URBAN SUSTAINABILITY: ECO-CITIES
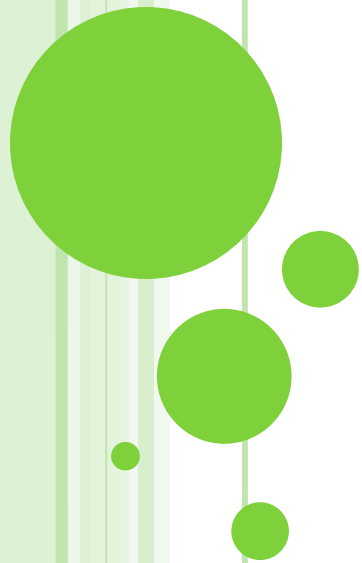
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Economic Geography

Dr. Gordon Winder

CONTENTS

- Problem setting
- The Concept Eco-Cities
- Networks of Eco-Cities
- The Label Eco-City
- Case-Study: Curitiba, Brazil and Waitakere, New Zealand

PROBLEM SETTING

JUST TWO EXAMPLES FOR FAST GROWING CITIES

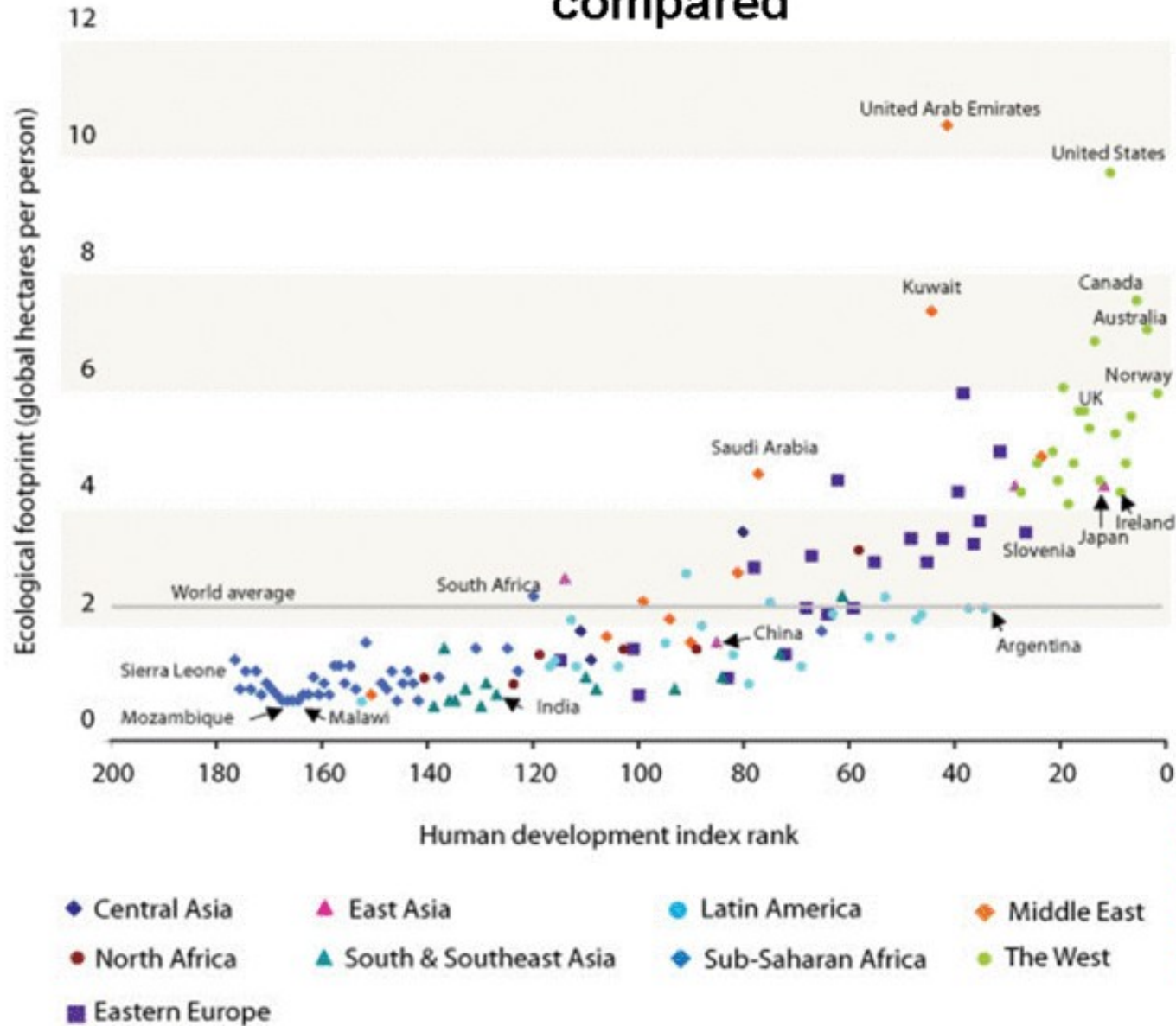London needs 125 times its own area to provide the resources it consumes.

