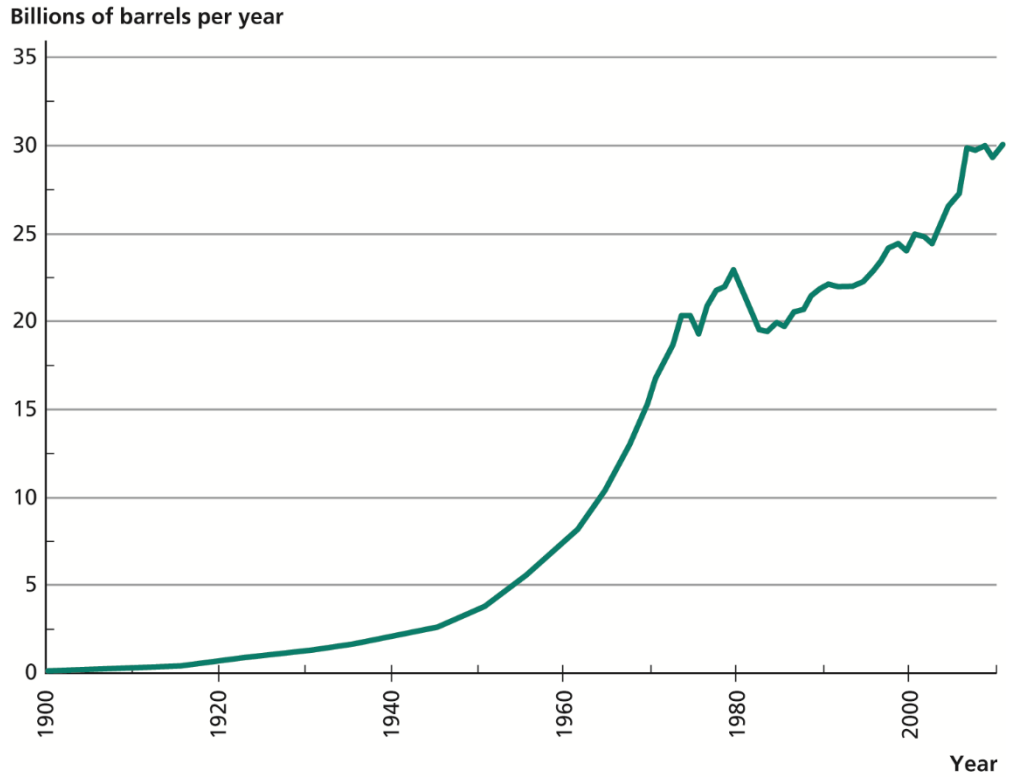
RECURSOS E MEIO AMBIENTE EM NÍVEL GLOBAL

Figura 16.1 Produção mundial de petróleo bruto, 1900–2010



Fontes: Jenkins (1977), p. 85 e Tabela 2, U.S. Department of Energy, Energy Information Administration (2007), cap. 11, BP (2011).

Tabela 16.1 Produção mundial de petróleo bruto e reservas mundiais (bilhões de barris)

	1945–1960	1961–1970	1971–1980	1981–1990	1991–2000	2001–2010
Reserves at Beginning of Period	51	292	612	649	1,001	1,108
– Production	77	119	205	217	253	253
+ Additions to Reserves	318	439	242	569	360	380
= Reserves at End of Period	292	612	649	1,001	1,108	1,236

Sources: Adelman (1995), Table 2.2; BP (2011).

