



JAPAN PATENT OFFICE

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Tanzania, March 12 and 13, 2013

Designing Innovation Policies to Meet Country Needs

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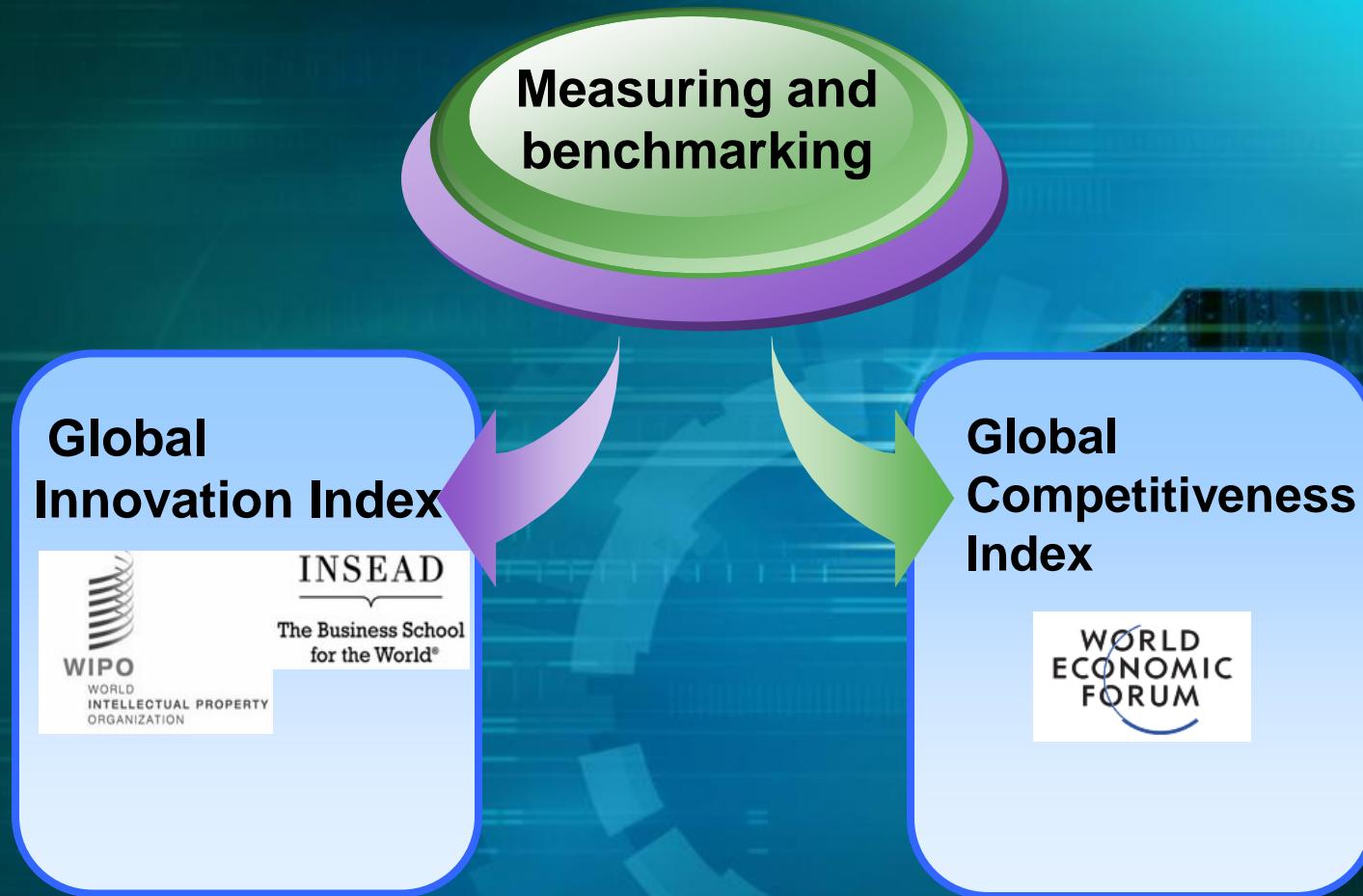
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Country needs

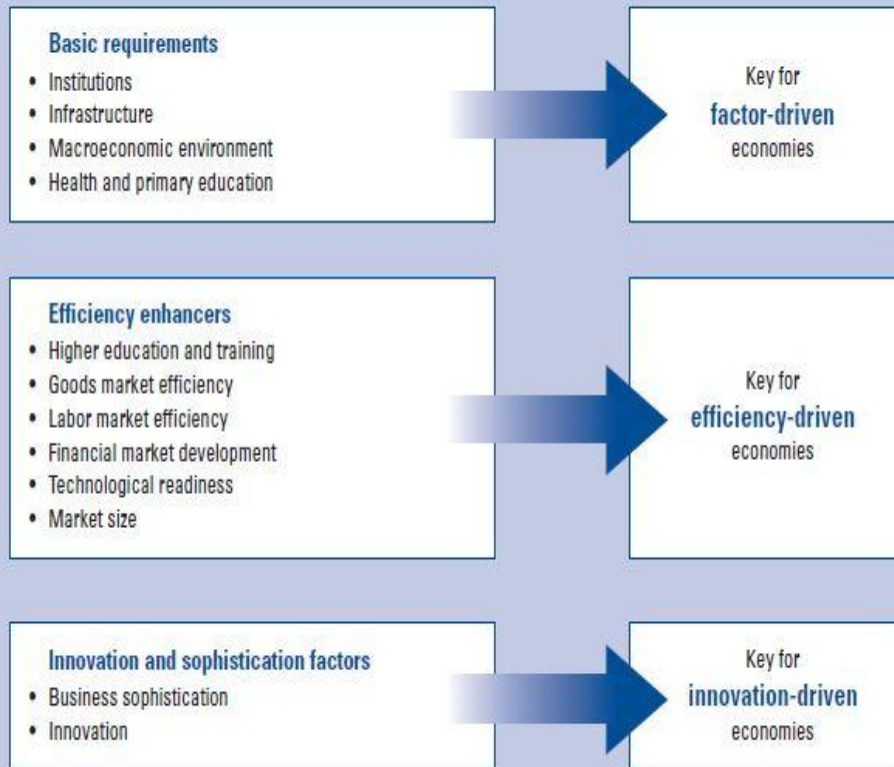
- Innovation Systems, Development, Competitiveness and Intellectual Property: A look from the South
 - GDP
 - Human development index
 - Political, social, economic, environmental context

Where is Africa according to the innovation and competitiveness models?



