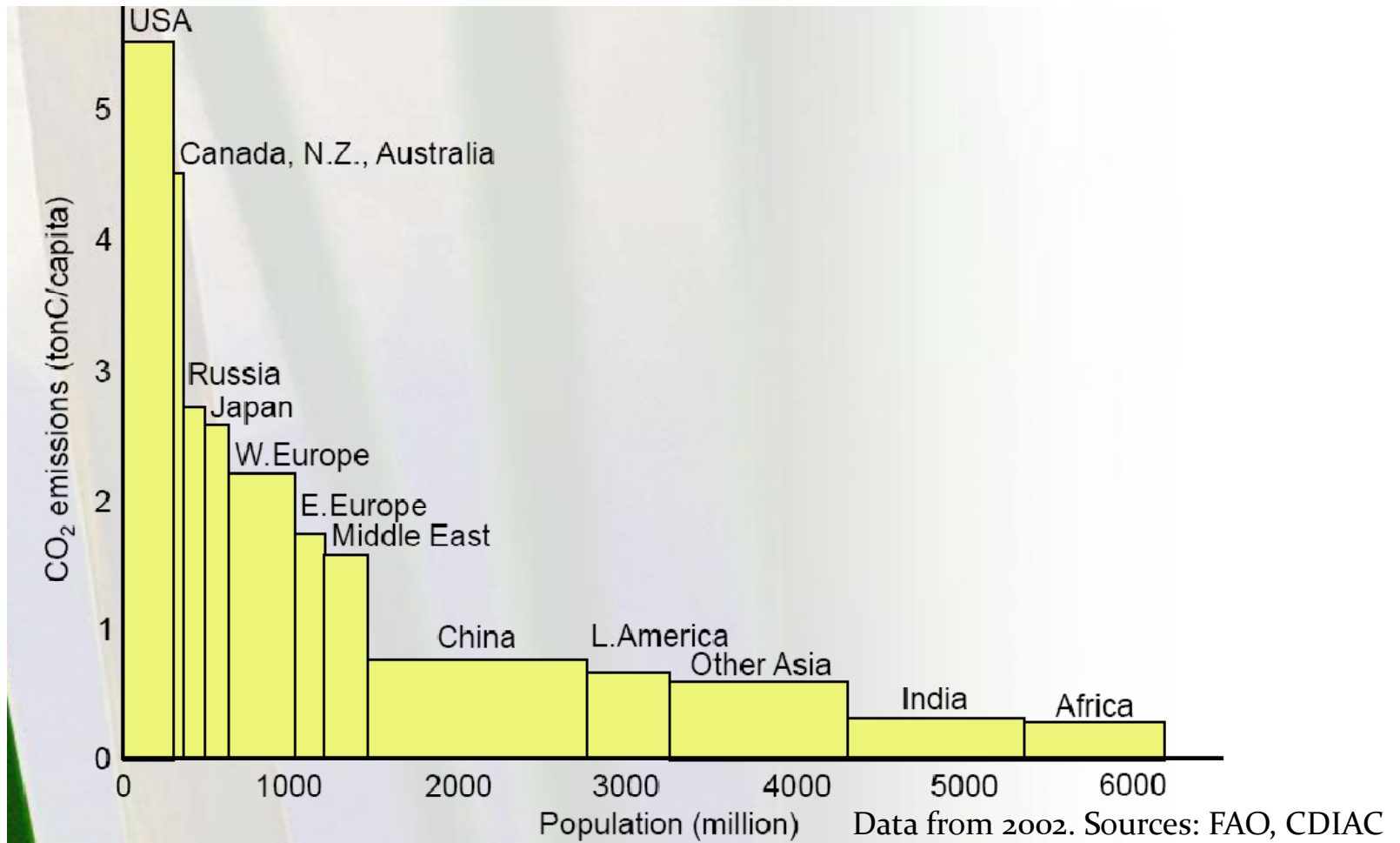
Source: IPCC (2007). (a) Global annual emissions of anthropogenic GHGs from 1970 to 2004.5 (b) Share of different anthropogenic GHGs in total emissions in 2004 in terms of carbon dioxide equivalents (CO₂-eq, 100 year GWP equivalence). (c) Share of different sectors in total anthropogenic GHG emissions in 2004 in terms of CO₂-eq. (Forestry includes deforestation.)

GHG Emission Levels by Country



Measured in CO₂ equivalents for 100 year GWP

Per-Capita CO₂ Emissions in 2002

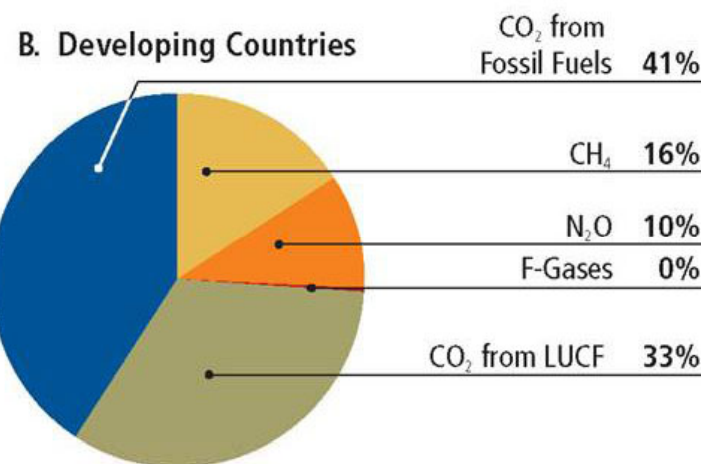
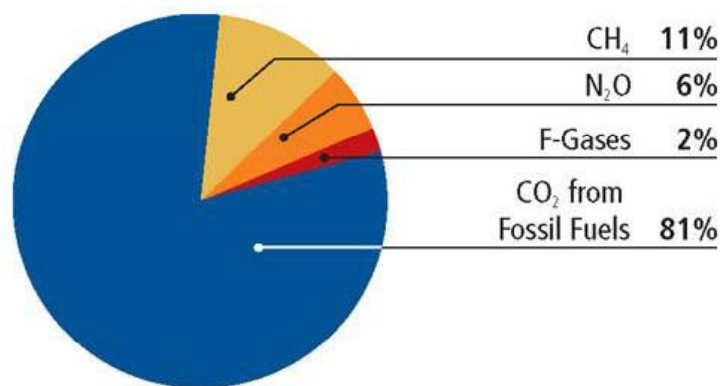


Antropogenic global GHG emissions

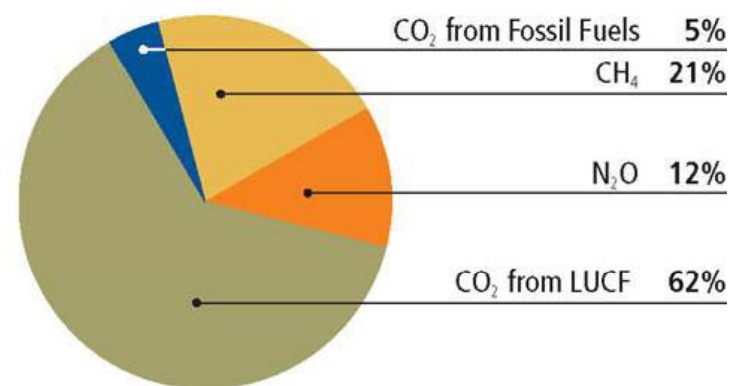
Measured in carbon dioxide equivalent units, using 100-year global warming potentials from IPCC (1996), data 2000.