Figura 16.2 Crescimento de um recurso renovável

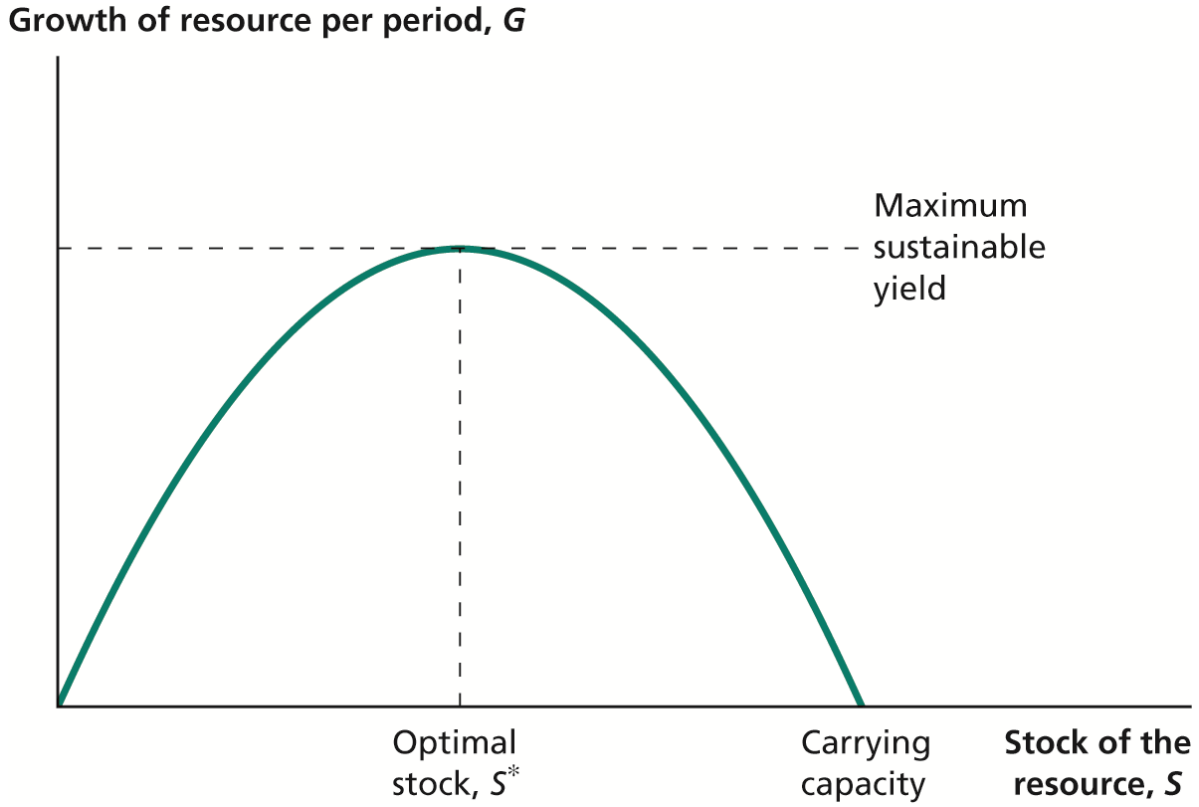
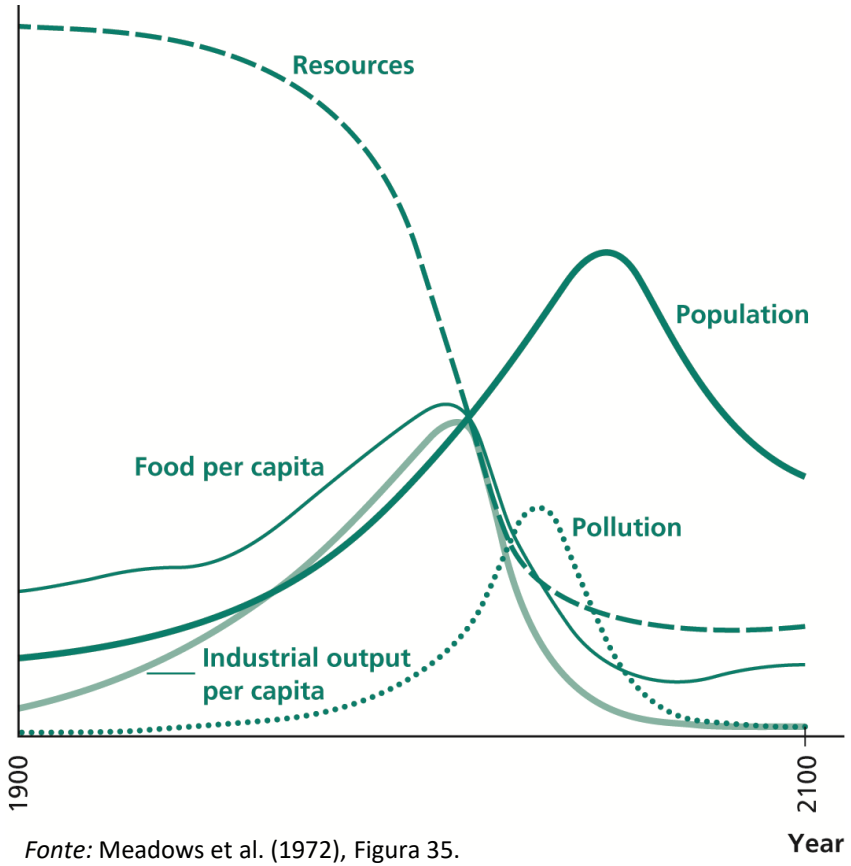


