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Innovation in Developing Countries: A Perspective from Africa

Rasigan Maharajh
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Outline of Presentation

1. Introduction
2. Population and Economic Growth
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4. STI and Development
5. Diversification of African Economies
6. Macro-economic Conditions and Policy
7. Economic Sectors and Priorities
8. Millennium Development Goals
9. Global Competitiveness
10. Industrialisation and Entrepreneurship
11. Regional Integration
12. Conclusions

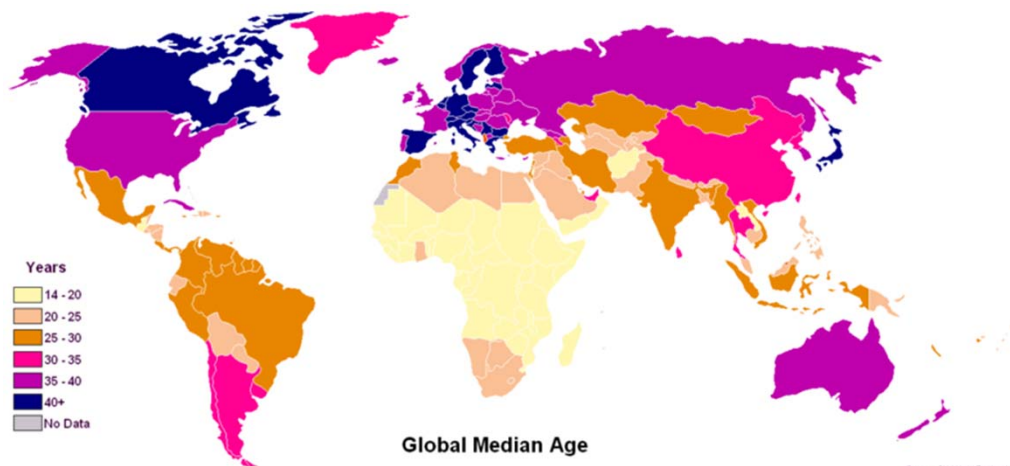


Introduction

- Economic growth - development programmes - seek to improve the quality of life of the general population
- Rising rates of change
 - *unaccompanied by any significant improvement in most of the indicators of human development & 'jobless growth'*
- Growing gap between Africa, & especially sub-Saharan Africa, and most of the rest of the world in the evolution of economic systems and the ensuing trading and investment patterns
- Entrenching the decoupling of economic growth and human development within the structure of most African economies



Population & Economic Growth





STI: Institutions & Policy

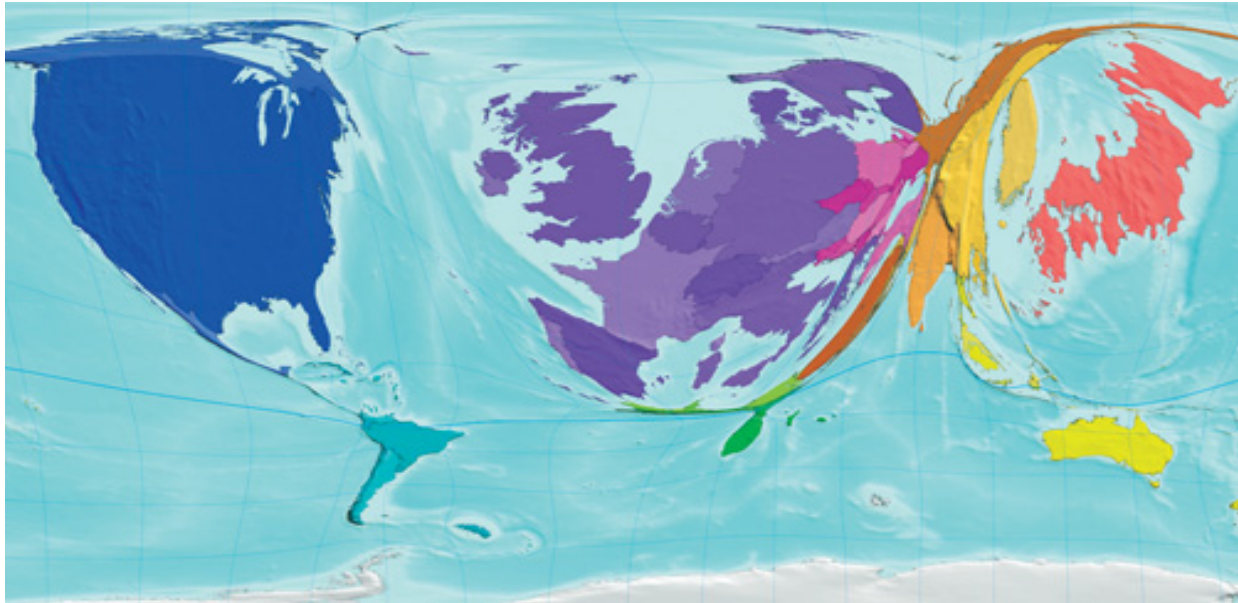
- ❑ Traditional definitions limit the scope of Policies by constraining Institutions
- ❑ Complex interdependencies underpin NSI's
- ❑ Dangers of isolated indicators
- ❑ Uneven spread of STI institutions across the continent
- ❑ High degree (sic) of differentiation



