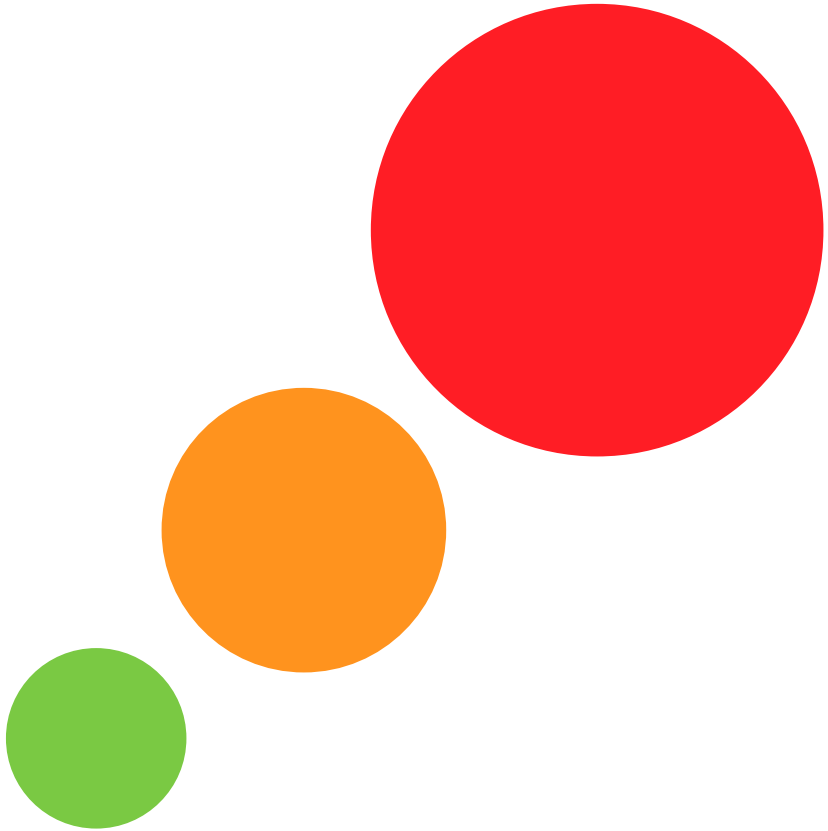


I'm forever plotting bubbles

Visualizing the growth in global consumption

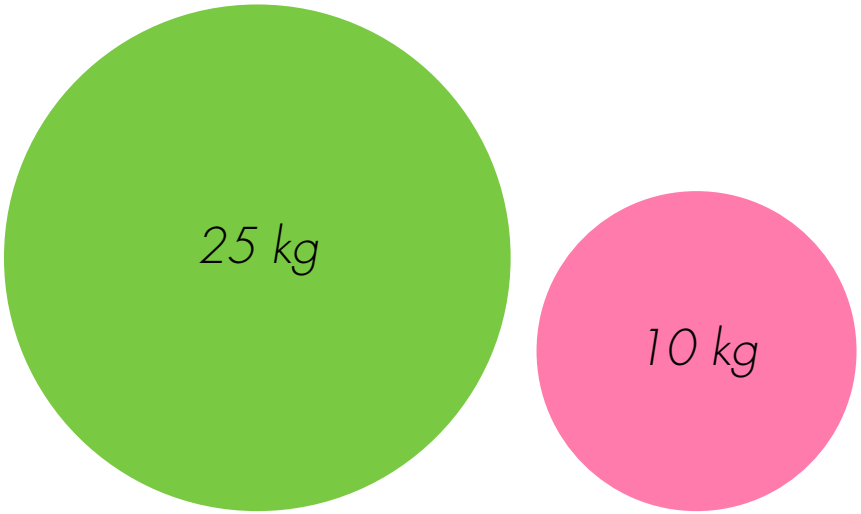
Jannik Giesekam - University of Leeds - 28th June 2012

A quick guide to bubbles

Most bubble graphs are of two types:

bubbles

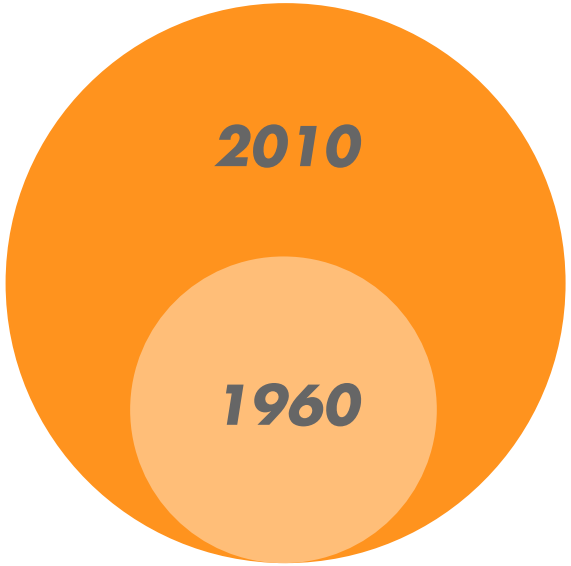
showing relative scale of consumption



Apples ***Pears***

bubbles within bubbles

showing changes over time



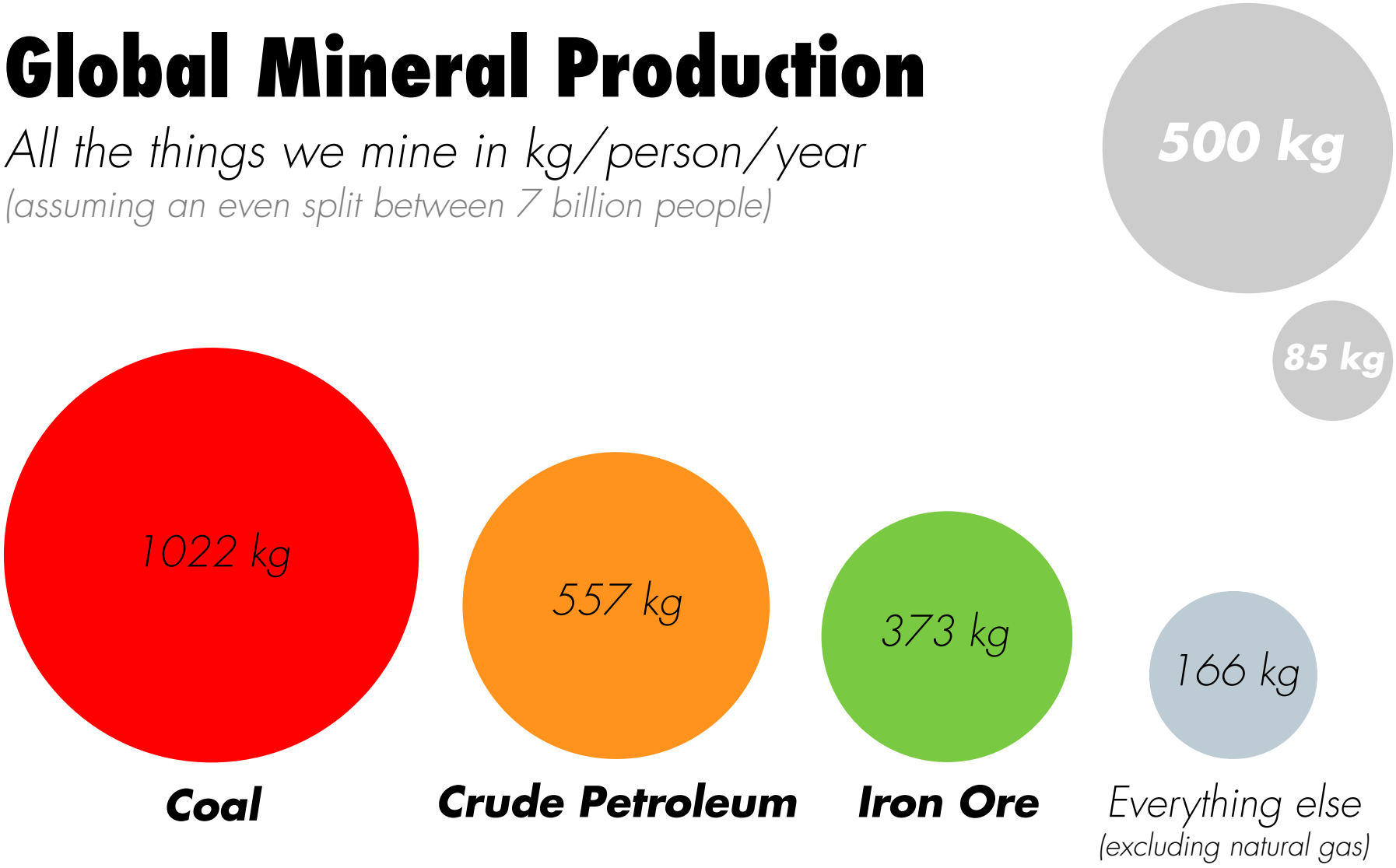
Oranges

Source: when and where the figures came from

Global Mineral Production

All the things we mine in kg/person/year

(assuming an even split between 7 billion people)



Source: BGS World Mineral Statistics 2010

What makes up 'everything else?'

Other things we mine in kg/person/year

(assuming an even split between 7 billion people)

Salt

Bauxite

Phosphate Rock

Gypsum

Estimate for minerals where figures are unavailable

Manganese

Potash

(K_2O content)

Chromium

Kaolin

Feldspar

Magnesite

Minerals <1kg

Copper

(Mined metal content)

Bentonite

Zinc

(Mined metal content)

Refined Lead

Barytes

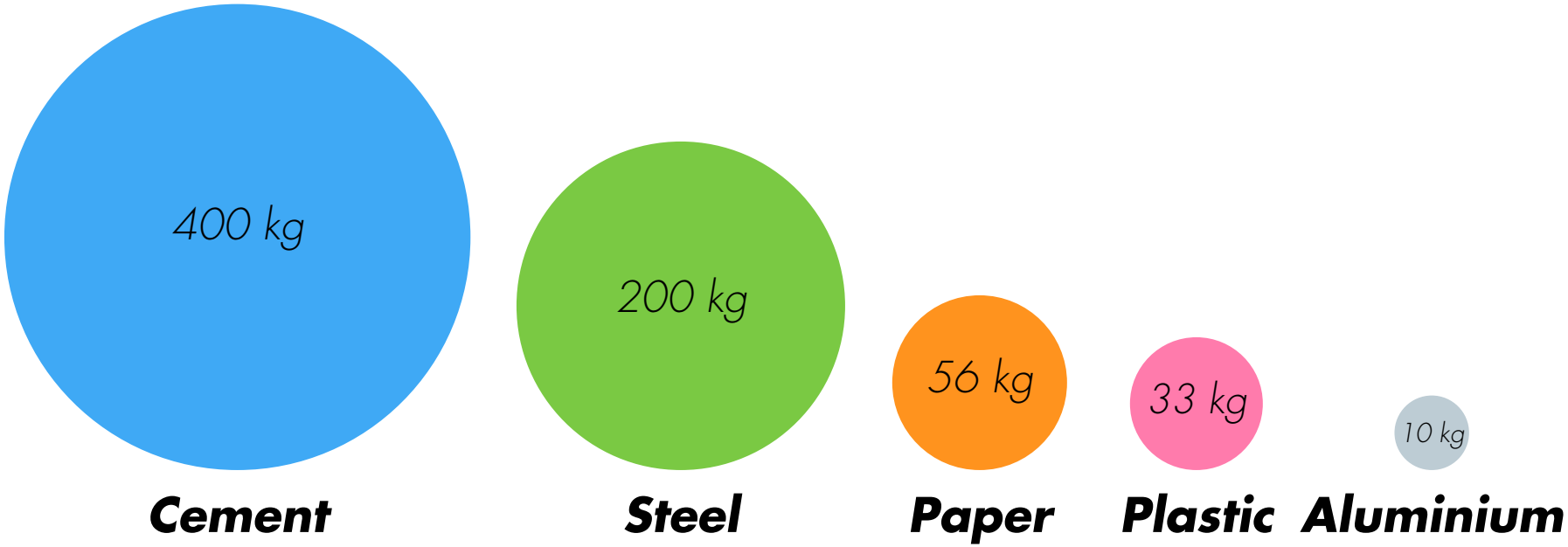
Strontium

Source: BGS World Mineral Statistics 2010

Production of Stock Materials

All minerals are converted by energy-intensive processes into stock materials from which final products are made