Tabela 16.2 Uso de energia por grupos diferentes de países

Country Group	Population (Millions)	GDP per Capita ($)	Commercial Energy Use per Capita (Kg of Oil Equivalent)	Energy Intensity (Kg of Oil Equivalent per $ GDP)
Low Income	764	1,061	364	0.309
Lower Middle Income	2,392	2,988	671	0.224
Upper Middle Income	2,419	8,063	1,825	0.227
High Income	1,113	33,691	5,112	0.151

Source: World Bank (2011).

Figura 16.3 Previsão de crescimento de *Os Limites do Crescimento*



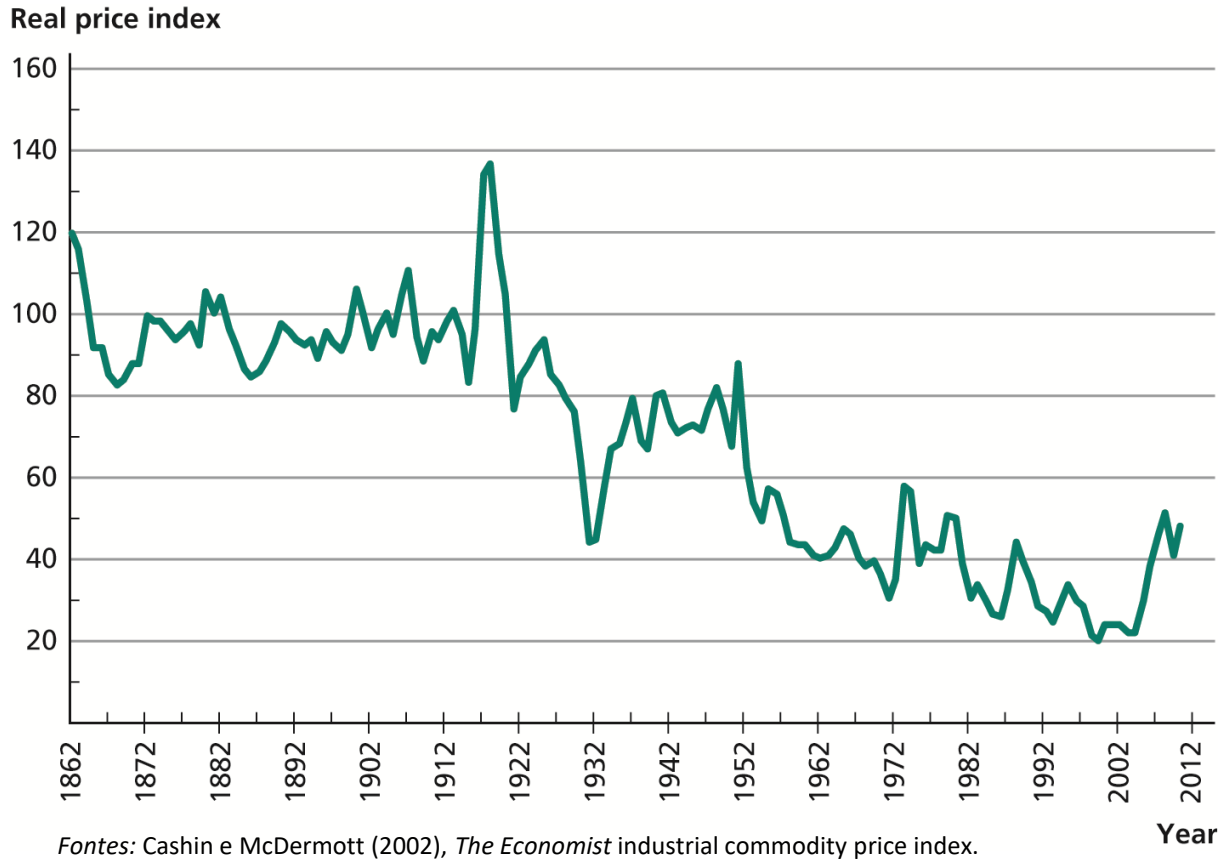
Fonte: Meadows et al. (1972), Figura 35.

