

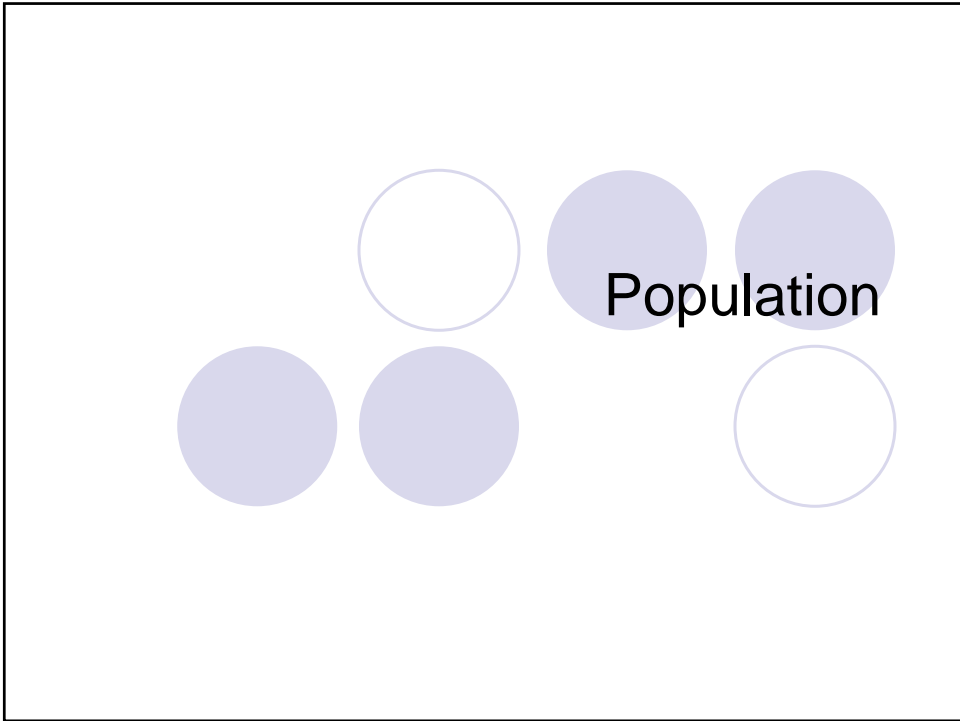
# Urban PDE dynamics: Situating PRIPODE research in the larger picture

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## Main Points

1. The urban transition is closely allied to the demographic transition & represents a fundamental societal transformation
2. Many of the same socioeconomic & environmental strains were evident in 19<sup>th</sup> c. transition, but the LDC transition is different:
  - The scale is much greater
  - Economic development prospects are dimmer
  - Global environmental context is more challenging
3. Still, sustainable urbanization may be the “last best hope” for economic development & environmental stewardship



### Urban Population: The Scale

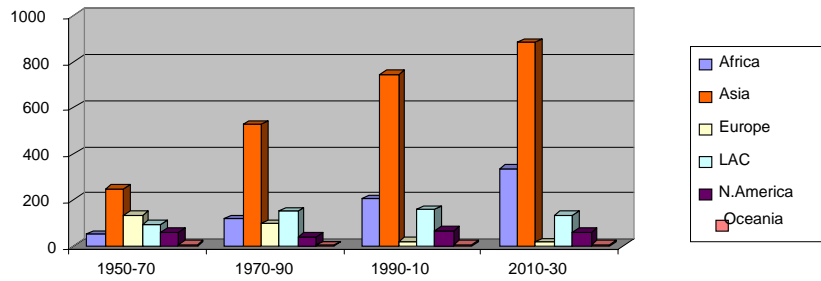
Region	2000 in millions	2030 in millions	Difference in millions
Developed World	870	1,010	+140
Africa	294	742	+448
Asia	1,360	2,640	+1,280
Latin Am. & Caribbean	394	609	+215

