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*Institute for Economic  
Research on Innovation*

TSHWANE UNIVERSITY OF TECHNOLOGY

# *Crisis's, Science, Technology, Innovation & Development*

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Round Table on Innovation and Development

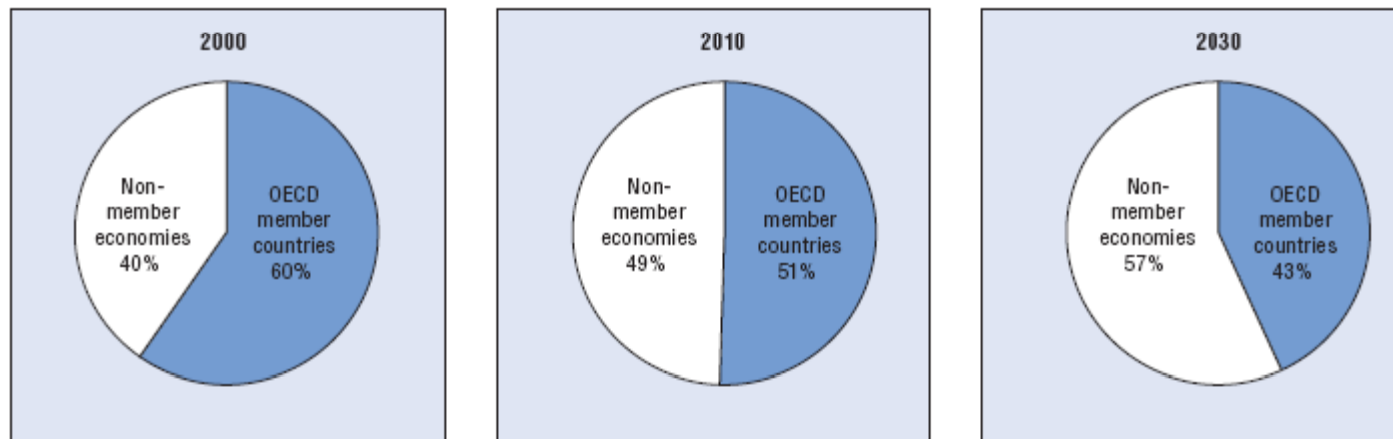
BNDES, Rio de Janeiro, 7 January 2011



# Outline of Presentation

1. Introduction
2. Crisis's
3. Innovation
4. Development
5. Conclusion

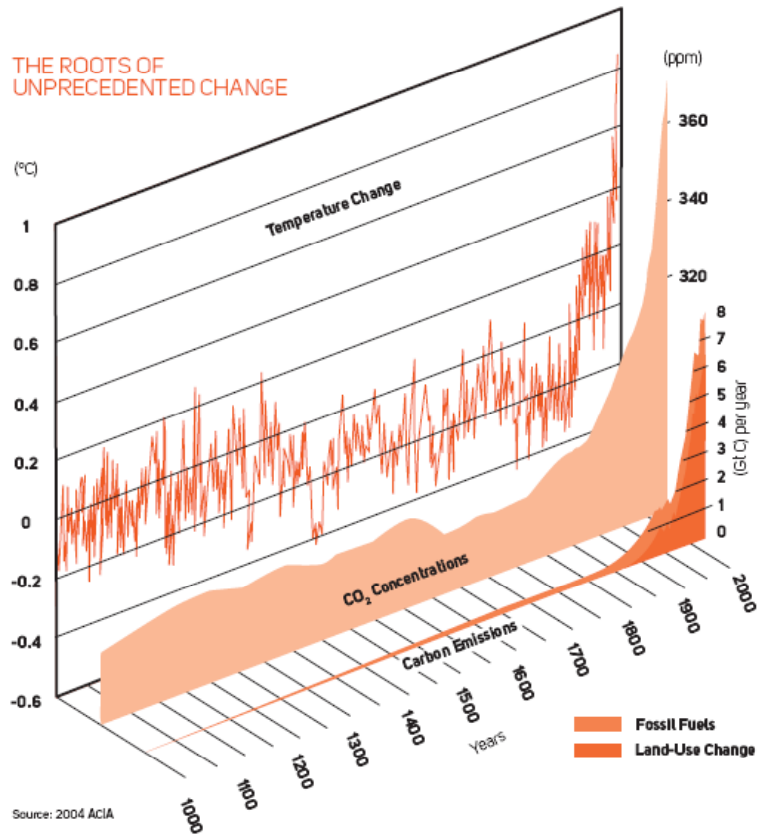
# Introduction



- ❑ “This realignment of the world economy is not a transitory phenomenon, but represents a structural change of historical significance” (OECD, 2010).