Japan's capital city Tokyo has grown to 34 million.

THE CITIES OF THE 20TH CENTURY

- The fast growth of cities has brought with it huge environmental and social problems.

- Cities occupy just 2 per cent of the land surface of the Earth but consume three-quarters of the resources.

- A sustainable ecological footprint that shares all the world's resources equally among its inhabitants would be 1.8 hectares per person.

Human Welfare and Ecological Footprints compared

Ecological footprint (global hectares per person)

Human development index rank

United Arab Emirates
United States
Kuwait
Canada
Australia
Norway
UK
Saudi Arabia
Slovenia
Ireland
Japan
World average
South Africa
China
Argentina
Sierra Leone
Mozambique
Malawi
India

◆ Central Asia   ▲ East Asia   ● Latin America   ◆ Middle East
● North Africa   ▲ South & Southeast Asia   ◆ Sub-Saharan Africa   ● The West
■ Eastern Europe

THE WEAKNESS OF THE TYPICAL CITIES

- Considerable differences between the ecological footprint of a person living in a rural area and someone living in the megacity;

- Population in big cities needs much more resources than the population in the cottage areas;

- Many cities were designed with no respect to the amounts of the resources they need;

- Waste disposal, environmental pollution and social networks were neglected.
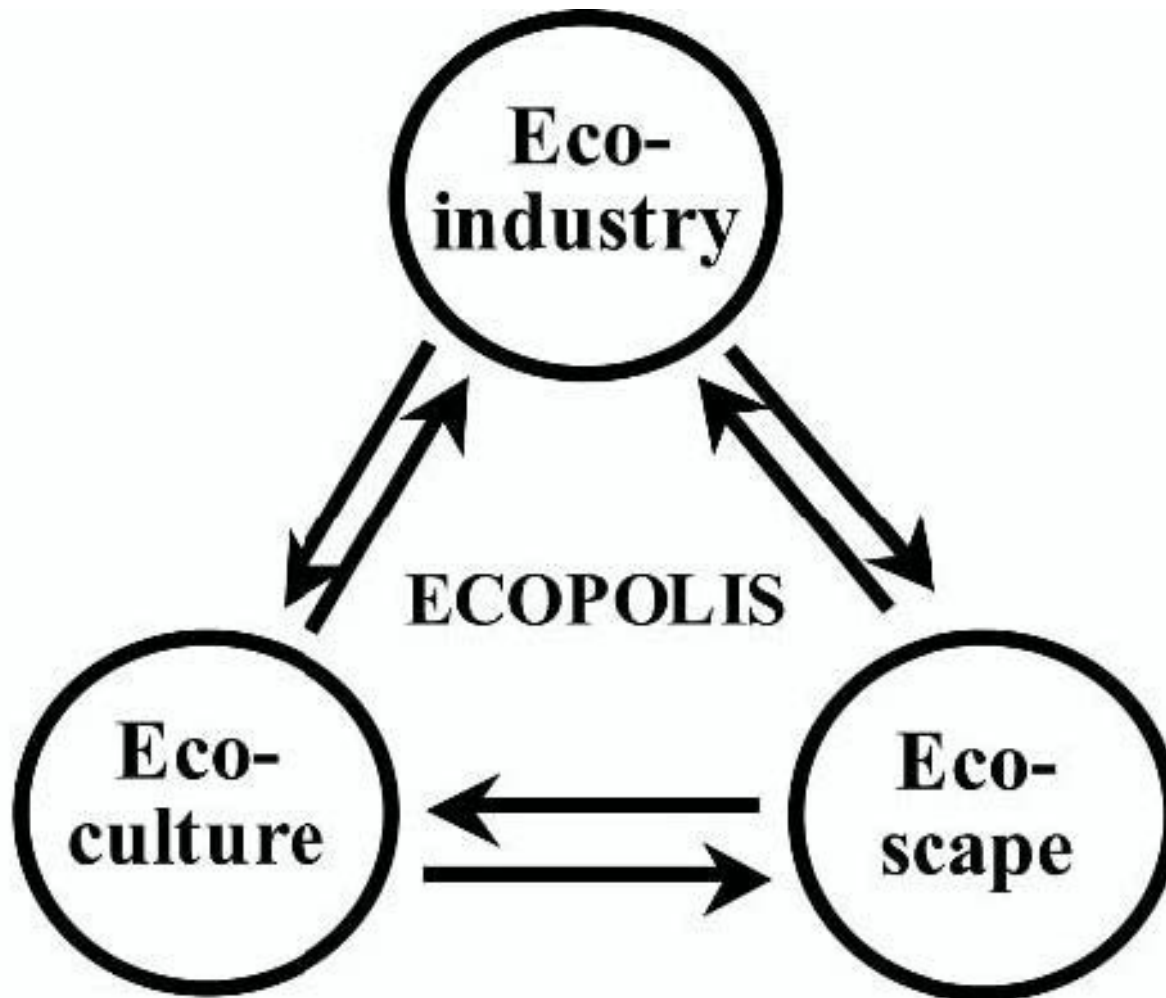
ECO-CITIES
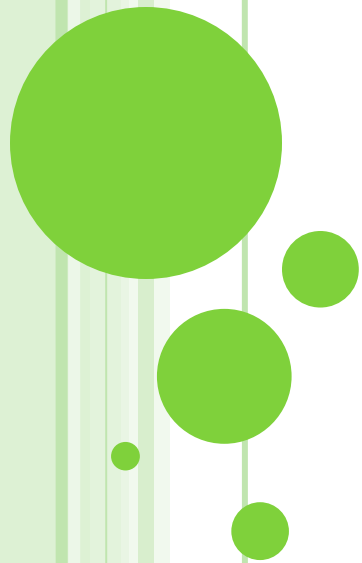
ECO-CITIES…