(figures in kg/person/yr assuming an even split between 7 billion people)

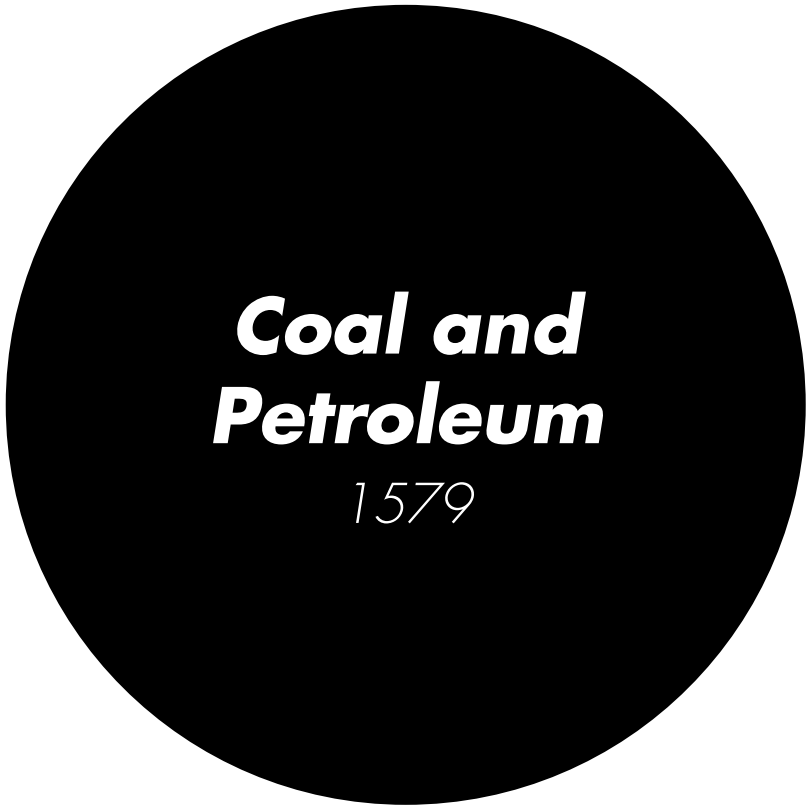


Source: Sustainable Materials with Both Eyes Open // Allwood & Cullen 2012

Global Mineral Production

All the things we mine in kg/person/year

(assuming an even split between 7 billion people)

