

Institution: The Open University
Unit of Assessment: C24 Anthropology and Development Studies
Title of case study: Innovation and the private sector in inclusive African development
<p>1. Summary of the impact</p> <p>Open University (OU) research into private sector investment and innovation processes in Africa and their equity implications has achieved wide national and global reach. The research has had direct impact on the health and agriculture sectors and in innovation policy, leading to requests for further policy-oriented research, the inclusion of research results into policy and practitioner publications, and direct implementation into policy. It has contributed to the integration of health and industrial policies, and has generated new policy approaches to strengthen health innovation systems, including science capacity building. Through the major <i>Research into Use</i> programme, it has influenced policy processes to improve food security outcomes, and been instrumental in achieving a Digital Emmy award in 2011.</p>
<p>2. Underpinning research</p> <p>Innovation and private sector development are central to economic development. Yet, despite much evidence and policy rhetoric to the contrary, innovation is still often promoted through linear knowledge transfer. Industrial policies require a better evidence base. OU research identifies the complexity of the innovation-investment-economic development nexus within Africa in ways that allow policymakers to promote innovation more effectively, and to appreciate and address the scope for inclusive industrialisation. The research has also had direct impact on commercial decision-making. The research has shown:</p> <p>A. The key role local business development plays in promoting inclusive growth in:</p> <p><u>Health:</u> A project by Mackintosh with Tanzanian (Mujinja) and Indian (Chaudhuri) colleagues investigated access to medicines in Tanzania and unexpectedly identified the importance of local manufacturers in facilitating access to medicines in rural areas, and also the role of a local NGO trader in facilitating local medicines purchase (2). This led to new and on-going funded research by Mackintosh with OU Visiting Fellows Tibandebage and Wamae on the scope for improving health sector performance through improved local manufacturing and supply in Tanzania and Kenya (1).</p> <p><u>Food security:</u> Clark was a senior member of an innovative programme on <i>Research into Use</i> (8) that showed the potential of promoting promising (often biotechnology-based) innovations by small agro-businesses in Kenya's agricultural sector in creating jobs, new skills training and improved agricultural productivity (5). The programme has shown how technology development and pro-poor aid funding could be much improved by more direct practical involvement on the part of British science and associated aid bodies like DfID.</p> <p>B. The scope for promoting an effective enabling environment for innovation in the private sector with respect to:</p> <p><u>Policy:</u> New Partnership for Africa's Development (NEPAD) funded research by Chataway and colleagues during 2009-10 (10) highlighted the potential gains from improved communication between often discrete policy action areas, such as education, finance and health, to better support policy goals, such as reduction of disease burden. The research advocated for innovation systems thinking to be mainstreamed in government health policy. Evaluation by Hanlin and Chataway, in collaboration with RAND Europe colleagues, of a large Wellcome Trust investment in research capacity building draws on and further develops this thinking (9).</p> <p><u>Finance:</u> Banda's doctoral research in Zimbabwe (11) highlighted the key role of financial capability for the sustainability of local pharmaceutical production. Clark's work with DfID's <i>Research into Use</i> programme found venture capital funding essential for the promotion of African private sector biotechnology businesses.</p>

Key individuals:

Health and pharmaceuticals: Professor Maureen **Mackintosh**, Dr Geoffrey **Banda** (Research Fellow)

Agriculture and innovation: Professor Norman **Clark**, Dr Julius **Mugwagwa** (Research Fellow)

Innovation systems and policy: **Clark**, Professor Joanna **Chataway**, Dr Rebecca **Hanlin** (Senior Lecturer)

3. References to the research

3.1 Relevant Grants

- 1.) 2012-14. DFID-ESRC grant, PI Mackintosh, 'Industrial productivity, health sector performance and policy synergies for inclusive growth: a study in Tanzania and Kenya'. £561,721.
- 2.) 2006-8. ESRC research grant RES-155-25-0046, PI Mackintosh: 'Non-governmental action to improve access by the poor to good quality essential medicines': PI Mackintosh. £165,327.
- 3.) 2010-11. UNITAID Geneva, research grant to report on 'Framework for Understanding Interactions Between Global Policy and Local Production of Medicines: example of antimalarial medicines': lead consultant Mackintosh, £30,683.
- 4.) 2009-10. GAVI via the Swiss Tropical Institute, research grants, PI Chataway 'Product Development Partnerships and Health Innovation Systems' £40,000.
- 5.) 2008-12. DfID grant via Research into Results Ltd., University of Edinburgh, Clark (Economic Advisor), 'Research Into Use', £55,000.