Competitiveness Index model

Figure 1: The 12 pillars of competitiveness



1.1: The Global Competitiveness Index 2010–2011

Table 2: Income thresholds for establishing stages of development

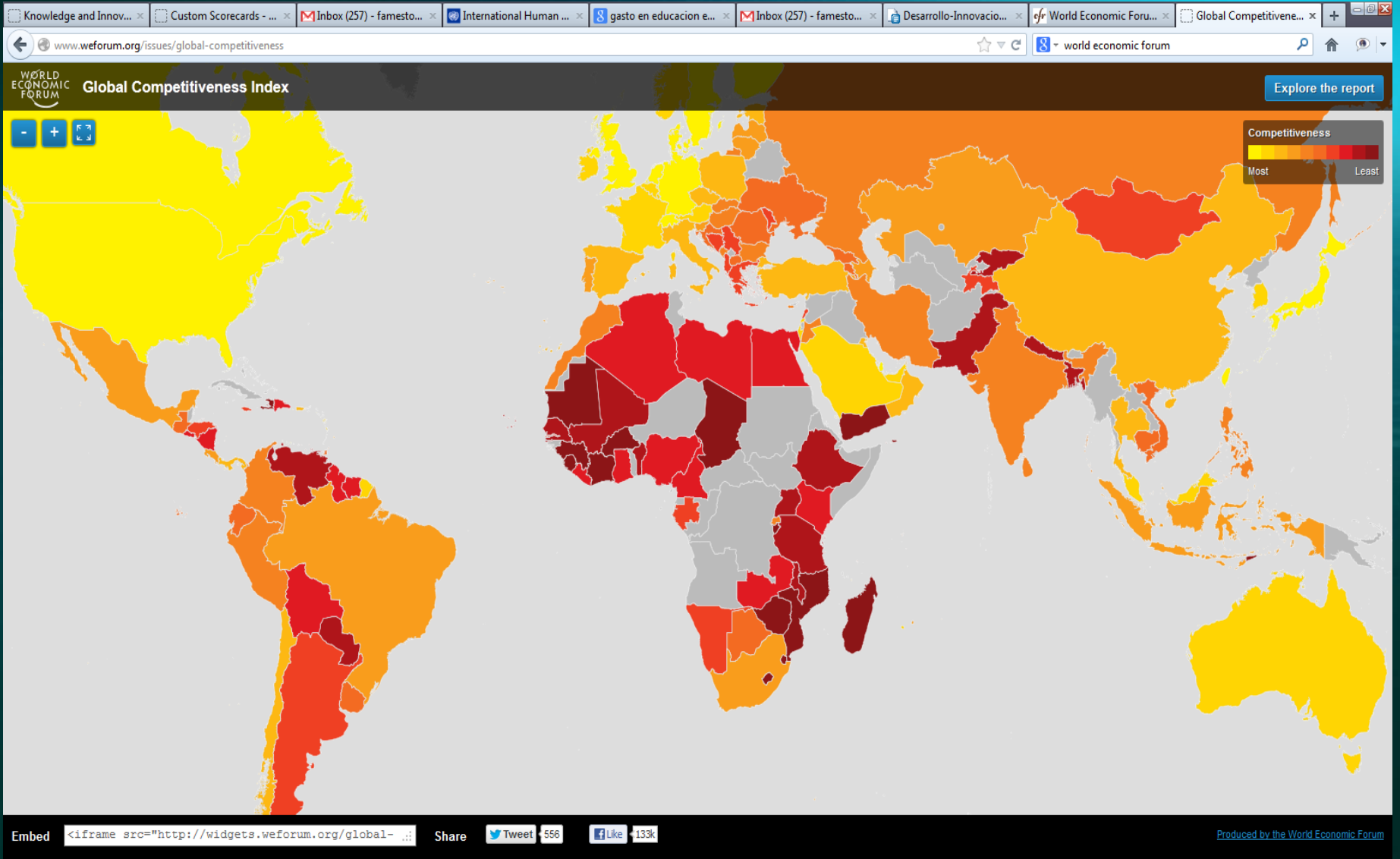
| Stage of development | GDP per capita (in US\$) |
|---|--------------------------|
| Stage 1: Factor driven | < 2,000 |
| <i>Transition from Stage 1 to Stage 2</i> | <i>2,000–3,000</i> |
| Stage 2: Efficiency driven | 3,000–9,000 |
| <i>Transition from Stage 2 to Stage 3</i> | <i>9,000–17,000</i> |
| Stage 3: Innovation driven | > 17,000 |

b The weights are the following:

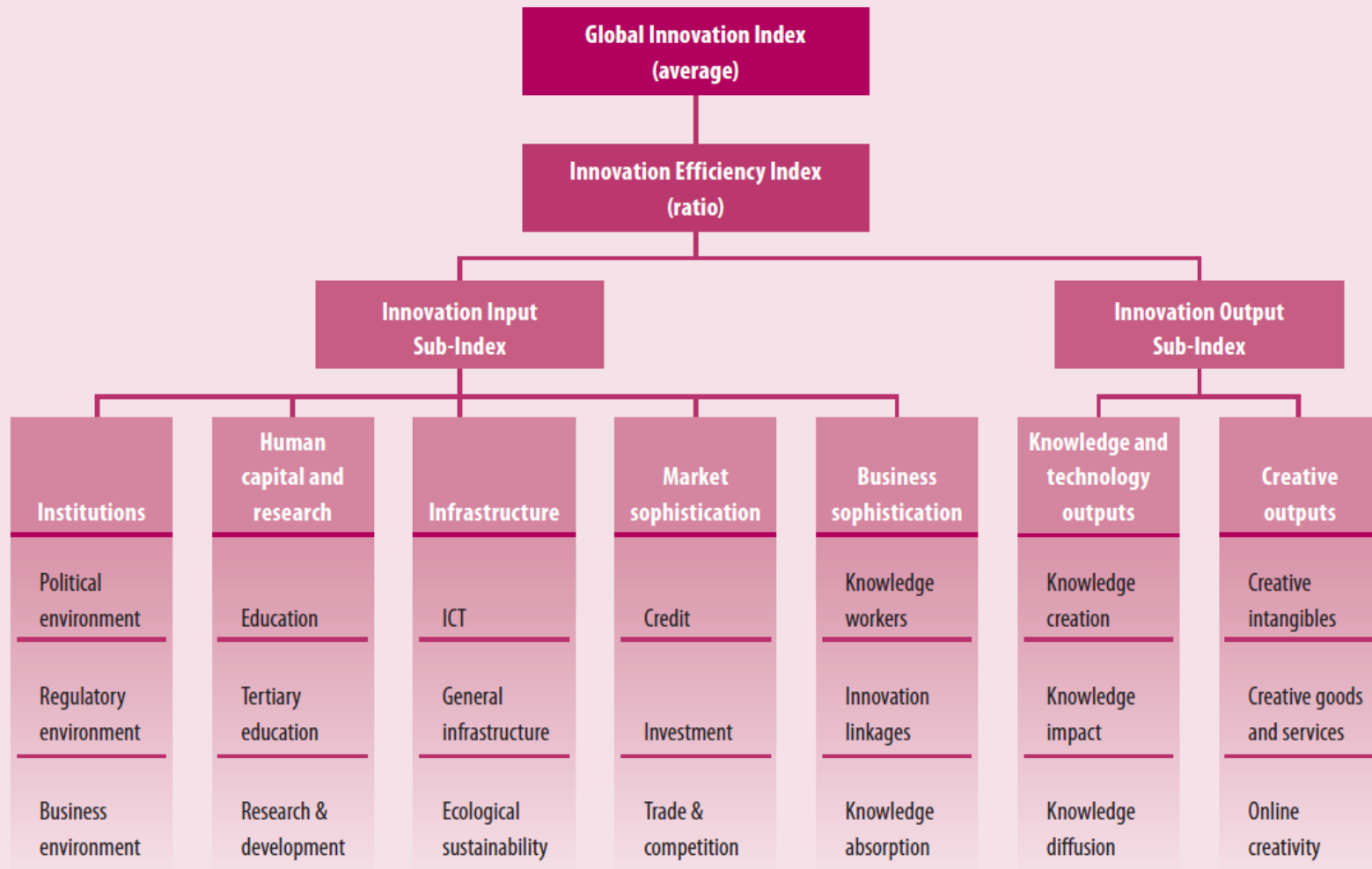
| Weights | Factor-driven stage (%) | Efficiency-driven stage (%) | Innovation-driven stage (%) |
|---------------------------------------|-------------------------|-----------------------------|-----------------------------|
| Basic requirements | 60 | 40 | 20 |
| Efficiency enhancers | 35 | 50 | 50 |
| Innovation and sophistication factors | 5 | 10 | 30 |

For further information, see Chapter 1.1 of *The Global Competitiveness Report 2010–2011*.