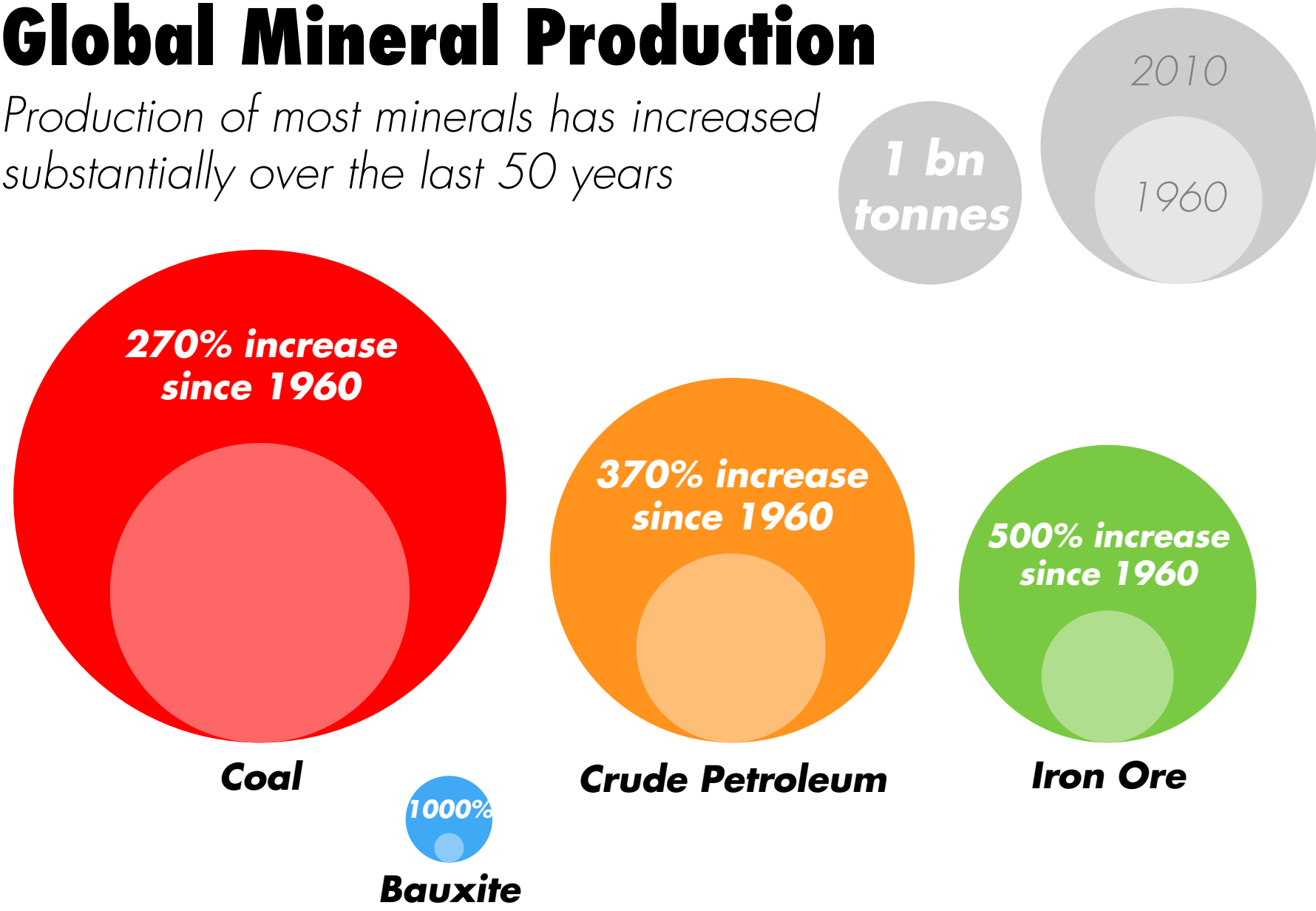


* excluding natural gas

Source: BGS World Mineral Statistics 2010

Global Mineral Production

Production of most minerals has increased substantially over the last 50 years

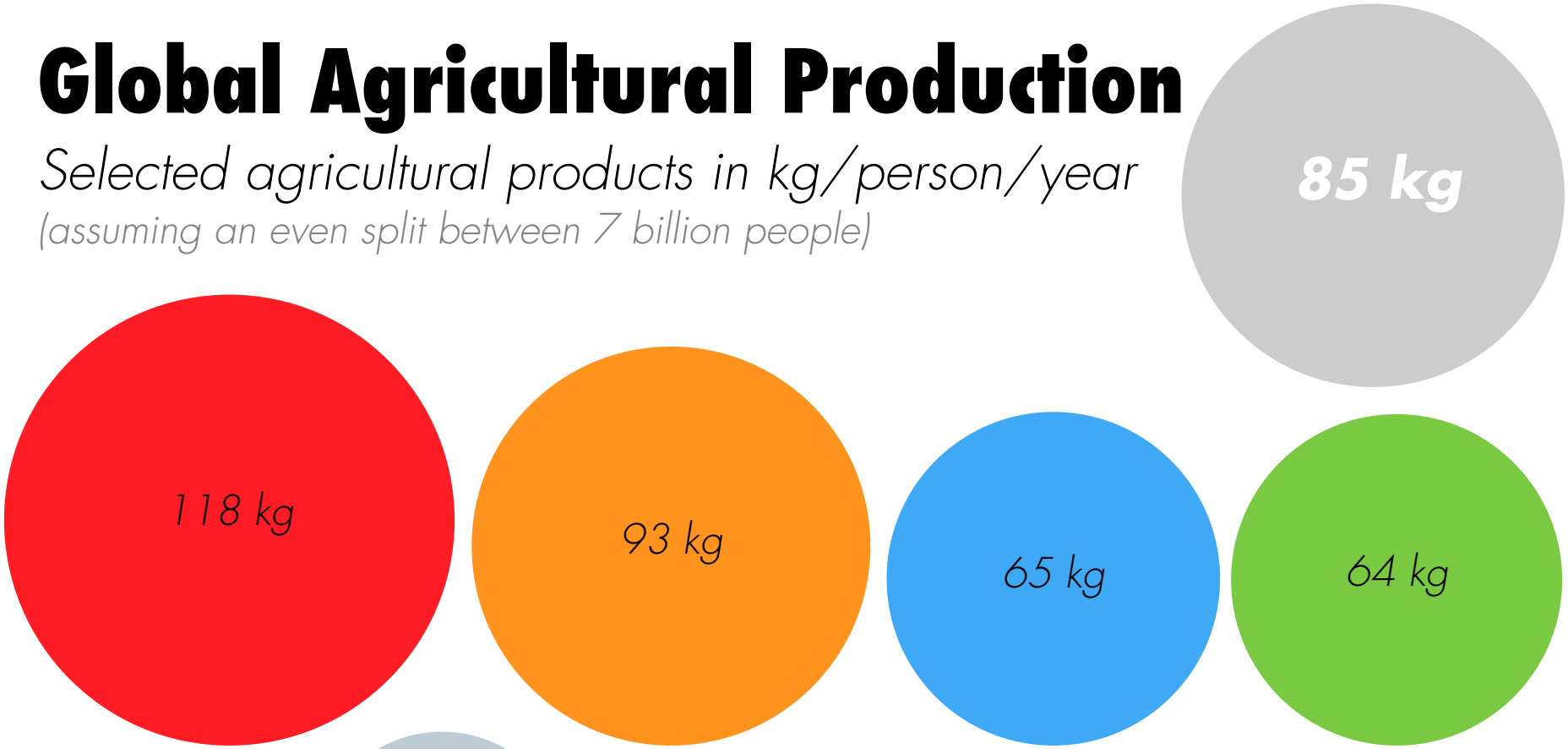


Sources: BGS World Mineral Statistics 2010

Global Agricultural Production

Selected agricultural products in kg/person/year

(assuming an even split between 7 billion people)



Corn

Wheat

Oilseeds
(soybean, rapeseed, and sunflower seed account for 75% of this total)

Rice
(milled)

Other Coarse Grains
(Sorghum, barley, oats, rye, millet and mixed grains)

Source: US Department of Agriculture Foreign Agricultural Service 2010/11

Global Agricultural Production

Selected agricultural products in kg/person/year

(assuming an even split between 7 billion people)

Sugar

Cotton

Pork

(carcass weight equivalent)

Chicken

(ready-to-cook equivalent)

Apples

Beef & Veal

(carcass weight equivalent)

Grapes

Coffee

(green)