STI & Development

- ❑ Classical: Smith, List, & Marx
- ❑ Evolutionary Economics: Solow's (1956), Nelson and Winter (1982), Dosi et al (1988), Lundvall (1992), & Freeman (1993)
- ❑ STI can serve to entrench current structures
- ❑ Counterfactual requirement of the recognition of historical and structural specificities (NSI)

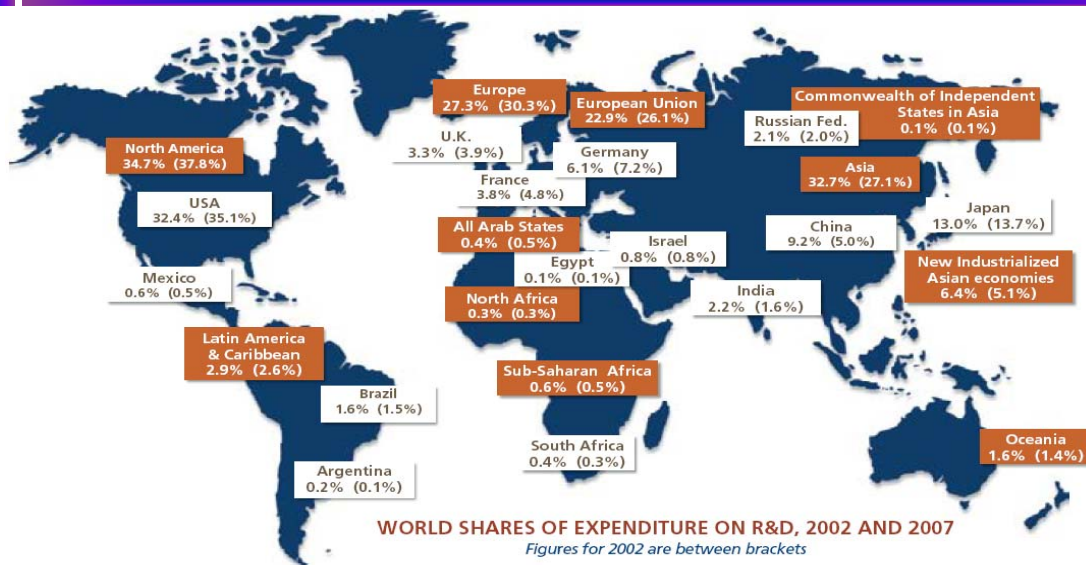
Proportion of all Scientific Papers published in 2001