Global Competitiveness



Innovation Index model

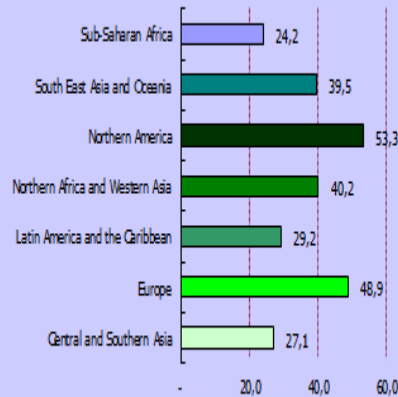
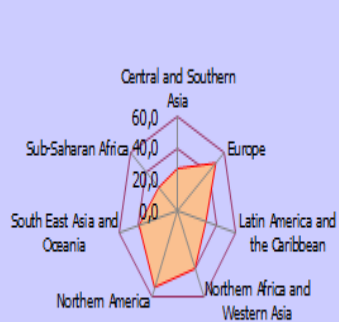


Africa in the Global Innovation Index

PILLARS (average of countries' scores)

2. Human capital and research

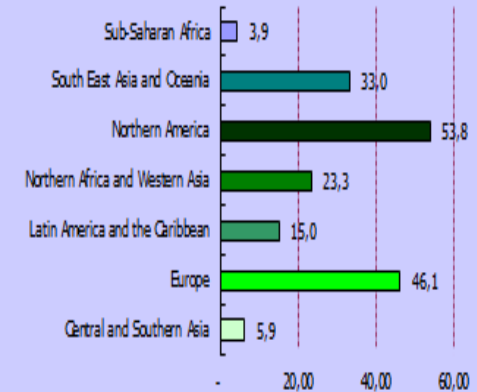
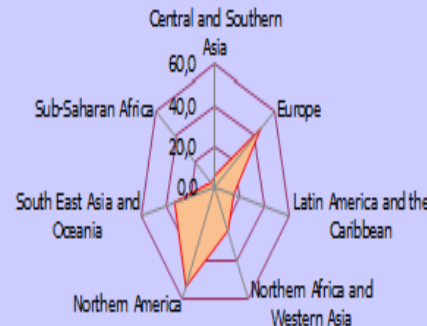
2. Human capital and research - Averaged scores



INDICATORS (average of countries' scores)

3.1.2. ICT use

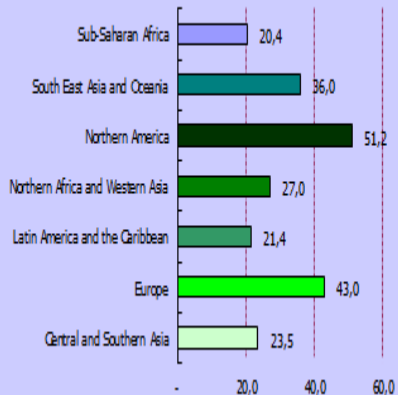
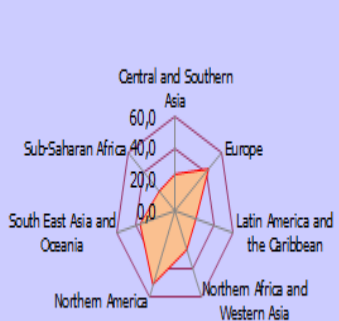
3.1.2. ICT use - Averaged scores



PILLARS (average of countries' scores)

6. Knowledge and technology outputs

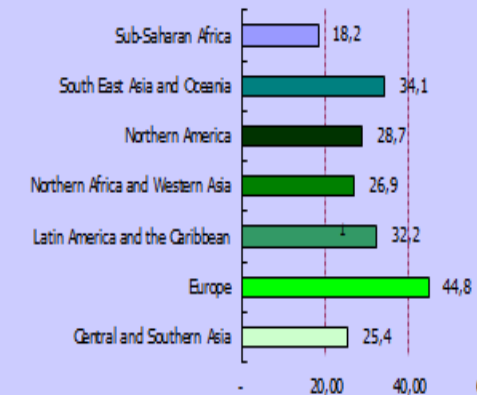
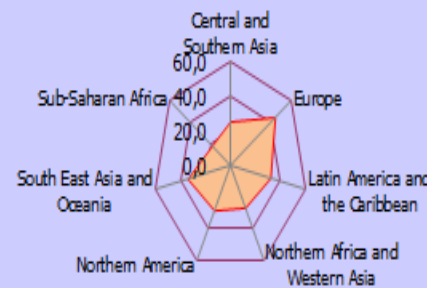
6. Knowledge and technology outputs - Averaged scores



SUB-PILLARS (average of countries' scores)