Tabela 16.3 Cálculo do valor de exaustão dos 14 minerais mais importantes

Mineral	World Consumption (Thousands)	Price per Unit ($)	Production Cost per Unit ($)	In-Ground Price per Unit (Price –Production Cost) ($)	Value of Exhausted Resource (Consumption : In-ground Price) ($ Million)
Crude Oil	3,012,984	113	56.6	56.4	169,932
Natural Gas	95,925	2,133	958.3	1,174.7	112,683
Hard Coal	3,967,054	40	32.6	7.4	29,356
Brown Coal (Lignite)	1,119,937	11	9.4	1.6	1,792
Bauxite (Aluminum)	132,315	33.8	14.5	19.3	2,554
Copper	9,539	2,330	1,385.2	944.8	9,012
Iron Ore	604,679	40	23.9	16.1	9,735
Lead	2,718	679	658.1	20.9	56.8
Nickel	783	6,278	5,239.9	1,038.1	812.8
Phosphate	136,482	38	31.7	6.3	859.8
Tin	166	5,428	4,209	1,219	202.4
Zinc	6,964	1,033	894.4	138.6	965.2
Gold	1.74	12,346,000	10,822,700	1,523,300	2,652
Silver	10	169,872	129,763.5	40,108.5	401.0
Total					341,015

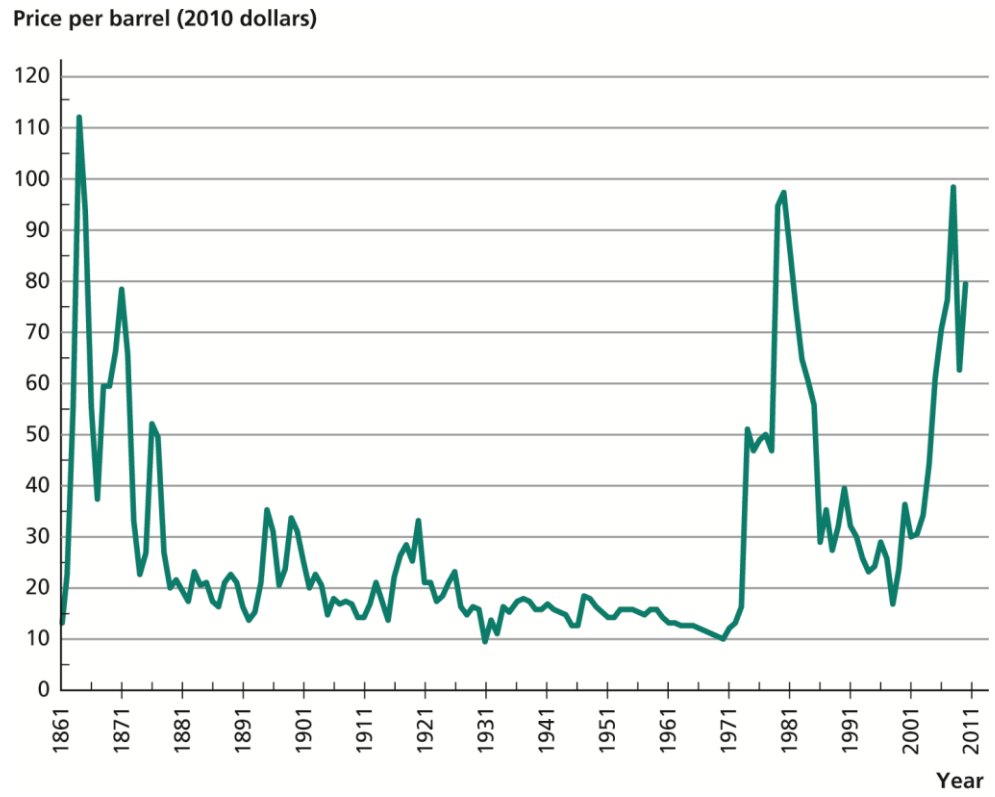
Source: Weitzman (1999). Quantities are all metric tons, except for natural gas, which is measured in trillions of joules. Prices correspond to the unit of quantity used. Data are for 1994.