Source: worldmapper data-ii-science research



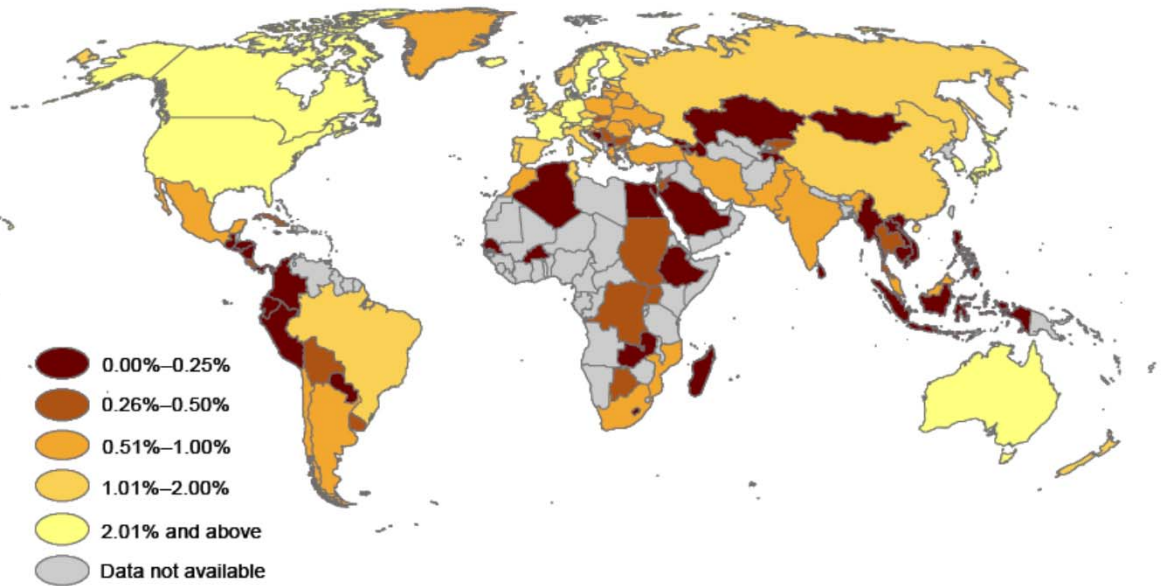
Africa: GERD (Latest Year)



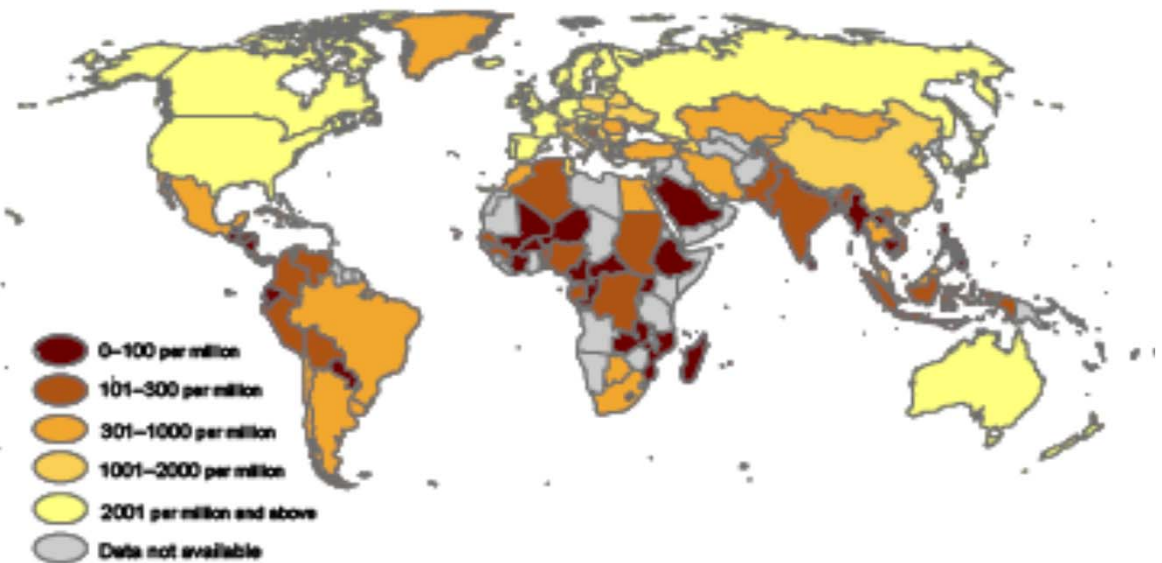
WORLD SHARES OF EXPENDITURE ON R&D, 2002 AND 2007
 Figures for 2002 are between brackets

