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Attracting pharmaceutical manufacturing to Africa's special economic zones

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Abbreviations

AEZO	African Economic Zones Organization
AfCFTA	African Continental Free Trade Agreement
AMRH	African Medicines Regulatory Harmonization
APIs	Active pharmaceutical ingredients
EAC	East African Community
EPZs	Export processing zones
ESG	Environmental, social and governance
ETP	Effluent treatment plants
FDI	Foreign direct investment
GHG	Greenhouse gas
GMP	Good Manufacturing Practices
GVC	Global value chain
MNEs	Multinational enterprises
PAVM	Partnership for African Vaccine Manufacturing
R&D	Research and development
SDGs	Sustainable Development Goals
SEZs	Special Economic Zones
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCTAD	United Nations Conference on Trade and Development
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization

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Key messages

1. The number of Special Economic Zones (SEZs) worldwide continues to grow, and Africa is no exception. At the same time, global value chains (GVCs) are experiencing structural change and increasing fragmentation, which is leading to downward pressure on investment in GVC-intensive manufacturing sectors. This challenges the economic model that SEZs have historically relied on and calls for a strategic rethink of their value proposition. One way for SEZs to maintain their momentum is to focus on sectors aligned with the Sustainable Development Goals (SDGs), such as healthcare and renewable energy.

2. Local pharmaceutical manufacturing is a priority for African policymakers as a means of achieving SDG 3 ("Health for All"), especially in the wake of the Covid-19 crisis. It contributes to meeting African demand for medicines amidst poor access to essential drugs and a rise in demand due to population growth and shifting health needs. Despite its importance, foreign direct investment (FDI) in African pharmaceutical production remains limited. Africa is still heavily dependent on imports of medicines, and manufacturers that are present on the continent focus mostly on the final stages of formulation and rely heavily on importing active pharmaceutical ingredients (APIs).

3. The business case for investing in local pharmaceutical production in Africa is challenging. SEZs, however, can make it more viable by offering a platform to build the capacity needed to achieve the necessary economies of scale. They can facilitate preferential access to larger regional markets, provide essential infrastructure for manufacturing, promote clustering and networks, and establish a supportive governance and regulatory framework. The overall policy framework should ensure that medicines produced in SEZs are accessible within the host economy, thereby enhancing local access to essential medicines.

4. To maximize the benefits of SEZs in Africa, it is essential to address their mixed track record by ensuring proper design and integration into local, regional and global value chains. This includes fostering local content through skilled labor, small and medium-sized enterprises (SMEs), and innovation capacity, aligned with the Sustainable Development Goals. The next-generation SEZ model must emphasize high-quality standards, sustainable imperatives and the creation of functional links to local, regional, and global economies.

5. Building on these general principles, this report outlines a targeted policy package to attract pharmaceutical investment to SEZs. Key elements include a dual market approach that serves both local and export markets, comprehensive market assessments, and policy adaptations tailored to the needs of the pharmaceutical industry, among other strategic options.

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Introduction

The local production of pharmaceuticals has been high on the agenda of African countries. Yet, despite the attention given by policymakers and local firms on the continent, the development of an industry capable of being competitive and providing local populations with better access to medicines has largely been limited to a few cases. There is a clear need to scale up investment into local production to have an impact on the ability of African countries to meet SDG 3, which promises better health for all.

This report argues that there is a case to be made to attract pharmaceutical investors to establish their facilities in African SEZs. However, the unique features of pharmaceutical manufacturing require tailoring the legal, governance and physical structures of SEZs to pharmaceutical manufacturing needs and public health considerations. Countries such as Kenya have already begun to seize this opportunity.

UNCTAD has long been committed to advancing local pharmaceutical manufacturing across numerous countries and regions in Africa, and to promoting the sustainable development impact of SEZs. If structured well, SEZs can enhance the business case for investment in local pharmaceutical production in Africa, leading to important gains in health, resilience to external shocks such as the Covid-19 crisis, and economic development. The policy suggestions in this report are presented for the consideration of investment and SEZ policymakers and operators and industry.

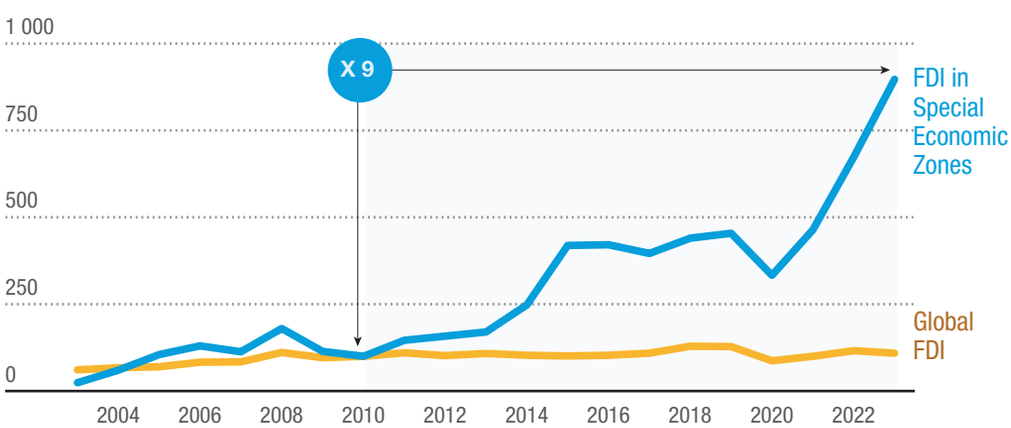
Context. SEZs in a fractured global economy: the drive towards the SDGs.

SEZs have proliferated globally, with around 6,000 zones now established across 150 economies. While SEZs have grown more heterogenous over time, there are at least three key characteristics of such zones: (i) SEZs are normally governed under a separate regulatory framework vis-à-vis the rest of the country and tend to offer various types of fiscal incentives; (ii) within their boundaries, these zones provide infrastructure and support services for business operations; and (iii) SEZs provide trade facilitation services, often acting as separate customs entities and offering exemptions from customs duties.

The continued growth in the number of zones underscores the increasing reliance on SEZs as a tool for attracting investment, driving industrialization and stimulating economic growth. Governments worldwide, facing rising global competition to attract mobile industrial activities, have adopted SEZs to boost investment, innovation, productivity and economic development. In response, multinational enterprises (MNEs) have channeled an increasing share of FDI into SEZs, reflecting their growing role in their global investment strategies (Figure 1).

Africa is no exception to this trend. While still limited in absolute numbers, SEZs have become increasingly relevant across the African continent. According to UNCTAD (2019), approximately 240 SEZs had been legally established in Africa as of 2019, accounting for about 4 percent of the global total. However, only about half of these zones were fully operational, as many were still under construction or in the early stages of development. Among African countries, Kenya leads with 61 SEZs, followed by Nigeria (38), Ethiopia (18), and Egypt (10). East Africa hosts around 50 percent of Africa's SEZs.[1]

Figure 1
Global FDI projects into SEZs hit new highs in recent years
(Number of announced cross-border greenfield projects, indexed 2010 = 100)



Source: fDi Intelligence https://www.fdiintelligence.com/content/feature/record-fdi-flows-into-global-free-zones-in-2023-84091 and UNCTAD based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

[1] The AEZO Atlas contains detailed descriptions of Africa's SEZs by country (https://www.africaeconomiczones.com/aezo-atlas/).