Figura 16.4 Preços dos recursos naturais, 1850–2010



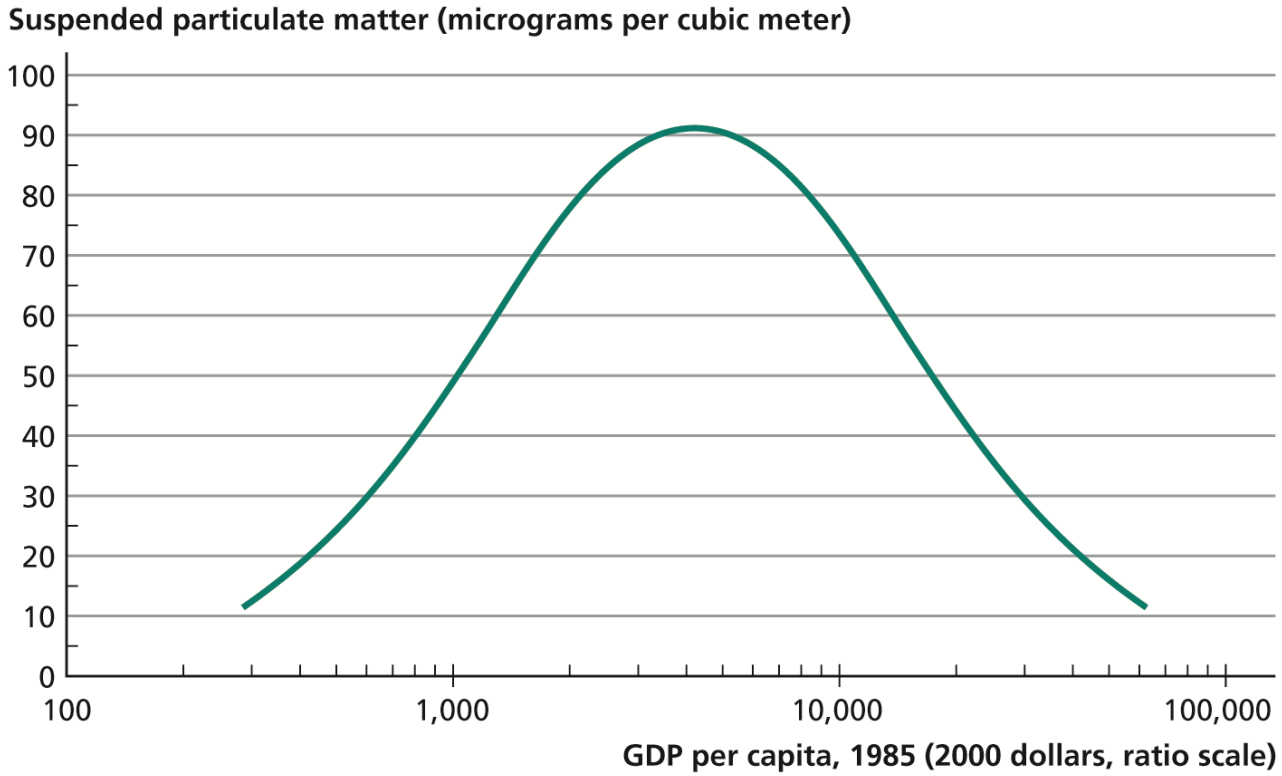
Fontes: Cashin e McDermott (2002), *The Economist* industrial commodity price index.

