



Global Environment and Its Challenges

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Global Developments



Mega Issue



Knowledge Needs



Trends in Global Development

Political: emergence of new powers in the global South as a result of global economic and geopolitical shifts



Source: World Databank, 2011

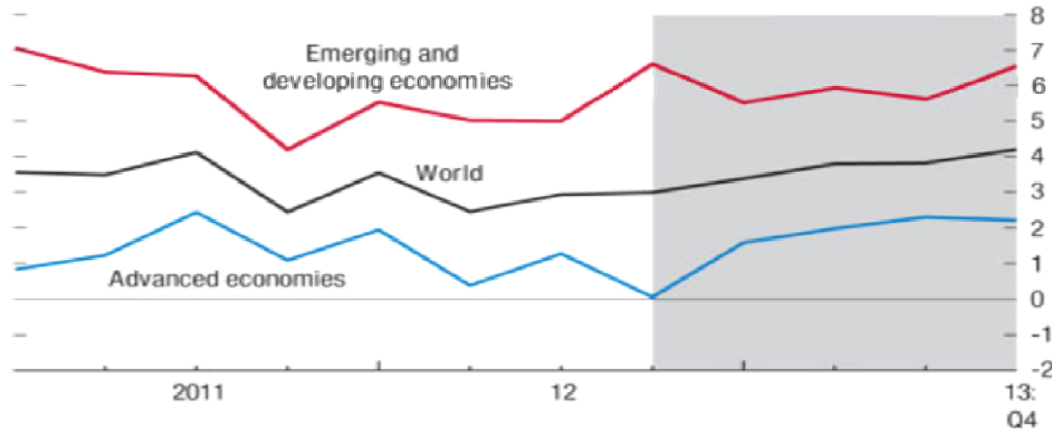
Trends in Global Development



Trends in Global Development

Economic: financial crisis and its impacts on the economy

Figure 1. Global GDP Growth
(Percent; quarter over quarter, annualized)



Source: IMF staff estimates.

Impacts

- Reduction in financial flows (ODA, FDI etc.)
- Reduction in export earnings

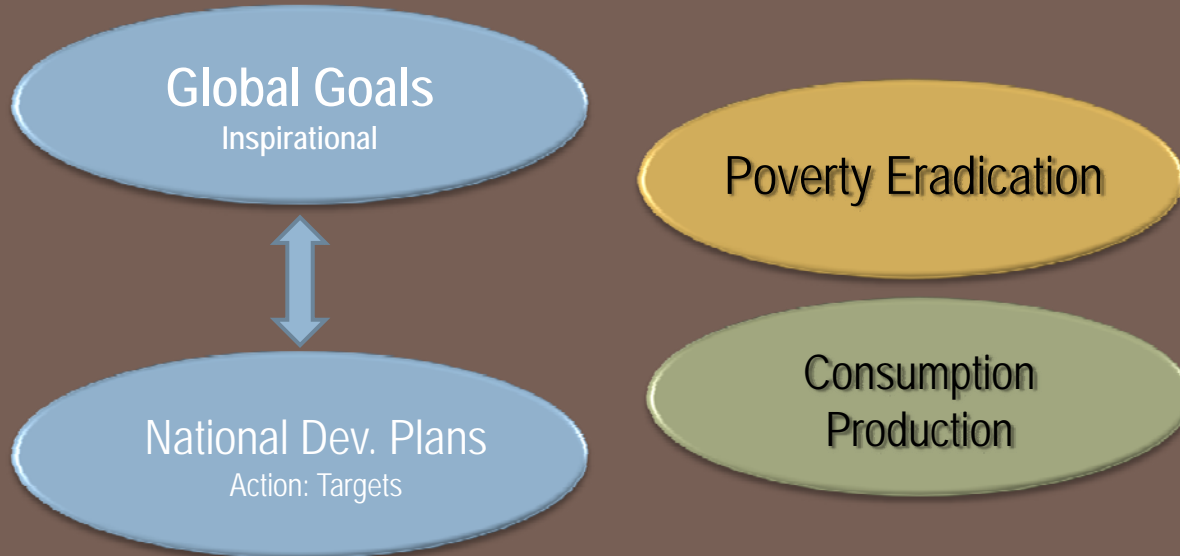
Source: IMF, World Economic Outlook, 2013

Overarching Goal: Sustainable Development, Poverty Eradication

Embrace Concept of Well Being: Human Well being focus within limitations of Planet well being.