- …are self-sufficient in energy, water and most food products, with the aim of zero emissions of greenhouse gases in transport systems;

- …are environmentally and socially friendly;

- …are created through changes in the production mode, consumption behavior and decision instruments, based on ecological economics and systems engineering;

- …combine ideas about urban planning, transportation, public health, housing, energy, economic development, natural habitats, public participation, and social justice.

ECO-CITIES: ORIGINS

- 1975, Richard Register and colleagues started promotion of the concept eco-cities;

- Urban Ecology, a journal, in which the concept was introduced and developed;

- Regular international conferences for the exchange between the eco-cities and promotion of new technological and scientific developments.

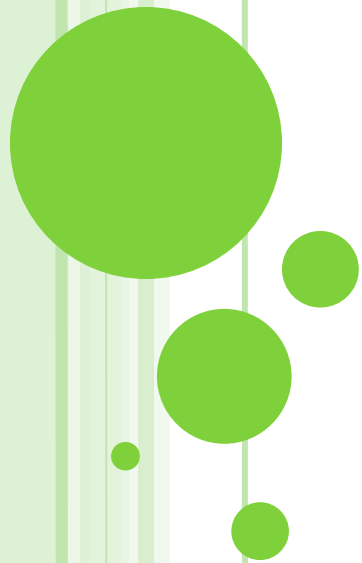# THREE GOALS OF ECO-CITY DEVELOPMENT

NETWORKS
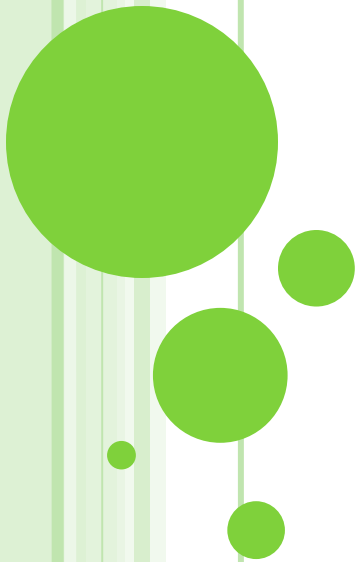
NETWORKS BETWEEN ECO-CITIES

- Bilateral co-operation:
  - Meetings between city authorities
  - Support and funding of ecological projects;
- Multilateral co-operation:
  - International conferences bring together specialists of different fields
  - Share of best practises
  - International programmes for urban development between private companies with the support of the state.

CONSTRAINTS

- The concept eco-city presents the perfect image of an eco-city;

- Cities adopt different sets of methods, according to its size, needs, capacities and financial resources;

- Only few of the so called eco-cities can be considered eco in all fields of the concept.

ECO-CITY AS A LABEL

NEW IMAGE AS AN ECO-CITY

- The label eco-city creates a distinguishing image that mobilizes resources;

- Increased accumulation of capital and investments;

- Twofold changes of the city:
  - in its urban planning to create a healthy city
  - in its economic development, a new image that is successfully merchandised.

- Problem: no standard label for eco-cities
  - cities adopt a certain set of eco-city principles that allow them to be labeled eco-cities and to profit from this new image.