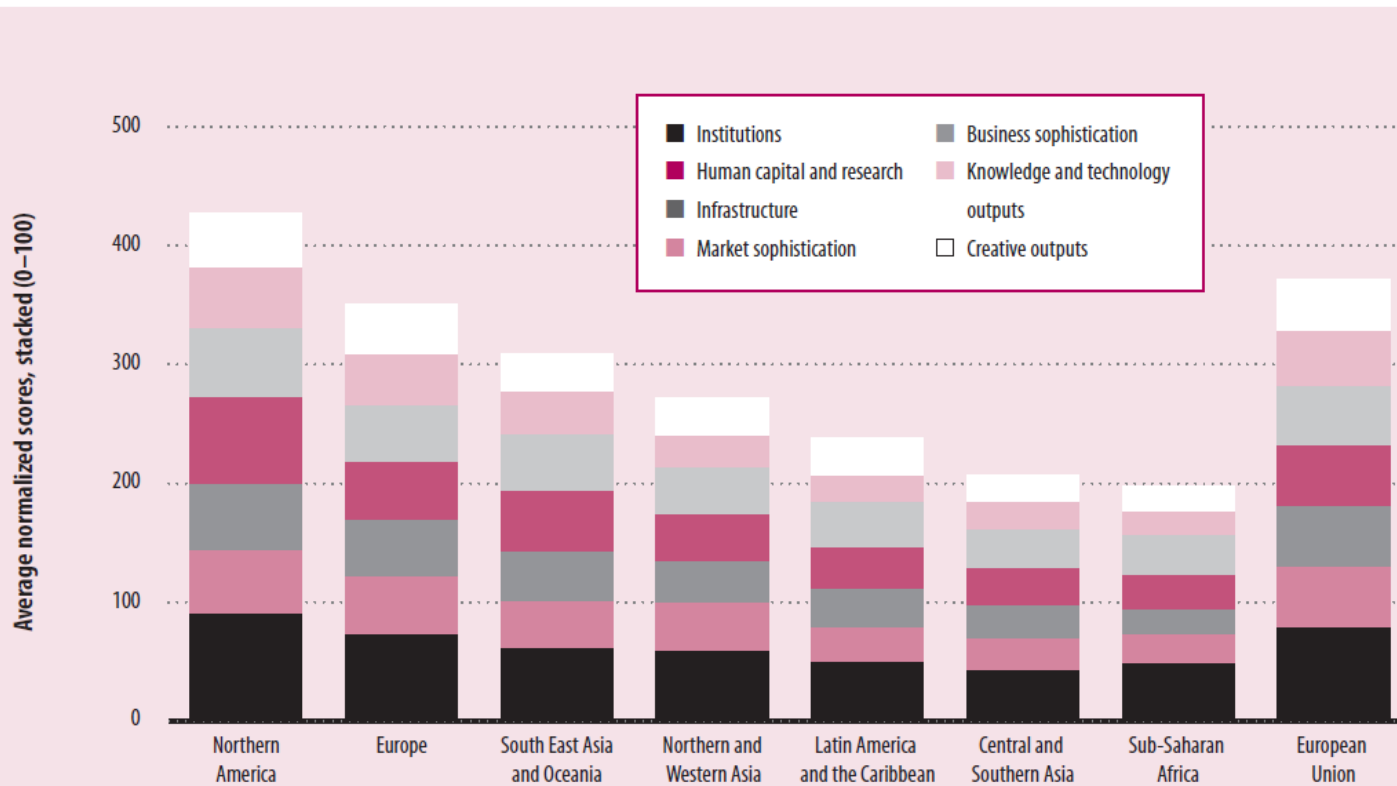
3.3. Ecological sustainability

3.3. Ecological sustainability-Averaged scores



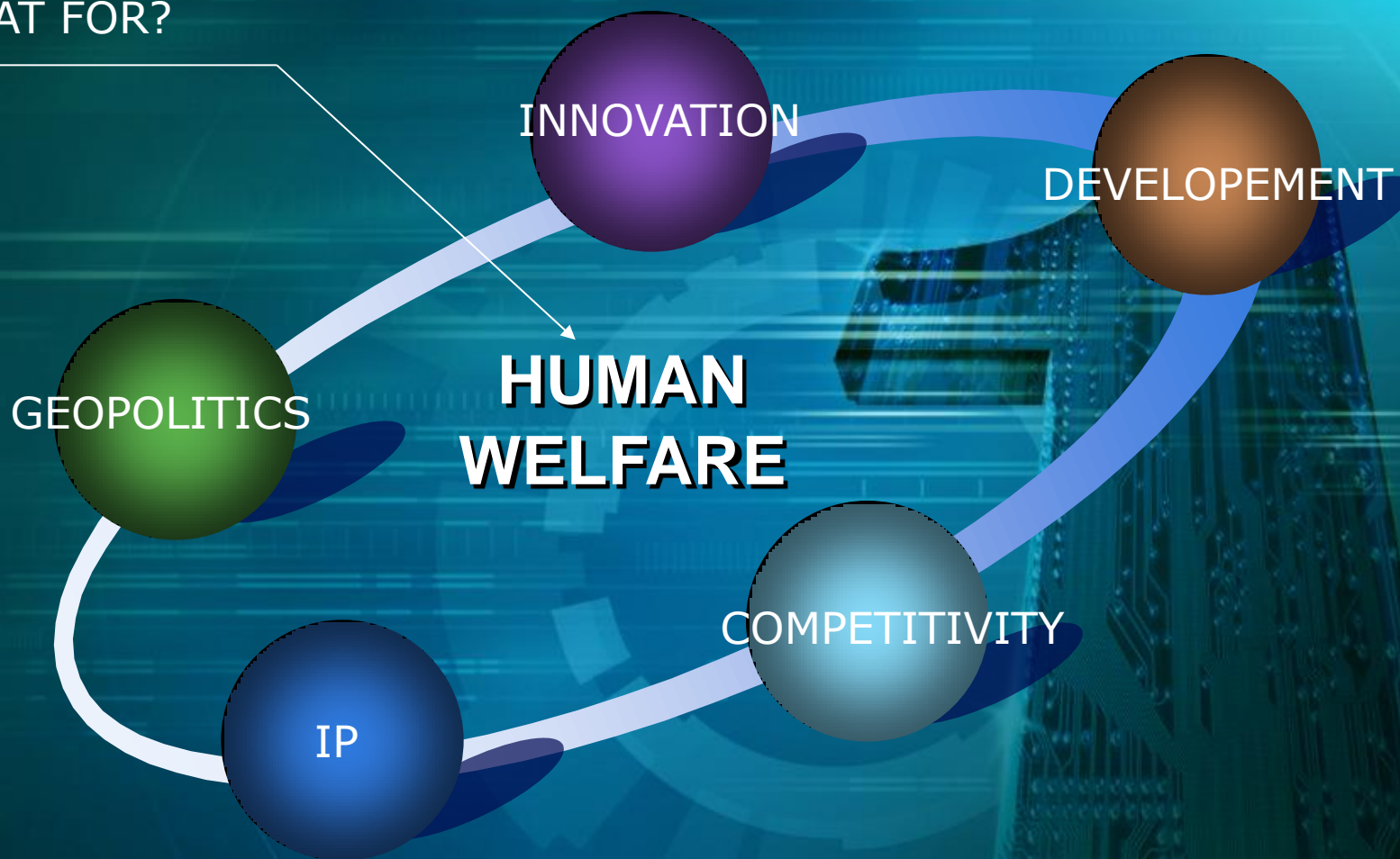
Innovation index: regional comparison

Figure 5: Average scores for selected country groups

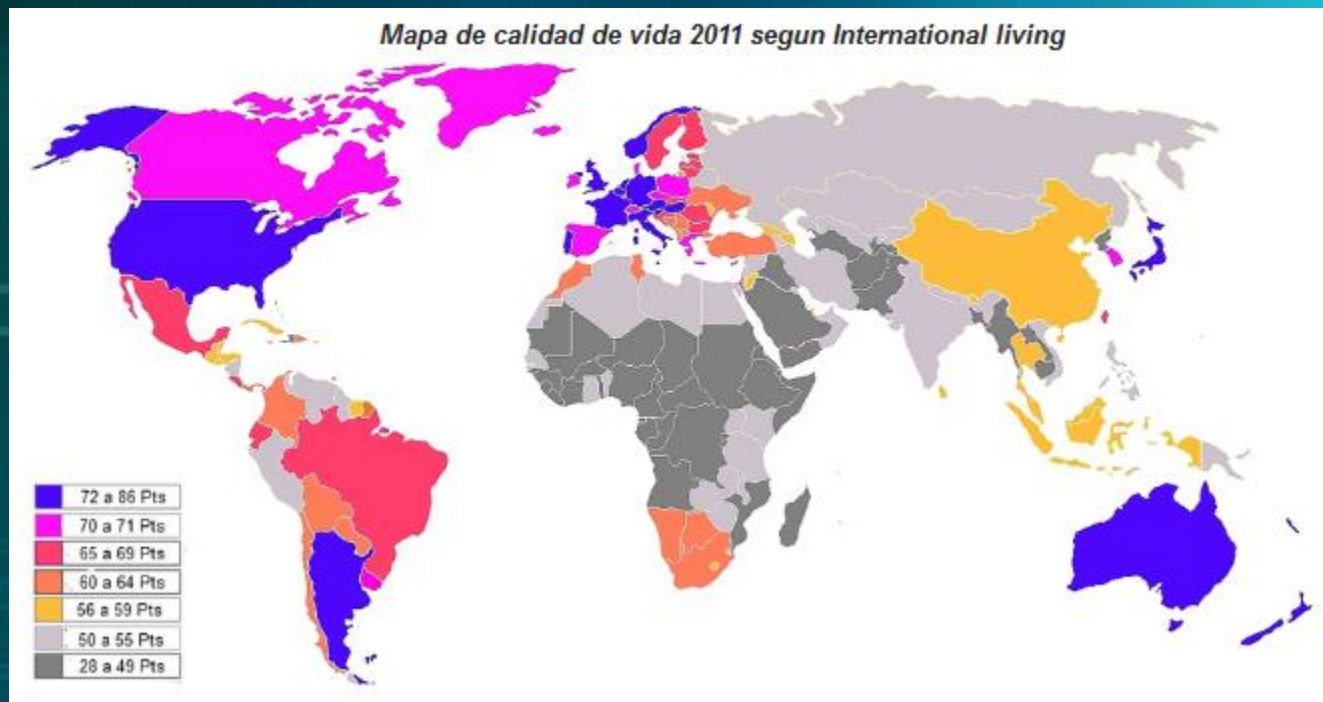


ECONOMY OF INNOVATION

WHAT FOR?