Figura 16.5 Preço real do petróleo, 1861–2010



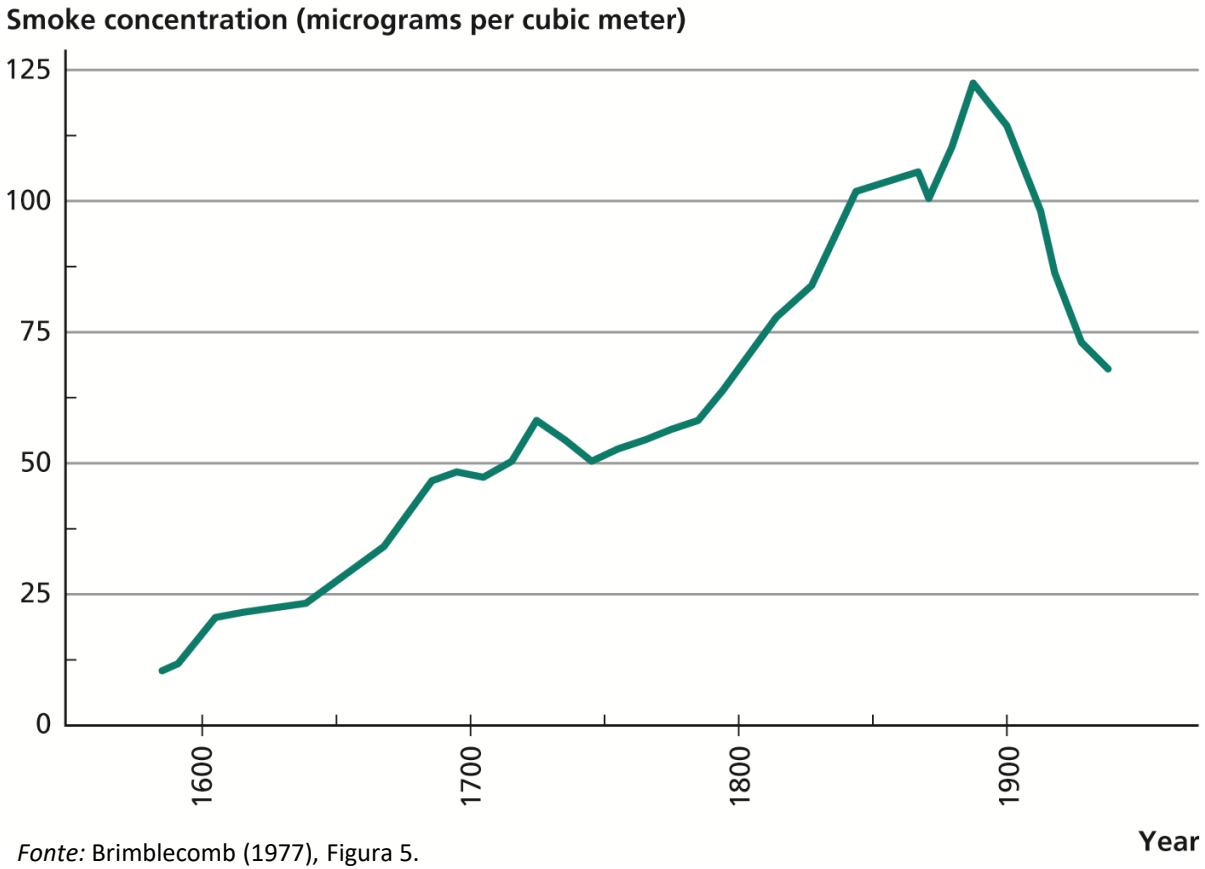
Fonte: BP (2011).

Figura 16.6 Curva Ambiental de Kuznets



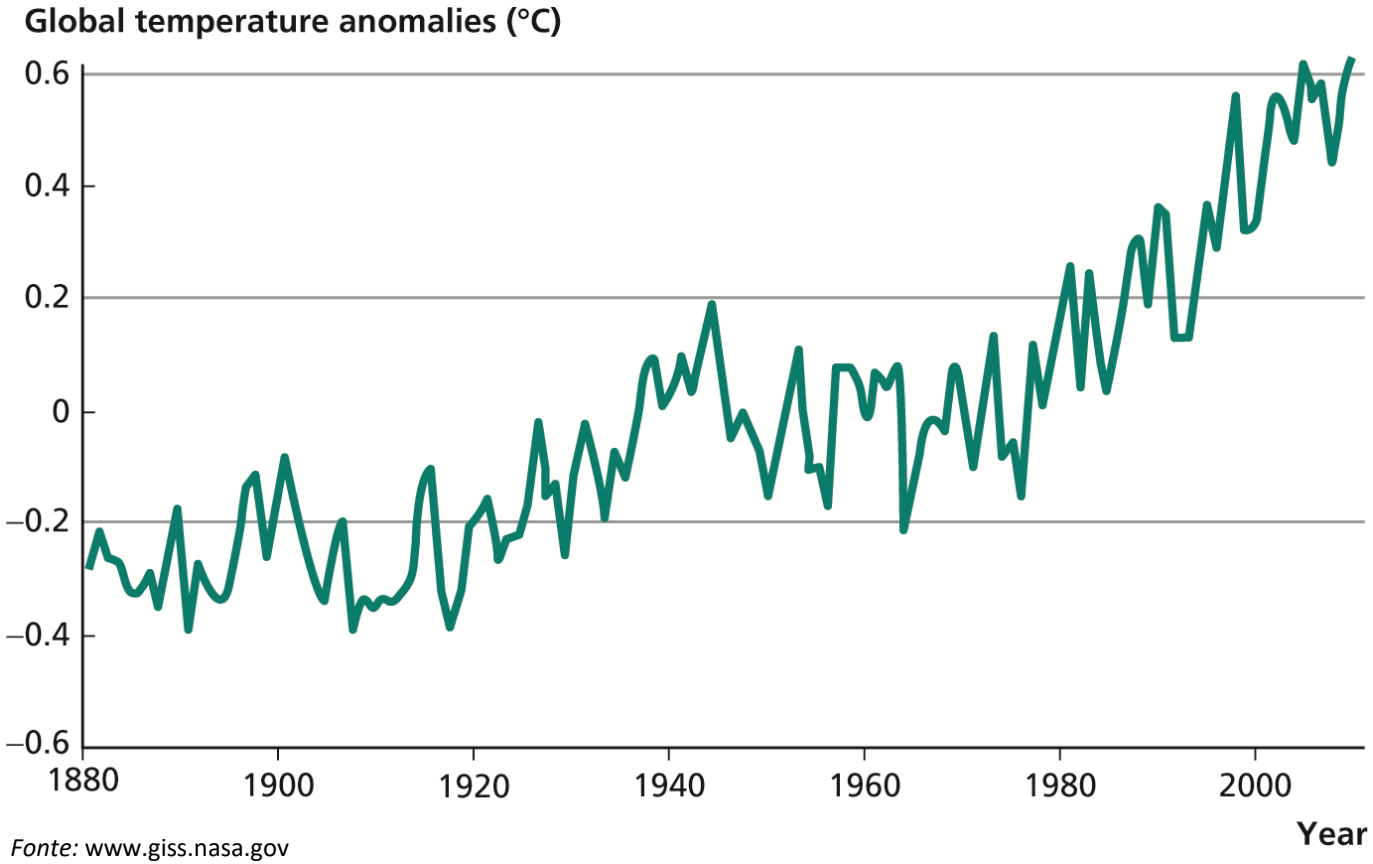
Fonte: Shafik (1994).

