



Inclusivity in the industry / health security interface

Maureen Mackintosh
The Open University, UK

With thanks to the many researchers referenced and working on this topic.

Panel presentation for:

Re-igniting Africa's industrialisation through innovation

Calestous Juma Lecture Series on Knowledge and Innovation for Development

12th August 2021, ACTS, Nairobi (Virtual event)

Decades of African, Asian, Latin American recognition of the importance of local manufacturing for health

- Post Independence, many countries in Africa built up pharmaceutical production to support publicly led expansion of primary care: examples: Tanzania, Ghana, Zimbabwe.
- In Kenya, local researchers have been arguing for more local production of medicines and supplies to support local health care at least since 1980s.
- 1950s and 1960s India: pharmaceutical policies built industrial inputs to publicly led health care.
- The health-industrial complex policies in Brazil were built to serve the development of the SUS.

These old-established arguments are constantly revitalised in research and evidence e.g. *Making Medicines in Africa* (2016), led in Kenya by ACTS.

Global appreciation of these arguments has followed from Covid-19 experience

- As local experts predicted, African countries were at the back of the queue for Covid-19 supplies, medicines and vaccines (Banda et al 2021a);
- Global supply chain collapse in the context of high import dependence, low purchasing power, and low-tech local manufacturing capabilities;
- Pandemic demonstrated the critical nature of local manufacturing for tackling medical emergencies and generating local health security;
- Innovation in response occurred where manufacturing is stronger, e.g Kenya: sanitiser using local ethanol and adapted plastic bottle delivery systems, local swabs and testing kits; and much more across the continent;
- An African manufacturer: some innovations were by “people who weren’t given the opportunity to innovate in a pre-Covid world” (Banda et al 2021b)

African governments now more focused on strengthening local health security: how to make it happen in practice?

- Well before this pandemic, many African governments had included pharmaceuticals in revived industrialisation policies e.g. in EAC countries; also with African Union support; then Covid19 struck:
- An African pharmaceutical manufacturer commented:
 - For decades, African healthcare has been neglected. When top government officials fell ill, they would 'hop on a plane'. When Covid-19 hit, they were no longer able to do that. This 'national disgrace' has created a new realisation of the need to invest in local health systems – including their supply chains.
- An African academic commented:
 - The pandemic has been a wake up call, but how to stay awake?
- The importance of these issues was already understood: how to make change happen now?

Making innovation work inclusively on the health/industrial frontier: lessons from Calestous Juma?

Insights into what it takes to overcome resistance to innovation are drawn on here, from Professor Juma's *Innovation and its Enemies* (2016).

Innovations required on the health/industrial frontier (examples):

1. Market shaping to create demand from health need;
2. Finding and unlocking industrial/health synergies;
3. Obtaining and building on platform technologies;
4. Generating industrial deepening: breaking upstream blockages;
5. Finding feasible and sustainable business models.

Examples from work by African colleagues on current project on industrial/health linkages to improve cancer care in East Africa and from earlier work.

1. Market shaping to create demand from health need

Juma on the importance of agency for inclusion: “the design of new technologies .. need(s) to include the potential beneficiaries”.

Cancer patients in Tanzania expressed need to better address severe pain (Makene et al 2020).

Stakeholders views on how to achieve this included:

- New mindsets: taking response to pain more seriously means involving patients in defining need and therefore shaping procurement;
- Revising procurement process: from largely building on repeat orders to looking for affordable scope to meet need better;
- Government support for licensing and managing a controlled substance;
- Training that includes pain management and use of strong pain medication;
- Nurse and clinical officer prescribing to bring pain management closer to patients;
- More funding and support for palliative care from the beginning of treatment through to terminal care, with NGO and survivors' involvement.

2. Finding and unlocking industrial/health synergies

Juma noted: “people’s reluctance to break out from existing habits or routines”.

The pandemic crisis has seen normally cautious governmental *and* private sector take some risks, do new things: organisational and cultural change. Can this be built on?

Example of potential for local manufacture of oncology drugs:

- Mainly off patent; manufacturing relatively complex but not disruptive technology;
- Challenges include toxicity and waste management, enhanced protection of staff;
- Hospitals face the same challenges in using the medicines

Some health experts suggest that these drugs should be more safely managed in the local health systems before local production.

Conversely, local production of, say, a dozen key essential oncology drugs could:

- (a) reduce prices;
- (b) reduce stock-outs;
- (c) allow and incentivise shared learning on their management and use.

Oncologists, nurses and patients working with manufacturers and machine operators might help to get this right: that would be an innovative conversation.