Core Principles: Human Rights, Inclusive Social Dev., Equitable Econ. Dev., Env. Sustainability.

Global Goals: Meet Basic Needs of all Peoples by 2030-Zero Poverty, Hunger, Water, Energy Shelter



Post-2015 Development Agenda

Part I

Direction, Vision
100 yrs.

SD, Poverty
Well Being
Human
Well Being Planet

Part II

Action Plan for 15
yrs

Prioritization

SDGs
Means of
Implementation

Global Developments



Mega Issue



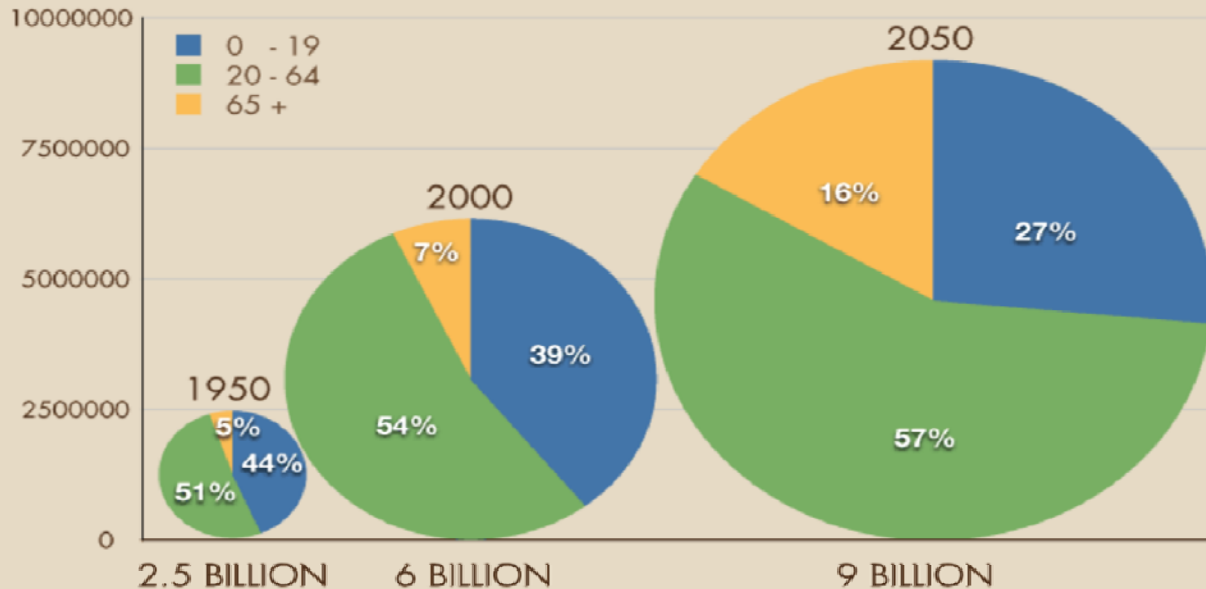
Knowledge Needs



Demographic Shift

Aging societies

POPULATION BY AGE GROUP



- 2050: More seniors than children first time in history
- dependency ratio will increase, creating challenges for social security and health care systems