Emission Profiles by Gas and Source

A. Developed Countries



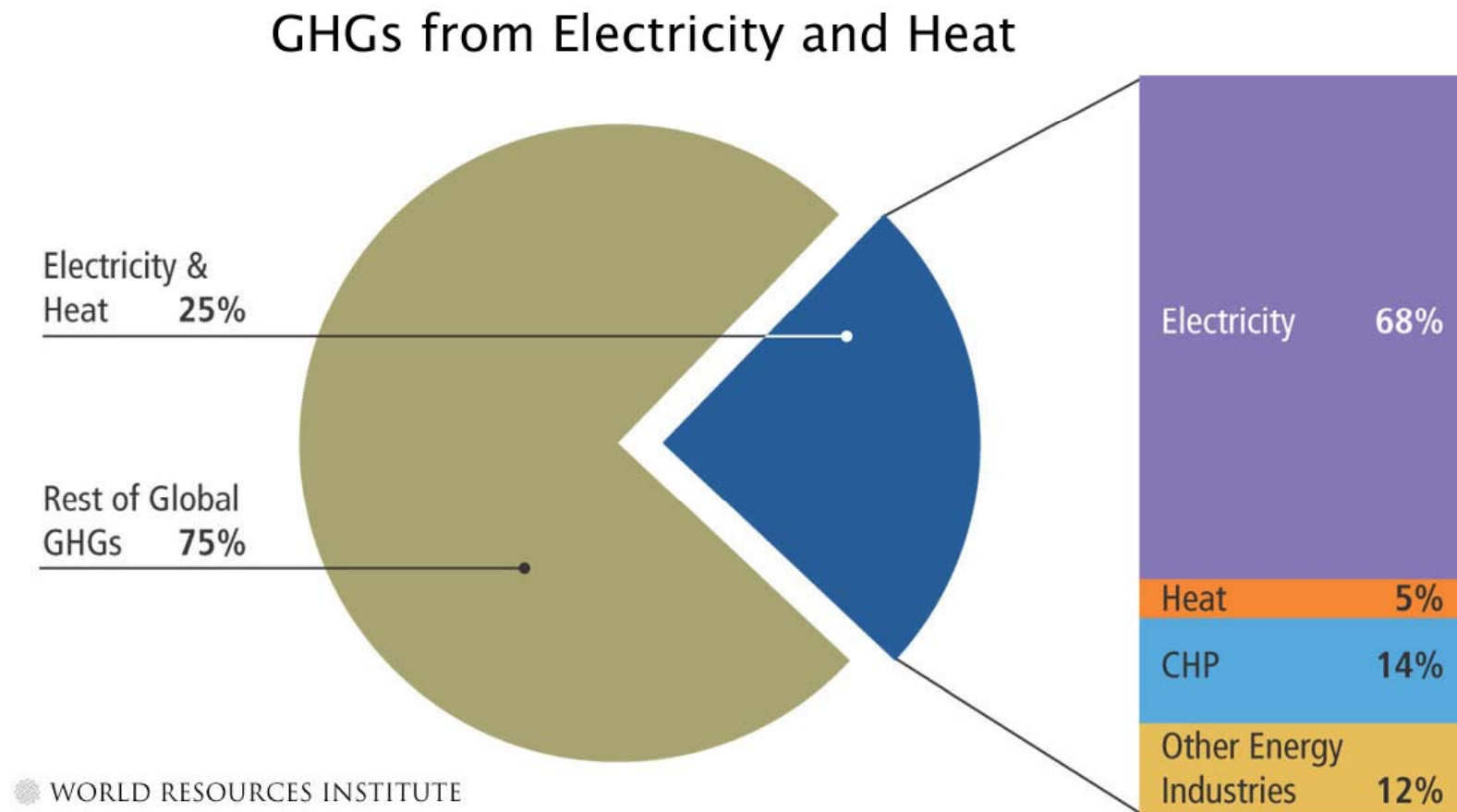
C. Least Developed Countries



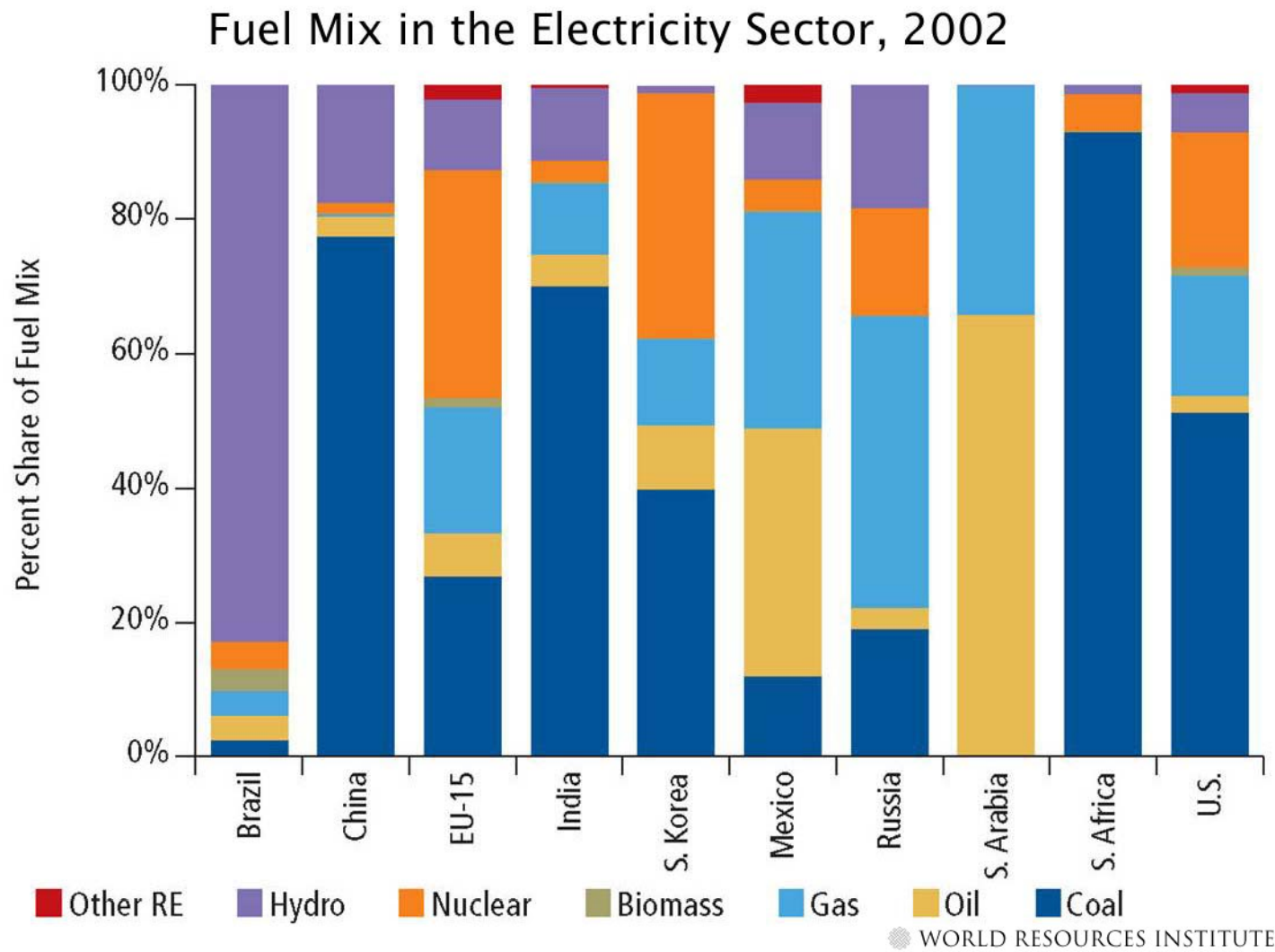
WORLD RESOURCES INSTITUTE

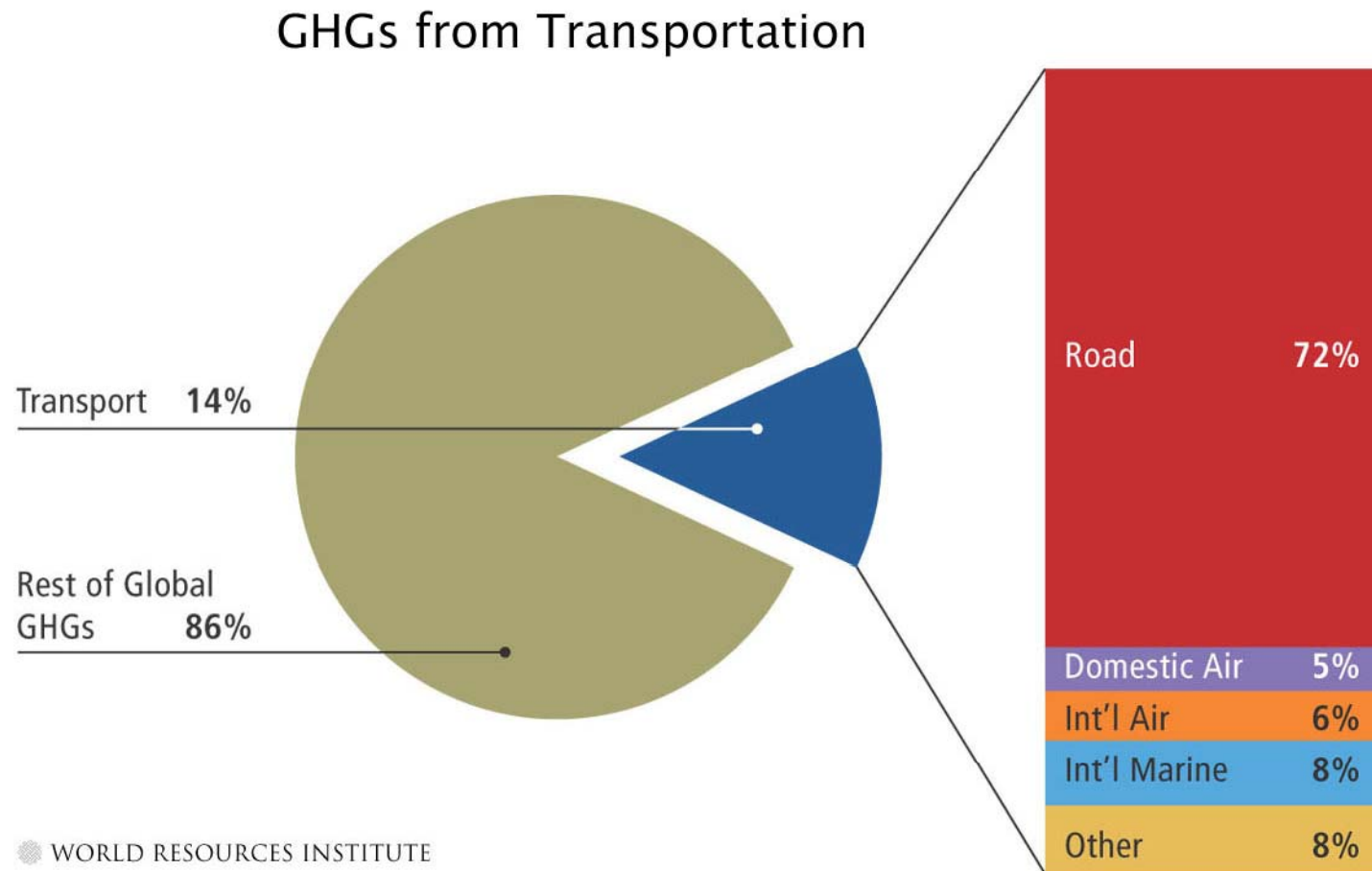