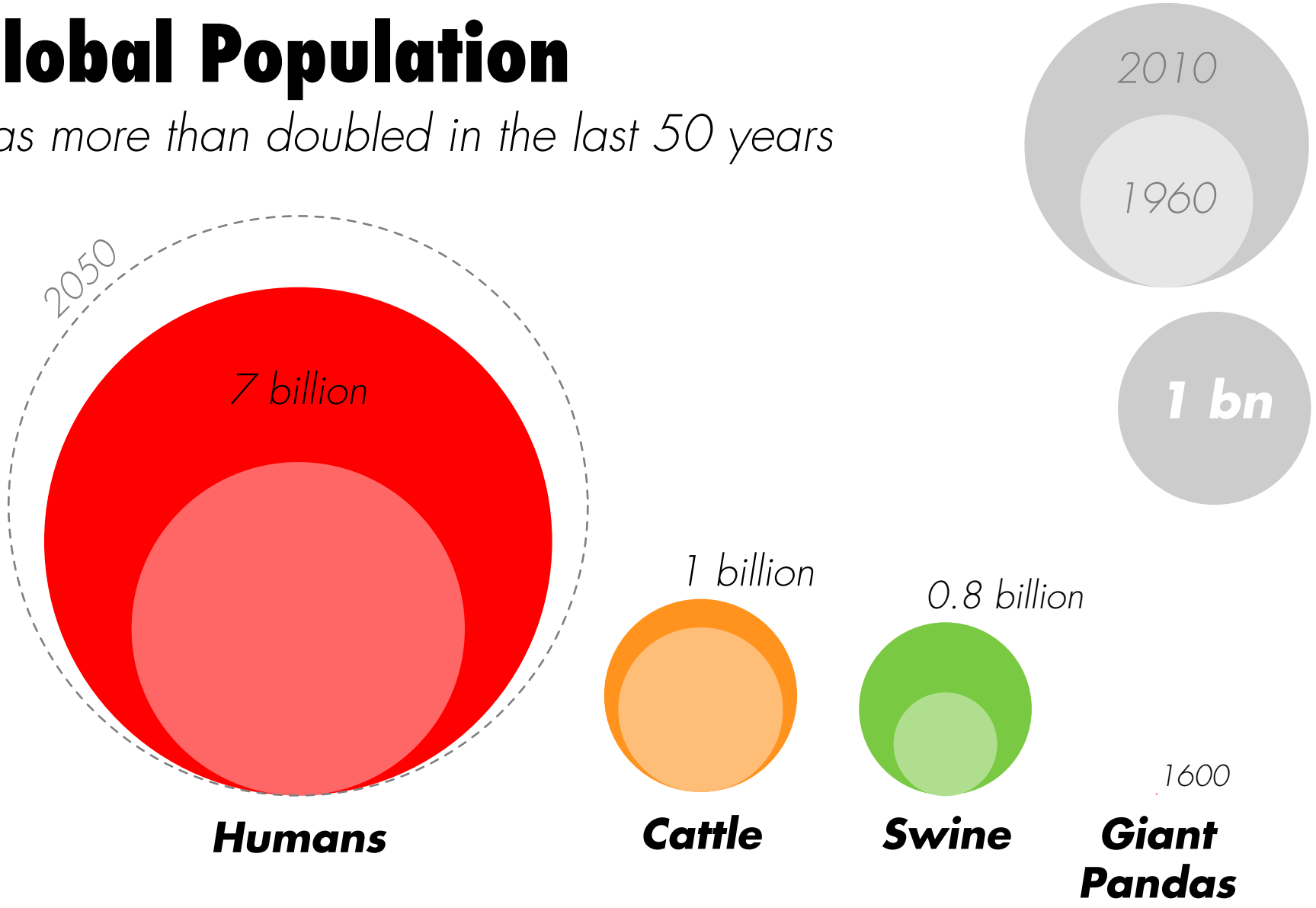
Turkey

(ready-to-cook equivalent)

Source: US Department of Agriculture Foreign Agricultural Service 2010/11

Global Population

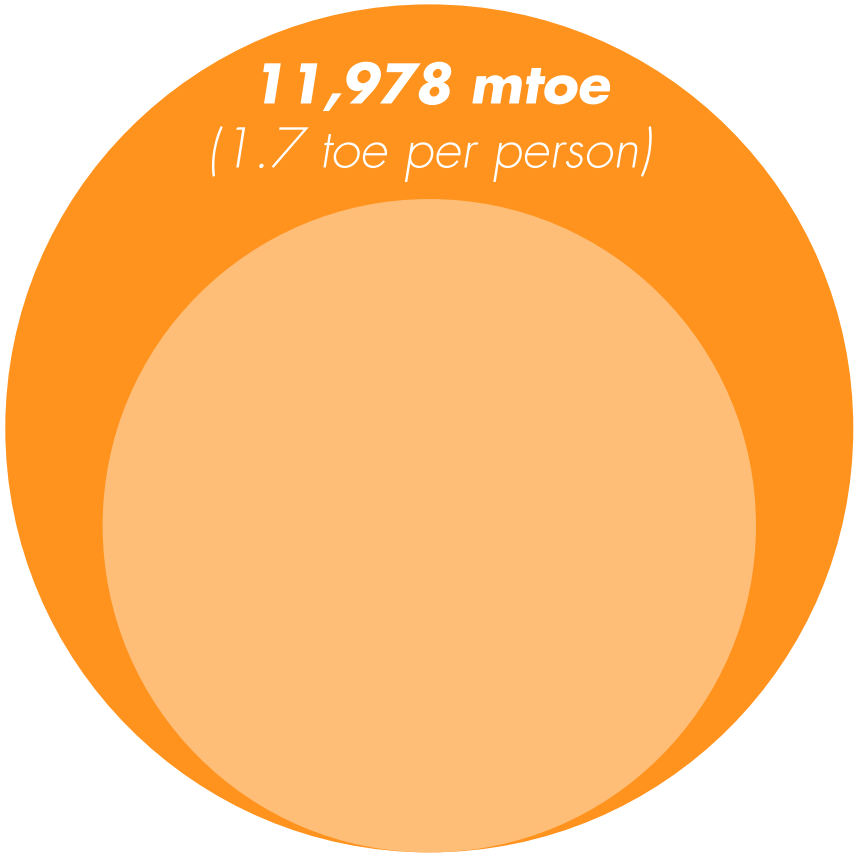
Has more than doubled in the last 50 years