1.9 Billion people!

Source: UN World Urbanization Prospects: 2005 Revision

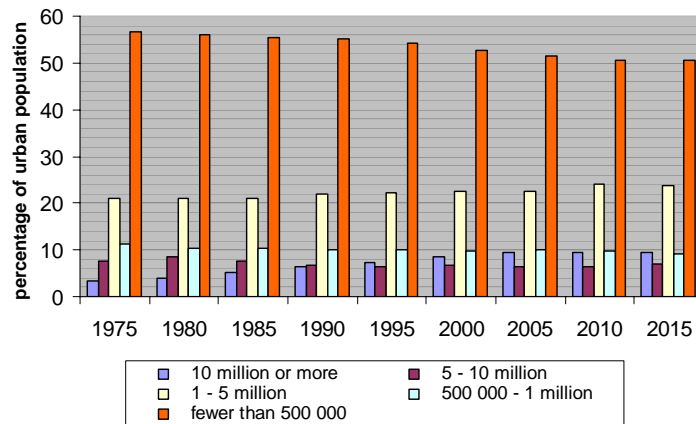
# Urban Population: The Scale

Figure 1 – Absolute urban growth by world regions, selected periods (in 000s)



# Growth: Small & Medium Cities

Figure 3 - Urban population, by size class of settlement, World, 1950-2015



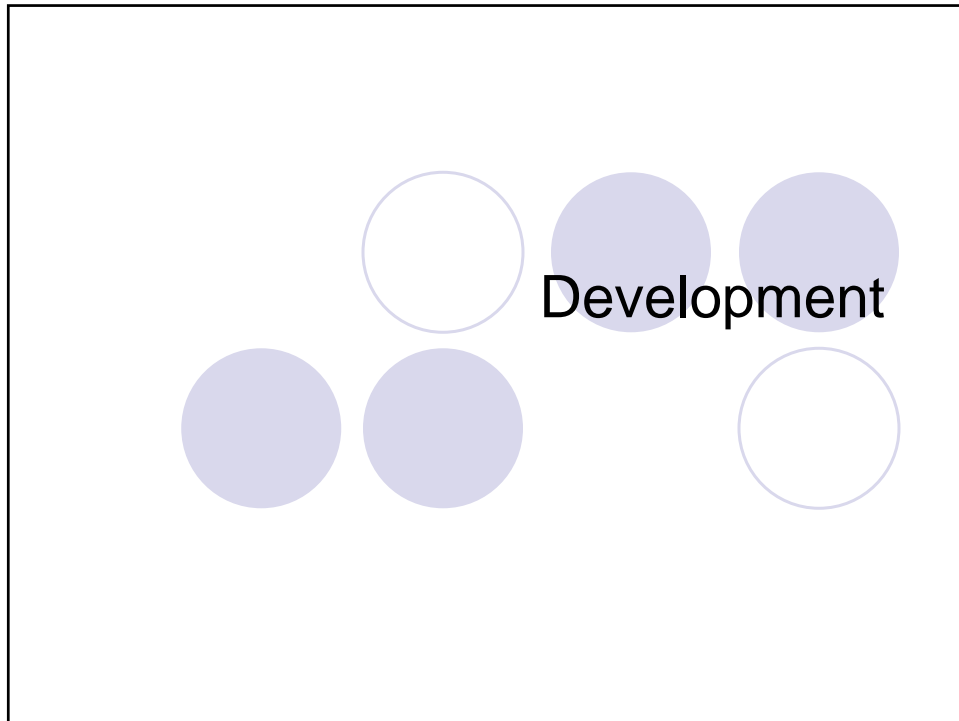
## PRIPODE Studies Examined

City	Type	Pop	Growth Rate
Accra	Capital	~2m	~3.4%
Brazzaville	Capital	1.2m	3.3%
Ho Chi Minh	Commercial	6.2m	>3.0%
Kampala	Capital	1.2m	~5.6%
Lagos	Commercial	12m	~4.0%

Doubling times of 12 to 23 years!