Demographic Pattern: Urban vs Rural



RURAL



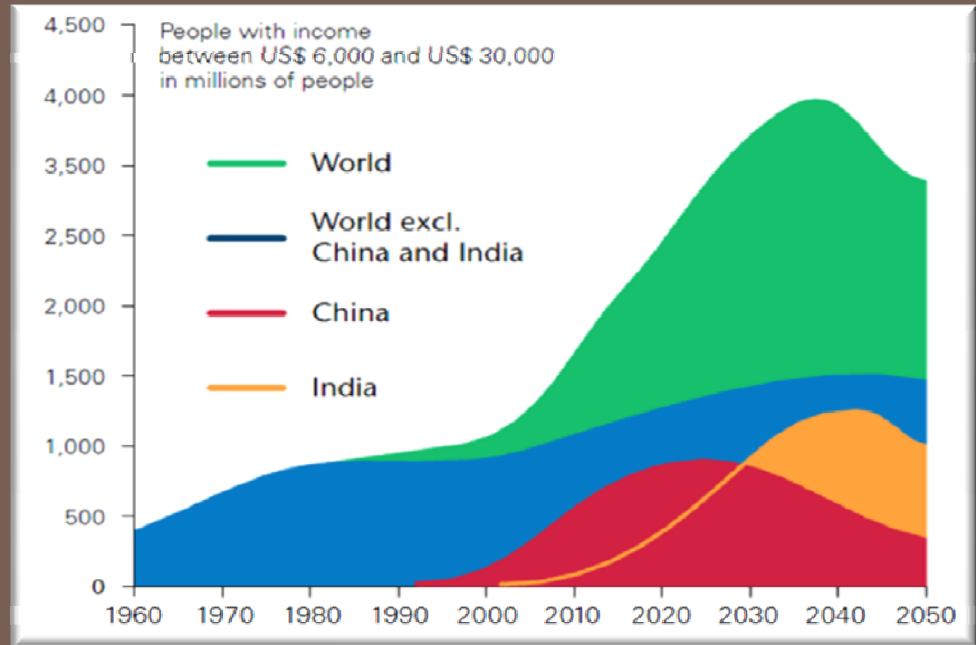
URBAN



- Total Population: 7.3 b – 2011: 9.0 b - 2050
- Urban Population: 3.6 b - 2011: 6.3 b - 2050
- Rural Population: 3.4 b - 2011 : 3.0 b - 2050 : 1.6 b - 2100
- Waste: Exponential Growth with increase in affluence

Goods Consumption Current and Future

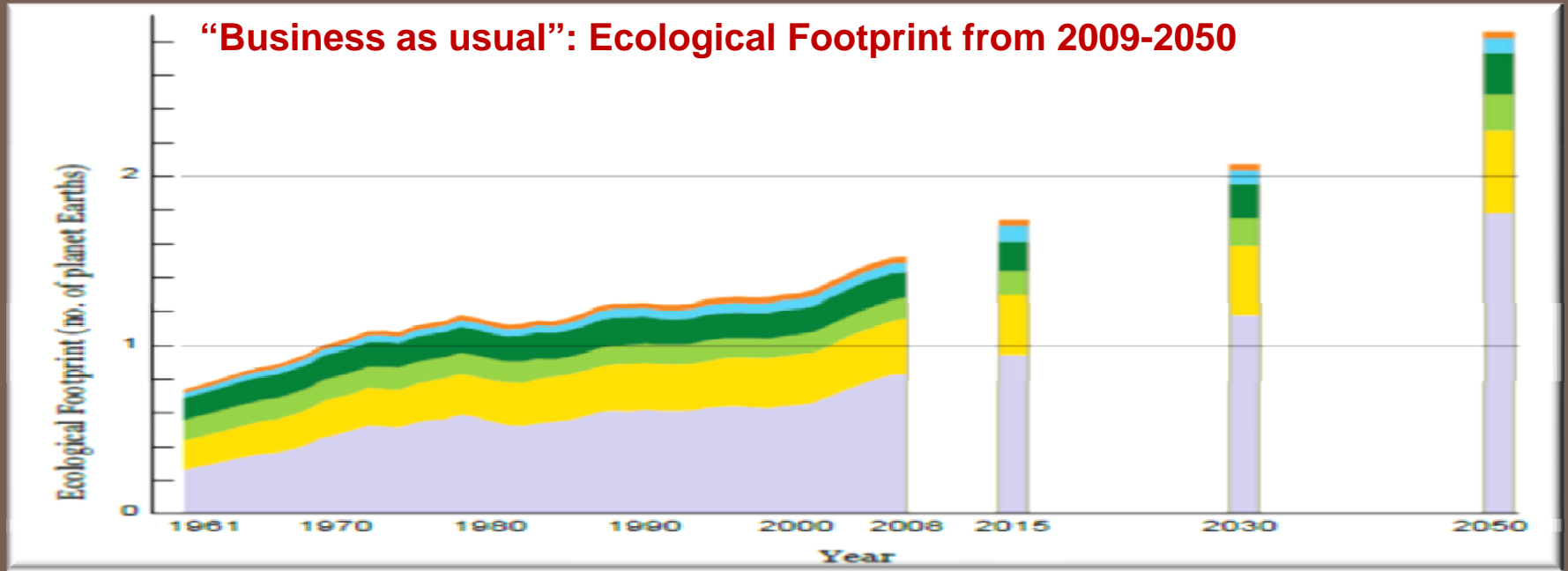
- 2030: Middle-class consumers will triple
- 2030: 300% growth of Middle classes in developing countries
- World GDP is projected to grow by 325% between 2007 and 2050
- 60% of GDP is consumer spending on goods and services
- 70 million people each year are entering an income bracket equivalent to between US\$ 6K and US\$ 30K