Figura 16.7 Concentração de fumaça em Londres, 1585–1940



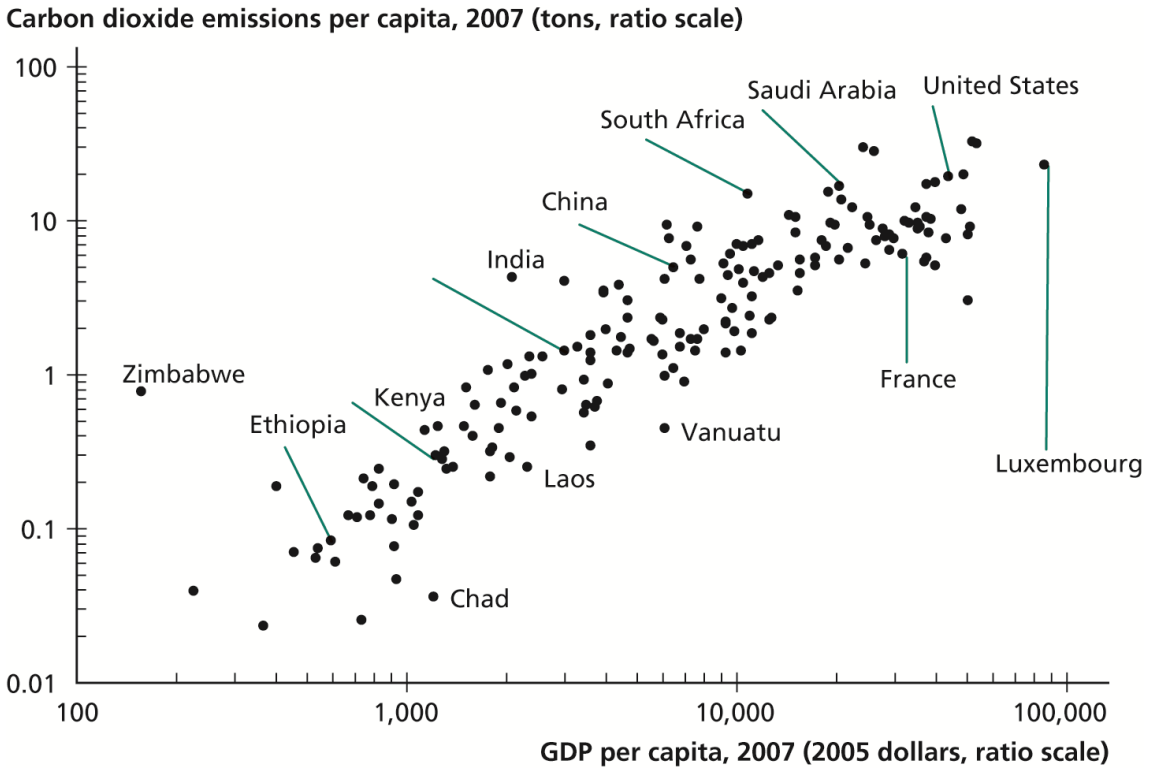
Fonte: Brimblecomb (1977), Figura 5.