## Main Trends

- Small to medium sized cities of <1m make up more than 60% of the urban population
- Hence most to future growth will take place there
- The growth rates of mega-cities have attenuated somewhat
- High rates of natural increase as well as migration



## Economic Development

- Closely allied to pop dynamics – in two areas particularly:
  - Employment opportunities
  - Peri-urban development



## Public & Private Sector

- Many LDC cities arose as market or administrative towns
- SAPs have led to downsizing of government – and hence public sector employment
- Globalization has set up a competitive dynamic among cities, yet LDC cities have:
  - weak economies, minimal infrastructure, and low skill labor markets
  - high risk profiles: corruption, instability and crime
- Net result: high transaction costs
- Discourages investment



## Informal Sector

- Comprises a wide range of activities and enterprises of varying complexity
- Workers often move fluidly between formal and informal sectors
- Problems: Lack of labor protections, low salaries, unstable, unregulated, lack of capital investments
- Opportunities: Dynamic, entrepreneurial, employment opportunities, labor-intensive



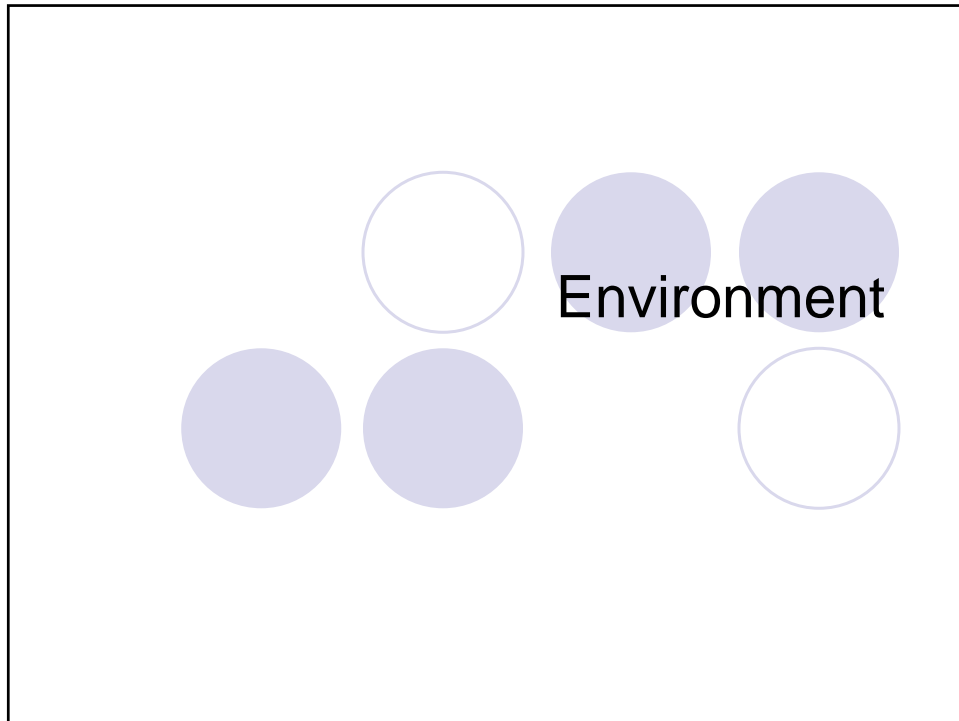
## Peri-Urban Development

- Leap-frog, polycentric development on the urban fringe
- Investment in real estate drives up rents (through land speculation)
- The poor are driven to the fringe by economics – despite lack of infrastructure
- Further strains the ability of governments to tax, to regulate environmental concerns, and to provide infrastructure



## PRIPODE evidence

- Lagos: A globalized city but with high transaction costs
- Accra: 50-54% of slum residents “self employed”
- Kampala: Lots of informal enterprises; petty crime (drugs, robbery, pick-pocketing, prostitution)
- Ho Chi Minh: Globalized city attractive to investment; rapid peri-urbanization and lack of infrastructure in periphery