# Crisis's I

## THE ROOTS OF UNPRECEDENTED CHANGE

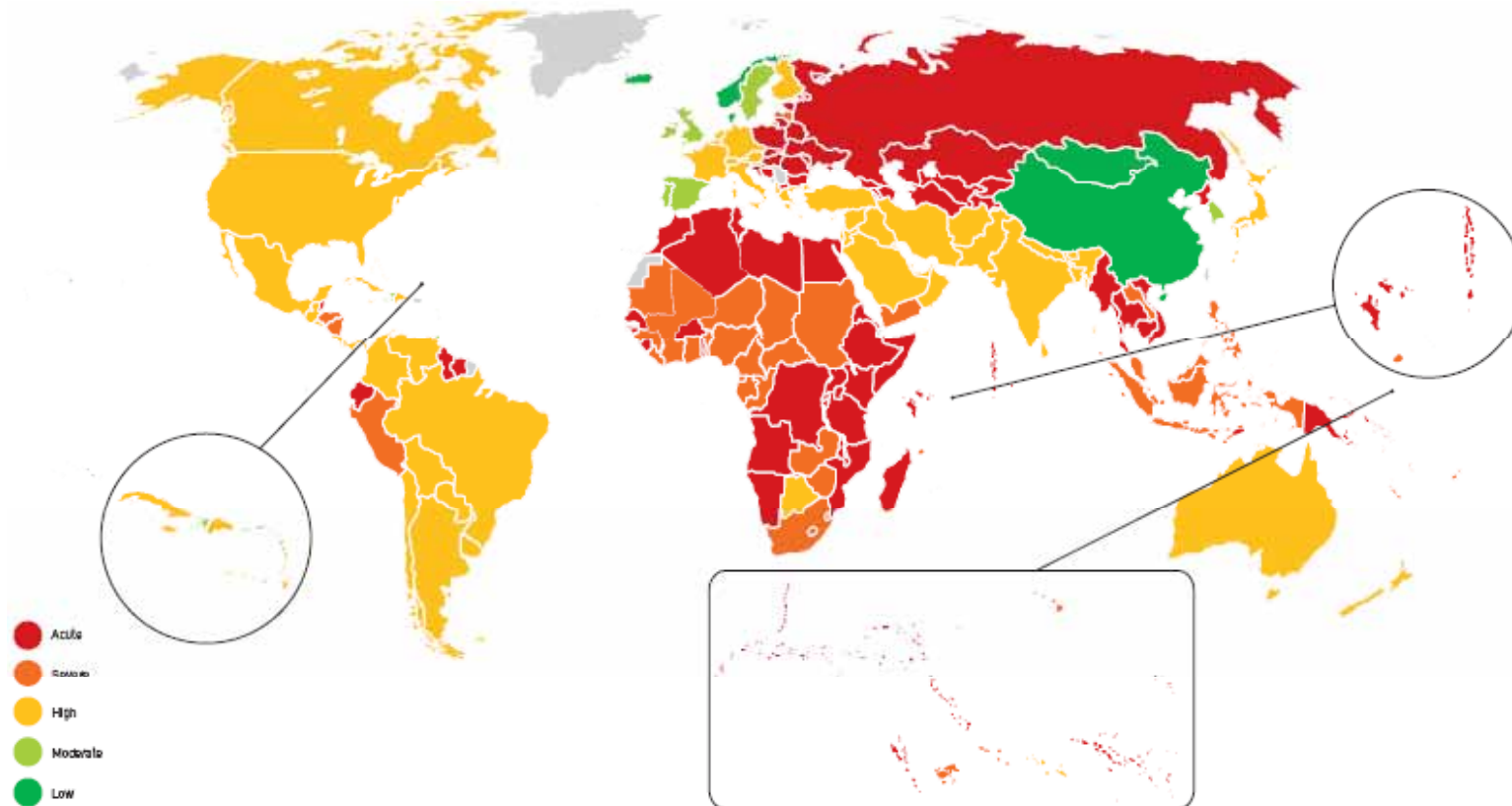


- Climate
- Mitigation
- Adaptation
- Energy
- Energy Transition
- Climate Resilience
- Environment
- Anthropocene*
- Financial
- World gross product contracted by 2.2 % (2009)
- Volume of trade shrank by 12.5 % (2009)
- Food
- Insecurity
- Chronic worldwide hunger