LUCF=Land Use Change and Forestry

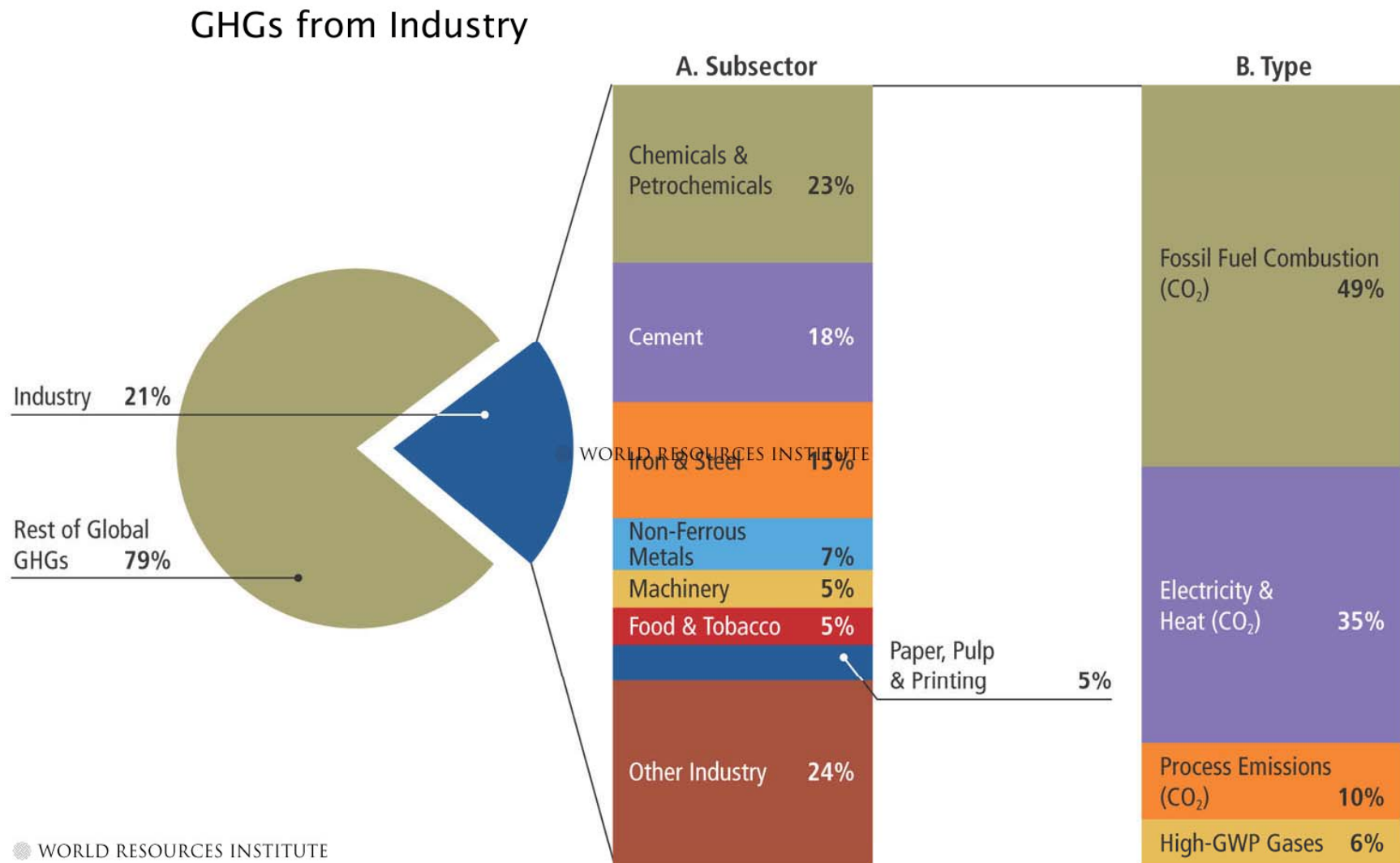
Source: WRI, Navigating the Numbers: Greenhouse Gas Data and International Climate Policy, <http://www.wri.org/publication/navigating-the-numbers>, same source for following slides

