

Annex 3: Examples of Successful Business Models in Life Sciences Manufacturing and Innovation

The estimated 2006 pharmaceutical market in Sub-Saharan Africa was \$3.8 billion, of which local manufacturers produced 25–30 percent. Medical supplies and devices accounted for an additional \$2.1 billion, but less than ten percent of that was locally produced.

Two additional components of the life sciences are relevant to Sub-Saharan Africa’s health sector. One is the innovation taking place in the region, primarily in South Africa, where companies like Bioclones—which develops novel formulations for erythropoietin (EPO), a hormone used to treat renal failure—are contributing to the establishment of a sustainable innovation sector. The other is research that is undertaken outside Sub-Saharan Africa but which is aimed at addressing health burdens that are relevant to Sub-Saharan Africa—such as The Foundation for Innovative Diagnostics (FIND), which has developed rapid tuberculosis diagnostics.

Provided that manufacturers will be able to withstand the pressure of competition from imports, life sciences across the region (including South Africa) is expected to account for 14 percent of projected cumulative health care investment opportunities, or about \$1.6–\$2.9 billion. Generic pharmaceutical manufacturing will be the largest single component, representing 40 percent of the projected investment in this sector. Most of the investments in this sector are likely to be greater than \$3 million.

Innovation represents most of the remaining investment opportunities, while medical supplies and devices manufacturing will absorb not more than three percent of the projected investment volume. The investment potential in clinical research organizations (CROs) is even smaller, but could potentially present some attractive knowl-

edge-transfer opportunities for investors looking for smaller opportunities. Most CRO opportunities are expected to be below \$250,000.

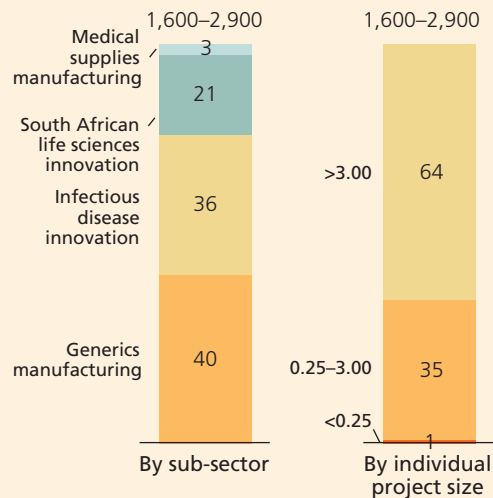
Overall, most of the investment opportunities in life science are large; two-thirds are expected to be greater than \$3 million and one-third is expected to be between \$250,000 and \$3 million; a negligible component will be below \$250,000 (see Figure A3.1).

Following is a description of key industry dynamics and promising investment opportunities in these four areas.

Figure A3.1

Life sciences investment opportunity, cumulative 2007–2016, including South Africa

Percent, \$ million



Source: Ministries of Health; National Health Accounts; country interviews; McKinsey analysis.

Pharmaceutical Manufacturing

More than 70 percent of Sub-Saharan Africa's estimated \$1 billion in annual pharmaceutical production is concentrated in South Africa, where Aspen Pharmacare, the only vertically integrated manufacturer in the region, is the clear leader. Nigeria, Ghana, and Kenya together represent about 20 percent of Sub-Saharan Africa's pharmaceutical production (see Figure A3.2). Of these three countries, only Kenya produces significant volumes for regional export—between 35 and 45 percent of Kenyan manufacturers' revenues come from exports to other Eastern African Community (EAC) and Common Market for Eastern and Southern Africa (COMESA) countries.

Overall, 37 Sub-Saharan African countries have some pharmaceutical production, with 34

having capacity for formulation and 25 limited to packaging or labelling. Only South Africa has a limited degree of API production. Most production outside South Africa is of non-complex, high-volume, essential products, such as basic analgesics, simple antibiotics, anti-malarial drugs, and vitamins.

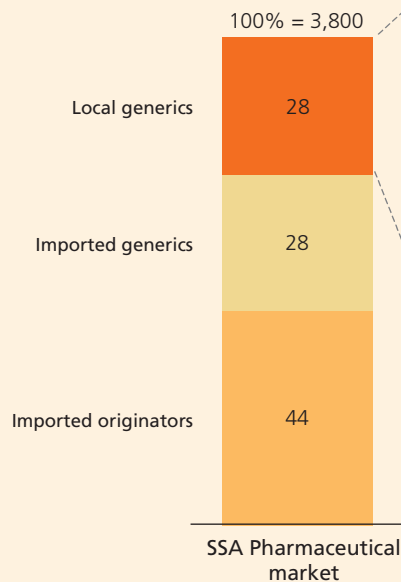
Local manufacturers currently capture only a small share of the donor market in Sub-Saharan Africa (estimated to amount to a total between \$750 million and \$1 billion), which is mostly focused on treatments for HIV, TB, and malaria. Donor-funded contracts generally require product prequalification from stringent regulatory bodies such as the WHO or the United States Food and Drug Administration (FDA). As of April 2007, only two Sub-Saharan African manufacturers¹¹³ had WHO prequalified products, and only 11 of

Figure A3.2

Estimated pharmaceutical market and generics manufacturing in Sub-Saharan Africa

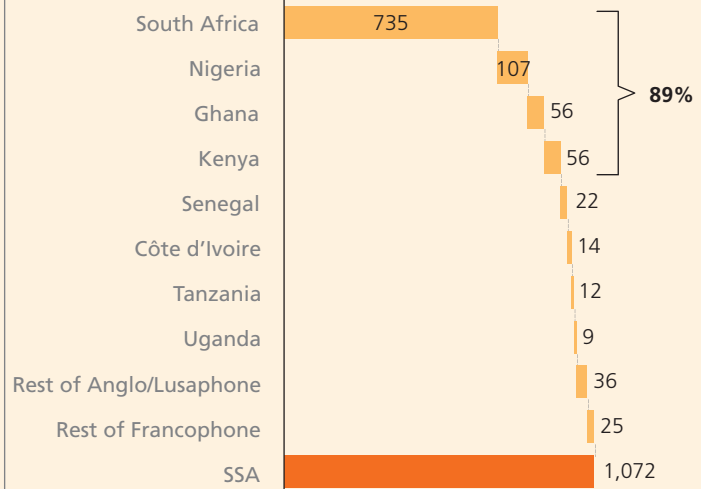
Breakdown of estimated ex-factory pharmaceuticals market in SSA, 2006