3.2 Relevant Publications

- 6.) Chaudhuri, S., Mackintosh, M., Mujinja, P.G.M. (2010) 'Indian generics producers, access to essential medicines and local production in Africa: an argument with reference to Tanzania'. *European Journal of Development Research* 22(4) 451-468.
- 7.) Mackintosh, M. Chaudhuri, S. Mujinja, P. (2011) 'Can NGOs regulate medicines markets? Social enterprise in wholesaling and access to essential medicines' *Globalisation and Health* 7:4.
- 8.) Clark N., Frost, A., Maudlin, I. and Ward, A. (2013) *Technology Development Assistance for Agriculture: Putting Research into Use in Low Income Countries* Routledge Explorations in Development Studies, London.
- 9.) Marjanovic, S. Hanlin, R., Diepeveen, S., Chataway, J. (2013) 'Research capacity building in Africa: Networks, institutions and local ownership' *Journal of International Development*, 25(7) 936-946.
- 10.) Chataway, J., Wield, D., Hanlin, R., Mugwagwa, J., Smith, J. and Chatuverdi, K. (2009). *Building the Case for Systems of Health Innovation in Africa*, in Kalua, F.A., Awotedu, A., Kamwanja, L.A. and J.D.K. Saka (eds). (2009) *Science, Technology and Innovation for Public Health in Africa*. Monograph, NEPAD Office of Science and Technology, Pretoria, Republic of South Africa.
- 11.) Banda, G. (2013) Finance as a 'forgotten technological capability' for promoting African local pharmaceutical manufacture. *International Journal of Technology Management and Sustainable Development*, 12(2) 117-135.

4. Details of the impact

1. Health sector: local production of pharmaceuticals and access to medicines in Africa

Research by **Mackintosh** and collaborators has had international reach and significant impact in challenging a widely held view that local pharmaceutical production in Africa is necessarily costly and inefficient. It contributed evidence supporting a broad policy shift at African government and international levels towards better integration of health and industrial policy. Mackintosh presented evidence showing that imported medicines, but not local manufactures, display 'urban bias' in accessibility to industrialists, regulators and policymakers at a plenary of the International Conference on Local Pharmaceutical Production in Africa (Cape Town April 2011); to UNIDO, Vienna and UNITAID, Geneva (2010) and at plenaries at international conferences in Bonn (February 2013) and the inaugural Euro-Africa Health Investment Conference, where the

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international audience included private industry **(12)**. The Pharmaceutical Coordinator for NEPAD also said the research will '*change the global pharmaceutical policy landscape.*' **(18)** Research findings have been fed into: Tanzanian policy debate, where they have '*made a significant difference...[and] added quite some value*' **(12)**; the Gates Foundation deliberations on private sector policy; and SCMS (Supply Chain Management System) investigations of local procurement in Tanzania. A senior programme officer in the Gates Foundation states that Mackintosh is one of only six academics who have shaped perspectives, policy and practice in this field, including that of NGOs working in medicines regulation supported by the Global Fund and USAID **(13)**. The research has been used by the German medical aid organisation, Action Medeor (AM). According to a Director of AM, Mackintosh's '*pioneering work [...] provided scientific evidence in a debate which was dominated by sentiment.*' Her research '*contributed to the decision made by Action Medeor to open a second warehouse in Masasi, in the very South of Tanzania.*' **(15)** The research has been referenced in the *Pharmaceutical Manufacturing Plan for Africa Business Plan* produced by UNIDO and the African Union Commission.

The East African Community and firms in Zimbabwe have taken up **Banda's** work on finance capability and the financing of local pharmaceutical production, emphasising its link with technological capability and innovation. Policy impact in the East African Community and sub-Saharan Africa was enhanced by Banda's participation in the Euro-Africa Health Investment Conference (April 2013). This work directly led to commercial impact when, after discussions of Banda's research, a Zimbabwean pharmaceutical firm, Varichem, accessed a \$10mUS long-term loan from an African development bank for a major reinvestment programme in new production equipment and machinery **(14)**.