SEZs are designed to boost productive capacity and foster a favorable business climate. The core value proposition of SEZs lies in offering infrastructure and a suite of incentives that make them appeal to both domestic and international businesses. Incentives typically include tax breaks, streamlined customs procedures and regulatory facilitation, creating an environment that supports investment and business growth. SEZs can help countries integrate into GVCs, enhance competitiveness in international markets, and serve as pivotal drivers of industrialization and economic transformation.

In Africa, SEZs take on an even greater significance as the continent seeks to overcome structural economic challenges, including heavy reliance on primary commodities and limited industrialization. By creating a conducive environment for manufacturing and services, SEZs can support the much-needed industrial diversification of African economies and spur private sector growth.

At this historical juncture, however, it is crucial for SEZs to acknowledge the profound shifts underway in economic globalization and their implications for the development and industrialization prospects of Africa and other developing regions. Traditional GVCs are undergoing structural transformations characterized by increasing fragmentation and diminishing investment in manufacturing sectors, while capital flows rapidly migrate towards services (UNCTAD, 2024). Consequently, the economic models upon which SEZs have historically relied are losing traction, compelling SEZs – and their partners, including Investment Promotion Agencies (IPAs) – to strategically realign their value propositions.

To foster resilience amidst these shifts, African SEZs must focus on industries and activities that are inherently less vulnerable to global GVC movements and more closely tied to public policy priorities and the SDGs. Sectors driven by sustainable development objectives, such as healthcare and renewable energy, are more insulated from the volatility of global production networks and better positioned to support inclusive, long-term growth. By directing resources and incentives toward these SDG-driven areas, SEZs can maintain their growth momentum, and emerge as catalysts of resilient and sustainable economic development.

1

SDG3 “Health for All” and local pharmaceutical production: an opportunity for SEZs with a major development impact for Africa

The focus on local pharmaceutical production aligns with SDG3.
For well over a decade, greater pharmaceutical production in low and middle-income countries has been advocated internationally.[2] In a 2019 joint statement, UNCTAD together with other United Nations agencies[3] and the Global Fund stated: *“in recognition of the important role local production can play in improving access to quality-assured medical products and achieving universal health coverage, the undersigned organizations aim to work in a collaborative, strategic and holistic manner in partnership with governments and other relevant stakeholders to strengthen local production”*.[4] This focus aligns with SDG 3, which aims to ensure

[2] World Health Assembly Resolution 61.21. Geneva, World Health Organization (WHO), 2008, adopting the Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property.
[3] World Health Organization (WHO), United Nations Industrial Development Organisation (UNIDO), UNAIDS (The Joint United Nations Programme on HIV/AIDS) and UNICEF (United Nations Children’s Fund).
[4] Interagency Statement on Promoting Local Production of Medicines and Other Health Technologies (2019). Available at https://www.who.int/docs/default-source/medicines/local-production/interagency-statement-on-promoting-local-production.pdf.

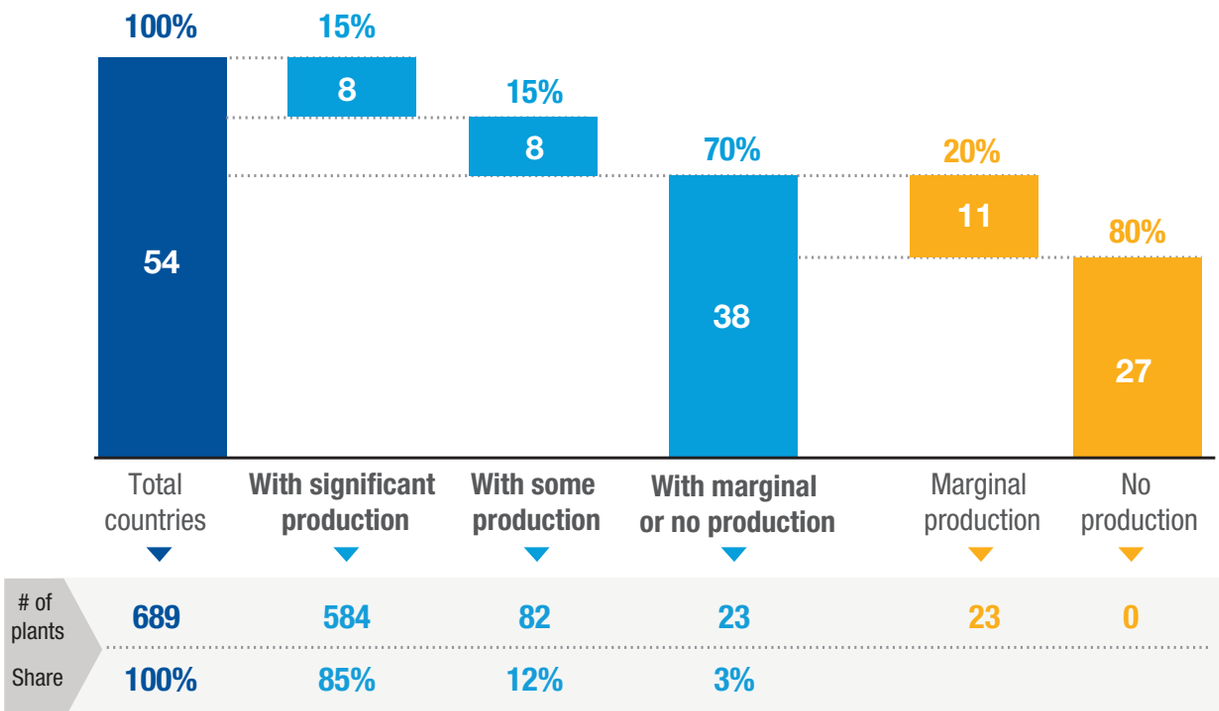
healthy lives and promote well-being for all. Target 3.B emphasizes the need for affordable access to essential medicines and vaccines. Supporting investment in local manufacturing capacity contributes to these global health goals and to reducing the reliance on external supply chains.

Africa is central to local production policy discussions and initiatives, at continental (African Union-UNIDO, 2012), regional (e.g., EAC, 2017) and national levels (e.g., UNCTAD, 2023a/b/c). The discussion has now moved from whether to promote local production across the continent to how to make it happen. Strengthening local pharmaceutical industry is seen as key to improving health outcomes and building resilience in African healthcare systems.

The COVID-19 pandemic further highlighted the importance of ensuring equitable access to pharmaceutical products, making the case for the localization of pharmaceutical production stronger. The pandemic highlighted the vulnerability of many African countries in accessing vital medicines – such as vaccines – and the crucial role that local pharmaceutical production can play in the long term. Future shocks – whether health-related, economic or geopolitical – could pose significant risks to the supply of pharmaceutical products in African countries. In addition, increased trade barriers and geopolitical tensions may disrupt current supply chains, making it increasingly difficult for African countries to source APIs and other key inputs for medicine production. This calls for a strategic analysis of African pharmaceutical capabilities and the development of actionable policies to strengthen Africa’s ability to ensure equitable access to pharmaceutical products.