Source: UNESCO Science Report 2010 (in print)

GERD % of GDP

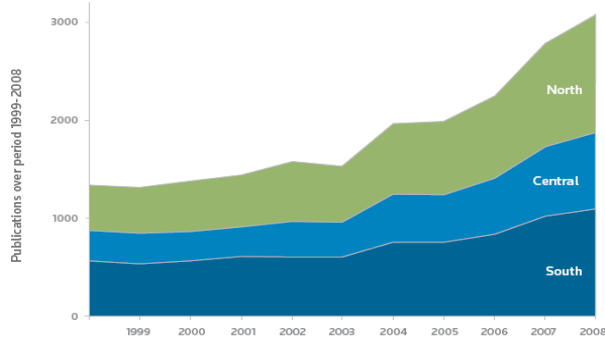


Researchers per million inhabitants





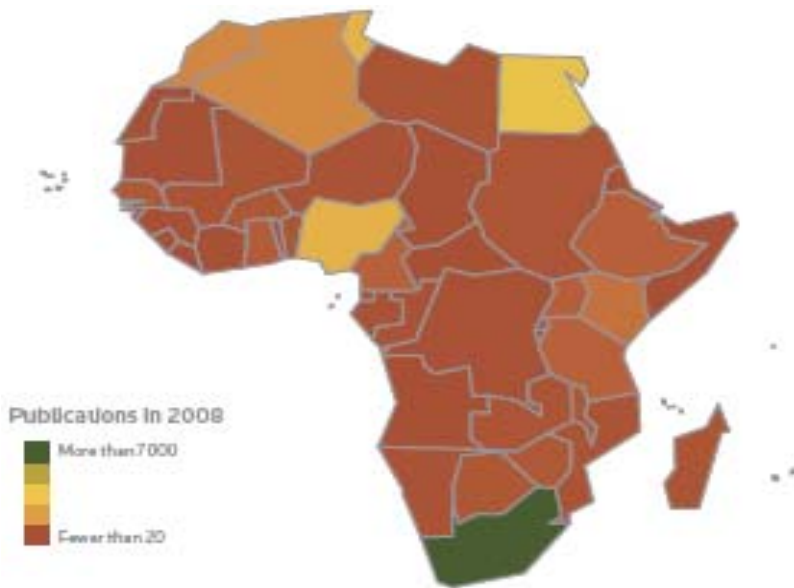
Regional Output



African Nations by Region (Listed within each region by descending order of publication volume, 1999-2008)	
North	Egypt, Tunisia, Morocco, Algeria, Sudan
Central	Nigeria, Kenya, Cameroon, Ethiopia, Uganda, Ghana, Senegal, Cote Ivoire, Burkina Faso, Madagascar, Benin, Gambia, Reunion, Gabon, Mali, Niger, Republic of the Congo, Togo, Eritrea, Guinea Bissau, Rwanda, Mauritania, Central African Republic, Guinea, Chad, Burundi, Sierra Leone, Liberia, Comoros, Equatorial Guinea, Cape Verde, Djibouti, Sao Tome & Principe, Somalia
South	South Africa, Tanzania, Zimbabwe, Botswana, Malawi, Zambia, Namibia, Mozambique, Mauritius, Democratic Republic of the Congo, Swaziland, Seychelles, Angola, Lesotho