Percent, \$ million



Breakdown of estimated ex-factory local generics manufacturing by country, 2006

\$ million



Of 46 SSA countries, 37 have pharmaceutical industries, with 34 doing formulation, 25 doing packaging/labelling, and just 1* doing limited API production

* South Africa's Fine Chemicals Corporation (owned jointly by Aspen Pharmacare and India's Matrix) is the only API producer in SSA.

Source: Country interviews, BMI South Africa Pharmaceuticals and Health Report Q4 2006; Global Insight; IMS; Company annual reports; African Union Draft Pharmaceutical Manufacturing Plan; McKinsey analysis.

the 248 WHO prequalified HIV, TB, and malaria medicines were produced by these two Sub-Saharan African manufacturers. While several manufacturers in the region are seeking prequalification, it is a difficult process for most of them—it requires renovation of production facilities, familiarity with qualification requirements and processes, and a dossier of product efficacy and safety tests that meets with regulatory bodies' requirements. Given the prevalence of small manufacturers in the region, the above requirements represent too high an economic burden, and at the same time often exceed the limited technical capability of the management teams.

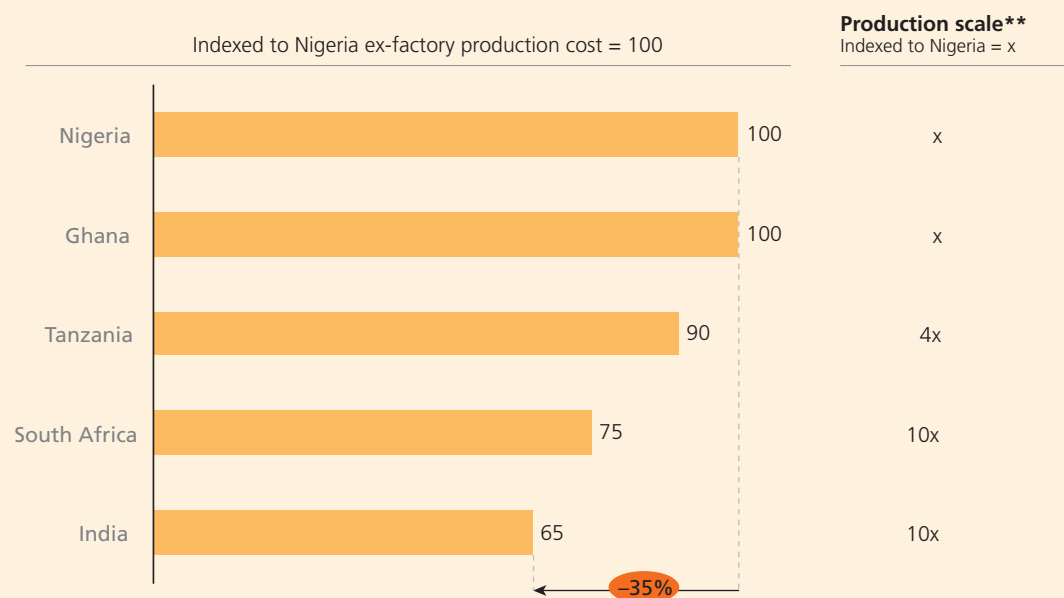
Sub-Saharan African manufacturers generally produce at a cost disadvantage to the large Asian generic manufacturers (Figure A3.3). One key disadvantage is scale. Although conversion cost

scale efficiencies generally plateau around 1.0–1.5 billion tablets in blister packaging per year, production at most Sub-Saharan African formulation sites is far below that level. For example, it is estimated that a third of the 30–40 percent cost disadvantage that a leading Ghanaian manufacturer suffers versus high-scale Indian manufacturers is attributable to scale.

Other causes of production cost disadvantage include a more expensive asset base (partially related to less-optimized process design), often coupled with obsolete technology, financing costs, and lack of integration with API production. In some cases, for example South Africa, labor costs are significantly higher than in India. In other situations, lower labor productivity leads to higher labor costs even where employee wages in comparable roles are close to those in Asia. Finally,

Figure A3.3

Estimated representative production cost structure for a bottle of 100 simple analgesic tablets*



* Costs include both raw materials (API, non actives, and packaging) and conversion.

** Relative volumes based on manufacturing plants with estimated production of 1.2 billion tablets for South African facility vs. 500 million for Tanzanian facility, 120 million for Nigerian facility, ~120 million for Ghanaian facility, 1.2 billion for Indian facility.

Source: Ghana Ministry of Health; Energy Information Administration 2006 Industry Electricity Prices; country interviews; McKinsey analysis.

regulation can work against local production, as in the Democratic Republic of Congo, where high import duties on packaging materials result in a higher overall tax on production for local manufacturing than on importing.

Freight costs do not go very far to close the gap between low-cost imports and locally manufactured generics, since they only account for approximately 12 percent out of 35 percent of the cost disadvantage (or four percent of the ex-factory cost of local manufacturers).

Moreover, given import difficulties and the fragmentation of distribution networks, shipping to other markets in Sub-Saharan Africa can be more expensive than Asia-to-Africa shipping, thus significantly limiting export opportunities. Intra-African imports are often subject to the same import tariffs as intercontinental ones, and manufacturers report that even when there are favorable trade terms between countries, they often do not actually enjoy the benefits (tax breaks), since they either don't extend to pharmaceuticals or are misapplied.

