

Sri Lanka's Innovation System according to the 2008 "Building the Knowledge Economy" document of the world Bank

A critique

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Colombo, March 25, 2008,



Overview

- A discussion on innovation is timely

But

- The analysis is based on an outdated interpretation of the National Innovation System Concept
- Recommendations not supported by the analysis



National Innovation System Concept is old

- ❑ Freeman, 1987
- ❑ Lundvall, 1992
- ❑ Nelson, 1993
- ❑ Patel and Pavitt, 1994
- ❑ Metcalfe, 1995

a system of interconnected institutions to create, store and transfer the knowledge, skills and artifacts which define new technologies." (Metcalfe, 1995)



National Innovation System Concept, WB 2008

Innovations system within a country consists of networks of institutions, rules and procedures, enterprises, universities, research institutes, think tanks and consulting firms (WB, 2008)

- Narrower Definition than 1985-1995
- Does not take current realities into account



Some Features of the WB analysis that need revisiting

- Manufacturing/S&T focus
 - services ignored
- Mode-1 knowledge focus
 - mode-2, user generated content etc., Google Knol etc. ignored
- Assumes we have universities



Manufacturing v. Services

- Service sector is >50% of GDP and growing
 - developed countries-70%; Sri Lanka 56%

- Services comprise 9 out of 10 steps in a modern production process
 - W A Wijewardena, Professor Sirisena Tilakaratna Memorial Lecture, 15 December 2006

- We now know much about Innovation in services
 - Discrete but small steps
 - Suppliers, customers and consultants as major knowledge sources (Freel, Gallouj, Tether etc.)



Mode -1 v. Mode -2

- Mode-2 knowledge, or Knowledge produced outside of formal knowledge institutions in the context of work, was predicted to become more important
 - Gibbons, et al. 1994 ; Novotny, Scott and Gibbons, 2006
- Universities as cross-roads ; universities giving AND receiving knowledge
 - (Delanty, 2001, Challenging Knowledge: The University in Knowledge Society)
- Web presence as knowledge capacity
 - Webometrics to assess universities
 - Katz (2006), Web Indicators for Complex Innovation Systems
 - Gamage & Samarajiva, ITID, forthcoming



Universities or undergraduate colleges

- **PhDs:** Sri Lanka produced 2.5 PhDs per year on average during 1991-2000 in 7 universities; Colombo 5 per year; Peradeniya 6 per year (Upali Samarajeewa Study)

(Carnegie classification 2000: Research I, 50 PhDs a year; Research II, 20 PhDs a year)

- **Research:** Research produced by 'pockets of productivity' or faculty on Sabbatical (Gamage, ISI, 1993-2002); Percent of licensable research?

- Malaria/Filaria
- Solid State Physics
- Natural products
- Natural resources
- Agriculture

- **Faculty qualifications:** 23% of Humanities and Social science teachers have a bachelors degree only; 33% have a masters from same university (Gamage, 2005, Corporate Plan, UGC Sri Lanka)



Recommendations not supported by Research

- Spending on R&D (S&T) needs to increase
 - At the expense of text books, supplementary books, hostels for undergraduates?; PhD training overseas for HSS or management faculty?
- Linkages between research and industry must improve
 - Ask Agricultural exporters to contribute cash for linking activity or invite them to sit on faculty boards; current LIRNEasia research on distributed knowledge.
- Entrepreneurship as a priority in the sciences
 - What do we know about teaching entrepreneurship? Start with career 101.
- Tax incentives
 - Objective should be increase competitiveness, not necessarily to link 'local' research to innovation
- Procurement should be decentralized
 - Existing models at University of Moratuwa? Set up a research foundation Redo the Research and Research Training Study by Samarajeewa



Conclusions

- Important to start the conversation on innovation in a small developing country such as Sri Lanka

But

- We do not have sufficient evidence at this point to make recommendations
- In fact, each recommendation in WB, 2008 document is a hypothesis that needs to be researched and verified