The African pharmaceutical market is heavily reliant on imports, with over 70% of its pharmaceuticals sourced externally, primarily from Asia. The remaining local production is present in about half the countries on the continent (27) but remains marginal in over a third of them – 11 countries with fewer than five manufacturing plants (Figure 2). Overall, about 70% of countries in Africa have no or marginal local production. The remaining countries – 16 in total – are equally split between those with moderate local production (5 to 30 plants) and those with a more substantial industrial footprint (more than 30 plants). Notably, this last group – including eight countries of which half are in North Africa – accounts for 85% of the approximately 690 pharmaceutical plants in Africa, indicating significant concentration of the industry.

Figure 2
Around 70% of African countries have little or no local production footprint in pharmaceuticals
(Number of countries)



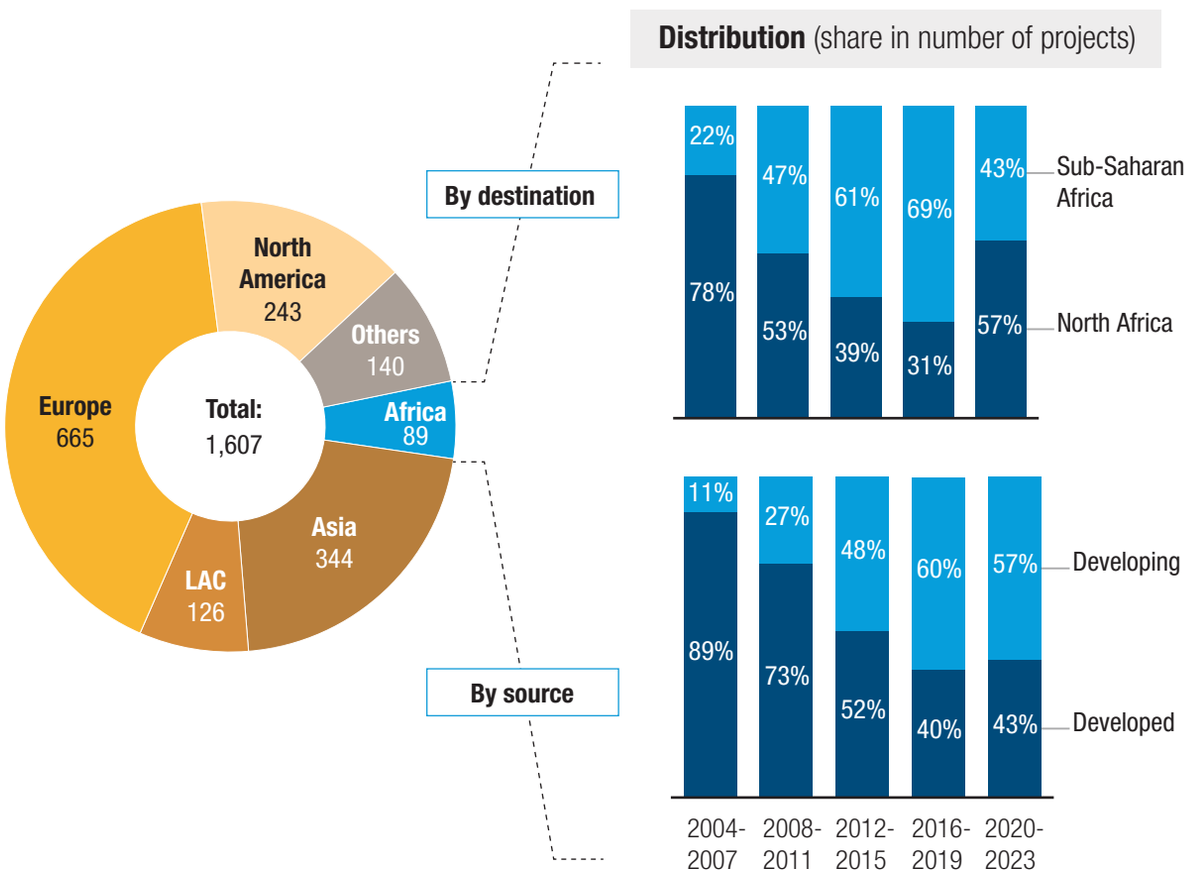
Source: UNCTAD Secretariat elaboration based on Banda et al. (2022).

Note: "With significant production": above 30 plants; "With some production": between 5 and 30 plants; "Marginal production": below 5 plants. In the absence of systematic data on African production facilities, this mapping (from Banda et al., 2022) uses information from company websites, industry contacts, and networks. While precise numbers may vary due to uncertainties, the relative scales of production across countries (e.g., whether a country has significant, some, or marginal production) are reliable for analytical purposes. Due to lack of data, 11 countries – mostly small – were not mapped in the original analysis. For simplicity and completeness, they are included here under the assumption that they have no production facilities, based on empirical evidence from similar countries. Excluding them would not alter the underlying findings of the analysis.

FDI in local pharmaceutical production in Africa has been very limited so far. Over the past two decades, there were only about 200 announced cross-border greenfield projects in Africa's pharmaceutical sector, with fewer than 90 in actual manufacturing activities (the remainder focusing on sales, marketing and distribution activities) (Figure 3). In comparison, during the same period, Asia saw 350 projects in pharmaceutical manufacturing and Latin America and the Caribbean 130. As a result, Africa's share in global cross-border greenfield activity in pharmaceutical manufacturing remains low, at approximately 5%. There has been a notable shift in the sources of FDI, with developing countries, particularly India, leading the majority of investments in recent years, reversing the earlier dominance of developed countries.

The underlying business model of African manufacturing is not fully local but mixed, involving the importation of APIs for local formulation. This model is also the most realistic path for expanding local production in the medium term given that API manufacturing is currently substantially absent in Africa. With a strong emphasis on generic drugs, profit margins are driven by costs and volumes, exposing the African pharmaceutical industry to major competitive pressure from global manufacturers.

Figure 3
The FDI footprint in African pharmaceutical production is small
(Number of announced cross-border greenfield projects in pharmaceutical manufacturing, 2004-23)



Source: UNCTAD Secretariat, based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com)

Note: LAC: Latin America and Caribbean..

In this context, developing the pharmaceutical industry can have substantial positive impacts on African society and the economy, **across three key dimensions: health, strategic and economic**.

From a **health perspective**, expanding the pharmaceutical industry can improve access to essential medicines including antibiotics, addressing inequalities and leading to significant health benefits for the wider population.

Strategically, localizing pharmaceutical production reduces dependency on imports, safeguarding supply during crises like the Covid-19 pandemic. Despite the concentration of API production in China and India, building local formulation capacities remains a significant step towards self-sufficiency.

Economically, industrial localization can boost job creation in skill-based occupations, advancing Africa's shift towards more knowledge-intensive industries, although value added in the formulation stage remains relatively limited.