Despite this cost disadvantage, last year Sub-Saharan African manufacturers sold \$1 billion of generic pharmaceuticals in the region.¹¹⁴ In most countries, local producers benefit from regulatory support in one or more of the following forms: (1) preference policies for public tenders (price advantage); (2) tax benefits on raw materials, intermediates, and final products; and (3) import bans on selected essential medicines (for example, in Ghana and Nigeria, import is banned for the seven largest volume products).

In general, these protectionist policies aid the domestic competitive position of Sub-Saharan African pharmaceutical manufacturers. As local manufacturers increase their production capabilities, it is plausible to anticipate that governments will extend this support to new products or segments of the supply chain. However, whether these policies will improve access to more affordable drugs or create the right incentives to improve drug quality is debatable.

Over the past decade, key stakeholders in the Sub-Saharan African pharmaceutical industry have debated whether the establishment of local manufacturing has a beneficial role to play in in-

creasing the accessibility to and quality of drugs. In many instances there is a perception that local manufacturing improves production quality oversight and security of supply. However, evidence of this is mixed. A 2003 WHO study of anti-malarial drug quality in selected Sub-Saharan African countries acknowledged that it is easier to exercise oversight over local producers than foreign producers. However, no consistent quality differences between locally and imported products were found.¹¹⁵

Separate research found that, although over 90 percent of counterfeit products in Nigeria with an identified source were imported, 44 percent of banned products come from unidentified sources.¹¹⁶ Any effort to limit the tragically high prevalence of counterfeit and substandard products in Sub-Saharan African markets would certainly serve both patients' and legitimate manufacturers' interests.

Some stakeholders express concern regarding security of supply for HIV, TB, and malaria (ACTs) treatments given patients' vulnerability to shortages in product availability. Supply interruptions that might occur if product supply was not able to respond immediately to demand—for example, as a result of a surge in global demand for such drugs—could theoretically cause supply interruptions and be disastrous for patients requiring these remedies. To put some quantification around this concern, if the percentage of HIV-affected Indian population under ARV treatment were to increase from its 2005 levels of seven percent to 50 percent, the worldwide demand would grow by an estimated 25 percent.¹¹⁷

API supply appears to be the key potential vulnerability, and this would not be addressed unless Sub-Saharan African manufacturers were able to develop greater control over their API supply. While it would be hard for Sub-Saharan Africa to develop a competitive API industry (given scale and expertise disadvantages), a viable alternative seems to be increasing the local formulation of final products to a size where it would be possible to acquire an offshore API source; this is the case for Aspen Pharmacare, which recently acquired API production facilities in both South Africa and India.

Notwithstanding the debate about the benefits of local production, there is a clear mandate from Sub-Saharan African governments and regional bodies to support the development of pharmaceutical manufacturing in Sub-Saharan Africa. This is made explicit in the African Union's 2007–2015 health strategy, which stated that "African Union Member States need to embark on local production of pharmaceuticals and other health commodities."

Key Investment Opportunities

Successful local companies have adopted some or all of the following strategies to increase their competitiveness:

- **Establish scale and invest in quality certification.** The opportunity to build scale is important to the growth and future competitiveness of Sub-Saharan African manufacturers. Likely future opportunities include:
 - The growth of domestic generic pharmaceutical markets; domestic industry consolidation; and greater access to regional and even global markets. In addition to revenue growth opportunities, there are productivity gains to be garnered from increased manufacturing scale. Furthermore, large-scale manufacturers are better able to support the costs and administration needs associated with certification and maintenance of quality standards.
 - Expansion of product portfolios. Larger-scale manufacturers are more likely to obtain WHO prequalification and, therefore, become able to locally produce more ARVs, TB drugs, ACTs, and drugs for the treatment of the region's growing non-communicable disease burden (hypertension, heart disease, cancer, etc.) in addition to the low-complexity, high-volume drugs local manufacturers often have the capability to manufacture at this time.
 - Aggregation of country markets into regional markets. This would create significant scale opportunities for Sub-Saharan African manufacturers (see Figure A3.4, where the potential opportunity created by regionalizing markets according to current regional trade community memberships is estimated).

- **Secure contract manufacturing, product licensing, or other technology-transfer-based relationships with multinational companies.** Sub-Saharan African manufacturers can derive significant advantages from partnerships with multinational companies, including leading South African manufacturers. Contract manufacturing or licensing arrangements offer local firms the opportunity to expand product portfolios, increase market share, and develop competencies. There are multiple local firms that have tie-ups/joint ventures with either niche multinational companies or Indian manufacturers (especially in South Africa) who could help improve the viability of local manufacturing. For example, the Cipla-Medpro relationship has facilitated technology transfer and cost effective manufacturing.

Typically, foreign manufacturers' criteria in assessing local partners for contract, license, or joint venture relationships are the prospective local partner's production capability and standards, market access and position, and management professionalism.

An example of a successful generics manufacturer is detailed in Figure A3.5.

