

Eco-efficient Cities – *quality of life for all at least cost for the globe*

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Presentation Overview

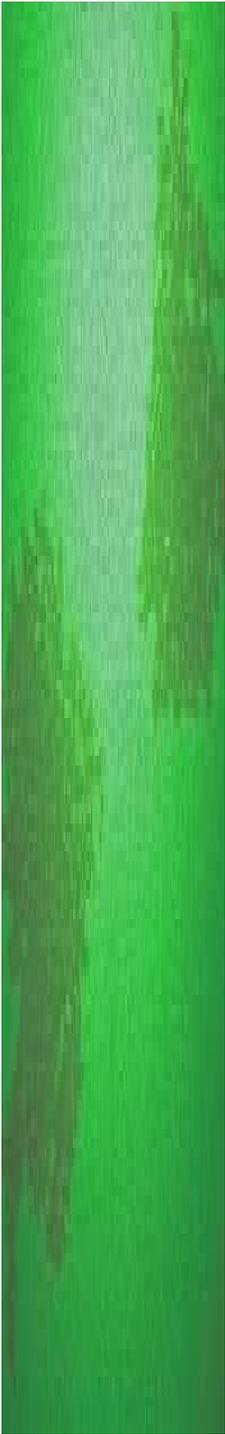
- **Eco Efficiency**
- **Urbanisation-Ecology Interface**
- **Urban Eco-efficiency**
- **Poverty and Eco-efficiency**
- **How to go ahead**
 - **Ecological footprint approach**
 - **ecoBUDGET**
 - **Eco-efficient Cities program**

Our Ecological Burden

- Population growth and increases in consumption is **increasing humanity's ecological burden** on the planet
- Total global **consumption** of natural resources has risen by **fifty percent** since 1970, while Earth's natural wealth has decreased by over **thirty percent**.

(World Wildlife Fund: Living Planet Report 2000)

- It takes more than **one year and two months** for the Earth **to regenerate what we use in a single year** .
- Depletion of ecological assets systematically undermines the well being of people. Livelihoods disappear, resource conflicts emerge, land becomes barren, and resources become increasingly costly or unavailable.



What is Eco-efficiency ?

Industry-oriented concept, with broader applications and acceptance

Delivery of competitively priced goods and services that satisfy human needs and bring quality of life while progressively reducing ecological impacts and resource intensity throughout the life cycle, to a level at least in line with the Earth's estimated carrying capacity.

(The term 'eco-efficiency' was coined by the WBCSD in 1992)

More services and well-being produced using less **raw materials** and **energy**.

Eco

“eco” = ?

Economic

OR

Ecology

“eco” refers both to economics, as in increased profitability, productivity, and competitiveness, and also to ecology, or less impact on the environment

