

DR MACHARIA WARUINGI ON WEALTH

Model for Funding Scientific Development in Africa

For my dissertation research for my doctorate of health administration, I worked with fellow Kenyans and convened 7 conferences that lasted from 1 to 3 days which attracted between 20 and 2,000 participants.

Participants in the Kenya Development Network's third business workshop (Washington, DC, April, 2005) discussed the concept that market failure was the primary reason of underdevelopment, and development of robust market was critical to improvements in health. Participants in the Kenya Development Network's fourth business workshop (Washington, DC, August, 2005) discussed the idea that market failure was caused by lack of biotechnology manufacturing. They observed that Kenya and the rest of Africa lagged far behind the developed world in reaping the benefits of the biotechnology industry. The high prices of biotechnology based biopharmaceutical drugs and diagnostic reagents rendered them inaccessible to the local people. A traditional culture of dependency created by the postcolonial political leadership of the country worsened the situation. The participants observed that the rate of emergence of relevant knowledge that is critical to technological development was very slow in Kenya. The local knowledge was unexploited and did not help the country deal with diseases such as HIV/AIDS, tuberculosis, typhoid, tetanus, hepatitis, diabetes, and cancer. The lack of proper follow-up of patients with HIV/AIDS, tuberculosis, and malaria leads to emergence of multi-drug resistant variants of the infectious agents.

More specifically, the participants observed that the traditional methods of financing biopharmaceuticals frustrates the emergence of the right kind of knowledge that would allow the development of a thriving bio-pharmaceutical industry in a country like Kenya. The participants observed that in the traditional model of financing biopharmaceutical manufacturing, a multinational corporation from the group of the 8 wealthiest nations (G8) develops the intellectual property associated with a medical or biopharmaceutical product. The multinational corporation obtains raw materials from the developing country such as Kenya. For example, SC Johnson, Inc., a giant United States-based multinational obtains raw pyrethrin extract of pyrethrum harvested from the highlands of Kenya. SC Johnson ships the extract to the United States for packaging and distribution into United States markets. Kenyans import packaged pyrethrin insecticide from SC Johnson. The imported, value added pyrethrin is very expensive for the

local people. Poor pyrethrum farmers in the highlands of Kenya do not afford the value added insecticide product marketed by SC Johnson. For their insecticide needs, Kenyan farmers have to rely on the World Health Organization's Roll Back Malaria initiative for donations of synthetic pyrethroids manufactured in Japan by Sumitomo, a Japanese conglomerate. The World Health Organization donates synthetic pyrethroids for use in the insecticide-impregnated nets and insect repellents for mosquito control in the fight against malaria. The synthetic pyrethroids used in this WHO global health initiative do not biodegrade.

Although malaria is a disease of global health concern that affects the very farmers who produce pyrethrin, the SC Johnson is not concerned with malaria control, and ships the pyrethrin out for US market. On the other hand the World Health Organization is unaware of the local production of pyrethrum. Flooding the market with donated synthetic pyrethroids by the World Health Organization destroys the local market for naturally growing pyrethrum, robbing the local people of their very means of subsistence. This practice subverts the capacity for local development of preventive, diagnostic reagents and treatment products. The poor people are unable to afford a consistent supply of expensive imported products, and the consumption is erratic leading to an explosion in the number of drug resistant parasites, bacteria, and viruses.

Participants observed that a homegrown biopharmaceutical industry would deliver products to the affected individuals at cheaper prices, and generate employment in the local community, affecting positively the quality of life of the local people. Harnessing scientific technology and resources from the local scientists and the diaspora community can be critical to the establishment of sustainable local-



Dr Waruingi at a July children's birthday party in New Jersey. Photo Prof Wanjiru Akinyi Waruingi.

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ly developed biopharmaceutical industry. The local biopharmaceutical company would manufacture molecules that are affordable to the local people in the country. Delivering products from industries established by local people themselves could alleviate poverty and liberate the country from recurrent fixes-that-fail.

The participants observed that the provider practice by the World Health Organization only led to temporary relief of the problem in the short term. The problems resurged with a bigger force. The side effect of this practice was always much larger than the original problem itself, and ended up causing more human suffering, and loss of life primarily due to the temporary disturbance of the socioeconomic framework.

Local biopharmaceuticals manufacturing would serve the health needs of the local people and produce surplus for export to people struggling with similar medical problems in other regions of Africa. The locally developed industry would provide jobs, for science and engineering graduates, and other skilled professionals, who would in turn afford better housing, and move out of the slum dwellings.

The participants observed that the local people might not have the capacity for a full-scale biopharmaceutical manufacturing. In this case, the local nationals could collaborate with a multinational corporation in the biopharmaceutical production process. The participants observed that for sustain-

ability, the local nationals would have to be involved in the entire value chain of product commercialization. The chain ranged from the discovery, or recognition, ensuring protection of the intellectual property rights, obtaining the regulatory licenses, product development and refinement, market research and market strategic planning, product manufacturing or processing, global sales and distribution, and multinational operations. The multinational corporations would have to move away from the traditional model where they used the local nationals as a source of cheap labor for manufacturing, processing, and reshipping of the finished products to the consumer markets in the group of 8 wealthiest nations.

The participants expressed concern that the traditional model stifled creativity, and knowledge emergence from within the local nationals. The local nationals did not develop the economic strength to purchase health products. The local nationals did not afford to pay for products imported from the West, diseases fester in the local community, stifling even further the economic development feeding in a reinforcing loop of poverty. Spiraling poverty led to increased crime and political unrest as people agitated for reforms.

The participants heard that the grinding poverty, decreased security, and political unrest caused local nationals to migrate to the G8 countries forming the new African diaspora. Many migrant diaspora nationals received education from top schools in the G8 countries, and attained career distinction in leadership roles in major multinational corporations. The diaspora nationals exploited the rapidly proliferating information and communication technologies to interact with local nationals in the home countries, and established companies back home.

Participants observed that in order to gain access to knowledge resources within the people of Kenya and similar developing countries, multinational corporations must include local people and the diaspora nationals in the commercialization process. The collaborative process would involve working with entrepreneurial individuals or companies from Kenya to establish a branded product. The multinational corporation must then work with the local company to establish upstream demand and secure government incentives for creation of new jobs. The local company must collaborate with a multinational corporation to refine and co-brand the product for the global markets, ramp up manufacturing, and distribute globally.



Dr Waruingi leaves Prof Waruingi's house in New Jersey for a Saturday watching cars racing. Photo WAW.

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