# Crisis's II

## GLOBAL VULNERABILITY TO CLIMATE ECONOMIC STRESS

Countries by overall climate vulnerability for economic stress



# Crisis's III

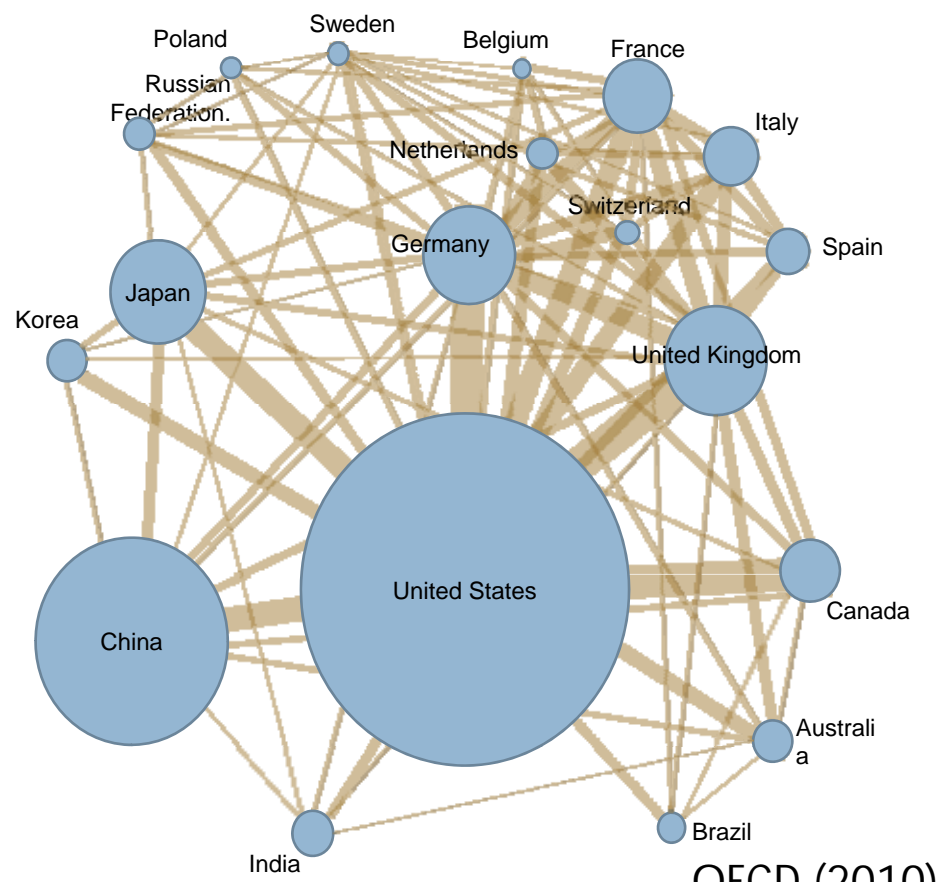
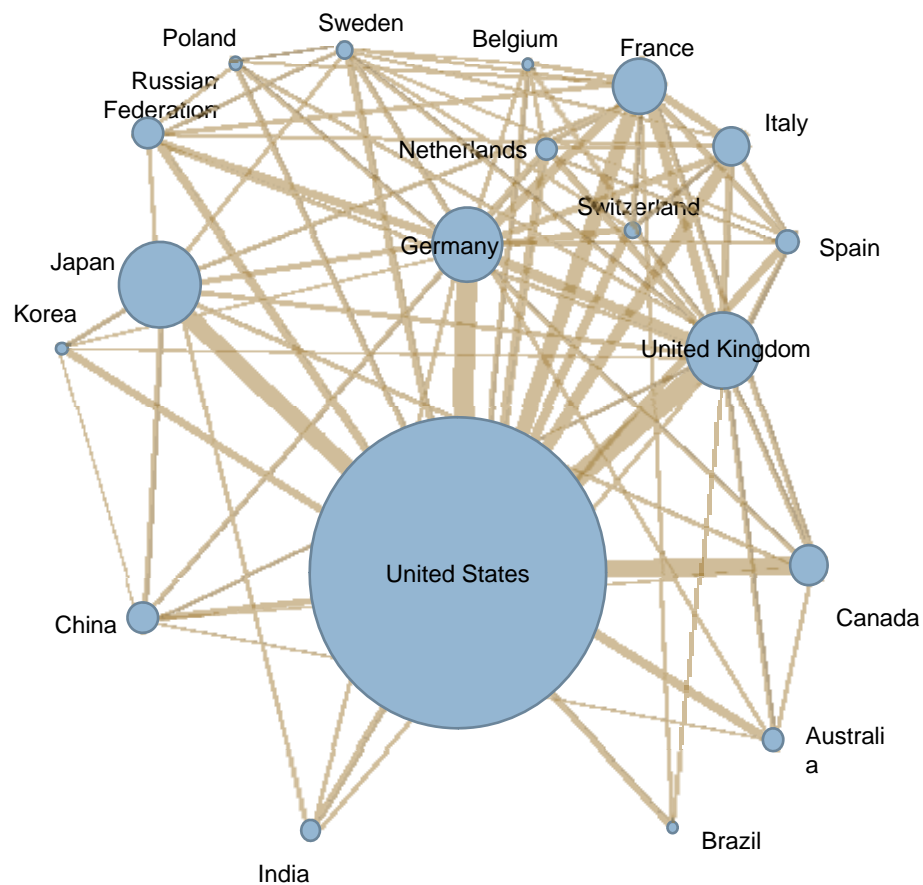
- ❑ Generalised capitalism of oligopolies dominates in all domains of economic life
  - ❑ Collective imperialism of the triad
  - ❑ Oligopolistic form of capitalism is at the origin of its 'financialisation'
- ❑ To question the domination of the monetary and financial markets over all the other markets would be to question the monopolistic rent of the oligopolies
- ❑ 'End of Abundant Access to Resources'
  - ❑ North – South Conflict Impacts
  - ❑ 'imperial rent' - accumulation of capital characterised by an 'accumulation through dispossession' of the peoples of the peripheries
  - ❑ the crisis offers the occasion to renew a national
- ❑ Development must be popular and democratically self-centred, submitting relations with the North to its own requirements