Efficiency

input-output efficiency in all stages of production, consumption and disposal

- capital productivity
- labour productivity

+

- energy productivity
- resource productivity

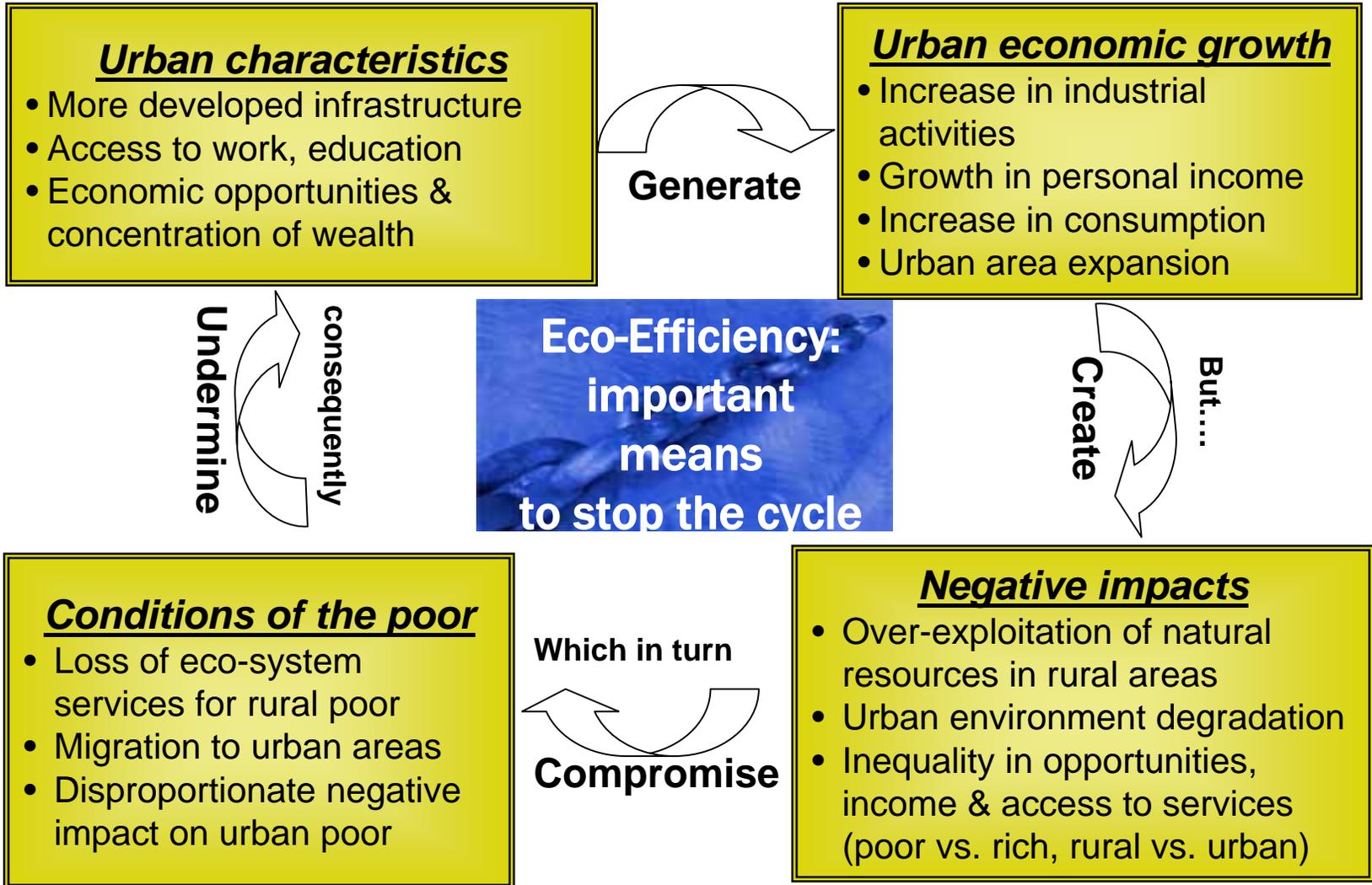
Why Cities should be Eco-efficient

It is now much more important to consider the environmental impacts of urban areas;

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- Cities have **most rapidly growing** population of the world.
- Global urbanization rate will reach **50 percent in 2007**, and 60 percent in 2030 (United Nations Population Division).
- Nearly all of the additional population growth is expected to be concentrated in urban areas .
- **No city or urban region can be sustainable on its own**, prerequisite for sustainable cities is sustainability of the global hinterland.