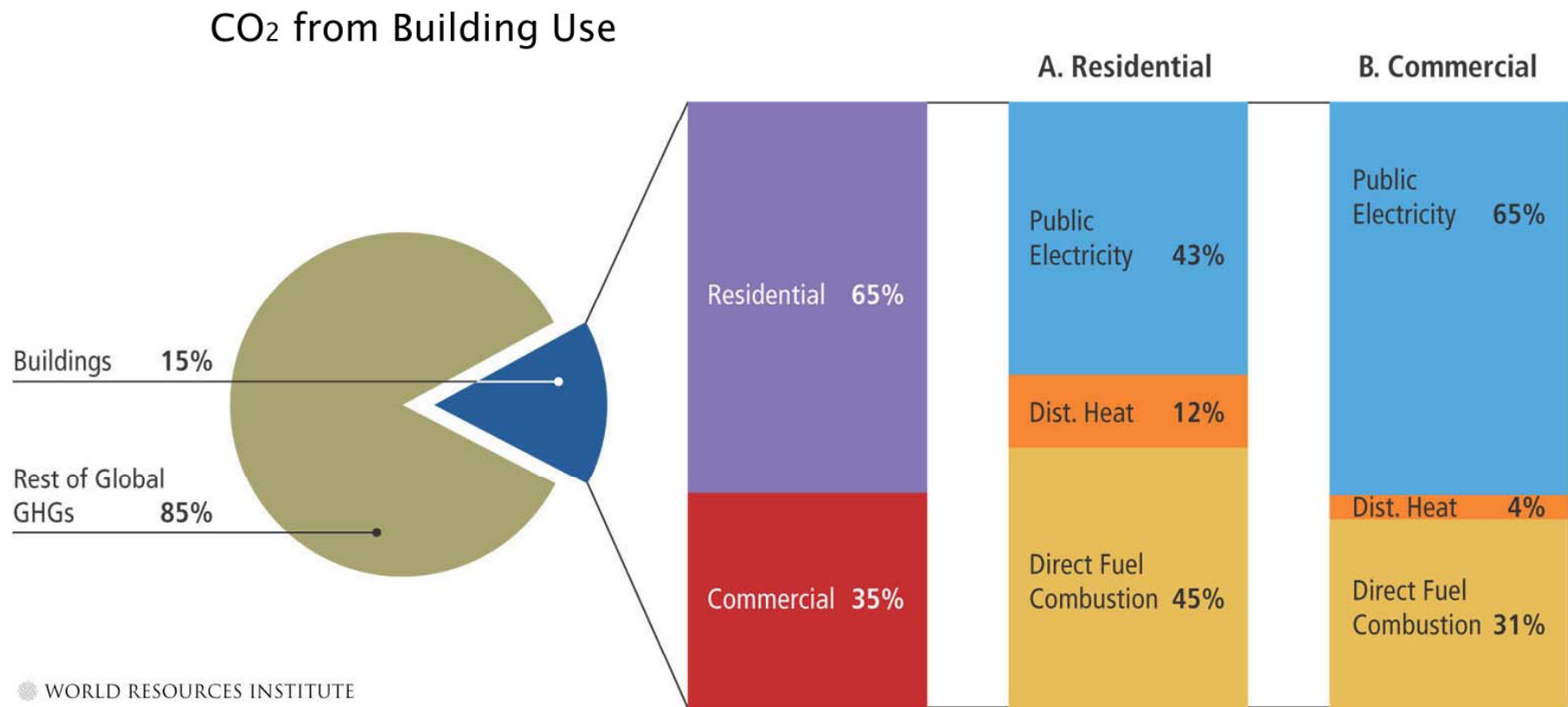


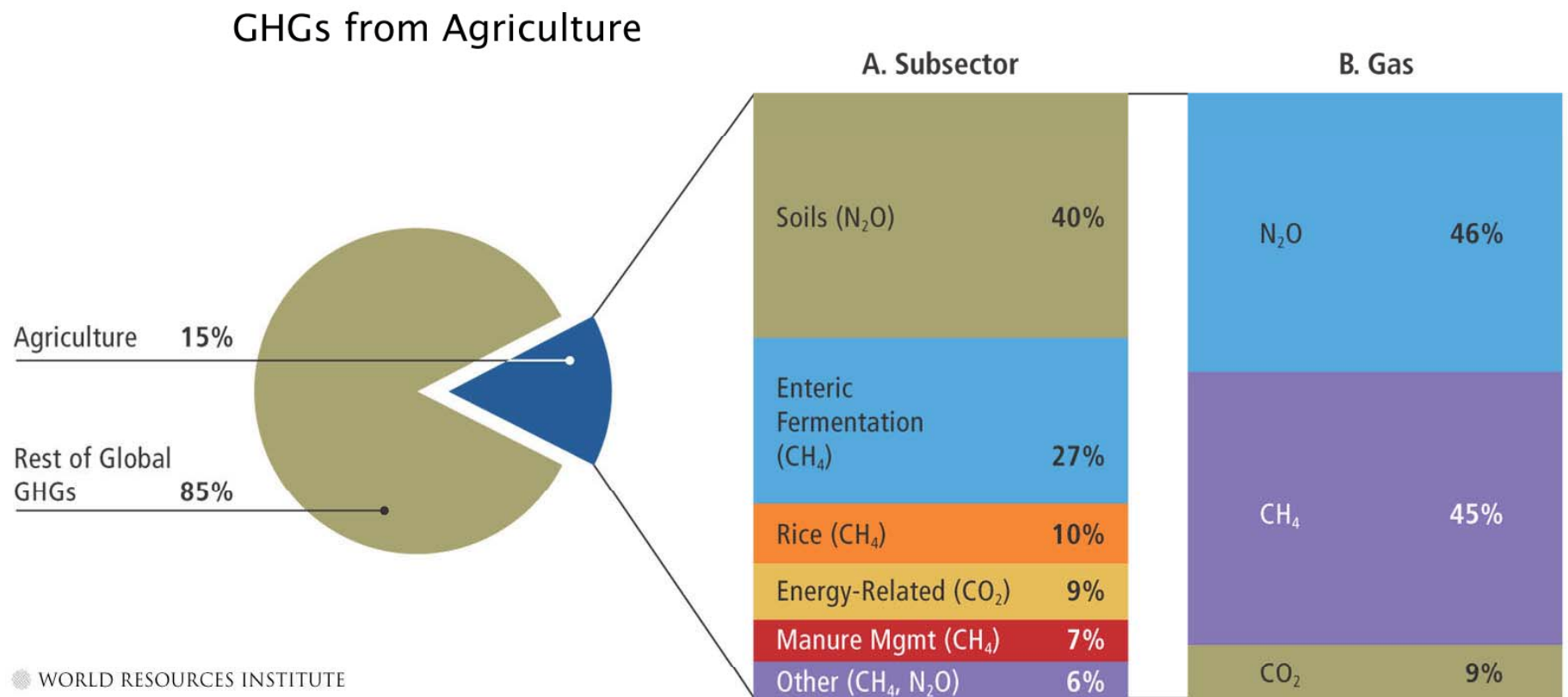
CHP = Combined Heat and Power Plants

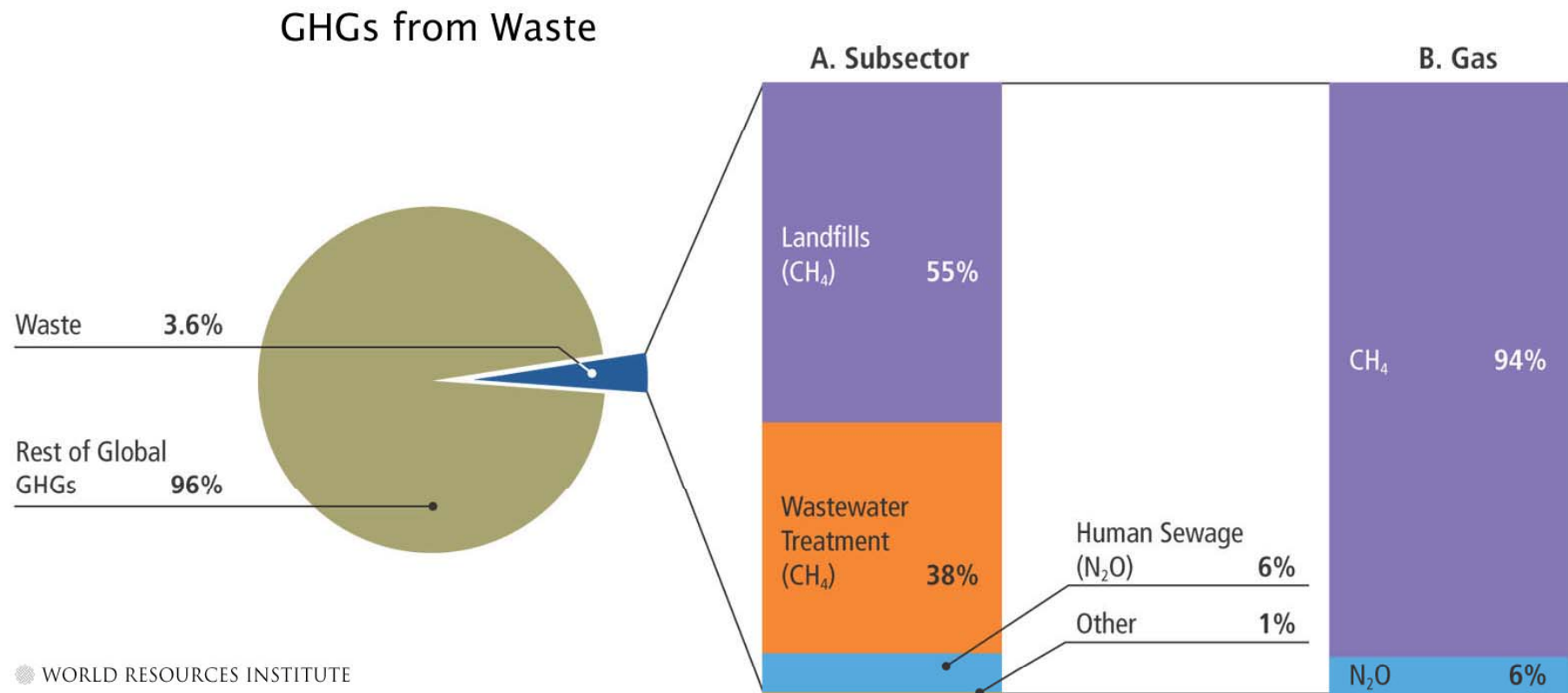












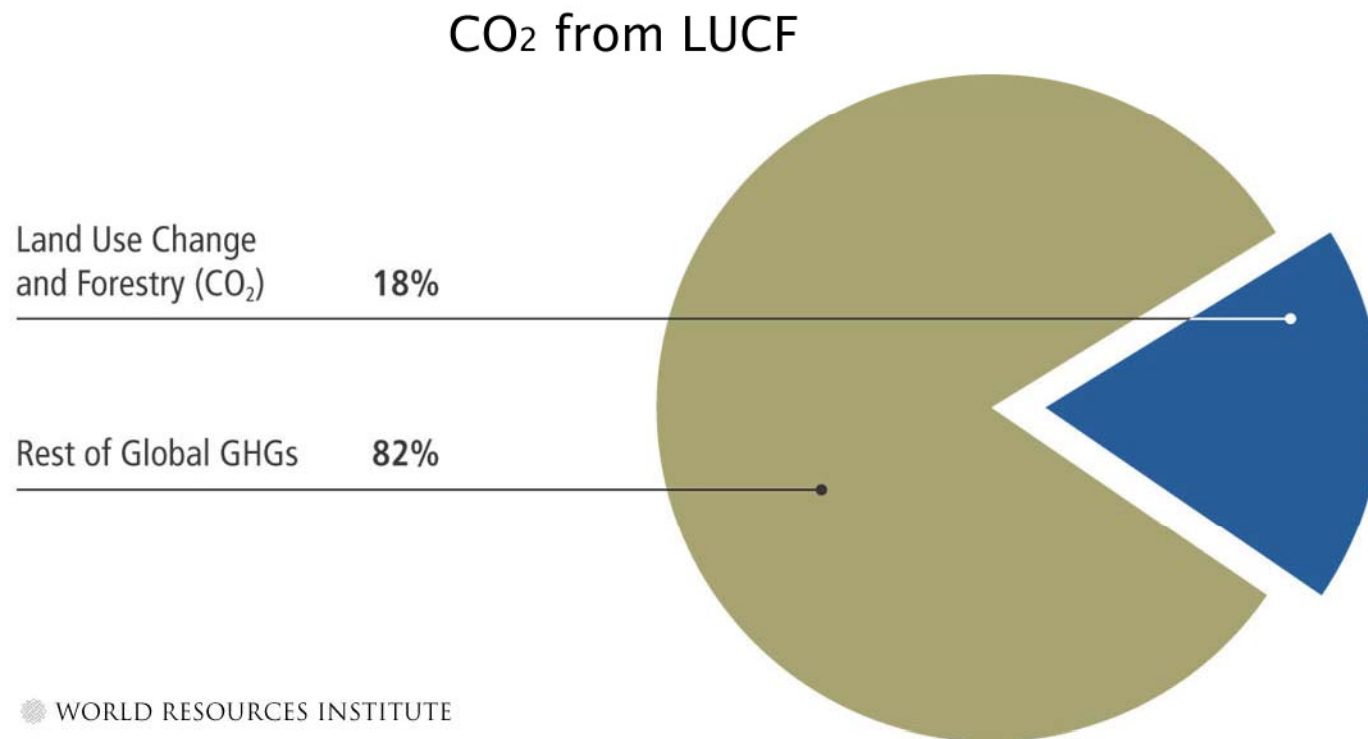
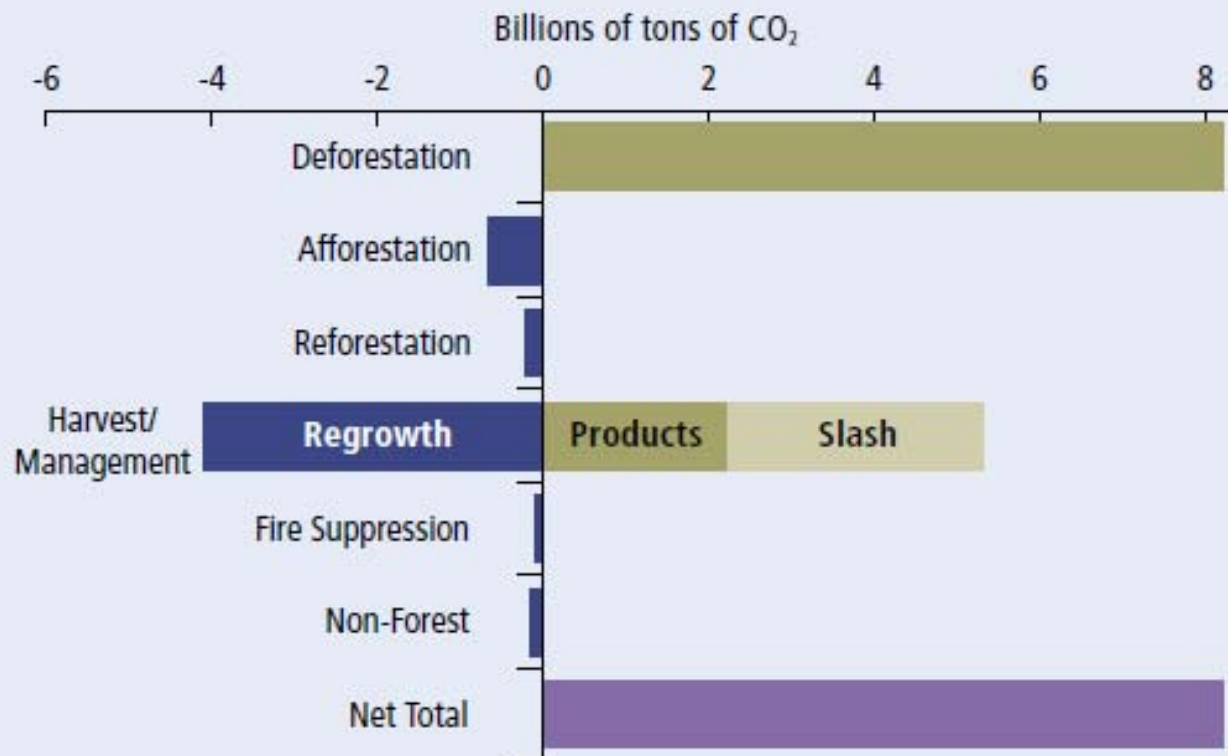


Figure 17.2. Annual Emissions and Absorptions from Land-Use Change Activities, Global estimates for the 1990s



Sources & Notes: Houghton, 2003b. Deforestation and reforestation in tropical countries include only the net effect of shifting cultivation. For afforestation, areas of plantation forests are not generally reported in developed countries (this estimate includes only China's plantations). Fire suppression is probably an underestimate, as it includes the U.S. only (similar values may apply elsewhere). Non-Forests include CO₂ from agricultural soils, but only resulting from cultivation of new lands.

Table 7.2. Land to atmosphere emissions resulting from land use changes during the 1990s and the 1980s (GtC yr⁻¹). The Fourth Assessment Report (AR4) estimates used in the global carbon budget (Table 7.1) are shown in bold. Positive values indicate carbon losses from land ecosystems. Uncertainties are reported as ± 1 standard deviation. Numbers in parentheses are ranges of uncertainty.