Manufacturing of Medical Supplies

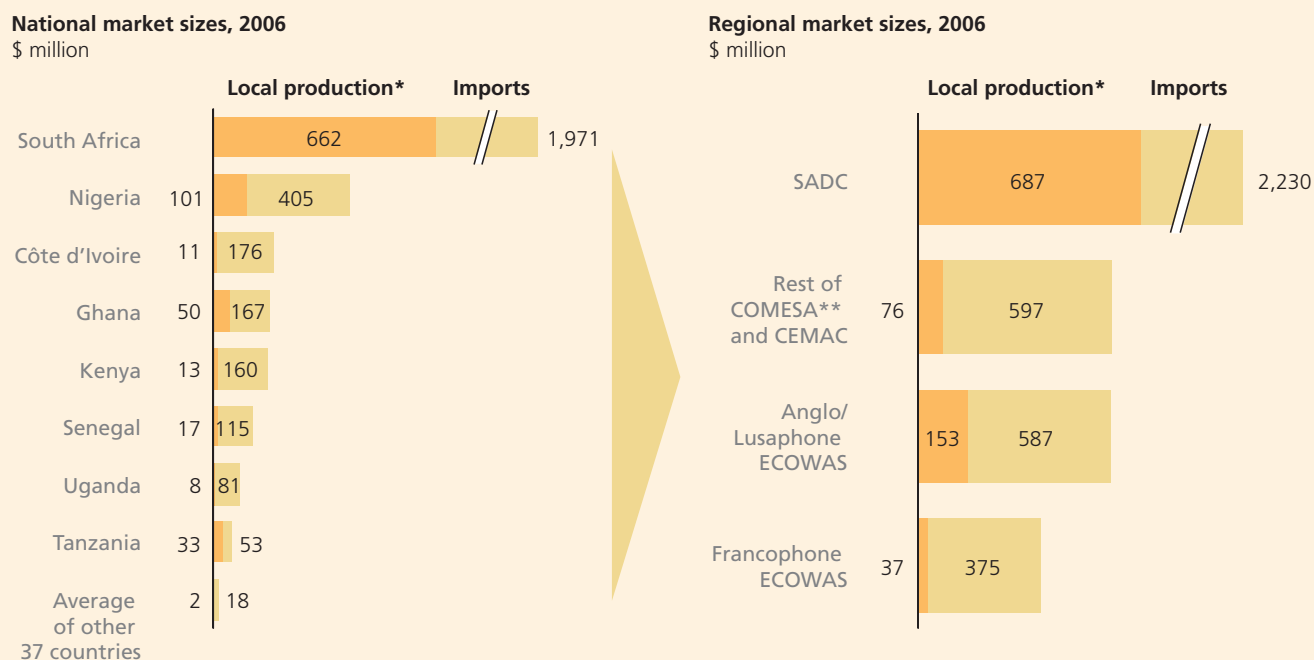
The overwhelming majority of Sub-Saharan Africa's estimated \$2.1 billion medical supplies market is imported. This lack of local manufacturing is generally linked to the lack of scale for commodity supplies, the production complexity of specialized devices, and the established expertise or proximity to raw materials (such as latex) of other production sites.

However, there is a case for local manufacturing for the following categories of goods:

- **Bulky products.** For items such as furniture for hospitals and clinics, local manufacturers would have a significant distribution and cost advantage over imports.
- **Products that make use of locally available raw materials.** Vertical integration efficiencies and the lack of tariffs on local raw materials would allow viable production of goods such as gauze.

Figure A3.4

Evaluation of scale effects of regionalization of pharmaceutical production



In addition, large manufacturers could afford the investment and time required to undergo WHO certification and access donors' markets

* Domestic production for domestic market. Excludes intra-African exports, e.g., Kenyan production exported to other African countries.

** Includes Tanzania. Excludes COMESA countries that are also in SADC.

Source: Country interviews, BMI South Africa Pharmaceuticals and Health Report Q4 2006; Global Insight; IMS; Company annual reports; African Union Draft Pharmaceutical Manufacturing Plan; McKinsey analysis.

es and dressings. For example, cotton is grown in Uganda, Senegal, and Mozambique, and manufacturing finished cotton products would be a natural vertical integration opportunity.

- Products that require customization. Items such as prosthetics and eyeglasses typically require proximity to users.
- High-value products and products in high-tariff categories. For example, Disa Vascular in South Africa can supply the local market with high-quality coronary stents, relying not only on state-of-the-art technology but also on its protection from import duties.

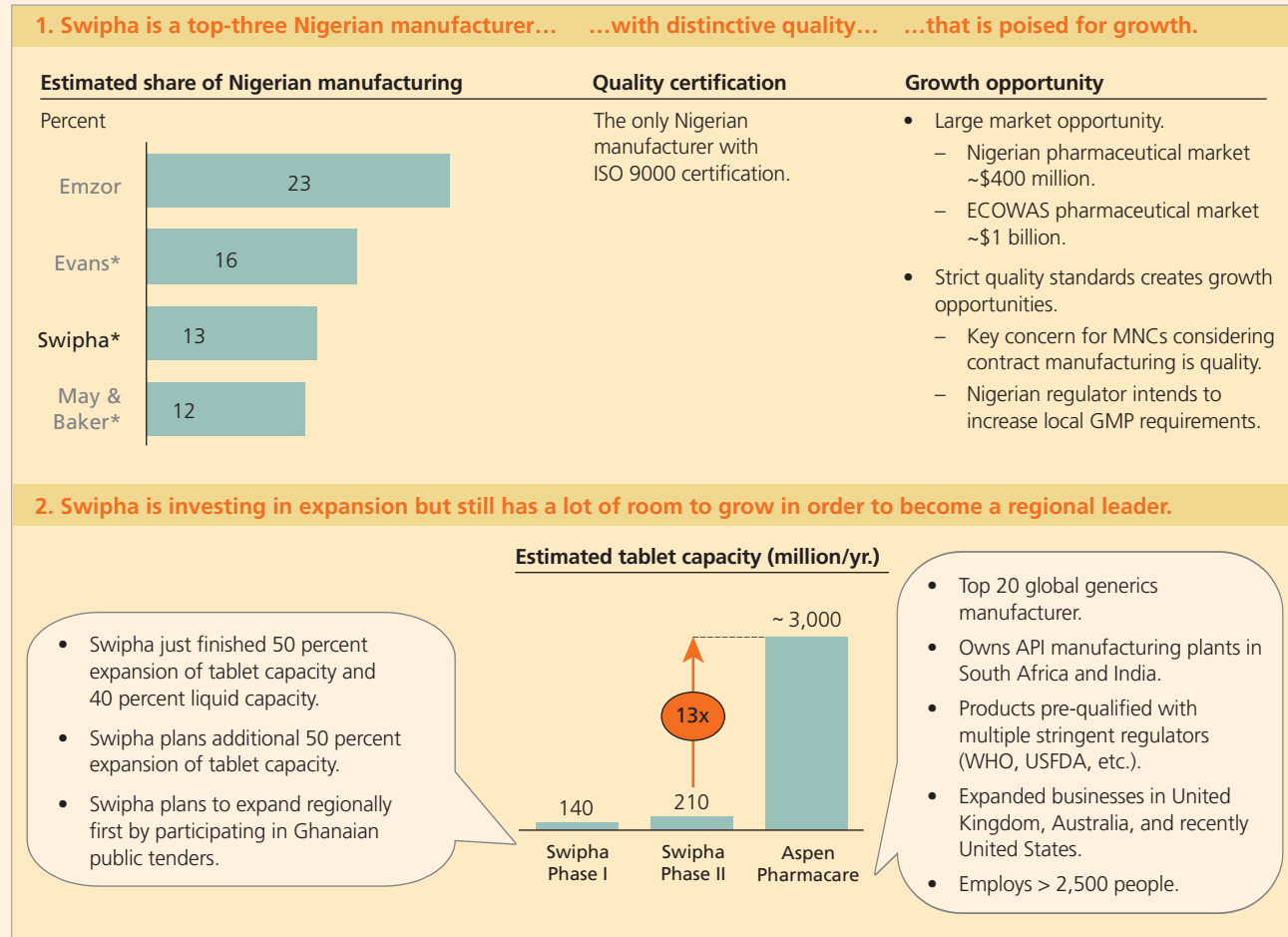
In addition, the availability of existing capacity favors the production of goods with low manufacturing complexity and/or those that are related to an existing industry, such as textiles. Three large product categories that fit the above criteria are mosquito nets—the current shift is toward long-lasting insecticide treated nets (LLINs)—medical gauzes, and medical furniture.