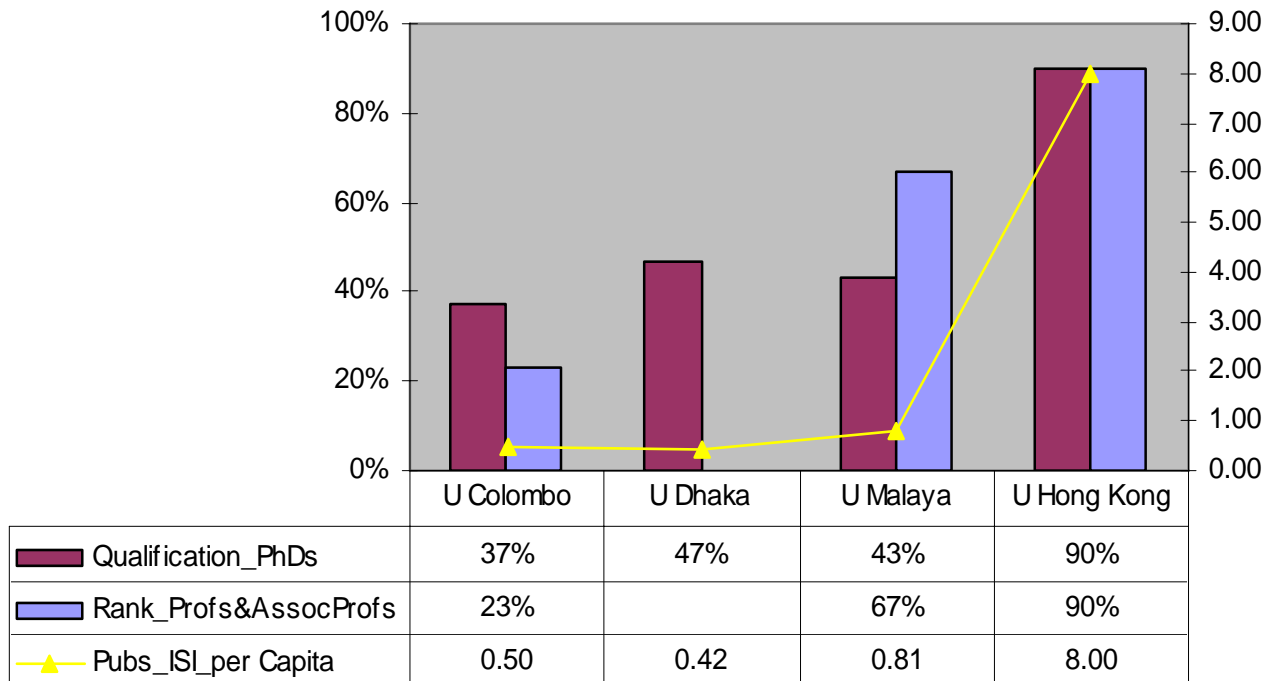


Our Work on Innovation



www.lirneasia.net

Quality of faculty in universities in the region, 2005



Qualification_PhDs
 Rank_Profs&AssocProfs
 Pubs_ISI_per Capita



Linking Knowledge to Innovation: The role of universities, Colombo , January 25, 2007

■ Universities

- Malaysia, Philippines, Bangladesh, Sri Lanka)

■ Industry

□ Agriculture (Palwehara Farm)

Technology or knowledge is not an issue. Financing, tax incentives, infrastructure, governance, HR are the issues

□ Tourism (Aitken Spence)

Productivity/creativity of people

□ ICT (SLICTA)

Productivity/creativity of people

(anecdotal; Need a systematic study)



Current Research at LIRNEAsia

Knowledge to innovation processes in solid waste services by local government in Sri Lanka

distributed knowledge/systems approach
Project is funded by the Innovation Policy and
Society Division of IDRC

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A Knowledge Network Model of Innovation