Source: Goldman Sachs, 2008

The expanding world middle class

Projecting the Ecological Footprint - 2050



Built-Up area

Fishing

Forest

Grazing

Crop Land

Carbon

UN FAO: demand for food, feed and fibers could grow by 70% in 2050

By 2050 humanity would require an equivalent of 2.9 planets to support the “business as usual” assumptions.

Source:WWF-2012

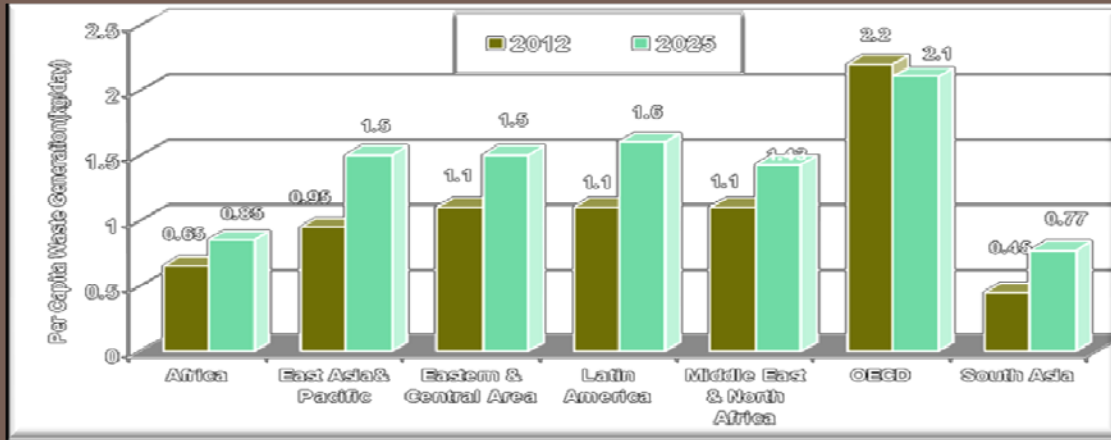
Trends in Global Development

Environmental: scarcity of resources

Mineral	Uses	2010 Production (‘000 of metric tons)	2010 Reserves (‘000 of metric tons)	Estimated Life Reserves (years)
Gold	jewelry, arts, electronics, dental	2.5	51	20
Silver	industry, coins, jewelry, photography	22.2	510	23
Copper	electrical wire, electronics, pipes, ingredient in brass	16,200	630,000	39
Lead	batteries	4,100	80,000	20