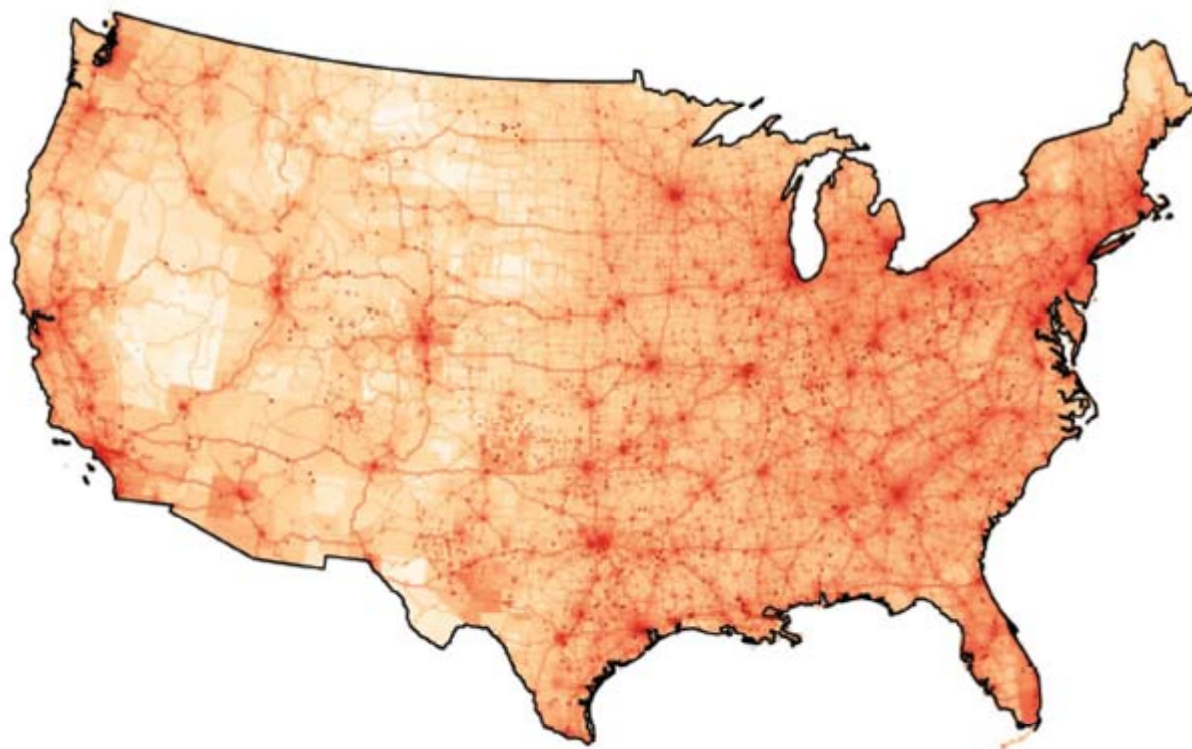
	Tropical Americas	Tropical Africa	Tropical Asia	Pan-Tropical	Non-tropics	Total Globe
1990s						
Houghton (2003a) ^a	0.8 $\pm$ 0.3	0.4 $\pm$ 0.2	1.1 $\pm$ 0.5	2.2 $\pm$ 0.6	-0.02 $\pm$ 0.5	2.2 $\pm$ 0.8
DeFries et al. (2002) ^b	0.5 (0.2 to 0.7)	0.1 (0.1 to 0.2)	0.4 (0.2 to 0.6)	1.0 (0.5 to 1.6)	n.a.	n.a.
Achard et al. (2004) ^c	0.3 (0.3 to 0.4)	0.2 (0.1 to 0.2)	0.4 (0.3 to 0.5)	0.9 (0.5 to 1.4)	n.a.	n.a.
AR4^d	0.7 (0.4 to 0.9)	0.3 (0.2 to 0.4)	0.8 (0.4 to 1.1)	1.6 (1.0 to 2.2)	-0.02 (-0.5 to +0.5)	1.6 (0.5 to 2.7)
1980s						
Houghton (2003a) ^a	0.8 $\pm$ 0.3	0.3 $\pm$ 0.2	0.9 $\pm$ 0.5	1.9 $\pm$ 0.6	0.06 $\pm$ 0.5	2.0 $\pm$ 0.8
DeFries et al. (2002) ^b	0.4 (0.2 to 0.5)	0.1 (0.08 to 0.14)	0.2 (0.1 to 0.3)	0.7 (0.4 to 1.0)	n.a.	n.a.
McGuire et al. (2001) ^e				0.6 to 1.2	-0.1 to +0.4	(0.6 to 1.0)
Jain and Yang (2005) ^f	0.22 to 0.24	0.08 to 0.48	0.58 to 0.34	-	-	1.33 to 2.06
TAR ^g						1.7 (0.6 to 2.5)
AR4^d	0.6 (0.3 to 0.8)	0.2 (0.1 to 0.3)	0.6 (0.3 to 0.9)	1.3 (0.9 to 1.8)	0.06 (-0.4 to +0.6)	1.4 (0.4 to 2.3)

Land Use Change over the years

According to the Woods Hole Research Center, about 100 Pg (one petagram = 1 billion metric tons) of carbon (not carbon dioxide, which is much heavier) were released into the atmosphere from changes in land use world-wide between 1860 and 1990.

US Emissions

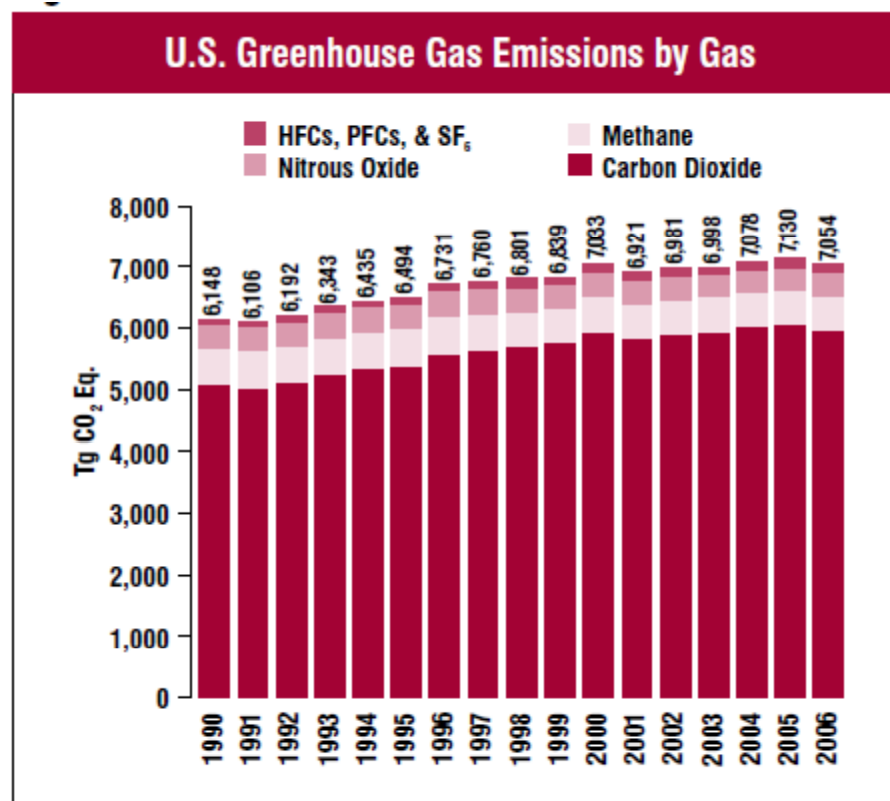
A regional measurement-based model for CO₂ emissions in the US