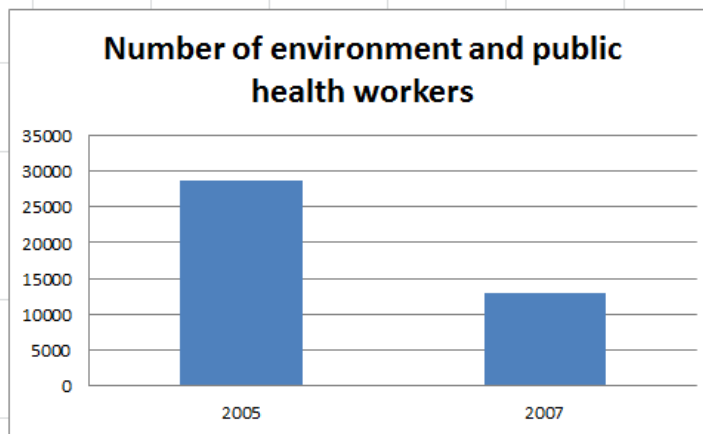
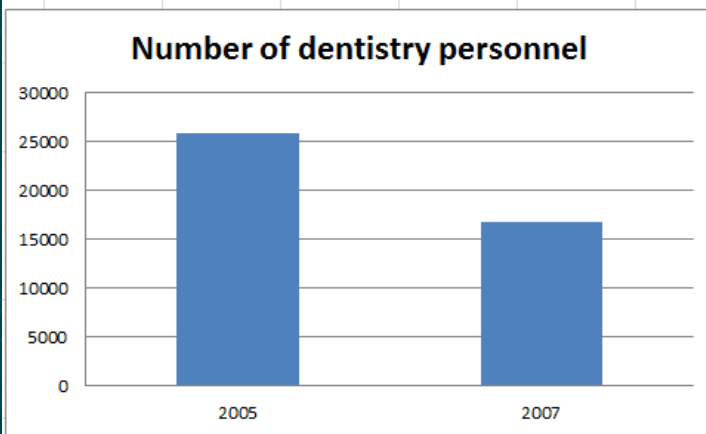
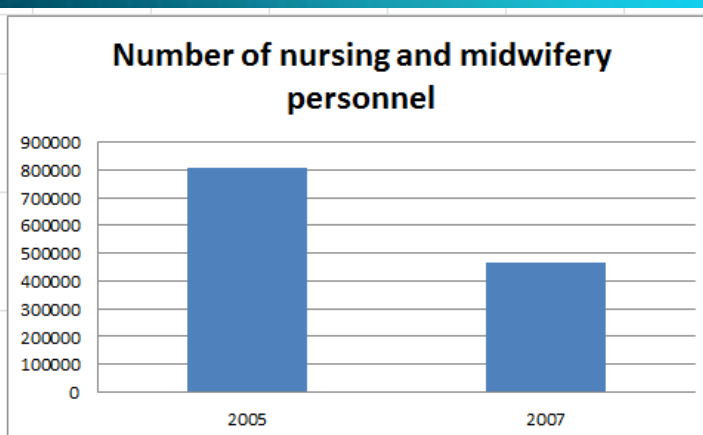
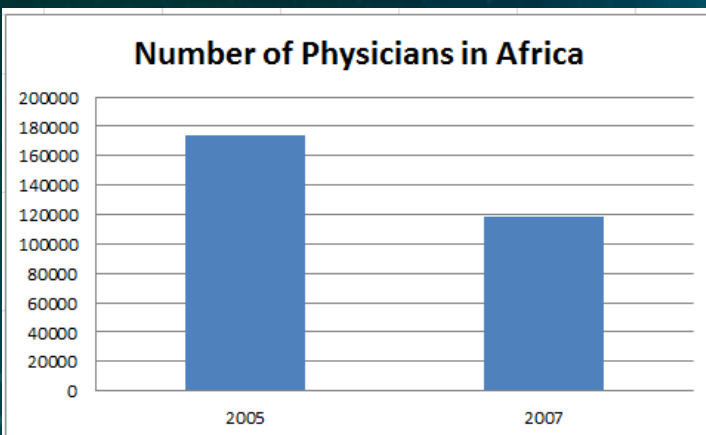


2011 Quality of Life Index



Health indicators

Source: World Health Organization



2007:

2 Physicians per 10000 population, 9 nursing per 10000 pop,
0,2 Dentist per 10000 pop, 0,2 public health workers per 10000pop

Health indicators (II)

World Health Organization

Global Health Observatory Data Repository - WHO African Region

Themes Data Repository Countries Metadata

Search

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World Health Statistics
Environmental health
Epidemic prone diseases
Equity
Global Information System on Alcohol and Health
Health systems
Health-related Millennium Development Goals
Health workforce
HIV/AIDS and other STIs

Data on the size of the HIV/AIDS epidemic: Data by WHO region

Showing data by WHO region

Show filters

Download this data as
CSV (codes only) | CSV (text only) | CSV (text and codes) | Excel (SpreadsheetML) | HTML (flat table) | GHO XML

Details: off

| | Number of children under 15 living with HIV ¹ | Number of deaths due to AIDS ¹ | Number of people (all ages) living with HIV ¹ | Prevalence of HIV among adults aged 15 to 49 (%) ¹ |
|--------|--|---|--|---|
| | 2011 | 2011 | 2011 | 2011 |
| Africa | 3 100 000 [2 700 000-3 400 000] | 1 200 000 [1 100 000-1 300 000] | 23 000 000 [22 000 000-25 000 000] | 4.6 [4.4-4.8] |

Number of people (all ages) living with HIV

Number of adults, women and children living with HIV

Prevalence of HIV among adults aged 15 to 49 (%)

Number of deaths due to AIDS

Data on the HIV/AIDS response

Data on other STIs

Children: environmental health: Water, sanitation and hygiene

Showing data by country

Show filters

Download this data as
CSV (codes only) | CSV (text only) | CSV (text and codes) | Excel (SpreadsheetML) | HTML (flat table) | GHO XML

Details: off

| | Water, sanitation and hygiene attributable DALYs per 100'000 children under 5 years ¹ | Water, sanitation and hygiene attributable deaths per 100'000 children under 5 years ¹ | Water, sanitation and hygiene attributable DALYs ('000) in children under 5 years ¹ | Water, sanitation and hygiene attributable deaths ('000) in children under 5 years ¹ |
|---------------------------------------|--|---|--|---|
| Algeria 2004 | 3711 | 101 | 114938 | 3139 |
| Angola 2004 | 43670 | 1266 | 1308451 | 37920 |
| Benin 2004 | 18200 | 518 | 235888 | 6716 |
| Botswana 2004 | 12100 | 341 | 25880 | 729 |
| Burkina Faso 2004 | 27476 | 786 | 664022 | 18985 |
| Burundi 2004 | 37668 | 1088 | 403464 | 11653 |
| Cameroon 2004 | 17401 | 497 | 479153 | 13693 |
| Cape Verde 2004 | 3471 | 93 | 2153 | 57 |
| Central African Republic 2004 | 18024 | 511 | 115396 | 3273 |
| Chad 2004 | 21527 | 618 | 387567 | 11123 |
| Comoros 2004 | 6541 | 177 | 5720 | 155 |
| Congo 2004 | 7854 | 220 | 40840 | 1142 |
| Côte d'Ivoire 2004 | 19687 | 561 | 580373 | 16533 |
| Democratic Republic of the Congo 2004 | 27258 | 786 | 3011743 | 86843 |
| Equatorial Guinea 2004 | 17739 | 506 | 16837 | 480 |
| Eritrea 2004 | 13309 | 379 | 93881 | 2673 |

Environmental indicators

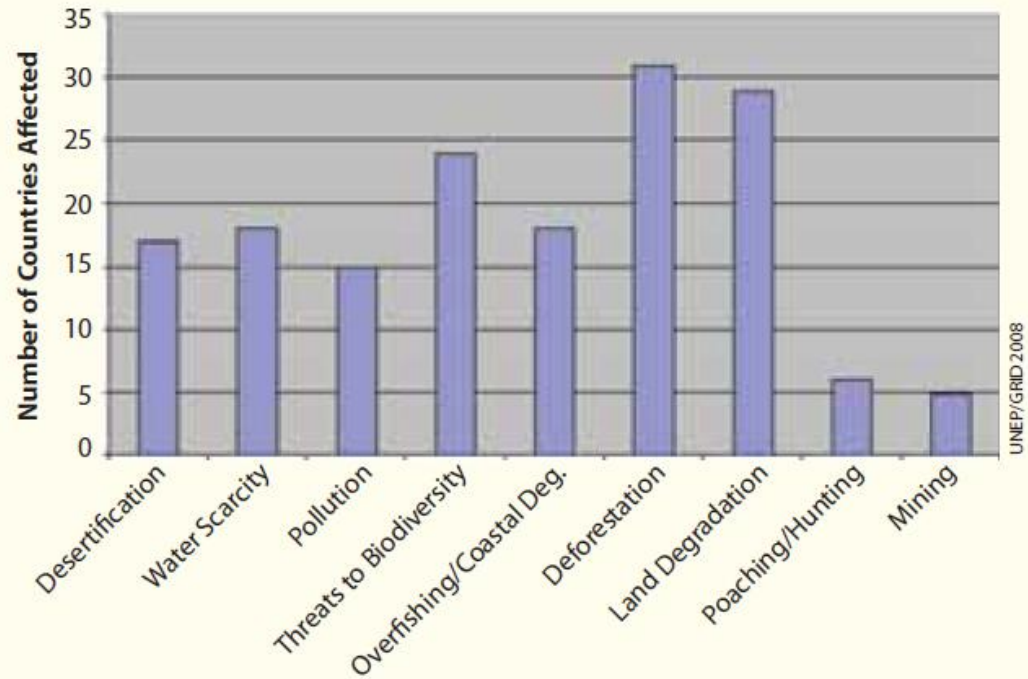
The association with carbon dioxide emissions per capita is positive and strong for HDI and nonexistent for health and education