Urbanisation Impact cycle

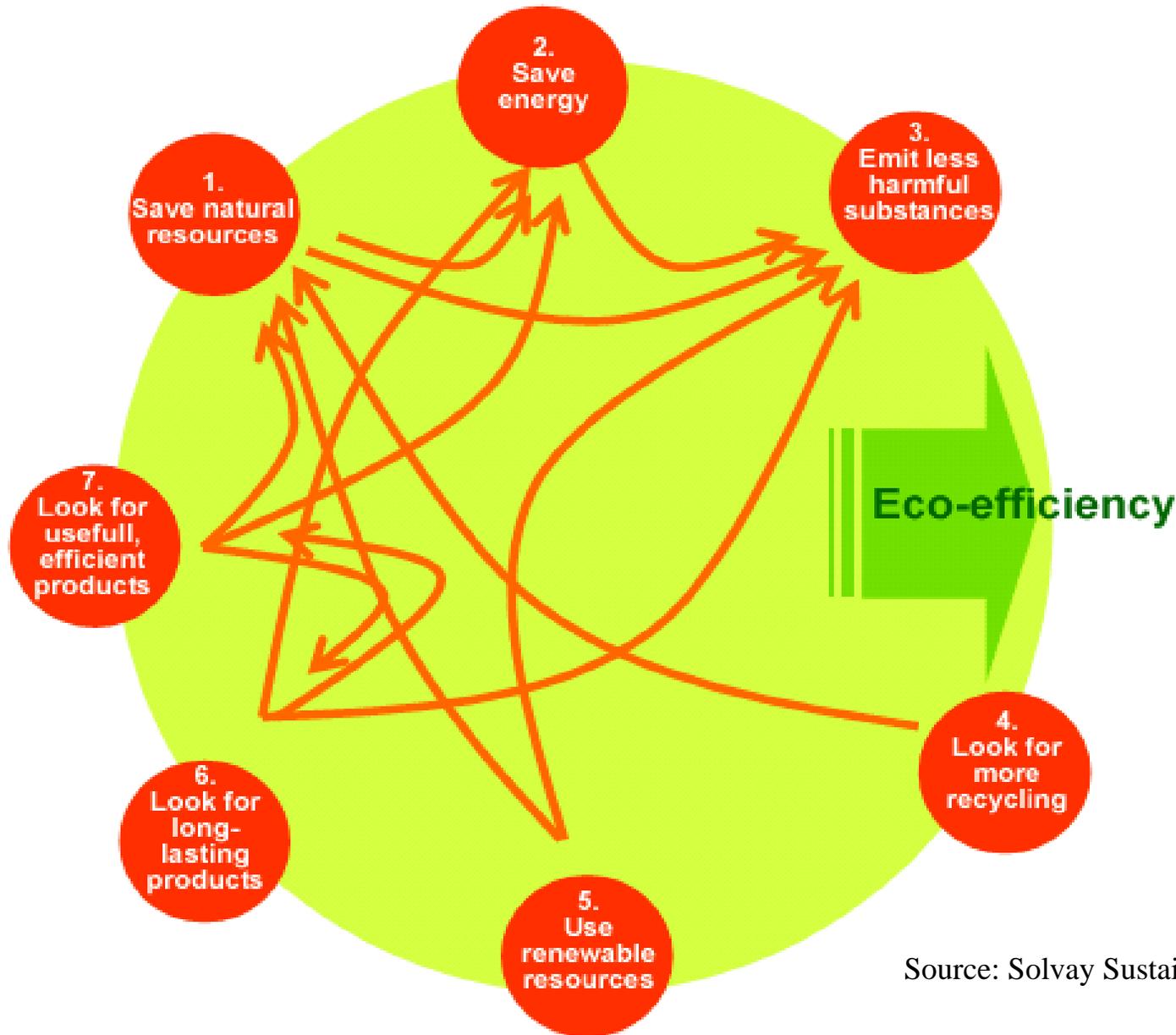


The Way Cities are heading

www.newint.org/issue313/facts.htm

- **AIR QUALITY:** One fifth of the world's population live in highly polluted cities.
- **ENERGY:** Cities account for 80 of the world use of fossil fuels.
- **FOOD:** Hundreds of thousands of tones are transported into the world's cities every day.
- **TRANSPORT:** In some cities, cars and related infrastructure take up 33% of city space.
- **SOLID WASTE:** Large amounts of waste discarded by cities. without proper sanitary disposal.
- **SEWAGE:** Many cities discharge untreated sewage into local water resources.

What eco-efficiency means in practice



These seven ways are equally valid for our cities and responsible communities, as for industry