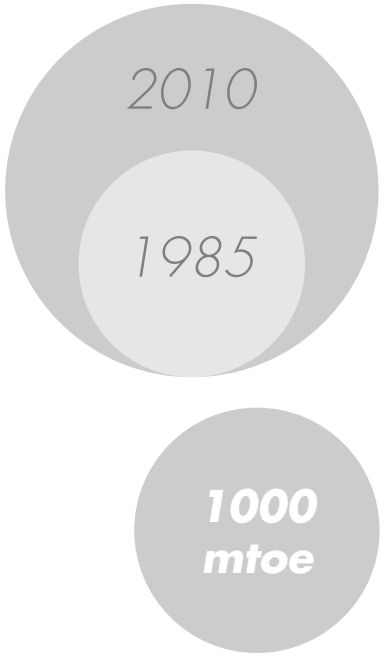


Sources: UN & USDA Foreign Agricultural Service 2010/11

Primary Energy Consumption

Has increased by two thirds in the last 25 years



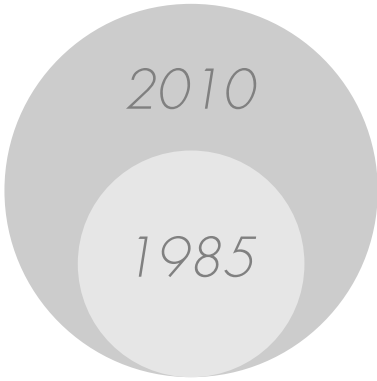


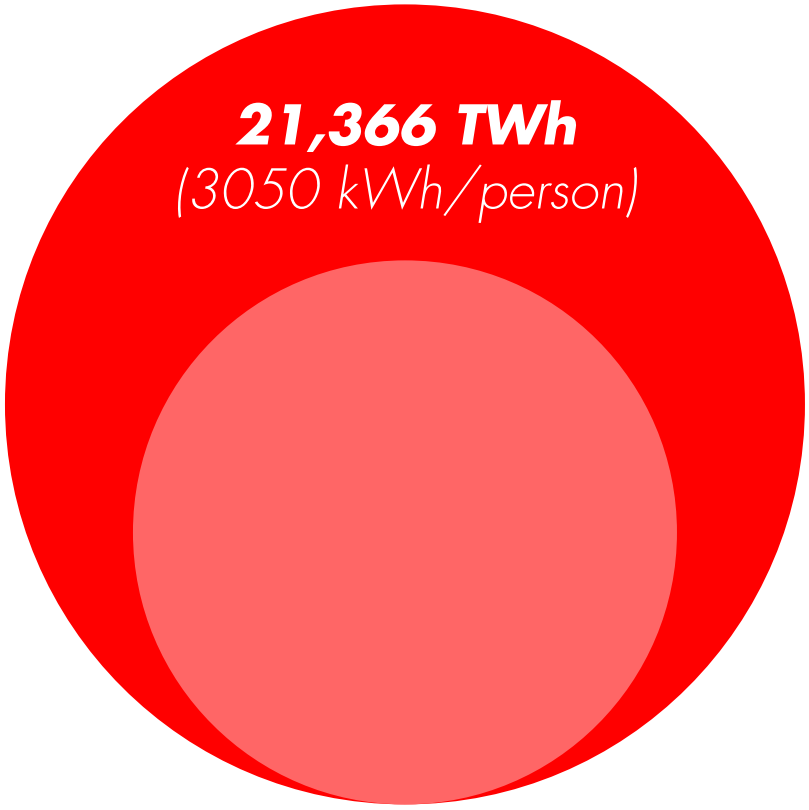
Global Primary Energy Consumption

Source: BP Statistical Review of World Energy 2012

Electricity Production

Global electricity production has more than doubled in the last 25 years



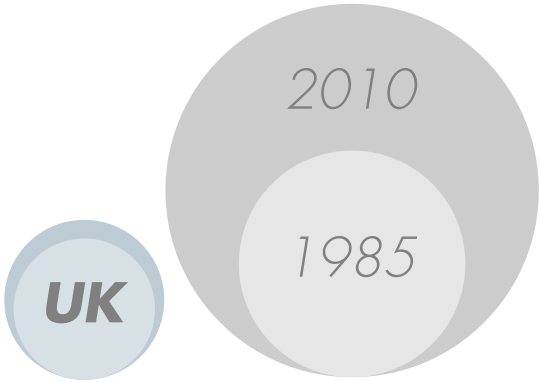


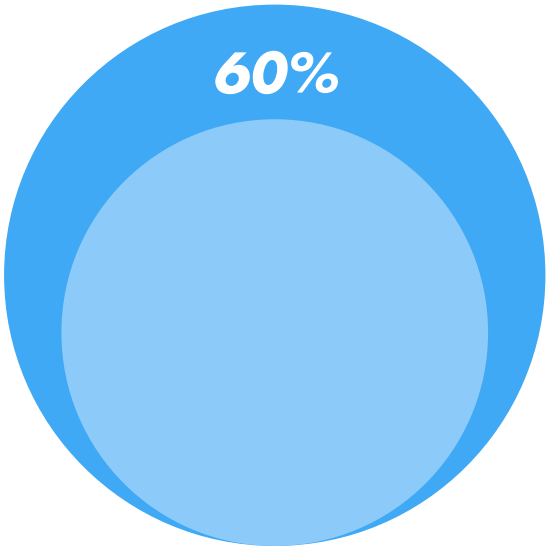
All Sources

Source: BP Statistical Review of World Energy 2012

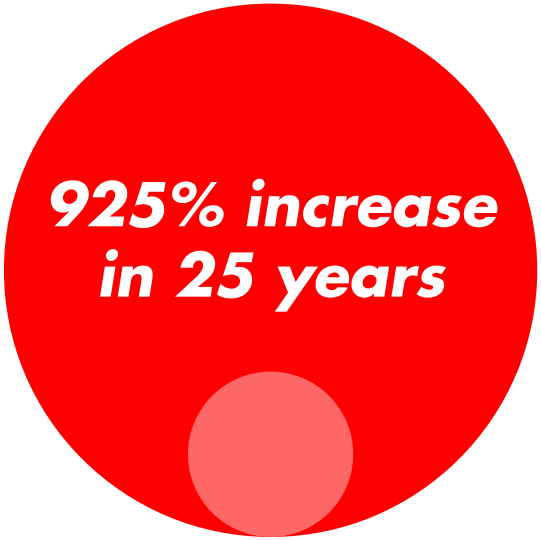
Electricity Production

These six countries accounted for two thirds of global growth in the last 25 years