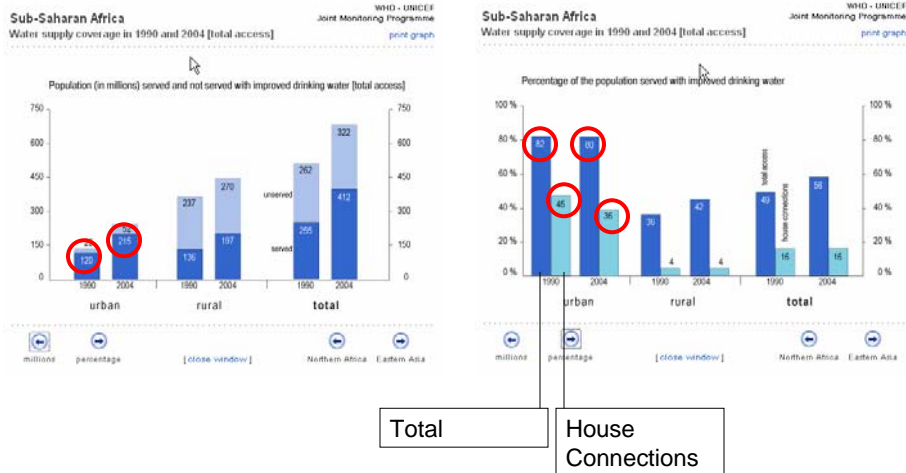
## Environmental Health Focus

- “Health provides an important tracer to indicate the quality of the population-environment relationship” (Ness 2001)
  - Global concerns (CC & biod.) are less of a concern to LDC urban policymakers
1. Water & sanitation
  2. Waste disposal
  3. Slum & Informal settlements
  4. Air pollution



# Water & Sanitation

MDG Target 10: Halve by 2015 the proportion of the population without sustainable access to safe drinking water and sanitation



# Waste Disposal

- Major public health problem: trash attracts insects and vermin (vectors), pollutes aquifers, and clogs drainage systems
- Strong spatial segregation: Most LDC cities simply do not have the political will to address the problem in slum neighborhoods
- Quantitative data are limited
- There are opportunities for recycling of organic matter (composting) and materials (paper, plastics, metals)

## Slum & Informal Settlements

- Spatial segregation:
  - Situated in hazard-prone areas
  - Mix of residential and industrial activities
  - Lack of services
- Land tenure insecurity & evictions, which have three types of impacts:
  - physical (housing stock)
  - economic (proximity to work place, loss of possessions), and
  - psychological impacts

## Air Pollution

- Growing fleets of sub-standard vehicles
- Fine particulate matter responsible for 0.8m premature deaths per year
- Household-level factors are major drivers of emissions (personal transport)
- Contaminates food
- Produces regional smog/ground-level ozone that can affect crop yields

## Evidence from PRIPODE

- Cameroon studies: Access to water within household less important than treatment
- Lagos: Spatial segregation, air and water pollution, lack of housing, waste disposal
- Kampala: Waste disposal, drainage problems, flooding
- Accra: Spatial segregation, waste disposal, infant mortality impacts
- Brazzaville: 85% have tap water but 30% still rely on rainwater
- Ho Chi Minh: Flooding & mix of residential & industrial

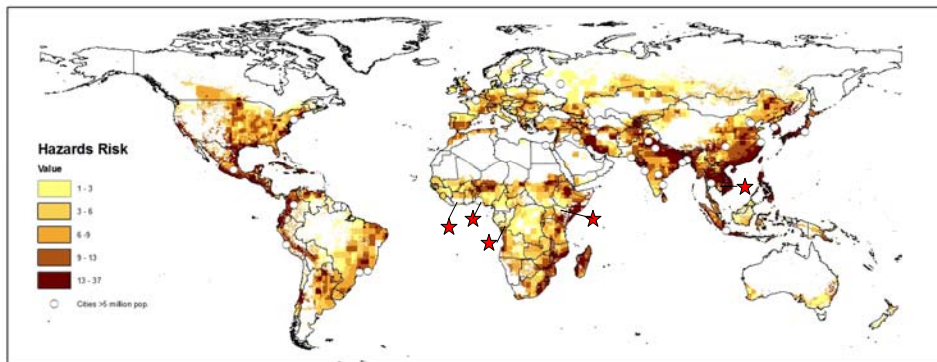
Population  
Development  
Environment



How might global environmental  
change impact low-income cities?