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2

A tough business case – that SEZs can help make viable

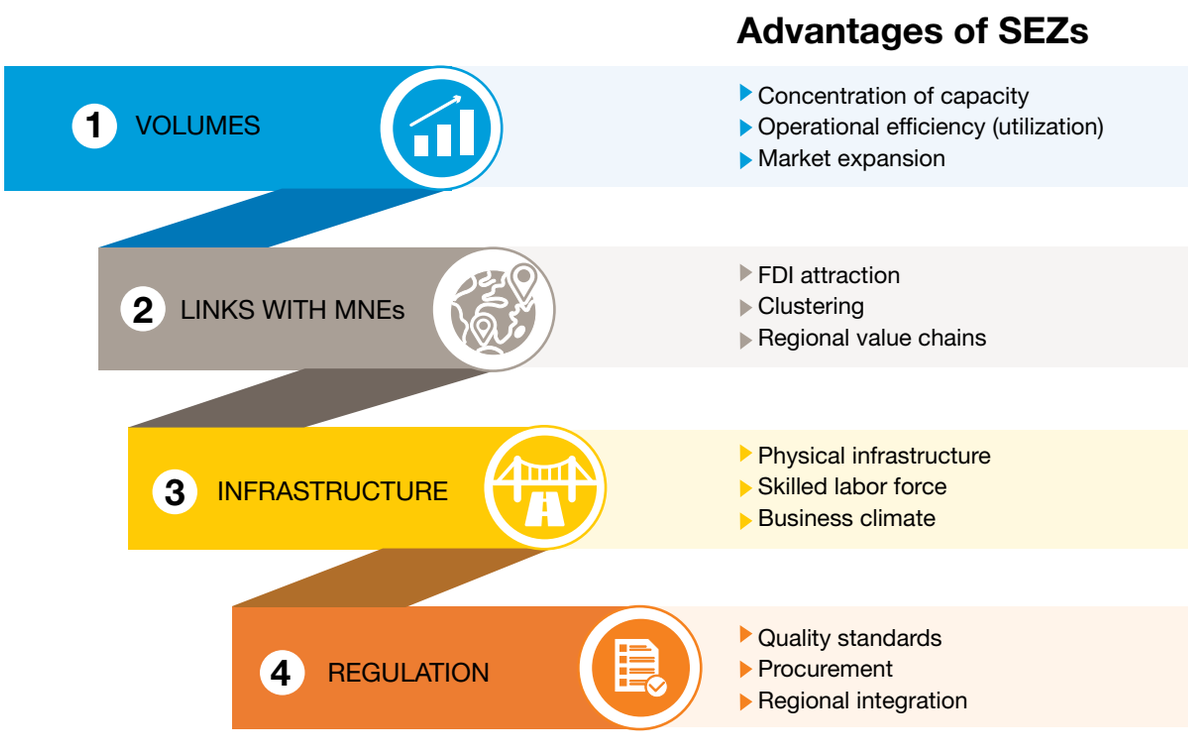
The business case for local pharmaceutical production in Africa faces significant challenges. Higher operational costs, smaller-scale plants and lower productivity sharply limit the continent's competitiveness in the global pharmaceutical industry. Additionally, the heavy reliance on imported APIs – essential for drug manufacturing – further undermines the feasibility of local production. When the cost of imported APIs represents a large share of total production expenses, African producers have limited flexibility for cost optimization, making it difficult to withstand competitive pressures from global manufacturers.

African local production can become economically viable at sufficient scale. While local manufacturing efficiency in Africa generally lags behind that of global competitors, higher production volumes and reduced transport costs can make locally produced medicines more affordable. A McKinsey analysis found that for various products – such as tablets, capsules and creams – the cost of drugs produced in Ethiopia and Nigeria can be up to 15% lower than the landed price of imports from India (Conway et al., 2019). This challenges the common assumption that local production is inherently more expensive and inefficient than importing finished products, delivering a key message to investment policymakers: under the right conditions, and at sufficiently high volumes, local pharmaceutical

manufacturing in Africa can be cost-competitive. This is particularly important for the continent, as the goal of local production is to pair access to medicines and greater health security with affordability.

SEZs are well positioned to support the main drivers of feasibility of local pharmaceutical production (Figure 4). Achieving competitiveness in Africa's pharmaceutical industry depends largely on (i) increasing production volumes. In addition, (ii) strategic partnerships with MNEs, (iii) the establishment of strong infrastructure, and (iv) regulatory frameworks - both at national and regional levels - can also make a difference. These elements are critical determinants of investment - whether foreign or domestic - in pharmaceutical manufacturing (e.g., UNCTAD, 2011a).[5]

Figure 4
SEZs support the four main drivers of feasibility of local production



Source: UNCTAD Secretariat.

Note: MNEs: multinational enterprises; SEZs: special economic zones; FDI: foreign direct investment.

[5] UNCTAD (2011a) outlines a number of prerequisites that exist for a location to be attractive for pharmaceutical investors: the availability of human resources, basic infrastructure, a functioning drug regulatory authority, and timely and cost-effective access to key inputs, especially APIs. Beyond these prerequisites, typical drivers for pharmaceutical investment include market access, the quest for strategic assets, a supportive policy environment, pricing policies, incentives and humanitarian concerns such as access to medicines.

1 SEZs provide a comprehensive platform for building the capacity needed to achieve economies of scale in pharmaceutical production.

Achieving economies of scale is critical for Africa to establish a competitive pharmaceutical industry, especially in the face of competition from international producers like India. The ability to scale up production is influenced by three key factors: the concentration of production capacity, the efficient use of that capacity, and the expansion of market size. SEZs offer a strategic solution by addressing these factors in a holistic way.

SEZs are specifically designed to cluster and concentrate industrial activity, making them a powerful tool for attracting investment. As the local pharmaceutical industry currently lacks the scale to compete with global players, SEZs can serve as hubs for building capacity. By bringing together local firms and foreign investors, these zones create an environment where production can be scaled up efficiently. The concentrated nature of SEZs allows for shared resources and infrastructure, which in turn reduces costs and enhances operational efficiency and capacity utilization. This is particularly critical as pharmaceutical manufacturing facilities in many African countries operate at low utilization rates, typically between 30 and 60%, compared to over 70% in developed economies (UNCTAD, 2023 a/b/c).

In addition to concentrating capacity, SEZs foster an environment of collaboration and networking. The co-location of companies within the same zone facilitates the sharing of resources such as logistics, packaging and regulatory services, which helps optimize productivity. This kind of collaboration is vital in that it enhances the efficiency of production processes and ensures that capacity is utilized to its fullest potential.

Another critical aspect of achieving economies of scale is market size. This is where SEZs can make a real difference. SEZs are inherently geared towards international markets. This vocation enables local pharmaceutical producers to integrate into international value chains and tap into broader markets beyond borders. This is also consistent with ongoing initiatives like the Africa Continental Free Trade Agreement (AfCFTA) and the Africa Center for Disease Control's Partnership for African Vaccine Manufacturing (PAVM) designed to treat Africa as a unified market. By aligning with these efforts, SEZs can help pharmaceutical manufacturers in Africa access regional and global markets, significantly expanding their reach and allowing them to produce at scale.

2 SEZs are tools designed to attract investment from multinationals.

FDI facilitates the transfer of skills and technology, promotes upgrading along GVCs, and helps local firms meet international quality standards (UNCTAD, 2011b).

The extent to which local firms integrate with MNEs affects their ability to acquire the knowledge and capabilities needed to scale production. SEZs create a supportive environment for MNEs by offering business and trade facilitation services, incentives, duty-free imports, and streamlined administrative procedures. These incentives attract international investors to establish and expand operations, enhancing the role of FDI within local economies. Furthermore, the clustering effect within SEZs fosters interactions among MNEs' local firms and suppliers, building a more cohesive ecosystem that promotes collaboration and innovation and can serve as catalyst for vertical integration within the pharmaceutical value chain. Currently, almost all African pharmaceutical firms focus on formulation and local distribution - activities at the

lower end of the value chain. However, SEZs provide an opportunity for these firms to pursue vertical integration, for example towards API production in the longer run, by taking advantage of the benefits provided within the zones.