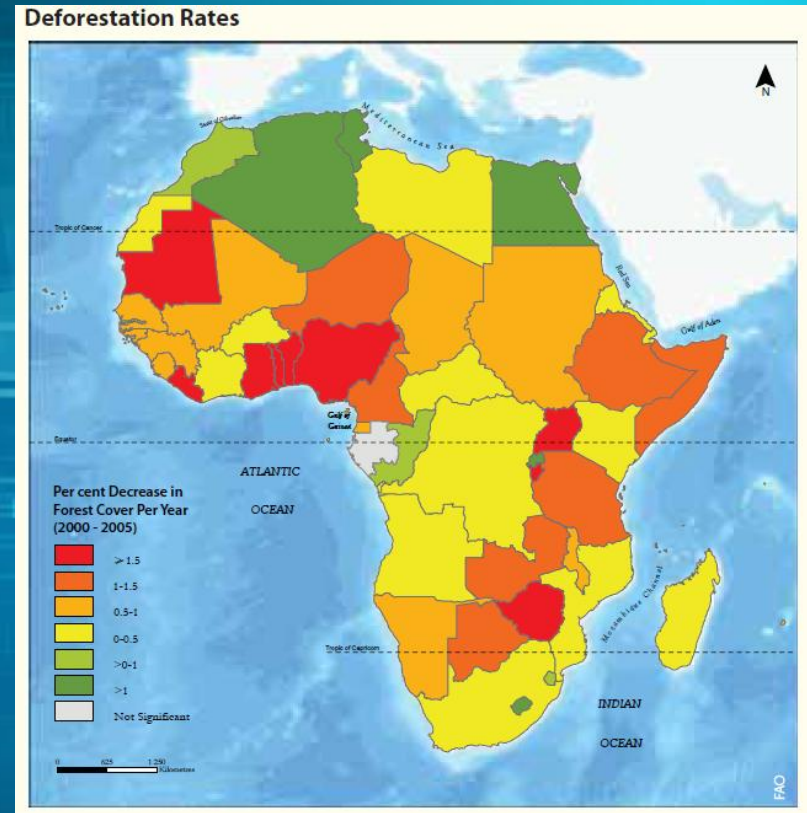
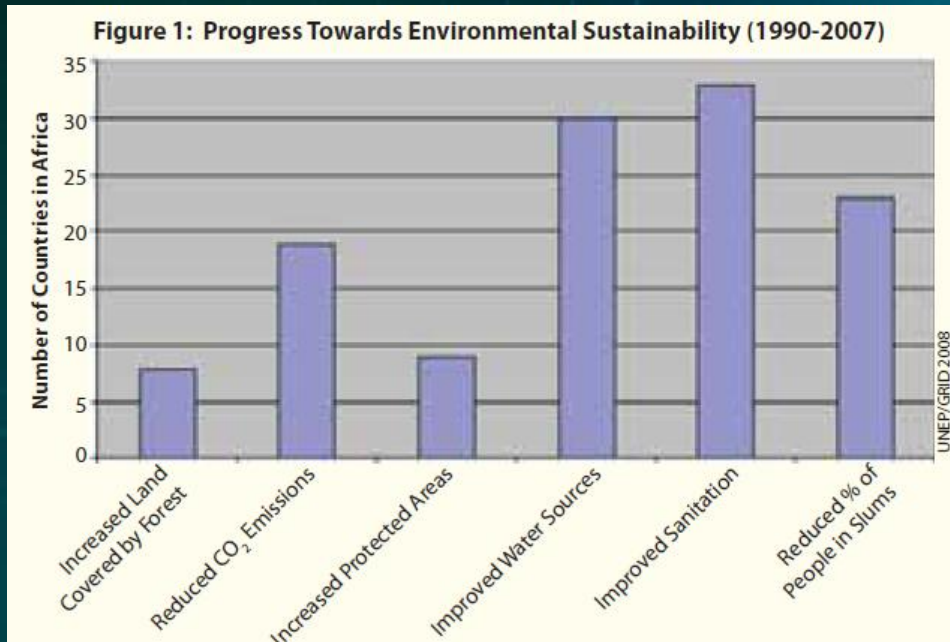
Carbon dioxide emissions per capita (tonnes)



Note: Data are for 2007.
Source: HDRO calculations, based on data from the HDRO database.

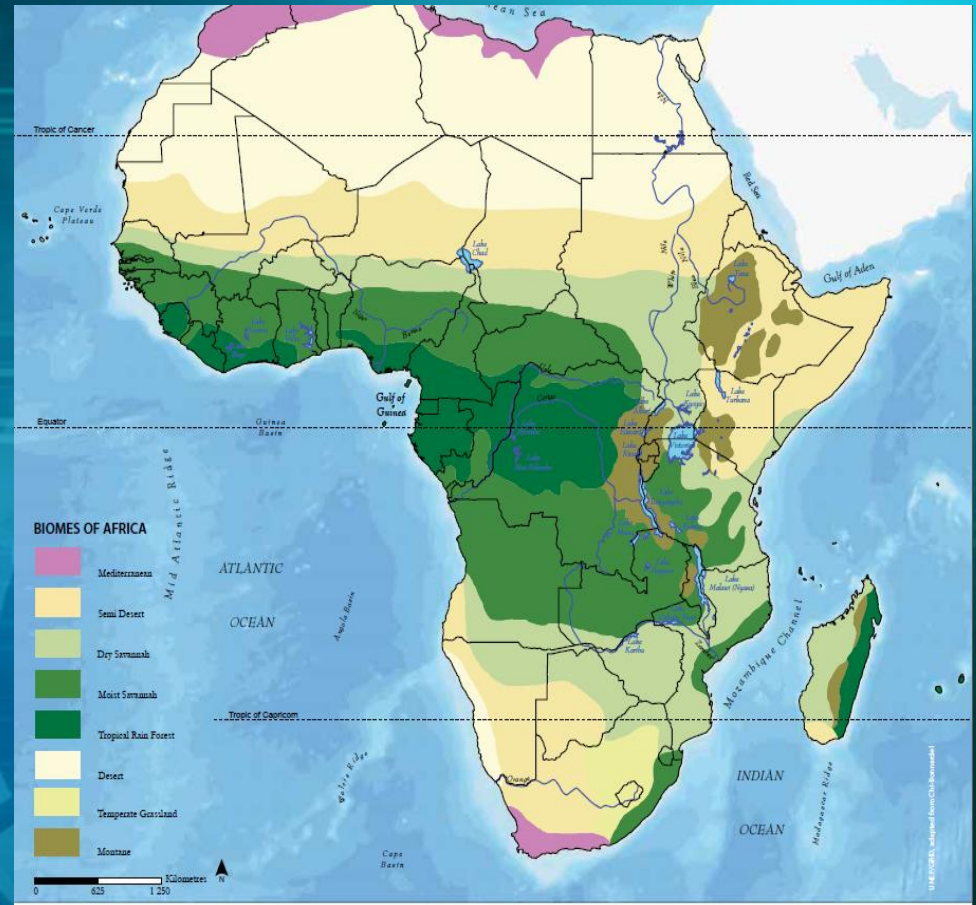
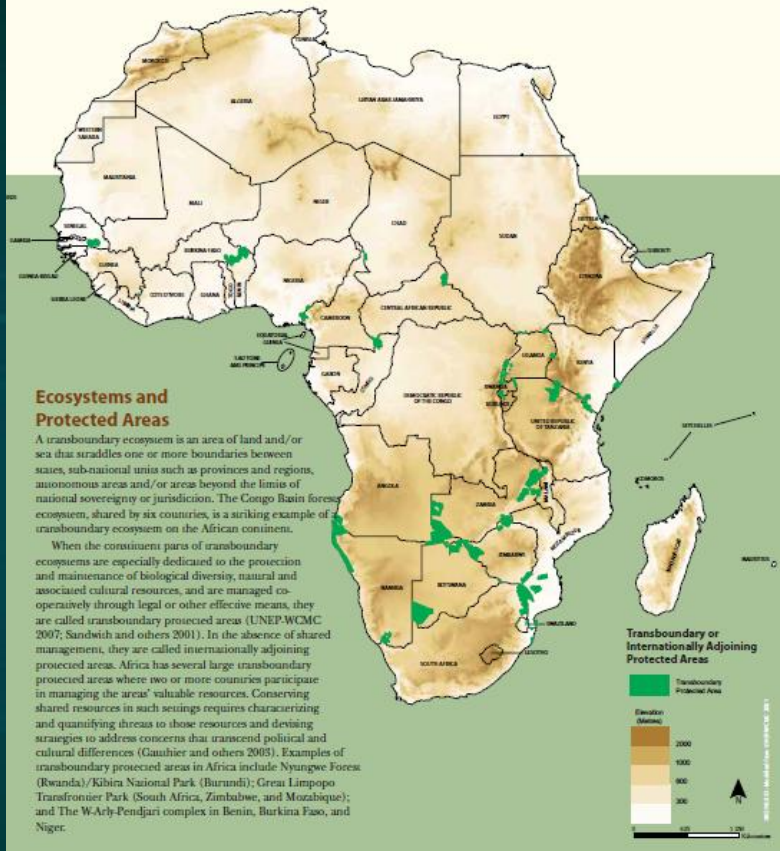
Figure 2: Examples of Important Environmental Issues in Africa