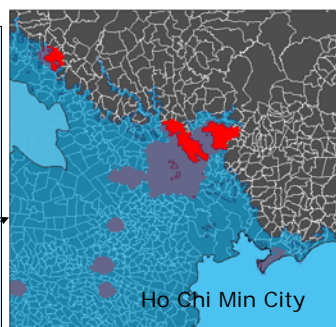
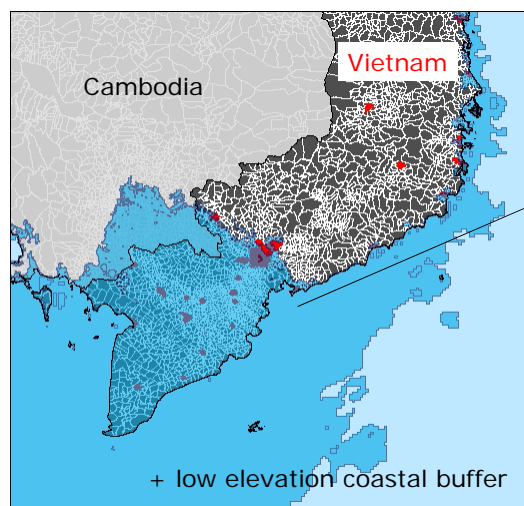
# Vulnerability to Climate Hazards