Asia: Mega-Issues

Environmental: Growth in waste quantities is fastest in Asia



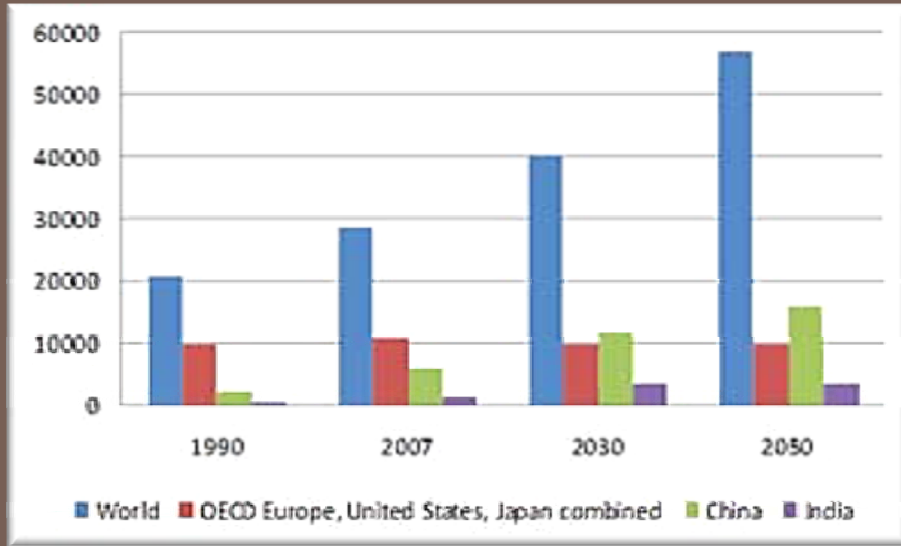
- In low- and middle-income countries, volumes of waste are growing and becoming increasingly more complex and hazardous
- In 2030, China will likely produce twice as much municipal solid waste as the United States.



Asia: Mega-Issues

Environmental: Emissions increasing

Million metric tonnes
of CO₂

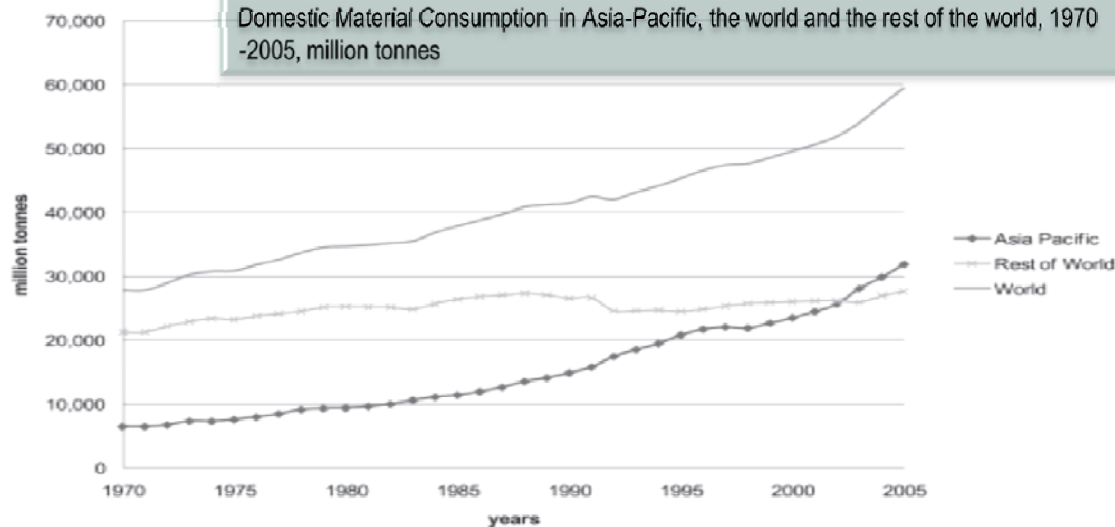


PRC and India will experience a significant increase in energy-related carbon emissions

- Under a business as usual scenario, the region will contribute around 45% of global energy-related CO₂ emissions by 2030.
- Urban buildings and transport will account for the bulk of energy consumption and carbon emissions.

Asia: Mega Issue

Environmental: Economic growth leading to rapid resource depletion



- Asia-Pacific has become the single largest user of natural resources.
- In 2005, resources used amounted to around 32 billion tonnes, or 8.6 tonnes per capita.
- Many countries have reached the limits of domestically available resources, leading to net imports.