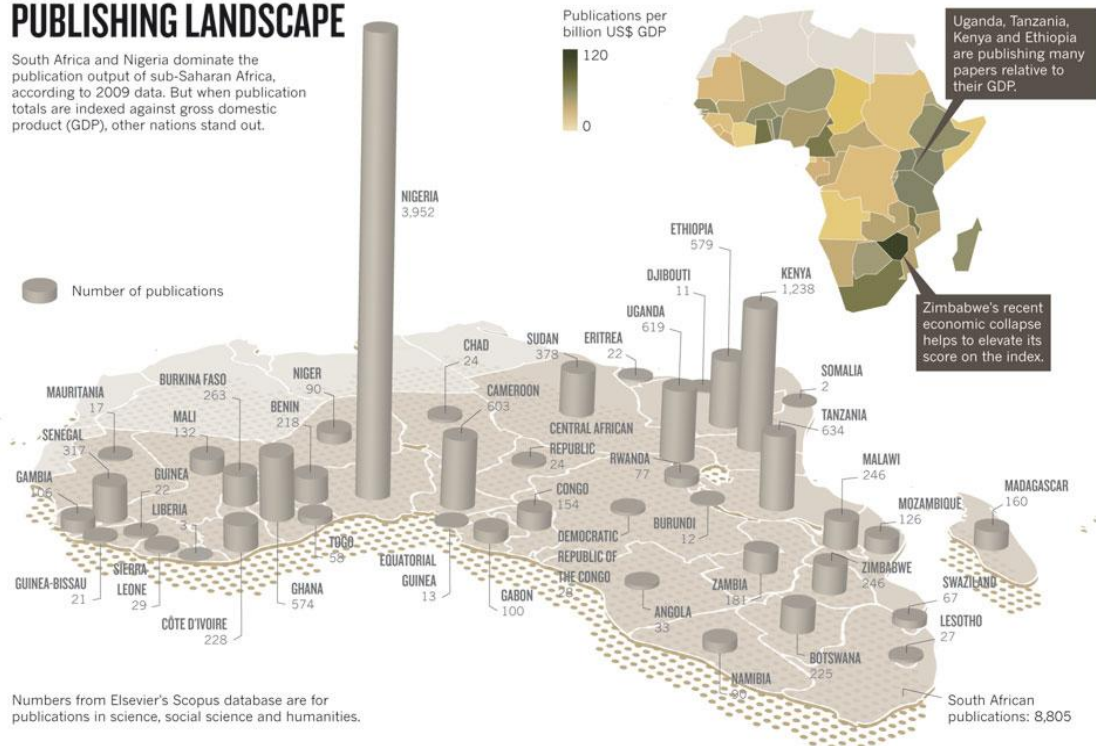
Country Output





PUBLISHING LANDSCAPE

South Africa and Nigeria dominate the publication output of sub-Saharan Africa, according to 2009 data. But when publication totals are indexed against gross domestic product (GDP), other nations stand out.



African Economic Diversity

- ❑ Integration requires the existence of different reciprocal markets for trade and investment, as well as for the flow of knowledge and human capital, among the prospective partner countries
- ❑ Most of African economies remain natural resource trap
- ❑ Low diversification of African economies
- ❑ Limited opportunities of intra-Africa trade



African Economic Diversity

Sector Share of change in real GDP for Africa, 2002–07; 100% = US\$235 billion

Sector	Percentage
Resources *	24
Wholesale and retail	13
Agriculture	12
Transport, communication	10
Manufacturing	9
Financial Intermediation	6
Public administration	6
Construction	5
Real estate, business services	5
Tourism	2
Utilities	2
Other Services **	6

Source: McKinsey Global Institute Analysis: 2010

In 2005 dollars.

* Government spending from resource-generated revenue contributed an additional eight percentage points.