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CASE STUDY: CURITIBA, BRAZIL AND WAITAKERE, NEW ZEALAND
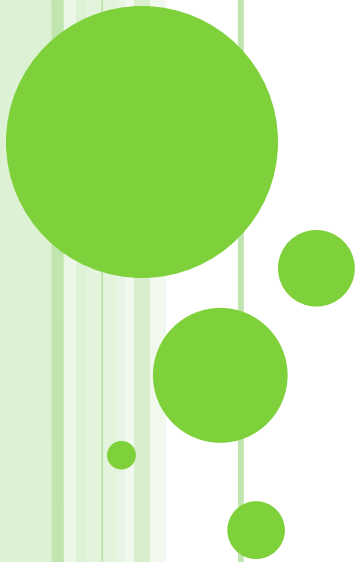
CURITIBA, BRAZIL

- Curitiba is the seventh largest city in Brazil with population of approximately 1.8 Mio;

- In the 1960s the city adopted and started the implementation of a new urban master plan with the prioritization of ecological urban structure;

- Launch of little projects, multi-purpose, cost-effective, people-centred, fast, simple, home grown, based on local initiatives and skills.

TRANSPORTATION & BUS SYSTEM

- an inexpensive, "speedy" public bus system;

- several kinds of buses that ensure a very fast transportation;

- Highly efficient with 1.3 Mio. passengers per day;

- bicycle and pedestrian lanes.

GREEN SPACE

- an increase in green space from one square meter per person, to 52 square meters per person over the last 40 years;
- People are encouraged to plant trees;
- Sheep mow the grass.

RECYCLING

- Over 70% of the city's garbage is recycled;
- Programme "garbage for food";
- Very cost-efficient;
- Maximum use is made of existing buildings;

EDUCATION

- Students learn progressive social and environmental concepts;

- Children are encouraged to establish community gardens to grow food.

OTHER FIELDS

- The city was planned to grow only within its contemporary borders;

- The industrial district was located in one separate area;

- A variety of social programmes support the socially weaker population.

WAITAKERE, NEW ZEALAND

- Waitakere is located in the western sector of the Auckland Region with population of approx. 177,000

- 1992 the city adopted Agenda 21 and became New Zealand's first eco-city;

TRANSPORTATION

- Programmes for promotion of public transport;

- Programmes for increasing the awareness of the impacts the car use has.

GREEN SPACE

- Adoption of a Green Network programme;
- Creation of new park areas and integration of the nature in the city landscape.
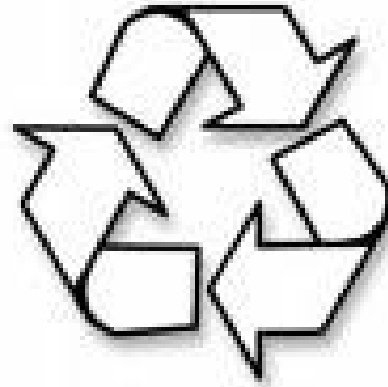
ECO BUILDING

- Eco Homes and an Eco Hospital are being built;
- funding programs for building ecological homes and public buildings;
- Several projects of public buildings.

RECYCLING

- Few achievements in the field;
- Recommendations of ways for waste reduction;
- No separation of waste.

EDUCATION

- Programmes for increasing the awareness of the population;
- Encouraging more participation and initiative in local governance.
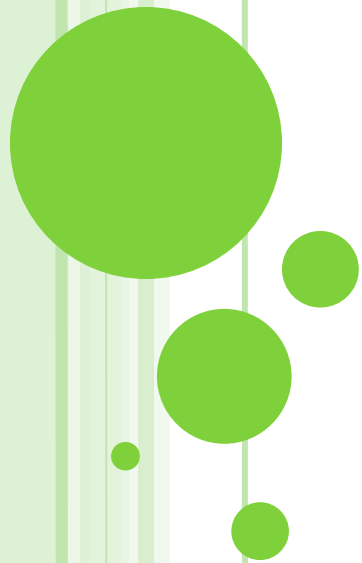
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OTHER FIELDS

- Urban consolidation: future population growth inside the current urban area;

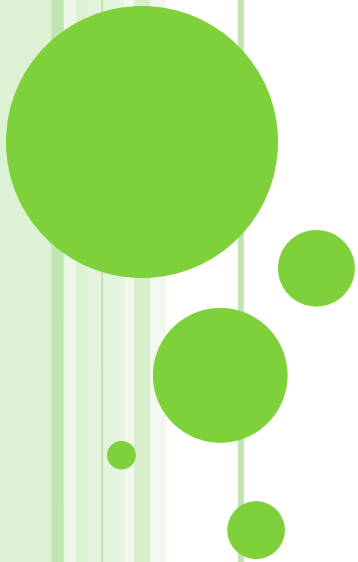- Cleaner production: aims to increase productivity of resources and reduce impact on the environment.

CONCLUSION

ECO-CITIES AT A GLANCE

- A relatively new concept;
- Cities are connected in a network;
- Eco-city is a label;
- Considerable differences among the eco-city models;
- A process that cannot be finalised.

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THANK YOU FOR YOUR ATTENTION!

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