Global Developments



Mega Issue

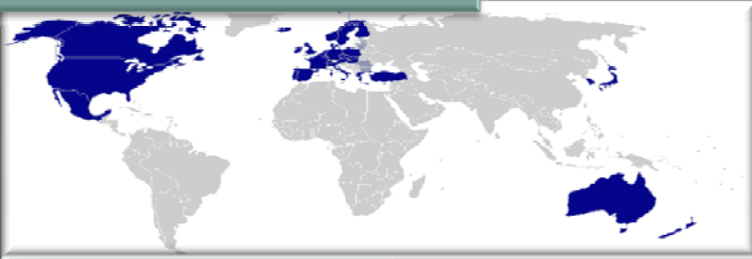


Knowledge Needs



Knowledge Needs 1: Guidance: Multi Polar World

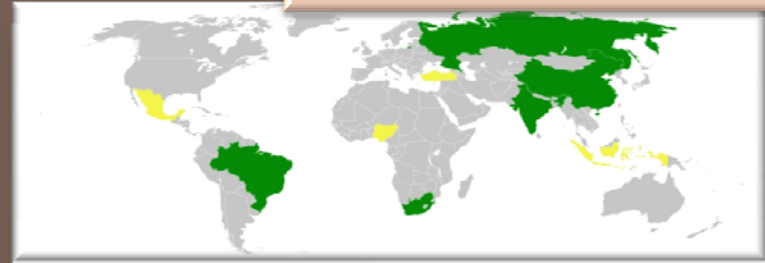
OECD



- Liberal Democracy
- Private Capital
- Abundance
- GDP -> Stuff



BRICS MINT



- Decentralized Democracy
- Public Capital
- Frugality
- Well Being -> Happiness



Knowledge Needs 2: Urban Sustainability

- **60% of cities yet to be built**
 - ▶ Climate Resilient, Low Carbon, Waste Recycling
 - ▶ Buildings as net producers of energy
 - ▶ Decentralized waste, water energy
 - ▶ Compact (people & jobs). Traditional Support Systems?
- **Prevention Policies**
 - ▶ Sustainable land use, minimize ecological foot print
 - ▶ Reduce per capita resource use
 - ▶ Integrated comprehensive waste management

Knowledge Needs 3: Markets for Mother Nature

What is wrong? What can we do?

- Population 2b→7b→9b→11b
- Crisis: Finance, Food, Water, Energy
- Poverty, Inequality
- Social Unrest, Terrorism, Civil Wars, Threat of Wars
- Climate Change: Floods, Droughts, Fires
- Depletion of Natural Resources, Environment Services