Figura 16.8 Temperaturas médias globais



Fonte: www.giss.nasa.gov

Figura 16.9 PIB per capita e emissões de dióxido de carbono per capita



Fontes: Heston, Summers e Aten (2011), http://cdiac.ornl.gov/.

Capítulo 16

Apêndice: progresso tecnológico e exaustão de recursos

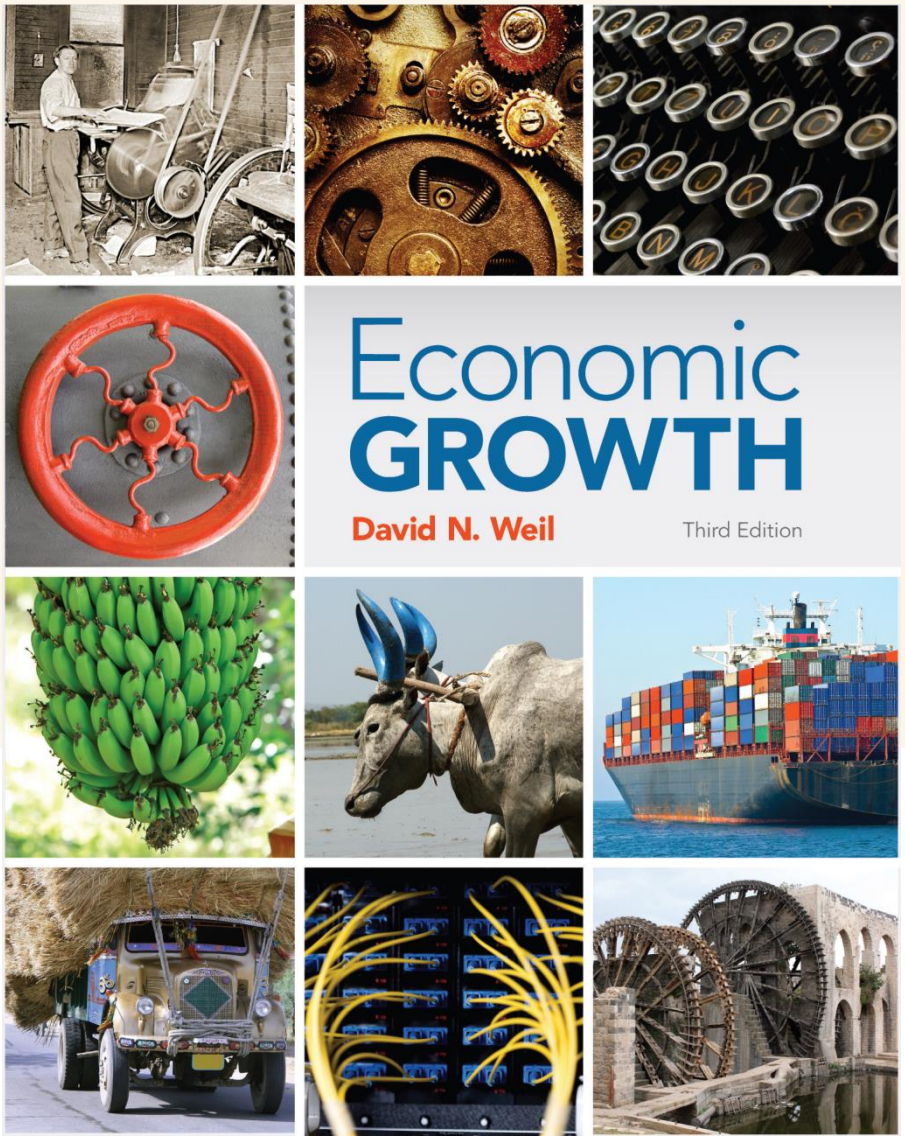


Figura 16.10 Relação entre uso e crescimento de recursos