Health sector: Product development partnerships (PDPs) and health innovation systems

Research by **Chataway, Hanlin and colleagues** on public-private PDPs and health innovation systems has had broad international influence, with impacts on policy development and strategies of the International Aids Vaccine Initiative (IAVI). The IAVI is a PDP that collaborates with more than 50 academic, industry and government organisations around the world to research and develop AIDS vaccines, and to advocate for the HIV-prevention field. The Regional Director of IAVI confirms that Chataway and Hanlin's evaluation of IAVI had a major impact on strategy **(17)**, particularly with regard to capacity building activities. Objective research and the codification of IAVI capacity building efforts carried out by Chataway and Hanlin also contributed to IAVI's fundraising efforts. The evaluation informed the governance of the PDP and validated the model. Subsequently, Chataway has advised on the strategies of PDPs in the current difficult funding climate, and Hanlin and Chataway have been invited to help develop a new evaluation of IAVI's capacity building in Africa. Expertise in assessing health partnerships led to: work for the Swiss Tropical Institute to assist in evaluating the Global Alliance for Vaccines and Immunisation (GAVI) Alliance's Advanced Market Commitment (AMC) on pneumococcal vaccines at baseline, and more recently a request to be involved in the latest evaluation activity of the AMC mechanism; and work for the GAVI Alliance on the provision of incentives for the investment in products targeting neglected diseases.

2. Agriculture sector impact

Work undertaken by **Clark** has been utilised by European, African and international organisations. He has had an impact on the policy decisions and funding strategies governing the UK Department for International Development (DFID) and, in particular, has played a significant role in the development of the *Research into Use* (RIU) strategy for awarding funding to technology development consortia across Africa through his role as Economic Adviser to the Director of this programme **(16)**. For example, he helped devise and facilitate a 'Dragons Den'-style competition in Nairobi, which brought together an African panel of venture capitalists and entrepreneurs to select these consortia. Approximately 50 people took part in the training workshop and the programme organisers received positive feedback on the value of the exercise. According to the RIU Director, the 'Dragons Den' exercise ensured that projects were funded, which would not previously have received funding, as they were more applied and commercial in focus and the funding decisions were more targeted at achieving outcomes in terms of technology and product development **(16)**. Funded 'Best Bets' projects include: Armyworm control (Kenya and Tanzania);

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Striga control/seed priming (Kenya); and BCAs (bio control agents) in Ghana. Other successful projects include Farm Input Promotions Ltd (FIPS), an NGO that focuses on input supply to smallholders. Well-Told Story Ltd runs a communications initiative designed to transfer technologies to unemployed youth, and The Sleeping Sickness Control (SOS) project is aimed at stopping the spread of cattle-driven Trypanosomiasis through a project run jointly with the private sector and the University of Makerere. A project designed to use multi-media opportunities for unemployed youth won the international One World Award in May 2011 and the 2012 Digital Emmy award for best programme in Children and Young People category.

5. Key sources to corroborate the impact**5.1 Available to be contacted by HEFCE**

12.) Founder & Managing Director, PharmaAfrica. This contact can speak to the impact of Professor Mackintosh's research on the Tanzanian policy debate in relation to local pharmaceutical production, including impacts on the practices of local manufacturing associations.

13.) Senior Programme Officer, Bill and Melinda Gates Foundation. This contact can discuss the impacts of Professor Mackintosh's research on the practices of NGOs and charities in relation to the private health retail sector in low income countries.

14.) Production Manager, Varichem, Harare, Zimbabwe. This contact can corroborate the impact of Dr Banda's research on the financing of local pharmaceutical production in low income countries.

15.) Action Medeor, Germany. This contact can speak to the impact of Professor Mackintosh's research on the practices of the German aid organization Action Medeor, around a) improvements in training strategy for their staff, and b) ways to address urban bias in local pharmaceutical production.

16.) Director of the *Research into Use* (RIU) Programme, DfID. This contact can discuss the impact of Professor Clark's work on improving access to better technology and product development opportunities in Africa.

5.2 Testimonials available upon request

17.) Regional Director, IAVI.

18.) Pharmaceutical Coordinator, African Union – NEPAD Planning and Coordinating Agency.