Globally, deforestation continues at a rate of about 13 million hectares per year (FAO 2007).

2.1 Transboundary Ecosystems and Protected Areas



United Nations Environment Programme
Division of Early Warning and Assessment - Africa

Designing Innovation Policies



The 'system of innovation' approach



**The Triple Helix of University-Industry-
Government Relations**

The 'system of innovation' approach (II)

Innovation Environments

- emphasis on research and development nationally as well as in enterprises
- human capital becoming one of the most central factors of competitive ability

International and regional Innovation activities approach

- the presence of business partners
- the existence of legislation to promote business (copyrights, rights of ownership, etc.)
- Networking

Innovation policies focused in social and productive priorities

- Local Social and Productive Development
- *Clusters, Interlinked value-adding activities*
- Traditional knowledge, innovations and practices of indigenous peoples and local communities. Innovation and Social Inclusion

Creating value from knowledge

INCORPORATING KNOWLEDGE IN

Agribusiness

Natural resources management

Industrial development

Social development

Environmental sustainability



Creating capacities for producing endogenous knowledge

INNOVATION

SUSTAINABLE DEVELOPMENT AND SOCIAL INCLUSION

Public policies catalyzing the process

UNIVERSITY-INDUSTRY ARTICULATION

RESEARCH AGENDA

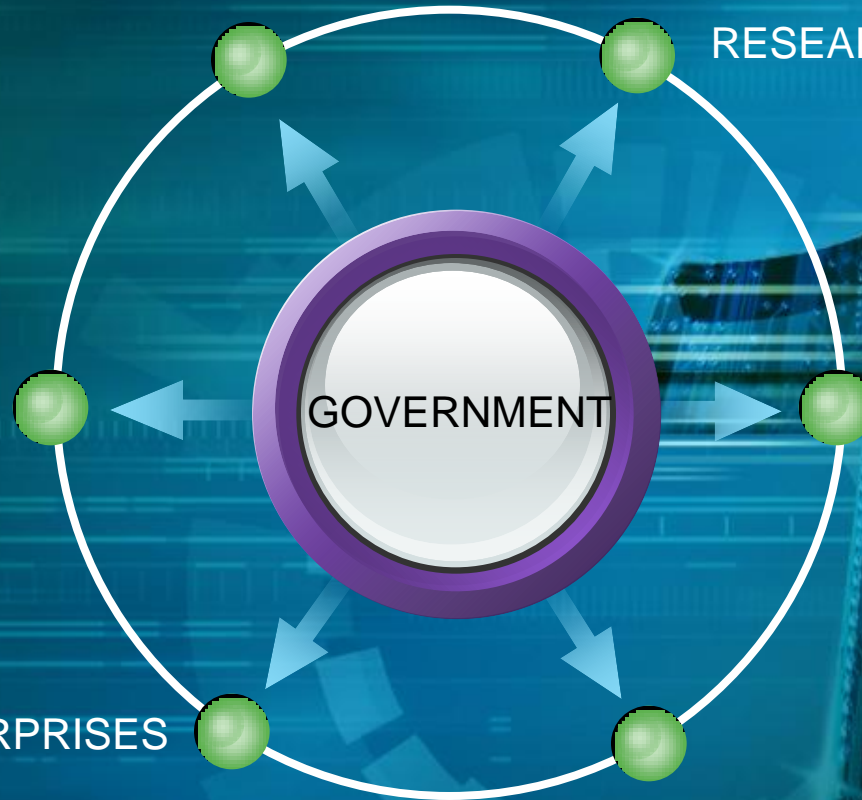
ENTERPREUNERSHIP

GOVERNMENT

DEVELOPMENT
STRATEGIC AREAS