Source: Solvay Sustainable Development

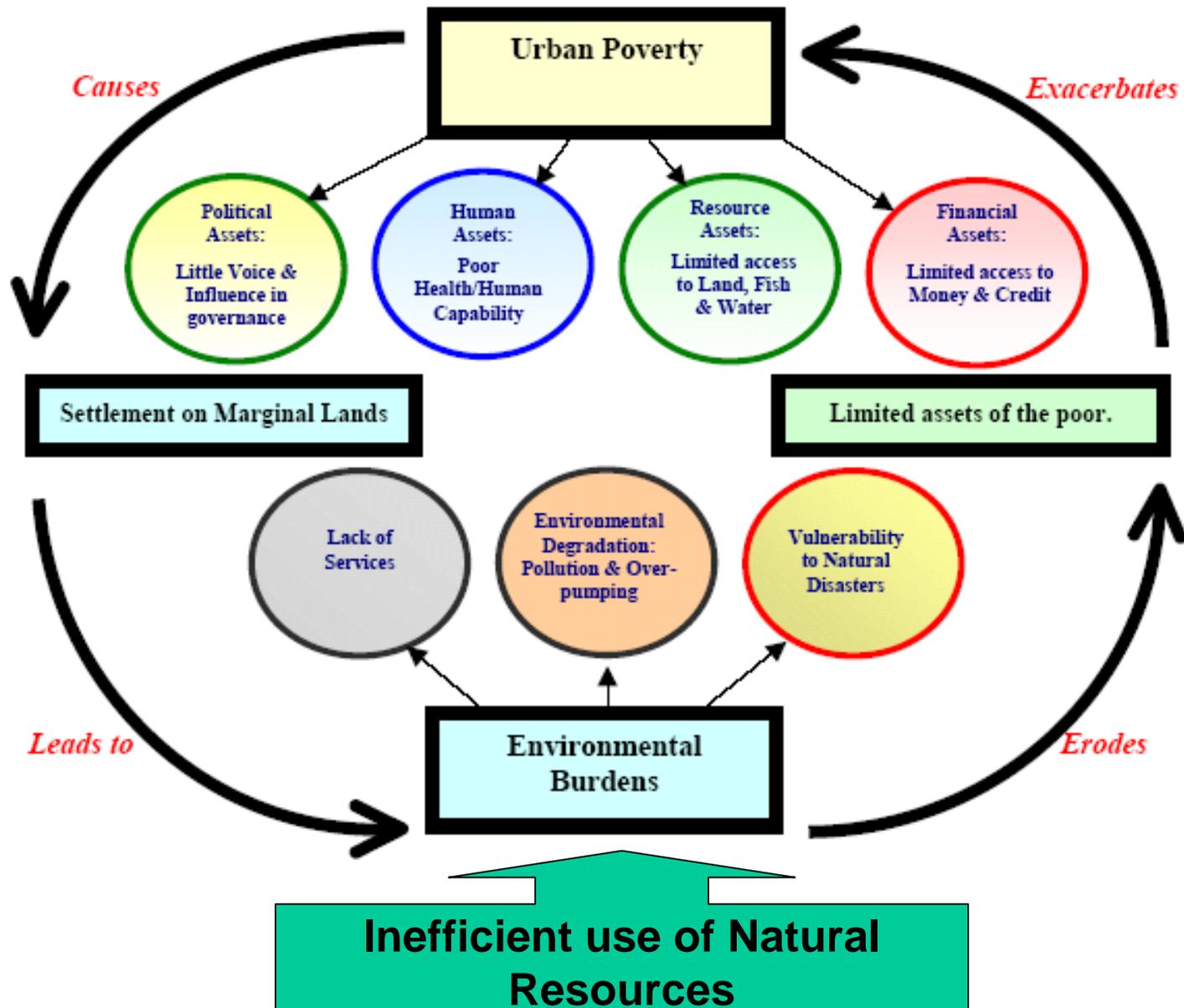
Urban Eco-efficiency



"Eco-efficient" innovations allow cities to

- **efficiently use inputs**– i.e. raw materials ,energy etc
- **offset the costs of improving environmental impact.**
- **enhance resource productivity making cities more competitive.**
- **resources equity** particularly relevant to conditions where resources are scarce and is thus linked to poverty alleviation