As shown in Figure A3.6, in 2007 LLINs represent a global market of \$150–\$300 million, of which about two-thirds is concentrated in Sub-Saharan Africa.¹¹⁸ Medical gauzes, wadding, and dressings represent an estimated \$90–\$120 million annual market in the region. Medical and dental furniture represent an estimated \$80–\$120 million annual market.

Figure A3.5

Case study, certified generics manufacturer: Swipha, Nigeria

Swipha is a leading generics manufacturer in Nigeria with good quality that is poised for growth. Swipha is investing in growth, but still has a lot of room for growth in order to become a continental leader.



* Excluding estimated 25 percent of products (by value) imported in final product form from Roche (Swipha), 33 percent from Cipla for Evans, 25 percent from Aventis for May & Baker. GlaxoSmithKline is Nigeria's largest pharmaceutical company, but locally manufactured value is less than those listed above.

Source: Country interviews; company business plan; McKinsey analysis.

The LLINs case example below (Figure A3.7) shows the challenges of investing in LLINs as well as the potential opportunities.

Innovation

In 2006, South Africa spent 0.9 percent of its \$250 billion GDP on research and development across industries. In comparison, India's spending in research and development is 1.2 percent of GDP, or \$9.5 billion, and the amount for the United States is 2.7 percent of GDP, or \$350 billion.

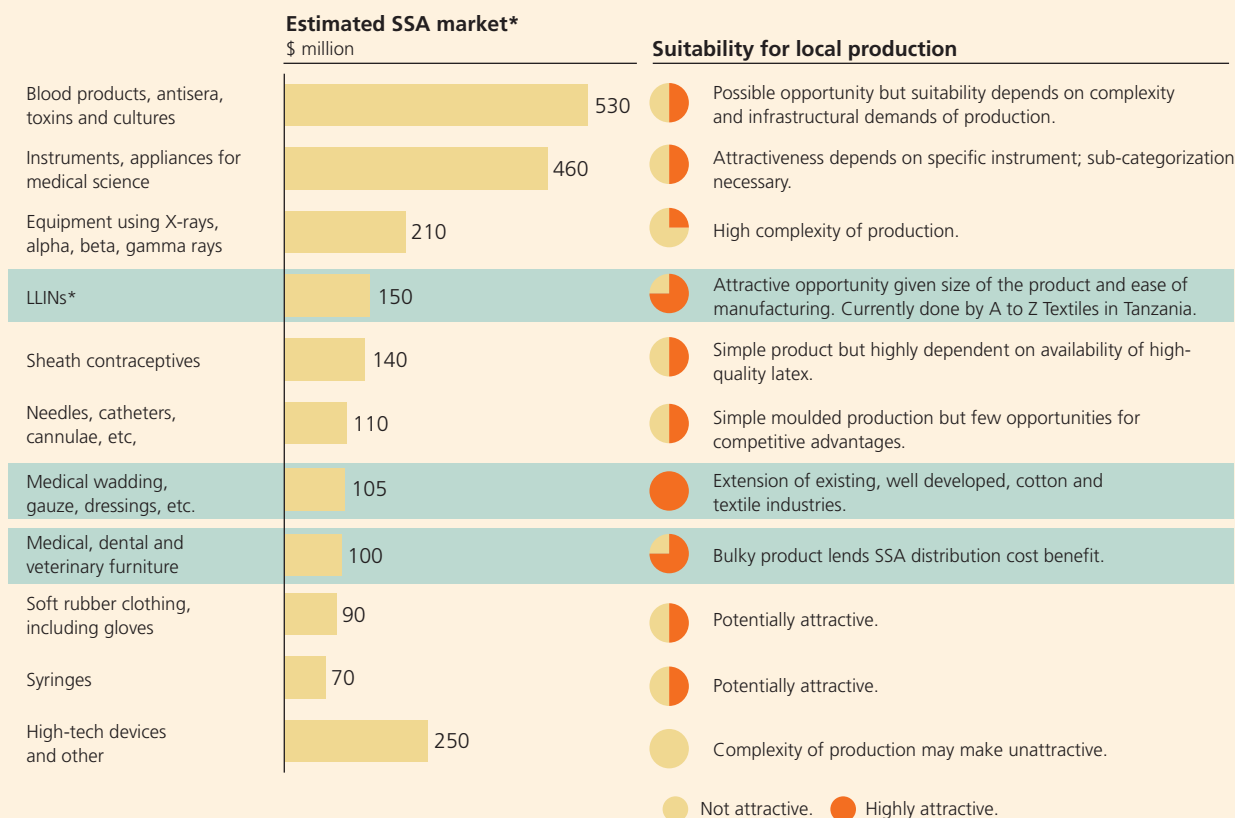
Private sector investment in biological, medical, and health sciences accounted for less than 10 percent of that value in South Africa.¹¹⁹ Not surprisingly, there is only one biotech-focused venture capital firm in the country, Bioventures, with just \$11 million under management.