## Large Cities in Relation to Current Climate Related Hazards



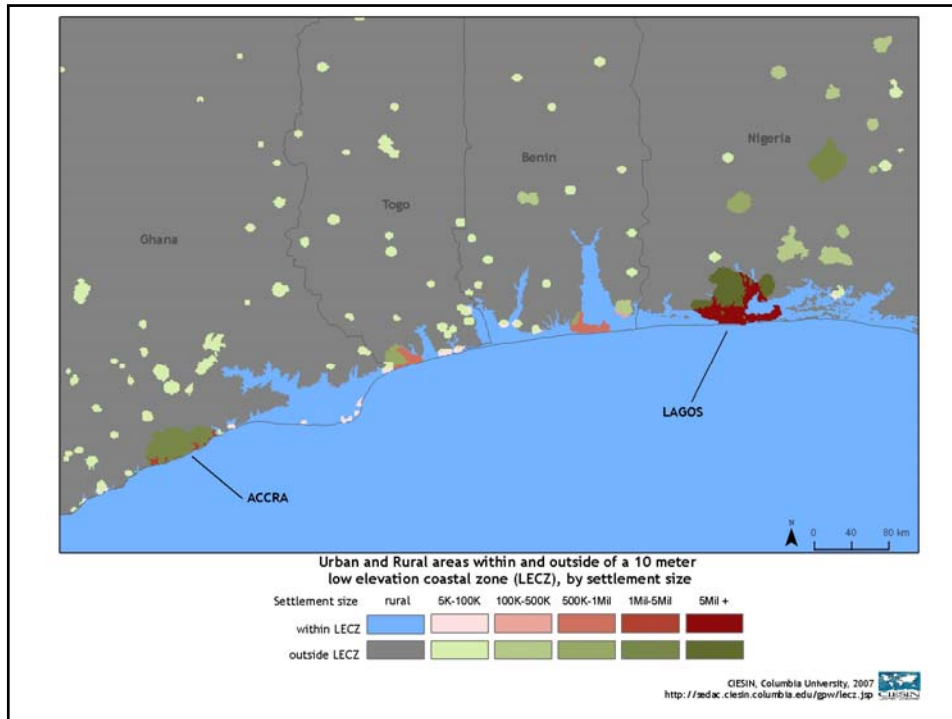
Source: de Sherbinin et al. 2007

## By 2100 we could see SLR of ~5m!



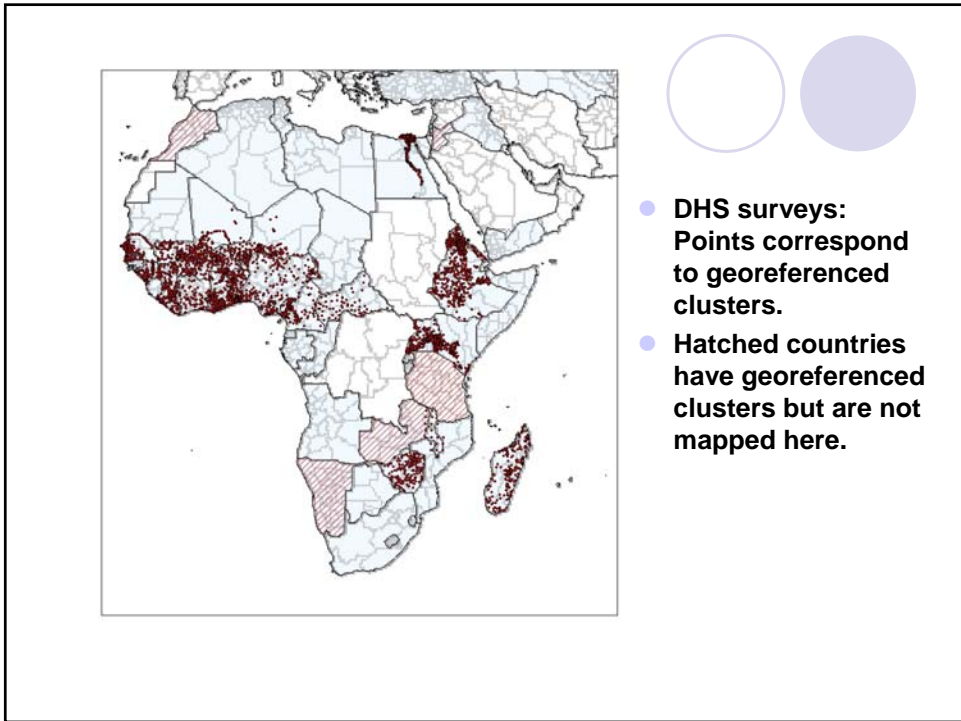
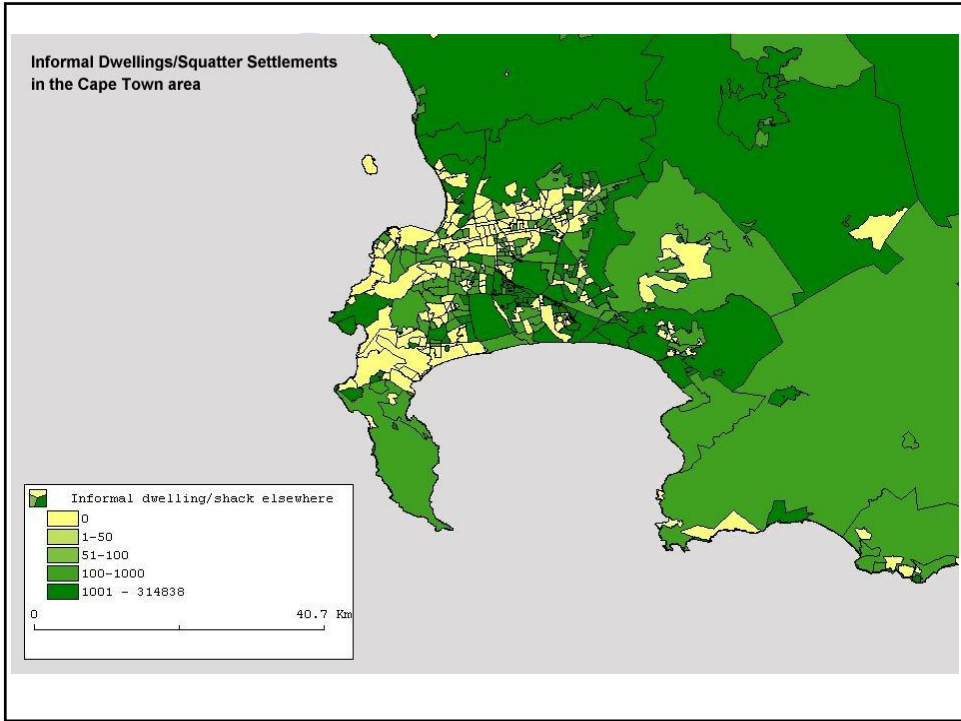
This scenario uses a 10m sea-level rise – three-quarters of Ho Chi Min City is submerged!