3. Obtaining and building on platform technologies: the case of vaccines

Juma on disruptive technologies:

“The underlying technologies are viewed by large corporations as products to be sold in globally competitive markets. Emerging nations on the other hand, may view them as generic technologies that provide new platforms for local innovation.”

Highly relevant comment for current debates and current investment plans for vaccine production in African countries.

I owe to Geoffrey Banda the argument that vaccine production capability potentially forms part of a broader development of industrial competences in biotechnology: a platform on which African firms, supported by governments, working with health needs, can build broader technological capabilities including e.g. monoclonal antibodies for a range of diseases including cancer.

Developing capabilities in new platform technologies needs medium term planning, patient capital, subsidy and consistent support for scientific work. Thinking differently from current conventional wisdom.

4. Generating industrial deepening: breaking upstream blockages

Juma: Institutions are crucial in managing change, providing information, reducing uncertainty, providing incentives, channelling resources, managing continuity.

Innovative industrial policy is the institutional key to unlocking health-industrial synergies:

- moving away from reactive and “level playing field” approaches;
- building sectoral policies to promote continuous improvement in health industries;
- Involving health system stakeholders in industrial policy;
- Generating *upstream* improvements e.g. APIs, locally produced excipients, better packaging.

Implies active government roles e.g. solving investors’ problems; breaking deadlocks between suppliers and customers; bridging gaps with value chain financial support for selective upgrading.

5. Finding feasible and sustainable business models

Juma discussed how to tackle the conflict between innovation and incumbency.

Example: the family business networks and conglomerates that dominate much of the East African private sector.

These business models have real strengths: business survivors long term where infrastructure is poor; investment and working capital expensive; upstream suppliers weak; regulatory frameworks problematic.

But the recurrent critique that these business models have limits when technology transfer is needed is correct (Wangwe et al 2021).

Responses recently include joint ventures with high income country-based MNCs, and partial or whole buyouts by Indian and South Africa-based MNCs.

Local policy thinking could do more to actively shape JV, PPP, private equity models to sustain some of the family business strengths while supporting effective tech transfer and upgrading. Supporting an African “Mittelstand”?

Reframing the problem: starting from “local health”

Juma noted that innovation fosters inclusion where it addresses unmet needs.

That implies tackling incumbency when incumbency represents power plus exclusion.

We have argued that effective implementation of this injunction requires reframing the policy space and objectives to focus on “local health” security. This:

- Builds on the recognised benefits of proximity e.g. shorter supply chains, inclusive geographical distribution patterns; and
- Recognises the importance of positionality: building up local agency within global health and the global economy.

Reframing the problem: institutionalising “local health”?

Juma: “In an increasingly complex and uncertain world, the risks of doing nothing may outweigh the risks of innovating.”

So how to “stay awake”?

Maybe, the need is for *institutional representation* of the search for synergies? This innovation needs an institutional location. It needs to be someone’s job, responsibility, accountability:

- To build a sectoral innovation and production system for better health;
- Find ways to identify and share mutual benefits through mutual learning;
- Represent health need and health security requirements;
- Generate patient capital to make it happen.

Requires active institutional work: Indian experience shows how industrial and health policy can move apart over time without this role (Srinivas 2012).

References

Banda G. Kale D. Mackintosh M. Mugwagwa J (2021a) Local manufacturing for health in Africa in the time of Covid-19: experience and lessons for policy. DEGRP Webinar Report <http://degrp.odj.org>

Banda, Geoffrey; Mugwagwa, Julius; Wanjala, Cecilia; Mackintosh, Maureen and Kale, Dinar (2021b). Local manufacturing, local supply chains and health security in Africa: lessons from COVID-19. *BMJ Global Health*, 6(6)

Juma, Calestous (2016) *Innovation and its Enemies* Oxford University Press

Mackintosh, M. Banda G., Tibandebage, P. Wamae W, (eds.) (2016) *Making Medicines in Africa: The Political Economy of Industrializing for Local Health*. Palgrave Macmillan OA.

Makene, Fortunata Songora; Ngilangwa, Richard Gordon; Mackintosh, Maureen; Santos, Cristina; Cross, Charlotte; Mujinja, Phares G.M. and Ngoma, Twalib (2020). Cancer patients' pathways: evidence and implications for policy. Economic and Social Research Foundation https://esrf.or.tz/wp-content/uploads/2021/05/ICCA_Tanzania_pathways.pdf

Srinivas, Smita (2012) *Market Menagerie: Health and development in late industrial states* Stanford University Press

Wangwe S, Simonetti R, Tibandebage P, Mackintosh M, Israel C. Mujinja PGM (2021): Upgrading under globalization in health-related industries in Tanzania: the case for dynamic industrial deepening *Innovation and Development*