Urbanisation - Poverty

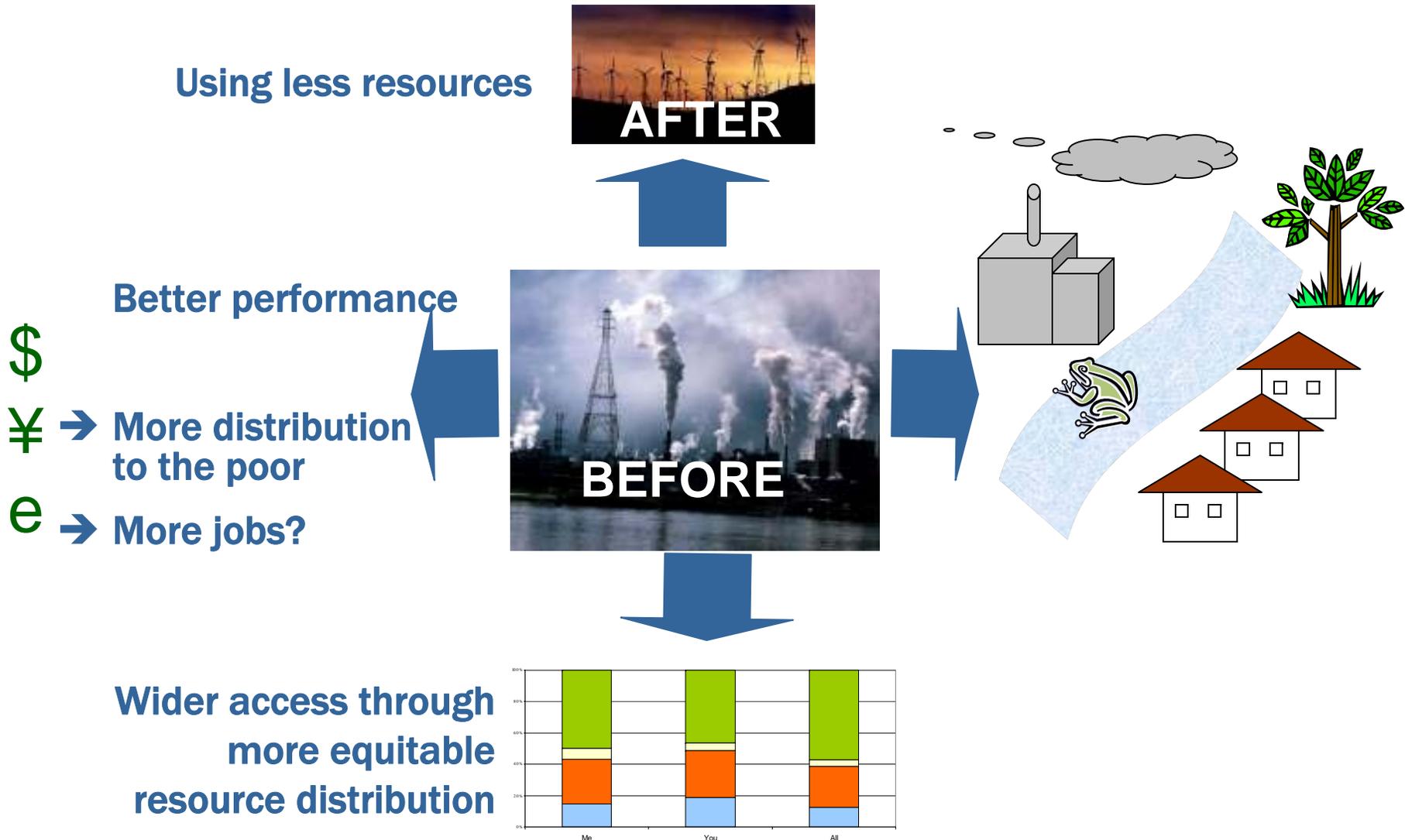


Poverty Alleviation and Eco-Systems

- **Poverty is a major cause and consequence of the environmental degradation and resource depletion.**
- **The poorer segments are unable to meet basic needs (food, health care, shelter and educational).**
- **The poor:**
 - heavily dependent on eco-system services.
 - more likely to suffer from negative impacts of degradation
 - well-being is linked to services from eco-systems*
- **Eco-efficient Cities: need to properly value & protect services from eco-systems to alleviate poverty.**
- **Changing consumption patterns will require a multipronged strategy focusing on**
 - demand,
 - meeting the basic needs of the poor, and
 - reducing wastage and the use of finite resources

* Poverty and Ecosystems: A Conceptual Framework (UNEP, 2003)

Potential of Eco-Efficiency for Poverty Alleviation



How to assess eco-efficiency of cities

Ecological Footprint Approach:

The Ecological Footprint is a resource management tool that measures how much land and water area a human population requires to produce the resources it consumes and to absorb its wastes under prevailing technology.

Footprints can be measured at an individual level, or for cities, regions, countries, or the entire planet .

Today, humanity's Ecological Footprint is over 23% larger than what the planet can regenerate.