(Amin, 2010)

# Crisis's IV

- ❑ ***Costs borne unequally between & within countries***
- ❑ *Changes in Production Patterns*
  - ❑ New International Division of Labour
- ❑ *Changes in Consumption Patterns*
  - ❑ New Global Middle-class
  - ❑ “prepare for a time when emerging markets are at least as important as drivers of consumption as they are platforms for low-cost operations” (Lowell Bryan, 2010)
- ❑ *Changes in Accumulation Trajectories*
  - ❑ Transitions in Techno-Economic Paradigms
  - ❑ Role of Financial Instruments
- ❑ Austere ‘Old’ Triad & rise of the BRICS+

# STI: Articles and Co-publications (1998 & 2008)



OECD (2010)



# STI Trends

- ❑ As global growth shifts to areas outside the OECD, emerging economies – from China, Brazil, Russia and South Africa – increasingly focus on innovation as a means to move up the value chain. The policy focus is not just on developing technological innovations for export competitiveness, but also on using existing technologies and non-technological innovations to address infrastructure and social needs such as water, health, education, transport and energy (OECD, 2010)
- ❑ NOTE: the technologies are themselves shaped by the dominant social relations (Amin, 2008)

## *The Part Played by Labour in the Transition from Ape to Man*

With every day that passes we are acquiring a better understanding of these laws and getting to perceive both the more immediate and the more remote consequences of our interference with the traditional course of nature. In particular, after the mighty advances of natural science in the present century, we are more than ever in a position to realise, and hence to control, also the more remote natural consequences at least of our day-to-day productive activities. But the more this progresses the more will men not only feel, but also know their oneness with nature, and the more impossible will become the senseless and unnatural idea of a contrast between mind and matter, man and nature, soul and body.

Frederick Engels (1876) *Dialectics of Nature*, Progress Publishers [6<sup>th</sup> Printing, 1974].

# Development Challenges

- ❑ Sustainability in an Unequal World?
  - ❑ Integrating Climate Change into Development Planning
  - ❑ *Dematerialisation*
  - ❑ **Real** Technology Transfers, Diffusion & Deployment
  - ❑ Global Reconciliation of Trade-offs
  - ❑ Universal Access to health and education services, water, sanitation, energy infrastructure, and social security provisions

# STI & Development

- ❑ Build domestic STI policy competences through evidence-based research.
- ❑ Improve policies and institutions within a framework of autonomy and accountability while ensuring that learning from implementation is acknowledged and progressively feeds back into improving strategies
- ❑ Recognise and support human resource development and management capability formation
- ❑ Achieve funding sustainability through public-private interaction and cost recovery
- ❑ Aim at merit and scientific rigour through competitive funding, peer review, etc.
- ❑ Enhance existing linkages and establish new ones between the productive and the knowledge sectors, while ensuring improved access to basic research and the growing international knowledge base

(Maharajh & Kraemer-Mbula, 2010)

# Conclusions

- ❑ Global Geo-Political Regime Transformation
  - ❑ *Market Dogma & Neo-liberalism*
    - ❑ New Public Management
      - ❑ Cutting of direct public sector costs and disciplining staff to improve resource use
      - ❑ Borrowing and use of private sector management practices and techniques
      - ❑ Introduction of competition in the public sector
      - ❑ Disaggregation and decentralisation of government and the public sector
      - ❑ Controls shifted from inputs to outputs to stress results rather than procedure or outcomes
    - ❑ *Predatory Elites or Benevolent Reformers*
  - ❑ International Solidarity *or* Humanitarianism (Amin, 2010)
- ❑ Global Citizenship!

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Thank you for your patience and  
attention. Muito Obrigado, ...r