Source: SEDAC at <http://sedac.ciesin.columbia.edu/gpw/lec2.jsp>

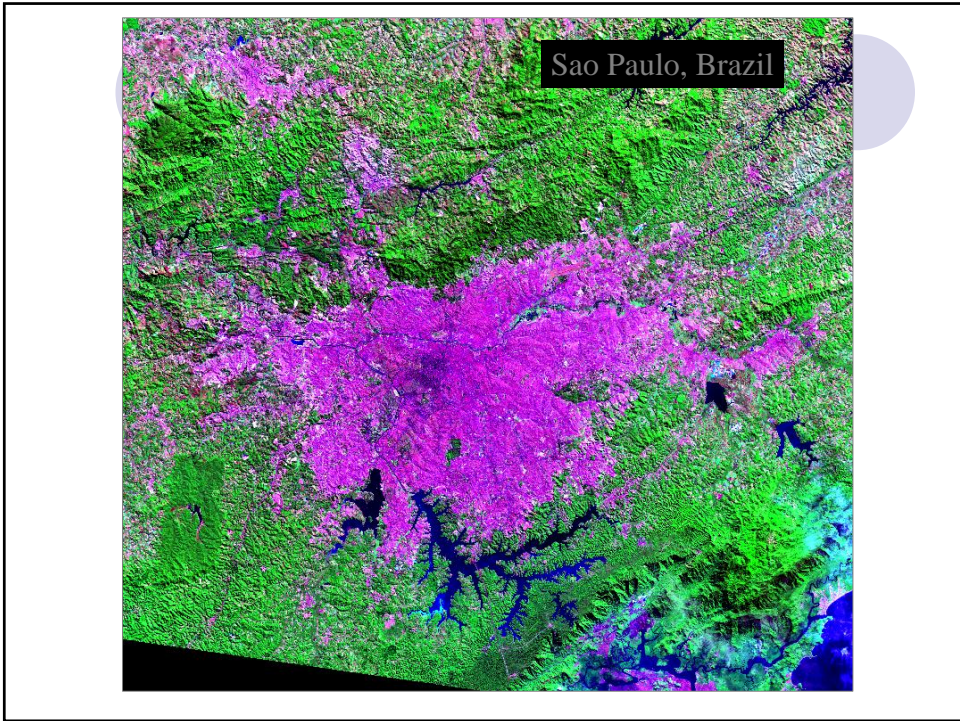



## Recommendations for Further Research

- Spatial analyses:
  - Not only use RS & census/survey data but *integrate* them
  - excellent analytical & communication tool
- Document actual contaminant levels
- Make the link to health/economic costs
- Gender issues: how do env'tal issues impact women & men differently?
- Good governance models for low-income cities
- Participatory action research in urban areas









**PERN**

[www.populationenvironmentresearch.org](http://www.populationenvironmentresearch.org)

**UNFPA State of the World's Population**

[www.unfpa.org/swp/](http://www.unfpa.org/swp/)

**Merci Beaucoup!**