MNEs, which already operate across multiple stages of the pharmaceutical value chain, can lead this process, helping to form local and regional value chains that also benefit domestic producers. This integration could enhance local production capabilities, push the industries towards higher value-added activities and enhance the health, strategic and economic impact of the pharmaceutical industry in Africa.

3 SEZs specialized in pharmaceutical production can provide the physical and organizational infrastructure necessary to support local manufacturing and foster a conducive ecosystem for its growth.

One of the key strengths of SEZs lies in their ability to offer high-quality physical infrastructure, which is critical for pharmaceutical production. Concentrating these resources in a specific area allows governments to make more efficient use of capital investments, reducing the risk and costs associated with the significant upfront investments required by pharmaceutical firms. SEZs can ensure the availability of industry-specific facilities, such as stable power and water supplies, waste treatment plants, and specialized logistics networks. These are crucial to maintaining the stringent conditions necessary for pharmaceutical production, including temperature control and proper disposal of chemical by-products.

Beyond physical infrastructure, SEZs can also provide "soft" infrastructure in the form of a skilled workforce and a supportive business environment. By collaborating with educational institutions and training centers, SEZs can support the development of the specialized skills required by the pharmaceutical industry such as chemical engineering, quality control, and regulatory expertise. Additionally, SEZs can foster an innovation-friendly atmosphere by providing incentives for research and development (R&D), including grants and tax breaks. This focus on R&D can drive product diversification and technological advancements.

Moreover, SEZs can create a business-friendly ecosystem through fiscal and non-fiscal incentives that foster cross-industry collaboration. Pharmaceutical SEZs, in particular, can generate significant horizontal spillovers, benefiting diverse sectors beyond pharmaceuticals. They stimulate demand for specialized business services such as logistics, packaging, consulting, and legal services, which can extend their impact across the broader economy. By requiring diverse inputs like chemicals, laboratory supplies, and specialized equipment, these SEZs also create opportunities for local suppliers to develop capabilities that benefit other industries.

Strategically located SEZs near ports or trade routes enhance logistics, reducing costs and delivery times, and boosting export and global competitiveness. As SEZ-based pharmaceutical firms integrate into global markets, they develop export expertise and international networks, which can be leveraged by other local industries, such as agribusiness and technology. The combined spillover effects position pharmaceutical SEZs as catalysts for economic diversification and resilience.

4 SEZs can offer a regulatory and administrative framework tailored to the needs of the pharmaceutical industry.

In pharmaceuticals, streamlined administrative procedures, stable and transparent rules and regulations, adequate standards, and predictable and cost-efficient compliance are critical to fostering growth and attracting investment. SEZs can provide a conducive environment for addressing these needs, enabling the pharmaceutical industry to thrive.

Pharmaceutical production requires strict adherence to international quality standards to ensure products are safe, effective and marketable both locally and internationally. SEZs provide the policy space for governments to implement and enforce such regulations, creating a controlled environment where companies can focus on meeting these high standards. By concentrating industry-specific infrastructure and regulatory oversight within these zones, SEZs can facilitate the production of high-quality pharmaceutical products that comply with global standards.

One of the primary concerns for international pharmaceutical companies investing in new markets is the risk of policy instability and weak legal protections. SEZs can mitigate these concerns by offering a stable and predictable regulatory environment. Zones often come with guarantees of policy continuity, legal protections, and support in dispute resolution. Such assurances can be crucial for attracting FDI in pharmaceuticals, where companies need long-term stability to make significant capital investments. By providing these guarantees, SEZs make the local market more attractive to global pharmaceutical firms, reducing the perceived risks associated with political or economic instability.

Bureaucratic hurdles and inefficiencies are major barriers to the growth of the pharmaceutical industry in African countries. In a recent UNCTAD survey, local producers in Ethiopia, Kenya and Uganda consistently rated red tape and poor administration among the top barriers to the growth of the industry (UNCTAD 2023 a/b/c). SEZs may provide opportunities to streamline business registration, customs duties, and regulatory approvals, including the registration of medicines. By implementing coordinated procedures and centralized, one-stop shops for regulatory services, SEZs can reduce administrative burdens and expedite the various approvals needed for pharmaceutical operations. This approach facilitates smoother market access and sourcing of essential inputs, and enables a more efficient interaction with government agencies.

SEZs can also play a role in ensuring that local pharmaceutical production complies with regional treaties and frameworks. As African countries seek to expand their pharmaceutical exports across the continent, aligning with regional agreements such as the AfCFTA and initiatives like the African Medicines Regulatory Harmonization (AMRH) is essential. SEZs offer a structured environment where the government can implement regulatory frameworks that are harmonized with these treaties, ensuring that locally produced pharmaceuticals meet the regulatory requirements of multiple markets.

Yet, the strategic measures outlined thus far will fall short unless SEZs are also designed to serve local markets, ensuring that the host country's population directly benefits from enhanced pharmaceutical production. Since SEZs are typically oriented towards export markets, measures should be established from the outset to enable manufacturers within the zone to supply local markets, thereby extending the benefits of improved medicine access to the host economy. This requires careful SEZ policy design, addressing how pharmaceutical outputs like APIs and finished medicines will be handled domestically if produced within the zone. In this context, a dedicated framework tailored specifically to pharmaceutical-focused SEZs could be considered. Local market access can also be linked to efforts to streamline administrative procedures. For example, pharmaceutical approval processes can be considered among the administrative procedures facilitated by SEZs.

Box 1
The development of the Kenyan pharmaceutical industry through SEZs/EPZs

Kenya has historically stood as East Africa's largest pharmaceutical hub, yet the presence of foreign-owned companies has always been scarce.[6] GlaxoSmithKline, the sole longstanding pharmaceutical MNE in Kenya, announced its withdrawal to adopt a distributor-led model while retaining its factory under affiliate Haleon.[7]

As part of its Vision 2030, aiming to transform Kenya into a middle-income country with a high quality of life, Kenya implemented SEZs and EPZs (Government of Kenya, 2007). Administered by the Special Economic Zones Authority Kenya under the Ministry of Trade, Investments and Industry, Kenya leads Africa in SEZ establishment, with 61 out of 237 zones on the continent as of 2019 (UNCTAD, 2019).

Kenya's SEZ/EPZ policy has spurred recent FDI in the pharmaceutical sector. Notable examples include Square Pharmaceuticals from Bangladesh and Dinlas Pharma EPZ Ltd. from India establishing facilities. Additionally, Strides Pharma from India acquired Universal Corporation, and B. Braun Pharmaceuticals from Germany renovated a Nairobi factory.

The largest SEZ pharmaceuticals-related investment announcement in Kenya to date has been Moderna's planned US$500 million project to producing 500 million vaccine doses per year at the first mRNA facility in Africa. A memorandum of understanding was announced in March 2022 and the agreement officially finalized in March 2023. In April 2024, however, Moderna "paused its efforts to build an mRNA manufacturing facility in Kenya while it determines future demand for mRNA vaccines on the African continent".[8]

Although the project's future is uncertain, this situation shows that demand factors are just as important as the supportive infrastructure and incentives SEZs offer in attracting and sustaining investment.

Source: UNCTAD.