**Mother Nature:
Biosphere**

**Markets:
Consumption**



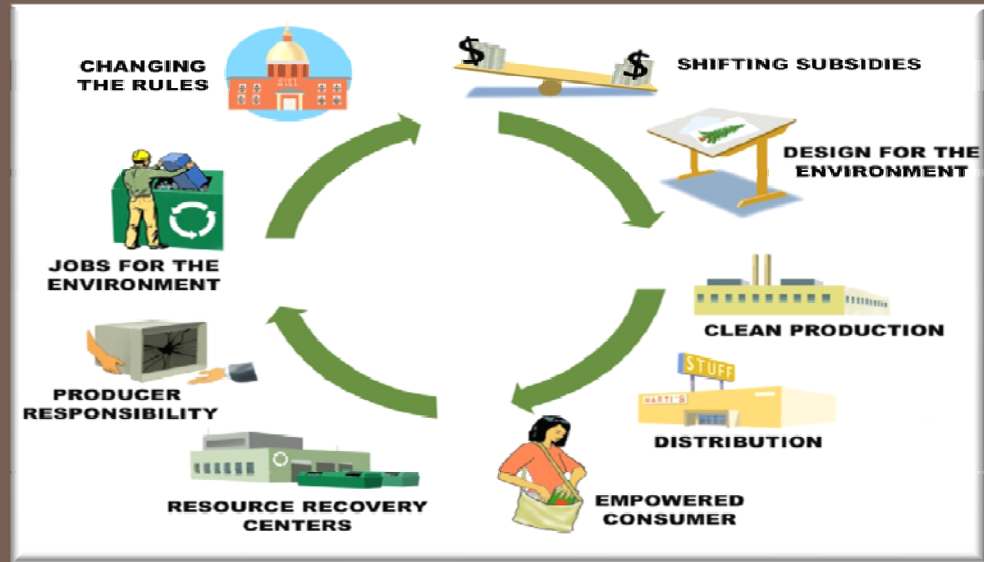
Knowledge Needs 4: Sustainability

From a sectoral to a holistic approach

- Consider all aspects of the system
- Investigate systemic changes

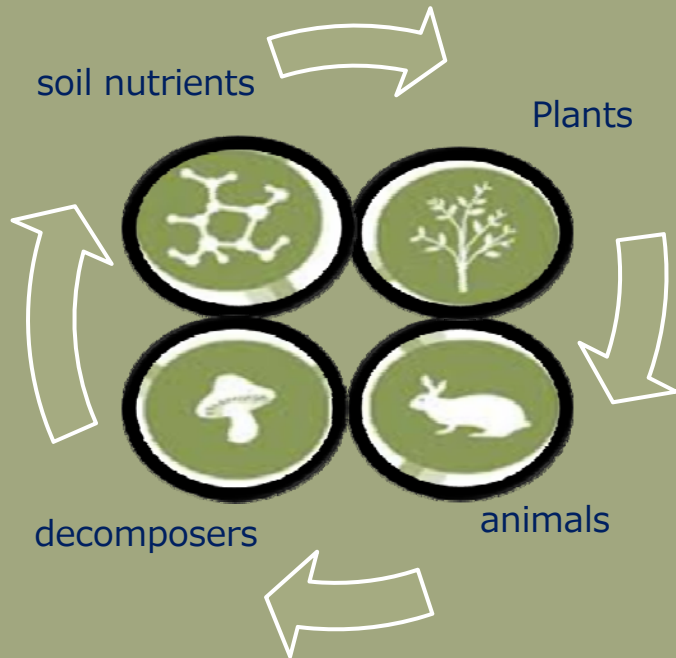


Sustainability in every human activity

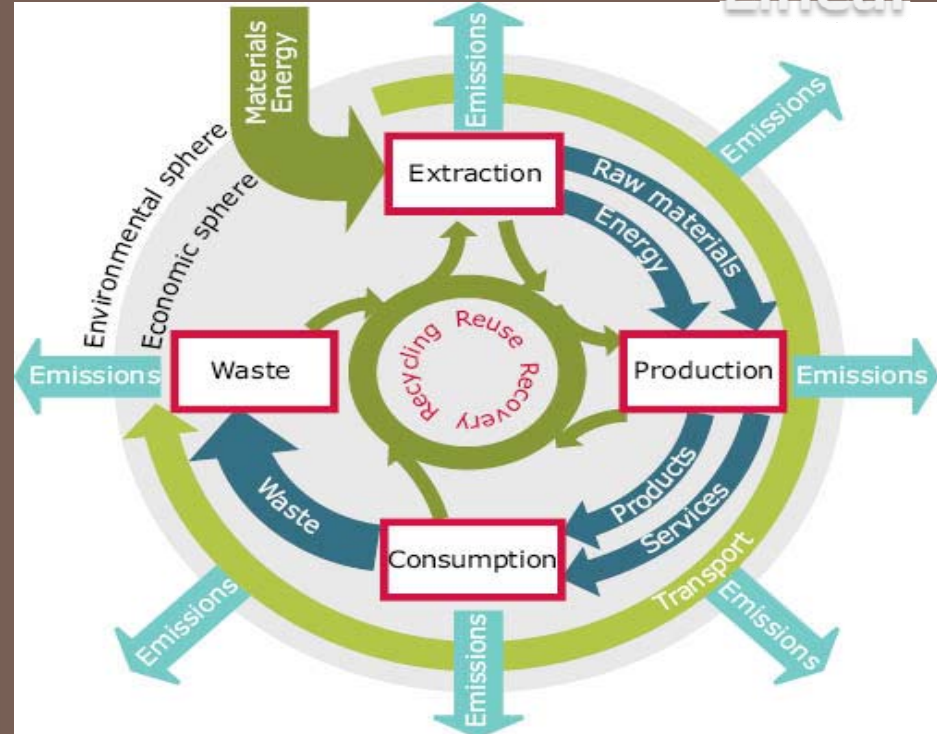


Knowledge Needs 5: Bio-mimicry

Nature: Closed loop



Man Made: Linear



Japan's No Food Loss

- 2010 Total Food Waste 17 mt p.a. Japan depends on import about 60% of its food.
- Business (manufacturers, retailers, restaurants) from 6 mt to target 3 mt recycle.
- Household from 11 mt to 10 mt recycle.

■ The food self-sufficiency (2007)