Source: Vulcan project, NASA/Earth Observatory

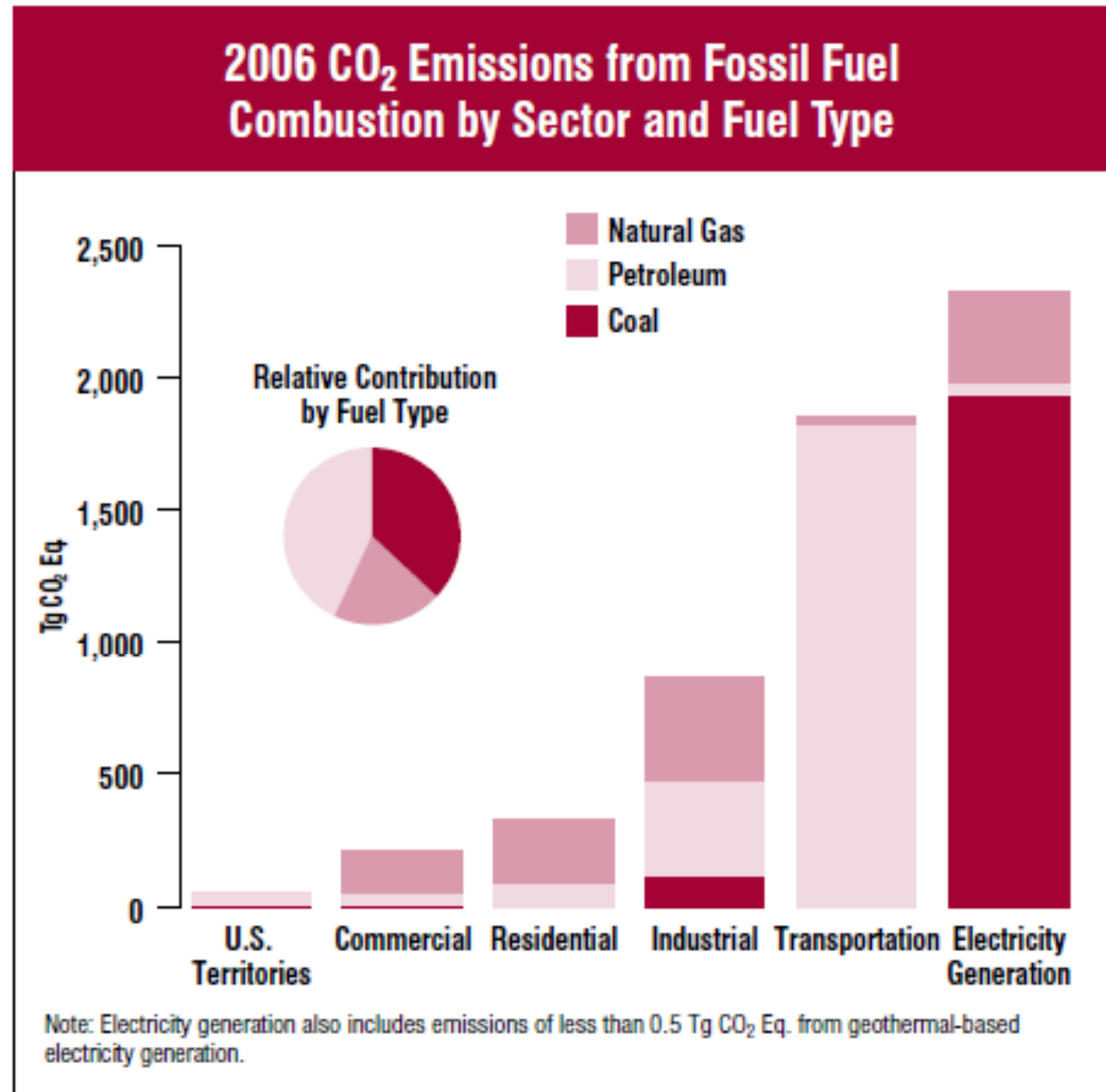
The map shows annual emissions in 2002 (in kilotons of carbon, with 1 kiloton equivalent to about two million pounds) from urban centers (larger red patches), widely scattered point sources like remote power stations or smelters (small red dots), and highways.

US Emissions



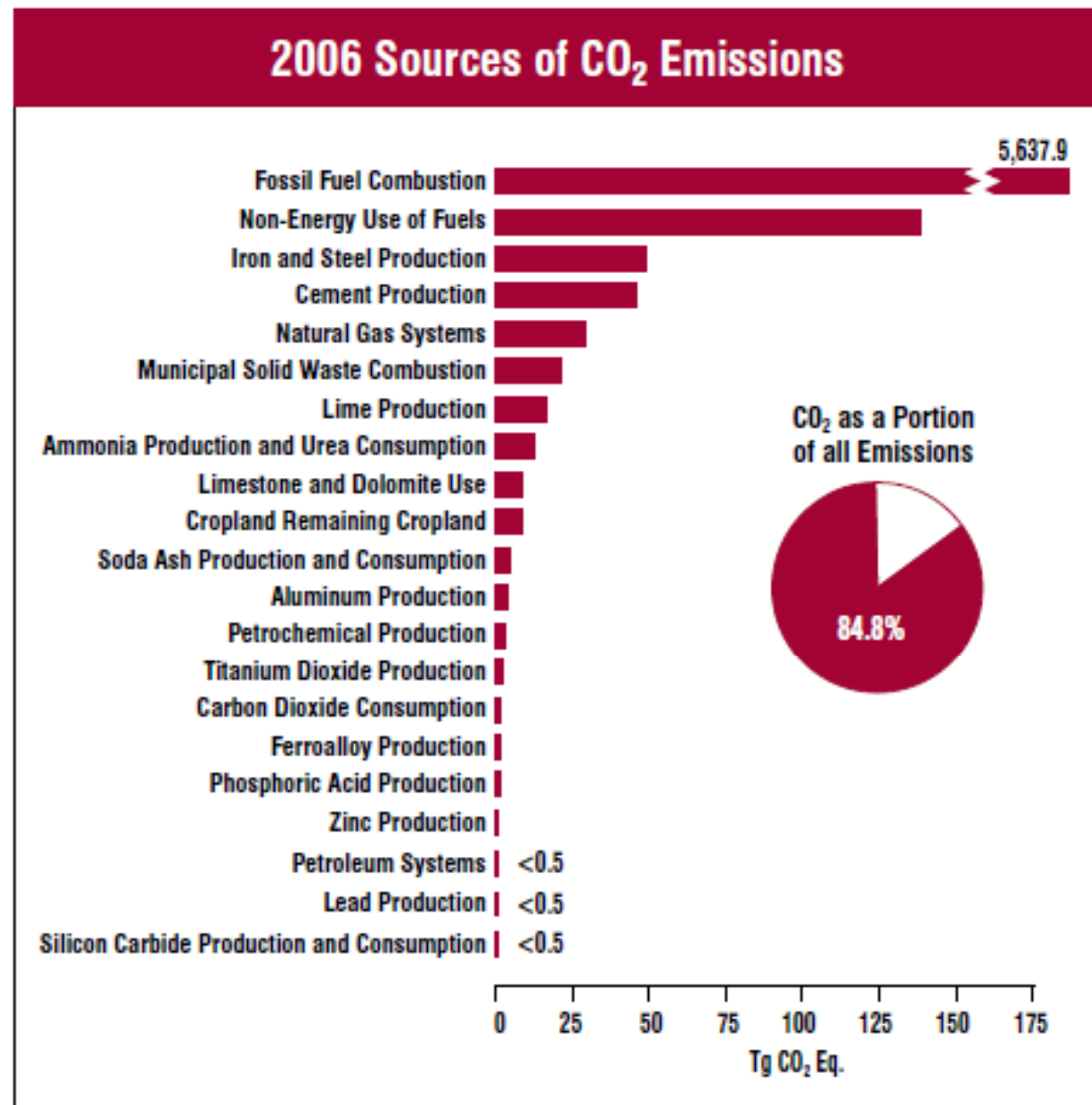
Source: EPA, CO₂ Equivalents are calculated as corresponding amount of CO₂ yielding the same global warming potential over a time span of 100 years