6 See also UNCTAD (2023b).
7 See, Healthcare Middle East and Africa, 'GSK to shut down commercial operations in Kenya after 6 decades' October 14, 2022. Available at https://www.healthcaremea.com/gsk-to-shut-down-commercial-operations-in-kenya-after-6-decades/.
8 See Moderna press statements, available at https://investors.modernatx.com/.

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Minding the gap(s): common pitfalls in African SEZs

Many African SEZs have encountered significant challenges in meeting their intended goals (UNCTAD, 2021). Often, their value proposition has been constrained by factors such as limited locational advantages, inadequate infrastructure, misalignment between SEZ-targeted sectors and national comparative advantages, and insufficient emphasis on ESG performance. Additionally, many SEZs have lacked the distinctiveness needed to set them apart from the broader economy (Watson, 2001; Farole, 2011; UNCTAD, 2021). Zone programs have also faced challenges related to fragmented strategies, limited political support, and coordination gaps, alongside deficiencies in SEZ monitoring and management.

Focusing SEZ investment promotion efforts on the development of pharmaceutical manufacturing can help bring greater clarity to marketing strategies and value propositions; at the same time, the requirements and high standards of the pharmaceutical industry can be a challenge for existing SEZs with weaknesses in infrastructure and a finite pool of skilled human resources.

Establishing linkages with the local economy has been a significant challenge for African SEZs. The success of SEZs depends on their capacity to integrate with the local economy, which can be achieved through mechanisms like workforce mobility, technology adoption by local firms, and the establishment of sourcing

and distribution linkages between SEZs and domestic businesses. In theory, such "dynamic gains" from SEZs could support the development of domestic production capacities, including in the pharmaceutical sector. However, these benefits are not automatic, and evidence shows that many SEZs globally remain isolated enclaves with limited connections to the local economy. In Africa, establishing these links has proven particularly challenging, with only some SEZs successfully generating broader economic and knowledge spillovers (Frick and Rodriguez-Pose, 2019). The factors that cause SEZ enclave effects in other industries can be even stronger in pharmaceutical manufacturing activities, where quality demands and standards imposed on suppliers tend to be higher. Additional efforts may be needed to build business linkages between pharmaceutical MNEs and local suppliers within and outside zones.

Evaluations of African SEZ performance point to five critical lessons for enhancing their positive impacts:

1. **Policymakers should set realistic expectations and achievable goals for the development of the pharmaceutical industry in SEZs.** This is especially important in Africa, where many zones have underperformed in the past. Pragmatically focusing on priority segments of pharmaceutical production and on locally viable activities within the pharmaceutical value chain can help avoid initial over-investment.

2. **Sustaining SEZ growth over time is challenging - zone growth needs to be stimulated after the initial years and cannot be taken for granted.** Decision makers must understand that their task does not end with the zone's opening. To ensure continued success, policymakers need to regularly adjust strategies, reposition value propositions, and adapt to evolving economic and, in the context of pharmaceuticals, health contexts. The pharmaceutical industry, in particular, is a dynamic industry driven by technological advancements that respond to emerging medical needs that will require strategic adjustments. Additionally, as the African pharmaceutical industry matures, particularly in larger pharmaceutical hubs, SEZs should continually adapt their support mechanisms and incentive toolkit to align with the changing landscape and specific requirements of local pharmaceutical sectors (UNCTAD, forthcoming). This dynamic approach ensures that SEZs remain responsive and effective in fostering sustainable growth within the pharmaceutical industry.

3. **SEZs can stimulate surrounding areas, but their positive effects are often limited by distance and local absorptive capacity.** Policymakers must focus on creating linkages between SEZs and local economies to maximize spillover benefits, being mindful of the transience and circumscribed spatial extent of SEZs' positive effects. To address this limitation in the context of pharmaceutical production, policymakers should focus on strengthening connections between SEZ-based pharmaceutical firms and local economies to enhance and sustain spillover effects. This could include enabling firms in SEZs to utilize local pharmaceutical distribution networks, creating more efficient and cost-effective supply chains. Additionally, establishing partnerships with local pharmacology faculties at universities can support the development of a skilled workforce tailored to industry needs, ensuring that SEZs not only drive immediate growth but also foster lasting economic and social benefits within the region.

4 **SEZ design should be tailored to specific local contexts, avoiding a one-size-fits-all approach.** This requires a clear understanding of regional and local needs, challenges and opportunities, as well as ongoing adjustments to maintain long-term economic dynamism. The feasibility of local pharmaceutical production in Africa depends on factors that vary widely across countries like population size, industry maturity, and FDI presence (UNCTAD, forthcoming). To effectively promote pharmaceutical manufacturing within SEZs, it is critical to acknowledge the continent's diversity and tailor SEZ designs to the specific needs and conditions of each country and region.

5 **SEZ design will need to take a whole-of-economy approach.** Policies must move beyond traditional enclave models and integrate SEZ strategies into broader national development frameworks. This involves creating synergy between SEZs and the wider economy to ensure that zones contribute to economic dynamism beyond their physical boundaries. To this purpose, SEZ design should align with national priorities, comparative advantages, and strategic development goals. Key elements of this approach include policy integration, coordinated governance, spillover effects, adaptability to mega-trends and institutional and legal support (UNCTAD, 2021).

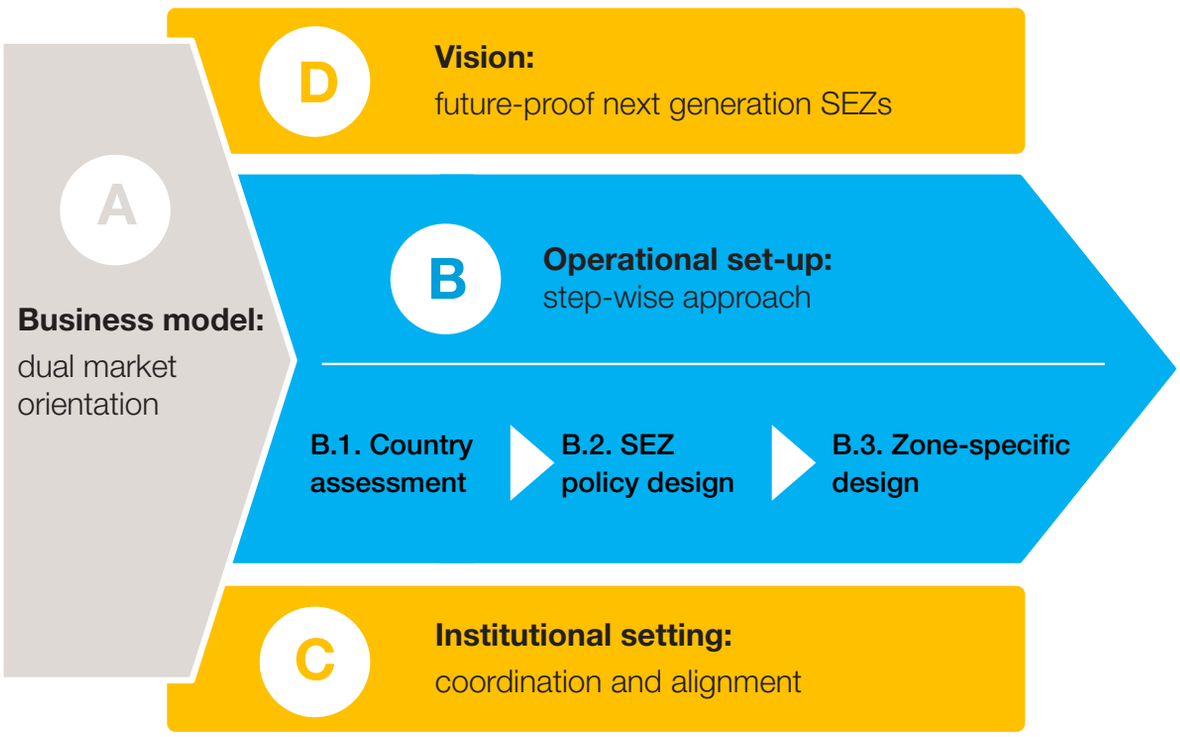
Building on these general insights, section 4 outlines a **targeted policy package to attract pharmaceutical investment to SEZs.**

