



**Changing lives of
ordinary people
through human and
social sciences**

Identifying critical linkages and interactions: universities and development in sub-Saharan Africa

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The challenge in sSA

- Largest group of low and middle income countries – not reached threshold conditions of development in education and health
- Institutions operate furthest from global scientific and technological frontier
- Universities and PRIs assigned critical roles by government, international agencies but much remains at level of ‘expressions of intent’
- Aspirational – little regard for specificities and actual state of scientific and education systems
- Systematic research minimal

Taking stock of a research journey

- Emerging attempts to grapple with NSI frameworks
- Lorentzen (2008, 2011): proceeding from **wrong** questions (don't need 'idiosyncratic' frameworks for each context)
- **Right** question: understand in context of innovation systems of which a part => identify critical linkages and interactions, empirically and normatively
- => oriented a research journey – twists and wrong turns, in process, but paper an attempt to take stock critically
- Engagement with streams in NSI literature other than 'catch-up' as well as complementary insights from higher education literature

Absence of significant university-firm interaction

- **Uganda:** prevalence of local small scale incremental innovation and learning processes, firms did not value universities because concern with 'big science', primarily informal, indirect and widely available channels
- **Nigeria:** manufacturing firms engage in occasional, non-continuous R&D activities, because firm R&D sufficient and quality of university research too low, 'big science'
- => Scale of interaction minimal, forms related to 'doing, using and interacting' modes, universities typically played indirect roles in economic development

Why towers or interacting with other forms of partners?

- Case studies- range of partners: informal micro firms, small scale and subsistence farmers, cooperatives and clubs, community based enterprises, university 'cottage' industries
- Extended instrument to universities in 13 SADC countries: partners, teaching activities, tacit and less formal forms and policy structures and mechanisms
- Interaction: collaboration between universities and PRIs, and public sector and development partner, firms small scale
- Informal and tacit forms (education of work ready students but consultancy), channels freely available, traditional university outcomes
- few structures to facilitate, need to build research capacity and overcome donor influence

Two broad questions

1. How can innovation systems literature help to understand the nature of innovation in strongly resource-based low and middle income economies, as well as the broad range of economic actors in those conditions?
2. If universities interacting with broad range of other social actors in public sector and civil society, how can these social and human development activities contribute to building capabilities and fragile NSIs? (higher education literature)
3. => integrated framework to guide future analysis

HE and NSI in African economies

- Other economic partners in resource-based agricultural economies not only firms in industrial and service sectors BUT if focus on 'rural innovation' only, condemned to fall behind
- Dichotomy: universal internal logics that drive science systems and local technology demand at a low level => universities role?
- Universities focus on innovation and knowledge frontiers for local conditions, PRIs on low level technology dev (Diyammet 2008) **vs** involved in full spectrum of knowledge and capability building, key role in embedding and recombining technologies for local actors and sectors (Hall 2007, World Bank 2006, Surie 2010, rural, broad based innovation approaches)



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- Conceptualising universities role in relation to range of economic partners – formal to informal sectors, rurality to urban based – in relation to spectrum of scientific generation, technology diffusion and adaptation, and to demands of DUI modes in complex and multiple combinations with STI modes

Universities: beyond a direct role in firm learning and economic development

- NSI ignores substantive nature of universities (Mowery and Sampat, Whitley, Schiller and Brimble) – tension between different roles within a knowledge based economy
- Clark (2008): knowledge base and discipline-centred nature of academic work is distinctive
- Disciplinary fragmentation as source of rapidly growing complexity and substantive growth (led by knowledge and research generation) vs reactive growth (driven by students or labour market) – in tension in different parts of an institution, or can lead to segmentation within a differentiated national higher education system

- Whitley (2000, 2003) universities = reputationally controlled work organisations – production of knowledge structured by academics competitive pursuit of intellectual reputations judged by their peers
- National systems distinguished by intensity of reputational competition and extent of intellectual pluralism and flexibility
- => responding to firms/other partners is of greater value when driven by substantive growth, integral to expanding knowledge base of discipline, to work of scholarship,
- Greater value to NSI when more pluralism and flexibility and less restrictive ‘reputational competition’ between institutions

HE systems in Africa face contradictory tensions

- Disciplinary imperatives increasingly globally determined and driven
- National systems that are highly differentiated and segmented with strong reputational competition and limited knowledge flows
- Challenged to respond to local economic and social development demands (low levels of technology)

Human and social development challenges and social partners

- Africa : Impossible to ignore poverty reduction and equitable distribution => capability building of technological upgrading and of 'freedom from want' – critical roles not only economic impact or partners but social development
- **BUT** growing recognition in developed economies – limitations for HE of sole focus on economic development
- Global trend to promote '**social engagement**' as complement to rapid growth of UILs, particularly role in regional development (Goddard, 2009, Benneworth and Jongbloed 2009, Newcastle university 2009)
- Promoting public good, democracy, equality, social justice

HE literature on community, civic, social 'engagement'

1. Should universities engage with 'external constituencies'? Tendency to dichotomise, to pose universities response to public good **or** private interests, role in economic **or** social development as mutually contradictory
2. How to conceptualise interaction or engagement? Complex debate in isolation from debates on innovation and technological upgrading
3. Promoting engagement within the university – how best to respond in way organise and conduct academic work? Emphasis on academic core, building scholarship

Attaining threshold conditions in fragile NIS


- Substantive academic core of HE needs to be strengthened through interaction => channels and benefits of interaction significant – those driven by substantive growth that can promote mutual capacity building, more flexible and less segmented HE systems
- Private and public benefits and risks of industry interaction (Arza and Dutrenit 2010) extended to include goals and motivations of other economic actors and social partners
- Balance of forms required for different purposes

Aligning economic and social development agendas to research interaction in Africa

- Build NIS systematically and integrated manner
- Focus on interaction, capabilities, learning and innovation
- Conceptual basis to identify forms of interaction, their benefits and risks for institutions and NSI, private and public good
- Extends to include social and economic development imperatives
- Wide range of external social partners and economic actors - public and private, including but beyond firms and farmers to government and civil society at various levels, regional, national or global

Elaborating and using this framework

- Adds stronger conceptualisation of university as knowledge based institution driven by substantive or reactive sources of growth and characterised by reputational competition
- Full range of teaching, research and outreach activities of academics establishes possibility of contributing to both DUI and STI modes of innovation
- => allows comprehensive mapping of university interaction in sSA universities – what exists to generate evidence to inform policy and capability building



Thank you
Obrigado

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