Limiting factors for the development of early stage biotech venture capital funds have been:

- Few exit opportunities. There are no later stage venture capital firms to fill the developmental funding pipeline and private equity firms are

Figure A3.6

Evaluation of opportunities for local manufacturing of medical supplies



* All figures, except mosquito nets, are imports with estimates extrapolated from Comtrade medical supplies import data to countries with 65 percent of total 2007 Sub-Saharan African health care spending and estimating that imports represent 95 percent of SSA medical supplies. LLIN sizing based on Roll Back Malaria projection of 42 million nets demanded in 2006, assuming 70:30 (30m:12m) LLIN : conventional net split, at \$5/net pre-distribution price based on producer interviews and net prices quoted on Roll Back Malaria website data. Price encountered ranges from \$4 to \$6, pre-distribution.

Source: Comtrade; Rollback Malaria; McKinsey analysis.

not interested in such early entrepreneurial models or in risky biotech investment. In addition, in recent years major device and biotech companies (usually the larger exit opportunity) have been less acquisitive of new ventures.

- A limited pipeline. Venture capital firms would have to reach down further into basic research to “pull up” very early stage companies, and therefore would end up holding investments for a very long time.
- Lack of experience. Few funding sources understand the sector well enough to feel comfortable investing in it.

On the other hand, about 51 biotech companies are active, engaged in first-, second-, and third-generation technologies.¹²⁰

Although small by global standards—private sector life sciences innovation outside large companies spending in clinical research currently receives an estimated \$50–\$60 million—South Africa’s emerging life sciences innovation sector has a strong base. The nation is politically stable and enjoys the subcontinent’s highest rating for ease of doing business.¹²¹ The country has strong communication, research, and physical infrastructures, and it is endowed with one of the world’s highest rates of biodiversity per unit area.

Figure A3.7

Case study, medical supplies manufacturing: long lasting insecticide treated nets (LLINs)

LLIN manufacturing illustrates some of the opportunities and challenges for supplies manufacturing in Sub-Saharan Africa. There is currently one LLIN manufacturer in Africa, Tanzania's A to Z Textiles, making three–four million nets per annum.

<p>A large market...</p> <ul style="list-style-type: none"> • Estimated \$120–\$250 million per annum 2007 market in SSA, based on 30–50 million nets at \$4–5/net ex-factory. • LLINs have lower life-time cost to user (\$5.33) than regular insecticide treated nets (ITNs) that last fewer washes (\$8.33).* • 10–20 percent margins. 	<p>...and a challenging market</p> <ul style="list-style-type: none"> • Challenging business environment given price variations between countries, nascent distribution systems, need to sell on credit, higher up-front user cost than insecticide treated nets (ITN), risk of counterfeits. • Slow registration process (both WHOPES & in-country) vs. conventional nets that do not require registration. • Market for LLINs is currently >90 percent public/donor funded, and not yet a developed or sustainable private market.
<p>Africa already produces textiles and bed nets...</p> <ul style="list-style-type: none"> • Africa has local textile manufacturing. • Textile manufacturers have experience with mosquito net production (but not LLIN production). 	<p>...although it is at a cost and technical disadvantage to Asia</p> <ul style="list-style-type: none"> • Cost leaders are Bangladesh, Vietnam, and China. • Technical leaders are Thailand and China.
<p>A bulky product means a freight advantage...</p> <ul style="list-style-type: none"> • Bulky product may offer distribution cost savings if manufactured locally. 	<p>...which helps, but does not achieve cost parity</p> <ul style="list-style-type: none"> • Distribution costs estimated at only five percent of total cost for nets with stenting technology. The key cost considerations are in yarn, stitching, stenting, chemicals, and financing.
<p>There may be preference for local supply...</p> <ul style="list-style-type: none"> • With a high malaria burden, Africa has an interest in ensuring a stable LLIN markets, including supply. • Potential for preferential status as a local producer when competing for tenders, especially if channeled through government procurement. • Local supply would support the development of sustainable markets needed to reach more people. 	<p>...and that will require building sustainable private markets</p> <ul style="list-style-type: none"> • Developing competitive local supply requires a long-term co-investment by local manufacturers and foreign technology owners. • To build a rationale for long-term co-investment, donors, governments, and suppliers need to collaborate to develop sustainable private LLIN markets.

* Rollback Malaria estimate based on three year lifespan (estimate of seven washes/year), and re-treatment of ITNs every six months.

Source: Country interviews; Rollback Malaria; McKinsey analysis.

South Africa also has strong academic and research institutions with expertise in the biomedical sciences and a track record of medical device innovation. Historically, however, intellectual property (IP) has generally been sold off-shore or simply not been commercialized. Hence researchers lack experience commercializing IP.

On the basis of the above, access to capital from financiers with investment experience in innovation would address a critical need in the sector's development.

The sector's need for capital extends along the developmental pipeline, from pre-clinical work to commercialization of both APIs and intermediate or finished products.

Figure A3.8

Case study, biotech innovator: Disa Vascular, South Africa

Disa Vascular is a South African biotech company that develops coronary stents. With strong academic backgrounds but minimal prior commercial experience, Disa’s founders have developed market-ready innovations with limited external funding.