4

A comprehensive policy package to make SEZs work for local pharmaceutical production

A holistic policy package is crucial for attracting pharmaceutical investment into SEZs. Such an approach should address four key dimensions: a fit-for-purpose business model to ensure market relevance, an operational setup for sustained growth, a robust institutional setting to enhance stakeholder alignment, and a future-oriented vision to build long-term resilience (Figure 5). Each of these areas is essential to support a thriving, adaptable pharmaceutical SEZ ecosystem.

Figure 5
A policy package for pharmaceutical investment into SEZs



Source: UNCTAD Secretariat.

Note: SEZ: special economic zone.

A. Business model: dual market orientation.

Reposition SEZs to serve both export and domestic markets. Traditionally, SEZs are designed with an export-driven focus, but pharmaceuticals require a dual-market approach to improve local access under SDG 3. This need for domestic availability is motivated by the pharmaceutical sector's role in advancing health and development, calling for a reshaping of SEZs' value proposition to support both local and regional needs effectively. Establishing SEZs solely focused on export markets would limit the industry's potential to meet domestic demand and improve local access to medicines. Forming partnerships with local distribution networks may be one way to help ensure that the host economy benefits from the presence of pharmaceutical firms in the SEZ , aligning with the SEZs' broader development goals.

Harmonize SEZ regulations with domestic and global quality standards to streamline local market access and enhance pharmaceutical excellence. Pharmaceutical SEZs require compliance with both SEZ-specific and domestic regulations to access local markets,

which can increase administrative burdens. Harmonizing SEZ and national pharmaceutical standards, or offering streamlined regulatory pathways, can alleviate this burden. Such alignment will make it easier for companies to operate domestically and help ensure that locally produced medicines meet high safety and quality standards. Adherence to global standards such as Good Manufacturing Practices (GMP), WHO prequalification and relevant ISO standards will also help to establish the brand of the pharmaceutical firms located in the SEZ.

B. Operational setup: a step-wise approach.

The successful setup of pharmaceutical SEZs requires governments to progressively address the foundational steps of SEZ development. This includes strategic country assessment (B.1), SEZ policy design (B.2), and zone-specific design (B.3). Systematically addressing each of these steps ensures a clear strategic focus, reducing investor uncertainty and attracting FDI. This approach has demonstrated its effectiveness in a variety of countries, including Jamaica, Jordan, the Republic of Korea and Malaysia, among others (Zeng, 2012; 2016b).

B.1. Conducting a thorough strategic pharmaceutical assessment

Countries should begin by assessing their comparative advantages in pharmaceutical production. African countries exhibit diverse factors impacting local pharmaceutical production, including population size, industry development level, and FDI presence (UNCTAD, forthcoming). These factors shape key SEZ success drivers, such as market access, labour costs, and workforce skill levels (Frick and Rodríguez-Pose, 2019). Thus, a strategy for establishing effective pharmaceutical SEZs must start with a comprehensive evaluation of a country's resources and competitive edge, especially in relation to regional pharmaceutical hubs. This assessment should be an ongoing process, adapting to shifts in GVCs and trade preferences (UNCTAD, 2019; 2024). Additionally, countries must account for evolving geographical and strategic positions, as well as connectivity within their broader region. Assessments are also a critical tool to identify potential partners along the pharmaceutical value chain for both backward and forward linkages in the local economy.

One particular aspect of any assessment will be the choice of medicines to produce in order to scale up access to medicines, which will necessarily involve discussions with local and regional health authorities regarding medical needs and an evaluation of how a firm locating in the SEZ will be able to meet those needs while adhering to applicable quality standards. This type of exercise will be important in building the brand of pharmaceutical firms locating in the SEZ, as well as for the SEZ at large.

Branding is a critical element in maximizing the impact of the SEZ on the host economy, as it shapes the perception of quality, affordability, and local economic contribution among stakeholders. Branding strategies for pharmaceutical SEZs can vary, including (i) generic branding with a focus on affordability and quality; (ii) co-branding with international pharmaceutical companies to leverage global recognition; (iii) local or regional branding, highlighting quality for nearby markets; (iv) public-private partnerships to ensure affordability and access for low-income populations; and (v) emphasizing international certifications such as GMP or WHO prequalification for global market access.

B.2. Adapting SEZ policy design to the needs of the pharmaceutical industry

Creating synergy with the existing productive ecosystem is essential for successful pharmaceutical SEZs. Policymakers should align SEZ strategies with the country's established industrial strengths to enhance cross-industry benefits and integration across the pharmaceutical value chain. Many SEZs in Africa have faced challenges by targeting sectors that do not align with local expertise, leading to high public costs and limited returns (UNCTAD, 2021; Castells, 2014).

For local pharmaceutical production, a realistic focus on formulation, rather than complex API manufacturing, aligns better with current capabilities in many African economies. Evidence shows that industrial upgrading is more effective when it builds incrementally on existing sectoral specializations (Farole and Akinci, 2011; Zeng, 2016a). The experiences of Argentina, Bangladesh, and Uganda demonstrate that technology transfer partnerships are critical for establishing and upgrading local production (UNCTAD 2011b). For instance, Argentina's partnerships with international companies enabled local production of complex products, such as biologics.

Targeted, temporary fiscal incentives can enhance the appeal of local pharmaceutical production by addressing both supply and demand needs. However, policymakers should avoid over-reliance on these incentives. For instance, tax-free status may attract established, profitable companies but offers limited value to early-stage startups, which often benefit more from human capital investments such as training centers and educational support. Given the widespread use of fiscal incentives globally, their effectiveness has declined, especially in less developed countries (Zeng, 2016a; Frick et al., 2019). Research shows that extensive tax breaks are often less impactful in these regions (OECD, 2015) and rarely drive sustainable investments (Frick et al., 2019). Moreover, reliance on corporate income tax-based incentives, such as tax holidays, should be re-evaluated in light of the global minimum tax, which may render these strategies less effective or even obsolete (UNCTAD, 2023d).

More broadly, fiscal incentives alone do not address deeper structural economic challenges that can limit the full benefits of foreign investment. As such, they are best viewed as "hygiene factors" – helpful but insufficient on their own (Frick and Rodríguez-Pose, 2023). Policymakers should tailor incentives to the local context, focusing on the areas where they are most cost-effective and needed. For pharmaceuticals, incentives could be directed toward critical production areas, such as vaccines or antibiotics (UNCTAD, 2023a/b/c).