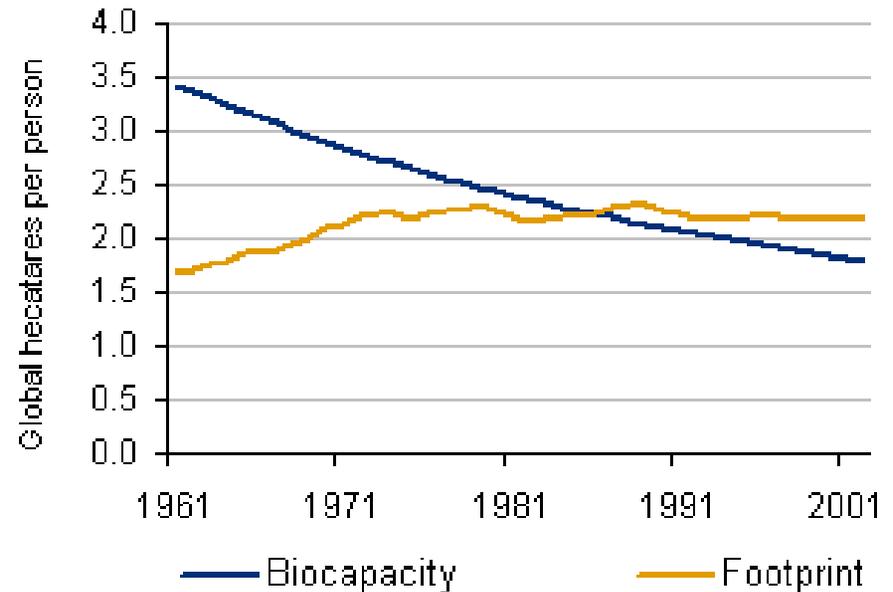
How much of the Earth is dedicated to sustaining just me?

Americans	- 9.7 Ha
Canadians	- 6.8 Ha
Italians	- 2.8 Ha
Indonesians	- 3 Ha
Japanese	- 4.8 Ha
Australians	- 7.7 Ha
Chinese	- 1.6 Ha
Indians	- 0.7 Ha

(-ve) (+ve) (footprint- bio capacity)

Average area a person consumes continually throughout their entire lifetime:

Footprint and Biocapacity



approximately **1.8 Ha** per person of Biologically usable land is available on this planet.

Ecological footprints of cities

- Ecological footprint of **London** is **120 times** the area of the city itself.
- **Berlin's** footprint is as large as the **eastern part of Germany**, or **12.8 Mha** .
- Ecological Footprint of **Manali** (small city in India) is over **9 times** its own size.
- For **Tokyo** this is equal to **116,242,000 ha** or **3.07 times** the land area of Japan.
- **Vancouver** is estimated as having a footprint **17 times** larger than its jurisdictional or geographic boundaries.
- The E.F. of **Toronto** is approximately **201 times** its jurisdictional boundary.

Cape Town's Ecological Footprint

- Cape Metropolitan Areas ecological footprint is about **128 300km²** – **equivalent to the size of the W Cape province.**
- The footprint is **52 times larger** than its jurisdictional area, and **166 times** the area of its built footprint
- Per capita footprint = **4.28 ha**
- SA average = **2.4 ha**
- (Gasson, 2002)

ICLEI World Congress 2006
for cities and local governments

Out of Africa: Local Solutions for Global Challenges

Cape Town, South Africa • Monday 27 February – Friday 3 March 2006

- ICLEI World Congress footprint = **48.33 ha** (as per Cape Town Average)
- z

Management Instrument - ecoBUDGET

ICLEI,s ecoBUDGET approach follows the same principles as the financial budget.

It focuses on the effective long-term management of natural resources and the urban environment.

Indicator based system for monitoring “environmental spending” (the use or degradation of natural resources) .

Successfully adopted by 11 local Governments in Europe and under Pilot implementation in Asia at Guntur (India) and Bohol (Phillipines)

Know Your Resources



Assess Needs



Plan



Spend



Monitor

ICLEI's Agenda

eco-efficiency is widely accepted as concepts but not as practice therefore:

ICLEI through an Eco-Efficient Cities program is aiming to develop and test a methodology and tools, and implement reference pilot cases for the development and implementation of Local Eco-Efficiency Agendas which address local unhealthy environments and unsustainable production and consumption patterns.

Eco-efficient Cities –

quality of life for all at least cost for the globe

Thanks

**ICLEI- Local Governments for Sustainability,
South Asia**

Website: <http://www.iclei.org/sa>

Unsustainable production and consumption is “the major cause of the continued deterioration of the global environment,”

Chapter 4, *Agenda 21*