	Self-funded start-up	Angel investor	Venture capital investors	Additional growth equity investment	Scale up or exit
Year	Pre-2000	2000	2002	2004	2007–2009
Business stage	Translated computational expertise from orthopaedics into vascular stent design.	First generation stent in use in Groote-Schuur Hospital (Cape Town).	Developed and licensed Gen1 stent; still subcontracting manufacturing.	Doing own manufacturing; sales both local and export; further drug-eluting stent development.	Need to invest in marketing, clinical trials for drug-eluting stent, and new R&D; not yet profitable; last quarter revenue of \$0.2 million.
Financing	Self-funded from orthopaedic consulting.	Angel investors double money on exit.	Bioventures: \$0.6 million equity.	International Development Corporation (IDC): \$0.9 million equity + \$0.4 million debt. Cape Biotech: \$0.1 million loan.	2007: \$0.4 million from existing shareholders. 2008+: Additional future needs undetermined.
Use of funds	Develop first stent (stainless steel).	European registration of first generation stent.	Develop cobalt-chromium and drug-eluting stents, hire staff & do marketing.	Cobalt-Chromium stent; animal trials of drug-eluting technology, build in-house production	Marketing, take drug-eluting stent to market, new premises, more R&D.

Source: Country interviews; McKinsey analysis.

With other imperatives for public spending in South Africa, including other urgent health needs, future growth in research and development investment may need to come largely from the private sector. In 2006, South Africa’s Ministry of Finance increased tax deductions for private research and development from 100–150 percent, signalling strong support for private sector-led innovation. That support builds on a public investment in 2003 in biotechnology regional innovation centers to support the commercialization of life sciences research.

Additionally, South Africa enjoys a strong reputation for clinical research, with a \$10 billion global industry that grew a remarkable 15 percent from 2005–2006.¹²² With a strong laboratory infrastructure, a diverse native patient population, reliable ethical standards, and lower costs than

similar research in the Western world, the country is an attractive base for clinical research. At present South Africa absorbs an estimated three percent of the global market (400 studies in Africa, of 8,000 globally¹²³).

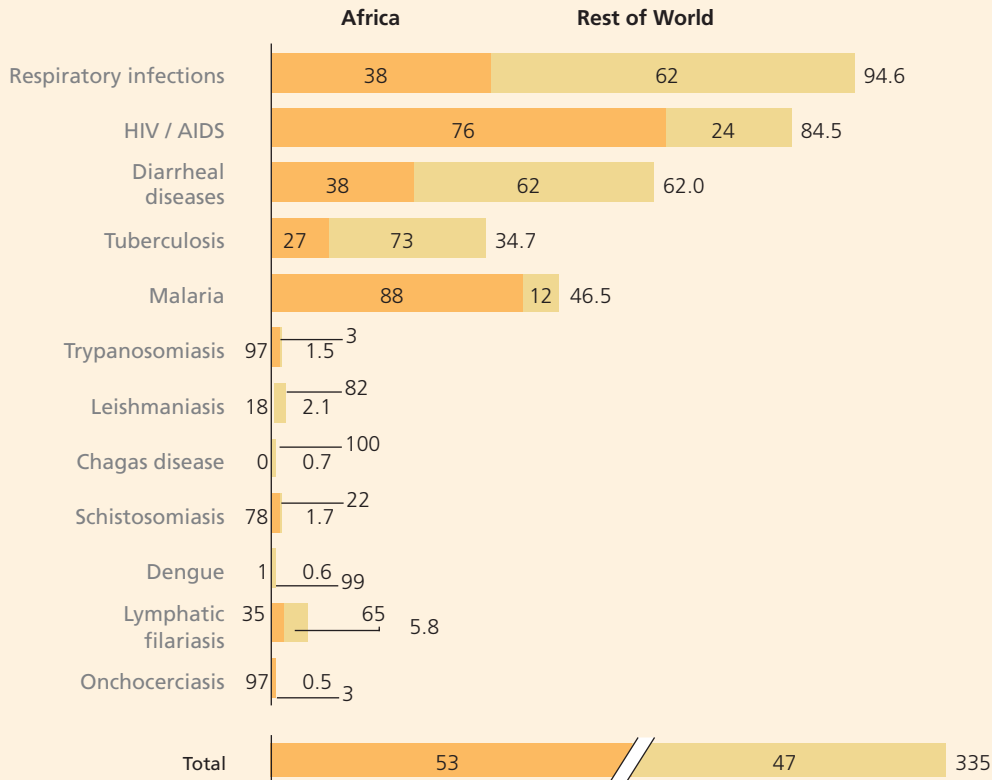
External investment opportunities in clinical research organizations are, however, limited. With an estimated capital investment of only \$30,000–\$60,000 to set up an out-patient clinical research site, the need for external financing is particularly low.

The key driver of public support for life science innovation in South Africa is the aspiration that local innovation will generate solutions to local health burdens. Public funding and research institutions are seeking to prioritise initiatives that address key health burdens, such as HIV and TB, or that develop innovations related to key indus-

Figure A3.9

HIV, TB, malaria and neglected disease burden, 2002

Percent, millions of disability-adjusted life years (DALYs)



Source: WHO 2002 disease burden statistics; organization websites; country interviews; McKinsey analysis.

trial sectors, such as mining and agriculture. Entrepreneurs, on the other hand, are primarily guided by the market opportunity for their products (both domestic and global) and the research interests of product innovators.

For now, the best opportunity for commercial investors may be in late-round funding given the dearth of venture capital, greater public participation in early stages of funding, and the long time to exit. The current landscape shows that investors prefer innovations that are cheap to develop and quick to commercialize, such as medical devices and innovative formulations of existing drugs.

Figure A3.8 shows the investment opportunity associated with Disa Vascular, a South African biotech company producing coronary stents.