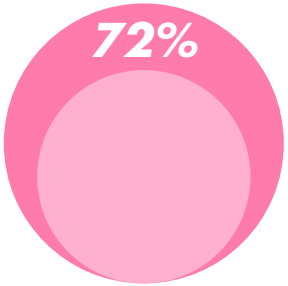




United States
4331 TWh



China
4207 TWh



Japan
1156 TWh

India
922 TWh

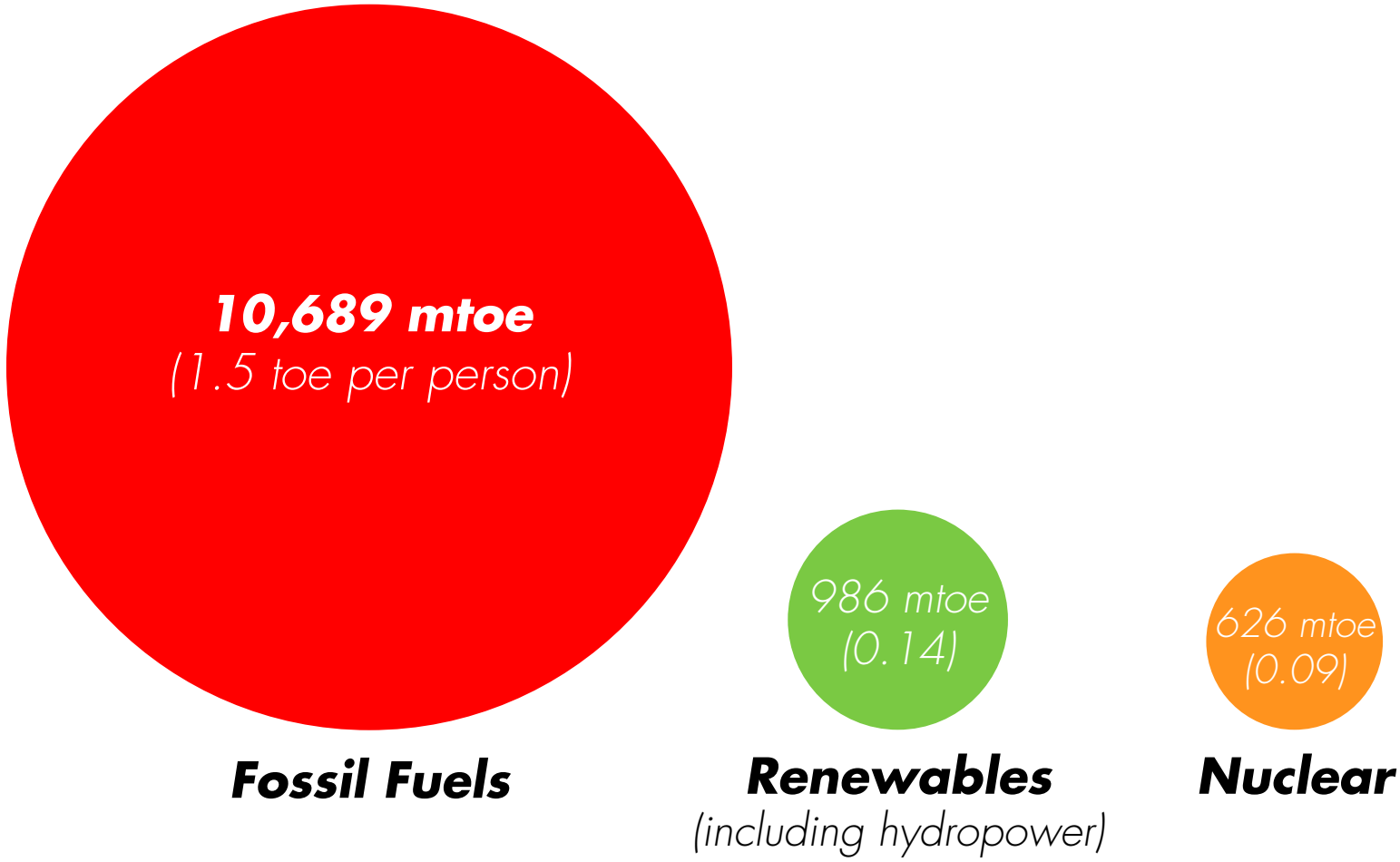
South Korea
496 TWh

Brazil
485 TWh

Source: BP Statistical Review of World Energy 2012

Primary Energy Consumption

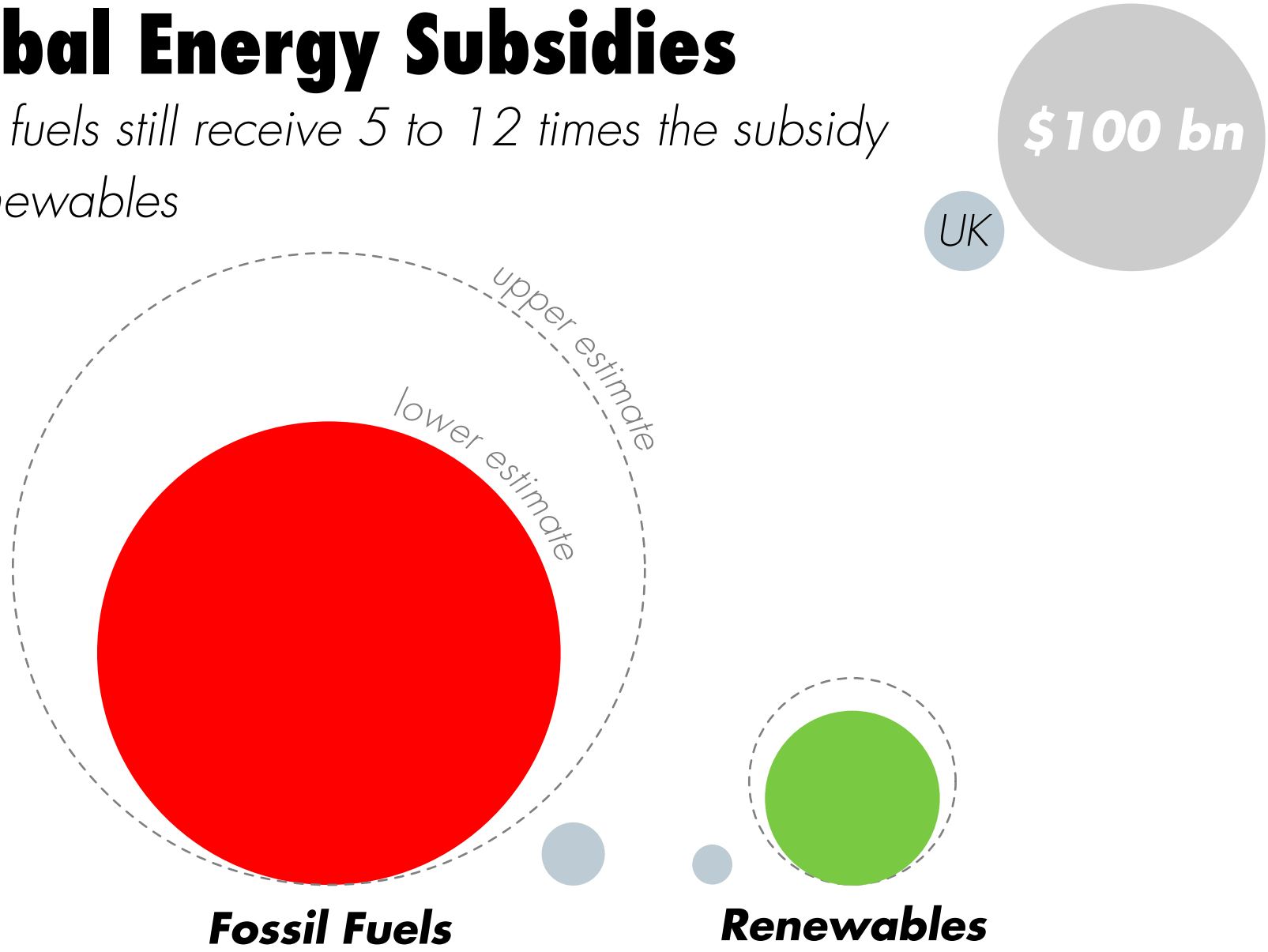
Fossil fuels still account for 86% of primary energy consumption



Source: BP Statistical Review of World Energy 2012

Global Energy Subsidies

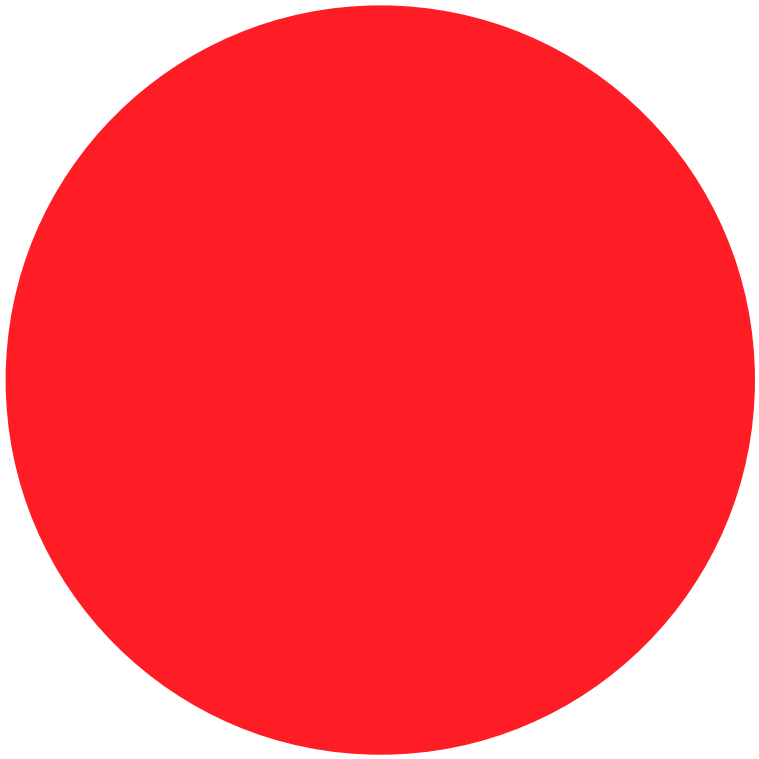
Fossil fuels still receive 5 to 12 times the subsidy of renewables