PUBLIC-PRIVATE ENTERPRISES

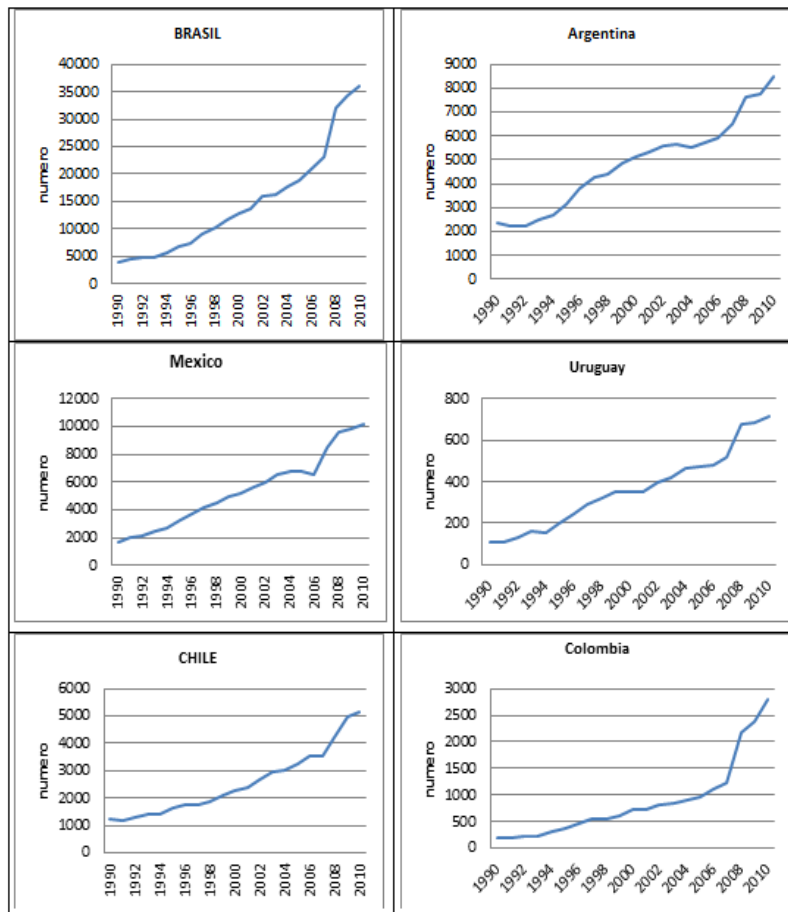
SOCIAL INCLUSION POLICIES
ENVIRONMENTAL SUSTAINABILITY



SOME LEARNED LESSONS

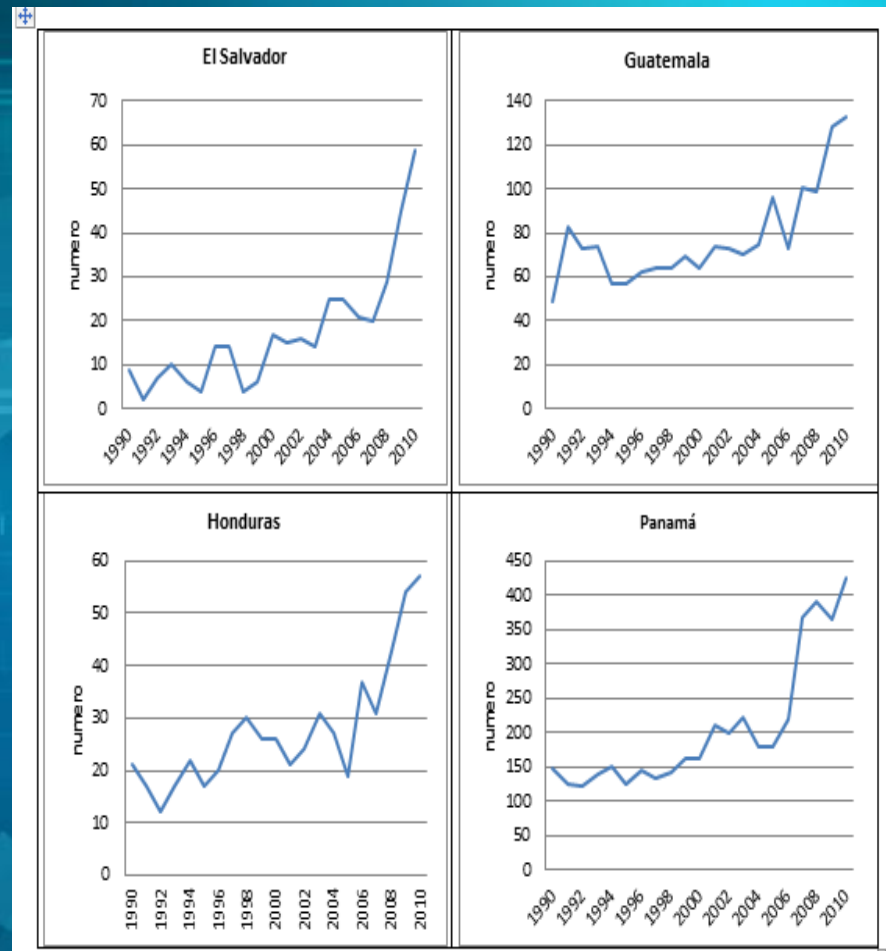
South America and Mexico

Number of scientific publications indexed in Science Citation Index



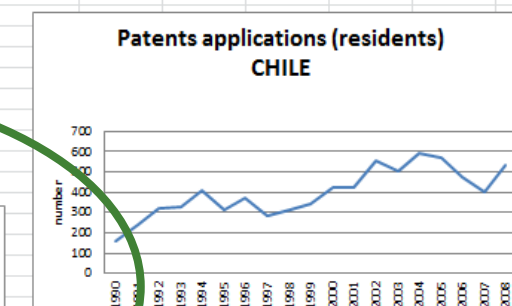
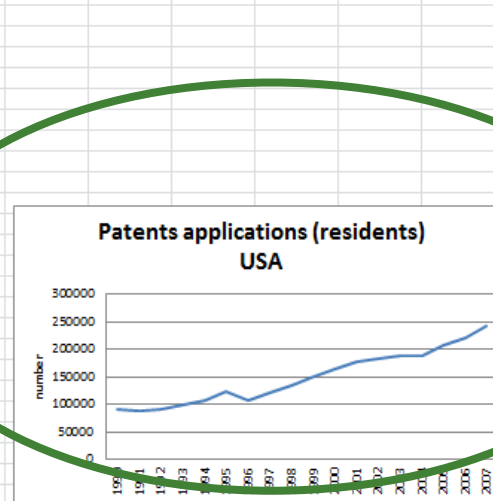
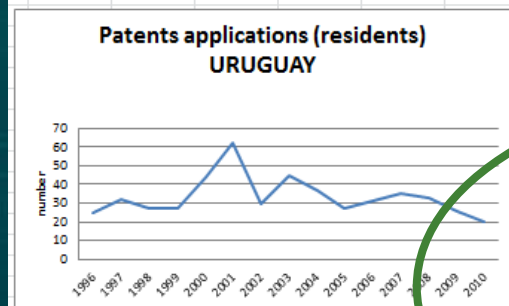
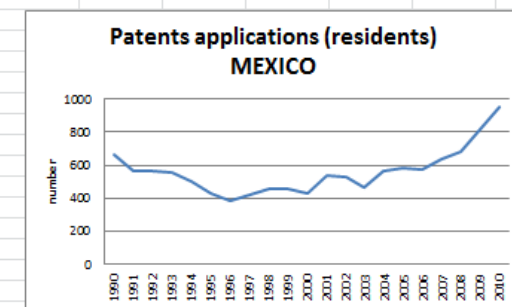
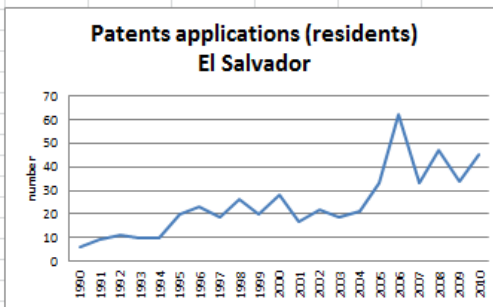
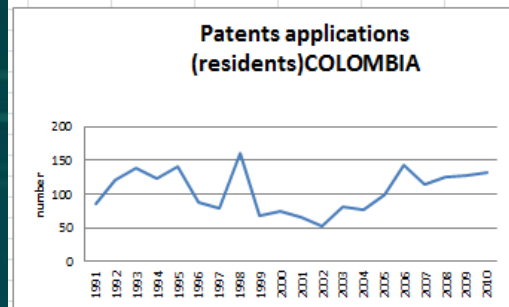
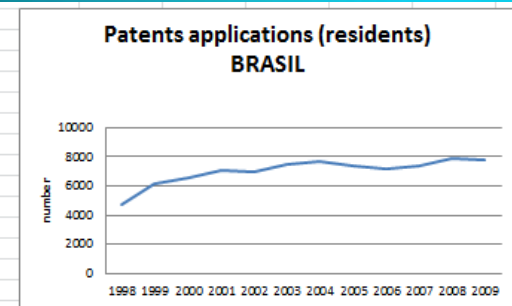
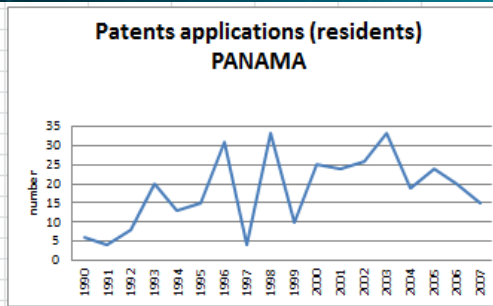
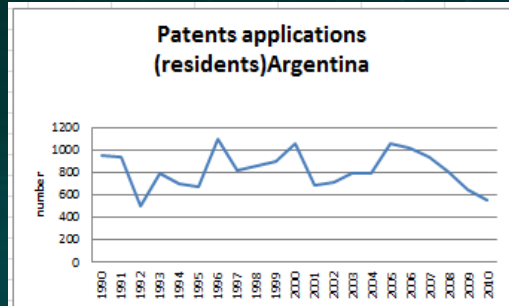
Source: own elaboration with data from RICIT

Central America



Fuente: Elaboración propia en base a datos de RICIT

SOME LEARNED LESSONS (II)



Linking R+D and Government needs

- Private sector
- University-Industry interphases
- Education (creating capacities for endogenous knowledge creation and technology adaptation)
- Entrepreneurship and IP in tertiary education programs
- Information and Communications technologies
- Local development (decentralizing innovation processes considering territorial specificities)
- Local agents involvement. Regional innovation system
- Networking (locally, regionally and internationally)
- Measuring effects to rectify policies

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Our future growth relies on
competitiveness and innovation, skills
and productivity... and these in turn rely
on the education of our people.

Julia Gillard

Thank You !