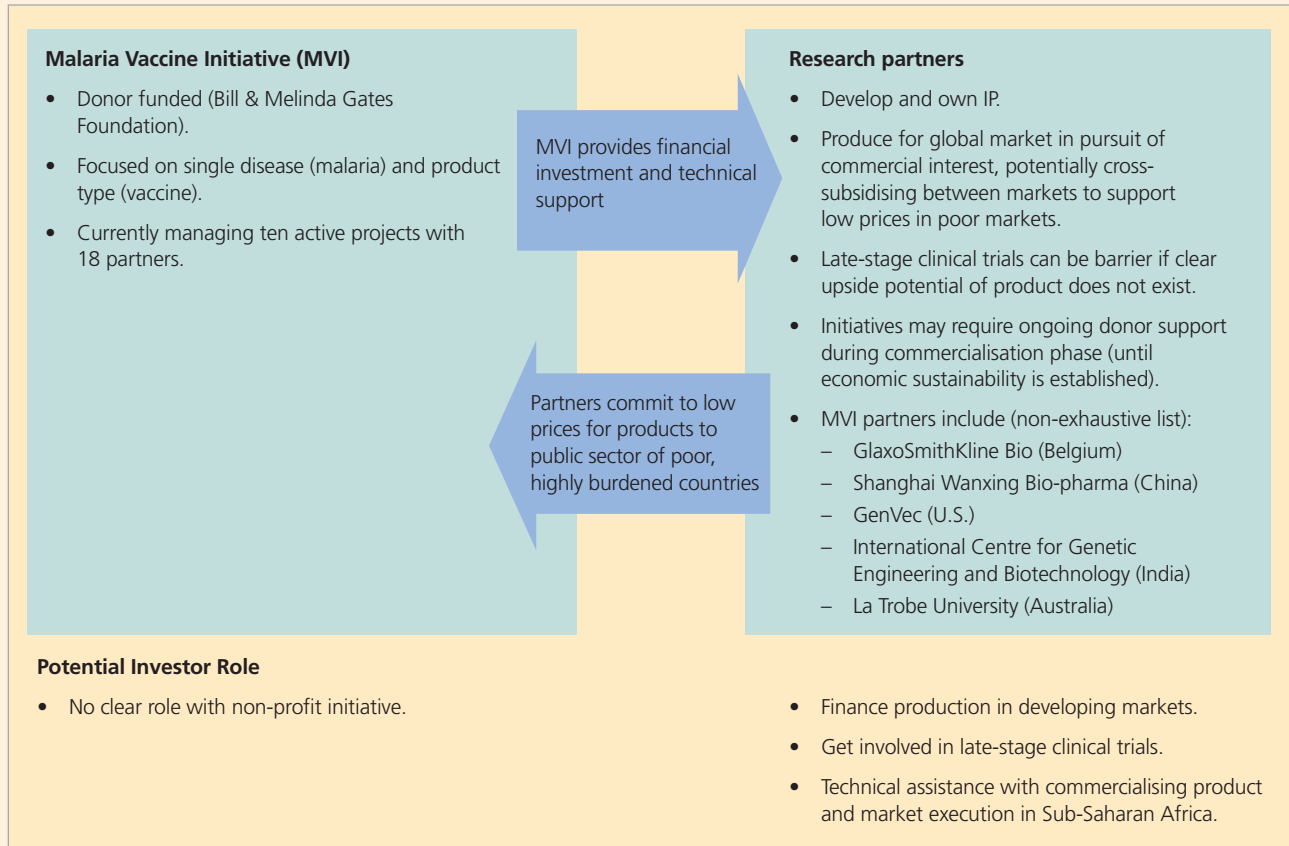
Commercialization of Infectious and Neglected Disease Research

Sub-Saharan Africa stands to benefit greatly from the development and commercialization of infectious disease medicines and products. The region bears a disproportionate share of the world’s infectious disease burden (Figure A3.9).

Africa bears 88 percent of malaria’s health burden, 76 percent of HIV’s health burden, and 58 percent of the overall HIV, TB, and malaria, neglected disease burden. The bulk of this is burden is found in Sub-Saharan Africa. Investing in solutions to these diseases, no matter where the innovation is based, is key to addressing the most important problems in Sub-Saharan African health.

Figure A3.10

Case study, product development partnerships: Malaria Vaccine Initiative (MVI)



Source: Country interviews; MVI web site; McKinsey analysis.

A significant opportunity to make a dramatic and positive impact on health care in Sub-Saharan Africa lies in financing the commercialization of infectious and neglected disease products that are developed at a global level. Although there are several sources and models of innovation for such products, commercial/non-profit product development partnerships (PDPs) are the clear leaders in this area.

The prototypical model for a PDP centers on a non-profit, donor-funded organization that manages a portfolio of partnerships with multiple commercial companies and research institutions, all focused on developing a drug, vaccine, diagnostic, or other product for a specific disease. For example, the Malaria Vaccine Initiative (MVI) is a

donor-funded organization that is partnering with companies such as GlaxoSmithKline, Shanghai Wanxing Bio-pharma, and GenVec, and research institutions such as La Trobe University in Australia and the International Center for Genetic Engineering and Biotechnology in India to develop a malaria vaccine (Figure A3.10).

MVI provides its partners with financial and technical support and, in exchange, requires that they commit to preset, low “cost-plus” prices for the public sector of poor nations. The commercial or institutional partners own the IP that is developed by the partnership and are free to pursue commercial pricing in wealthy nations, as well as in the private sector of poor nations.

Commercial partners often also see their investment in neglected disease research as part of their commitment to corporate social responsibility. There are similar partnerships pursuing malaria drugs (e.g., the Medicines for Malaria Venture); diagnostics (e.g., the Foundation for Innovative New Diagnostics); and other products (e.g., Net-Mark, which focuses on developing affordable and easily transferable LLIN technologies).

Investing in the commercialization of APIs, pharmaceuticals, and products developed by PDPs could entail financing some of the costs of Phase 3 clinical trials, as well as costs related to commercialization (such as manufacturing and product registration), provided that the products had significant market potential in wealthier countries (making the opportunity appealing from a financial standpoint).