** Education, health, household services, and social services.



Macro-economic Conditions & Policy

- ❑ Long term structural transformation process
 - ❑ appropriate conditions for the development of the broad based human capital base of the economy
 - ❑ fiscal and monetary policies become the supporting policy tools
 - ❑ development of sound governance
 - ❑ healthy and participatory civil society
- ❑ fostering of economic, as well as constitutional, democracies



Economic Sectors and Priorities

- ❑ “big push” theory of economic development
 - ❑ balanced growth
 - ❑ the interdependence of sectors, especially in terms of consumption power, within a closed economy framework
 - ❑ unbalanced growth
 - ❑ priorities assigned on the basis of industrial linkages and potential spill-over and multiplier effects
- ❑ Picking / Selecting Winners – Can we predict future states on the basis of current ones?
- ❑ “imagining the future” – Science and Technology Foresight



Millennium Development Goals

- ❑ ... growth has mostly not been the rapid, sustained and inclusive growth that is key to lifting people out of poverty.
 - ❑ Economic growth has been robust largely in countries with enclave resources such as oil and minerals. With few exceptions, the fruits of such growth have not been widely shared with the poor.
- ❑ ... many States have only weak capacity to carry out their basic functions and are not investing sufficiently in key social sectors such as education, health, water and sanitation.
- ❑ ... HIV/AIDS ... aggravated weak economic growth in many countries and is depleting human capital, the very foundation of social development.
- ❑ Inequality, Discrimination & Conflict
 - ❑ (UNECA, 2010, p. 13)
- ❑ *We recognize that more attention should be given to Africa, especially those countries most off track to achieve the Millennium Development Goals by 2015. Progress has been made in some African countries, but the situation in others remains a grave concern, not least because the continent is among the hardest hit by the financial and economic crisis. We note that aid to Africa has increased in recent years; however, it still lags behind the commitments that have been made. We therefore strongly call for the delivery of those commitments.*
 - ❑ High-level Plenary Meeting, General Assembly, United Nations, 64th Session (A/65/L.1)



Global Competitiveness

- ❑ Poorly developed industrial base, small populations with limited purchasing power and impoverished reproductive basis for human capital development strongly militates against the probabilities of developing sufficient local competences in the *free trade era*
- ❑ The continent, as a whole, however has the possibilities for breaking out of the poverty trap, in spite of the formidable political and institutional obstacles on the way to viable integration.
- ❑ *“the necessary overrides the improbable”*
 - ❑ Muchie et al (2003)



Industrialisation & Entrepreneurship

- ❑ “Unless we reject the myth of heroic individual entrepreneurs and help ... build institutions and organizations of collective entrepreneurship, we will never see the poor countries grow out of poverty on a sustainable basis”
 - ❑ Ha-Joon Chang (2010) Poverty, Entrepreneurship, and Development, accessed at: http://www.wider.unu.edu/publications/newsletter/articles-2010/en_GB/10-2010-Chang/
- ❑ Translating of entrepreneurship into general welfare also requires a comprehensive and effectively enforced regulatory framework
- ❑ Solid institutional foundation within which entrepreneurship can be leveraged to stimulate the type of industrialisation process required for structural transformation and development



Regional Integration

- ❑ Continental-scale ‘imagined’ community
 - ❑ Improved mobility of people and resources
 - ❑ Institutional Convergences [Legal]
 - ❑ Ecological, Financial, Industrial, Trade & Labour
 - ❑ North-South Divide
 - ❑ Multiplicity, Duplicity and Detachment from Evidence
- ❑ Viability & Sustainability



Conclusions

- ❑ Path dependencies and trajectories
- ❑ *Creative Destruction*
- ❑ *Improving Institutions*
 - ❑ Broadly Participative
 - ❑ Transparent
 - ❑ Universal Access
- ❑ *Innovation Systems*
 - ❑ Policy Harmonisation & Coordination



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Gracias, ...r