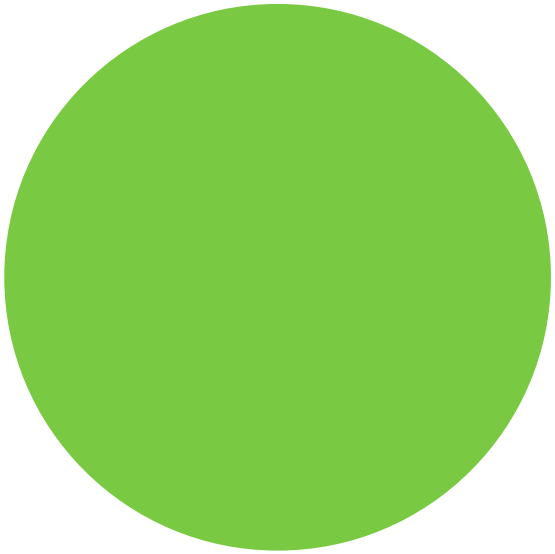
Sources: OECD, IEA & Bloomberg New Energy Finance 2011

New Energy Spending

Global expenditure on developing new oil and gas fields still outweighs investment in renewables



Oil and Gas Exploration and Production Spending



Annual Investment in Renewables

Sources: Barclays & Bloomberg New Energy Finance 2011

Gapminder Section of Presentation Not Available Online

Thank you
for listening

Any questions?

For more graphs check out www.jannikgiesekam.co.uk/research