US Emissions



Source: EPA

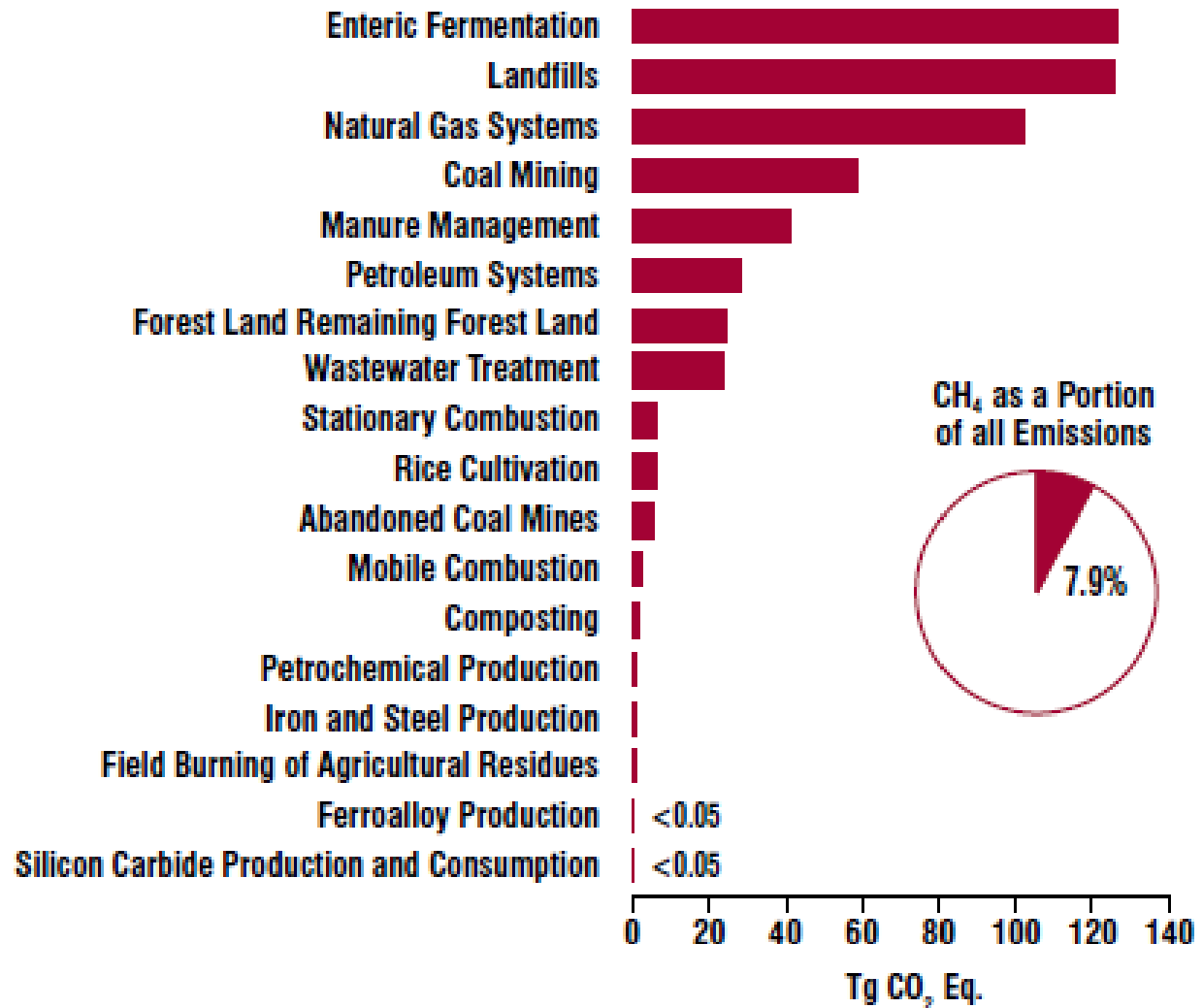
US Emissions



Source: EPA

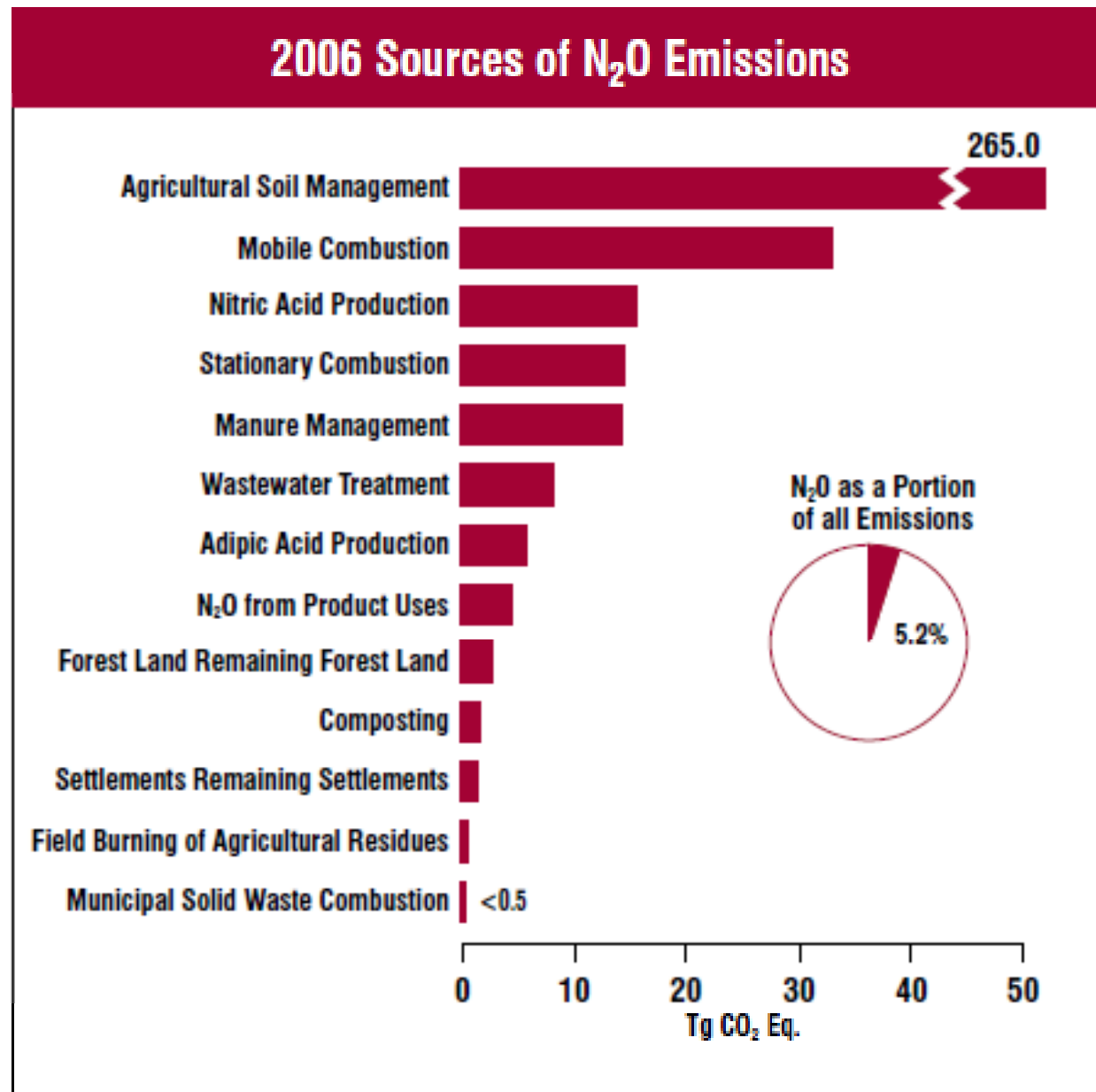
US Emissions

2006 Sources of CH₄ Emissions



Source: EPA

US Emissions



Source: EPA

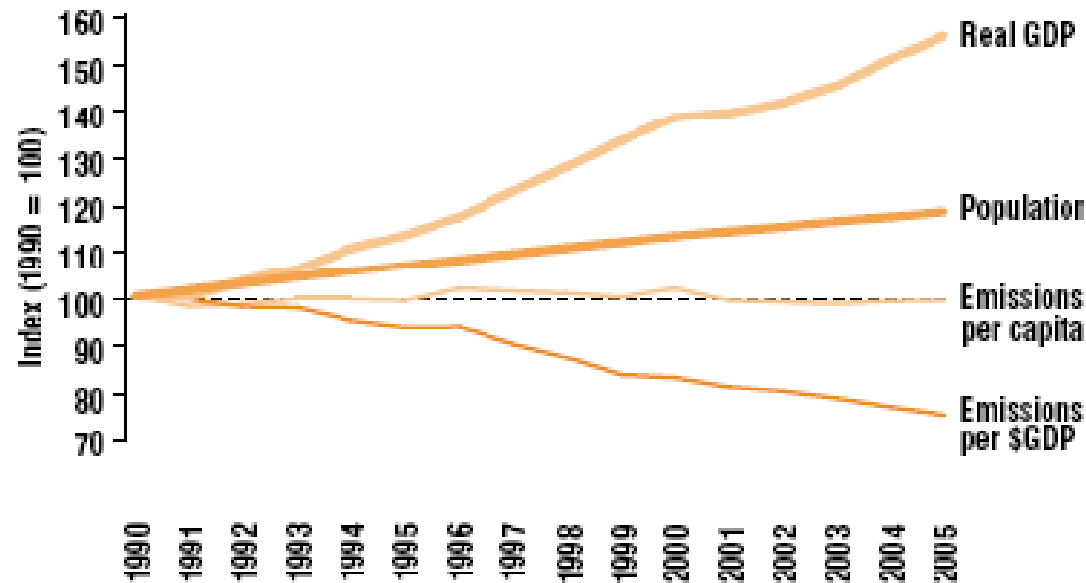
U.S. Emissions

Source:

<http://www.epa.gov/climatechange/emissions/downloadso6/o7Trends.pdf>

Figure 2-4

U.S. Greenhouse Gas Emissions Per Capita and Per Dollar of Gross Domestic Product



Source: BEA (2006) U.S. Census Bureau (2006), and emission estimates in the this report.

U.S. GHG Emissions Flow Chart