Foster supply and knowledge spillovers with surrounding regions. SEZs are often seen as tools for regional development, designed to attract investment and drive local economic activity. However, in Africa, many SEZs remain isolated, with limited connections to surrounding economies (UNCTAD, 2021). The SEZ model itself often affects these linkages: single-firm zones and EPZs, for example, typically struggle to integrate with the local economy. Regulatory barriers such as restrictions on local sales not only contribute to SEZ isolation but also undermine the core value proposition of pharmaceutical local production that consists primarily of increasing local access (see item A above). Similarly, high taxes on locally sourced inputs limit SEZ potential to act as stimulus to integrate African pharmaceutical industry vertically, including towards developing an African API production in the longer term. Even policies intended to encourage local sourcing, such as duty-drawback schemes, are often underutilized due to bureaucratic obstacles (Farole, 2011).

To counter these challenges, policymakers should actively strengthen local linkages by (i) conducting thorough assessments of the needs of enterprises that have located in the zone and local enterprises, (ii) removing regulatory barriers, (iii) offering fiscal and non-fiscal incentives for local integration, and (iv) providing shared facilities and administrative support to facilitate collaboration between SEZ-based and local firms (Zeng, 2015). This approach can help SEZs contribute more effectively to regional industrial ecosystems.

Leverage regional opportunities under the AfCFTA. The AfCFTA provides a powerful platform for SEZs in Africa's pharmaceutical sector, enabling expanded market access, reduced tariffs, and harmonized regulations that foster greater regional trade and investment. By promoting local manufacturing and industrialization, AfCFTA aligns closely with the objectives of SEZs to support a robust pharmaceutical industry across the continent (World Economic Forum, 2023).

However, the extent to which SEZs can fully leverage AfCFTA advantages remains uncertain, as pharmaceuticals produced within SEZs must meet specific criteria for rules of origin and local content to benefit from AfCFTA's preferential trade terms (AEZO, 2023).

Under AfCFTA, SEZ-based pharmaceutical companies also could establish joint ventures, partnerships and collaborations, leveraging local networks to strengthen market presence. Such approaches not only diminish market fragmentation but also contribute to building integrated, self-sustaining African pharmaceutical clusters – potentially positioning SEZs as key drivers for the rise of regional value chains that support greater access to medicines.

B.3. Adapting zone-specific set-ups to pharma industry needs

Integrate the strengths of business and research parks within SEZs. For R&D-intensive sectors like pharmaceuticals, combining SEZ advantages with those of business and research parks can significantly enhance innovation and production. This integration allows SEZs to provide tailored R&D incentives, fostering advanced production capabilities. By supporting initiatives like R&D consortia and patent-sharing, SEZs can help overcome key barriers, such as high upfront investment costs, that often limit local manufacturers in African pharmaceutical industry.

This model enables SEZs to offer networking and cross-industry collaboration opportunities alongside tax and economic benefits, making zones more attractive to investors. The added emphasis on R&D and innovation within SEZs creates a competitive edge and increases the zone's ability to attract high-value investments (UNCTAD, 2021).

Build skills and essential infrastructure for pharmaceutical SEZs. A major challenge for African SEZs is the shortage of skilled workers and vital infrastructure, both of which are critical for attracting investment (UNCTAD, 2021). Recent studies show that one in four investors views this skills gap as a key barrier (Frick et al., 2019). Infrastructure such as reliable power, water treatment and sustainable waste management is equally vital, often serving as a deciding factor for pharmaceutical firms.

A focused approach on top-tier infrastructure and targeted skills development programs, especially through industry-led training centers, can nurture a local pharmaceutical industry within SEZs. For instance, Bangladesh's success in building a skilled workforce through partnerships with educational institutions highlights the importance of such initiatives (UNCTAD, 2011b). Additionally, SEZ programs can improve medicine distribution across Africa by

supporting local firms in expanding networks to reach underserved areas, a strategy proven effective in Uganda's market access efforts (UNCTAD, 2011b).

Leverage environmental and social standards as a competitive edge for pharmaceutical SEZs. Historically, environmental and social performance in SEZs has been overlooked, with many countries lowering standards to attract investors. Today, strong environmental, social and governance (ESG) standards are increasingly critical, particularly for industries like pharmaceuticals highly sensitive to reputational risks (Kechichian and Jeong, 2016). SEZs have proven effective in tackling environmental issues, as seen in Viet Nam and South Africa (UNIDO, 2016), and can serve as hubs for achieving Sustainable Development Goals.

For pharmaceutical SEZs, for example, implementing effluent treatment plants (ETP) supports regulatory compliance and lowers costs. Policymakers should prioritize (i) setting clear ESG targets, (ii) independently monitoring firm performance, and (iii) enforcing compliance with well-defined penalties (UNCTAD, 2019).

C. Institutional setting: coordination and alignment

Strengthen coordination among pharmaceutical stakeholders for SEZ success. Effective SEZ programs depend on cohesive efforts across government bodies and public and private stakeholders at national, regional, and international levels. Yet evidence from African SEZs shows that lack of coordination and overlapping mandates can hinder progress (UNCTAD, 2021). Including representatives from key ministries – such as trade, economy, and health – on SEZ boards can improve communication and facilitate alignment. Coordination with educational stakeholders to facilitate the development of skills[9], with ministries and agencies dealing with SMEs and entrepreneurship to assess and strengthen local partners, with IPAs and with science, innovation and technology authorities will also be important.

Effective collaboration with IPAs can align SEZs with national investment promotion strategies, ensuring the zones are part of target sectors promoted abroad and well-represented on IPA platforms. Additionally, IPAs can play a crucial role in raising awareness among local enterprises about incentives and opportunities available within SEZs, helping them better navigate application processes and integrate into export-oriented production.

Aligning SEZ initiatives across regional policymakers encourages strategic decision-making about the location of production hubs and the types of medical products to target. Bangladesh's API Park exemplifies successful policy coherence, where harmonized policies on industrial growth and public health, supported by tax incentives and subsidies, helped establish Bangladesh as a leader in generic pharmaceuticals with a view to ensuring the long-term resilience of the industry (UNCTAD 2011b; 2013).

Streamline administrative processes to boost pharmaceutical investment in SEZs. Excessive red tape deters investment, particularly in Africa, where prolonged registration timelines of two to five years hinder access to medicines and pharmaceutical innovation (UNCTAD, 2023a/b/c). Simplifying procedures within SEZs is vital to attract and retain industry players, which can be achieved through one-stop shops and dedicated support systems. By cutting through bureaucratic

[9] Examples exist of zones that have established technical high schools and organized apprenticeships to promote skills development in sectors relevant to the firms operating within it. See, https://www.tangermedport.com/wp-content/uploads/2022/11/TM_News_VENG_Octobre_2022.pdf.

delays, SEZs can foster a more favorable environment for pharmaceutical firms, enabling quicker market entry and more rapid growth of local production capabilities. UNCTAD has extensive experience in developing digital single windows – integrated platforms designed to streamline business procedures in developing countries. By extending these systems to cover the administrative steps required for setting up operations within SEZs, digital single windows can also serve as dedicated channels for tasks like registering pharmaceutical products. UNCTAD is currently piloting such a specialized single window solution in Mali.[10]

Secure high-level political backing to drive SEZ success. Strong political support is essential for SEZ programs to receive the financial, technical, and infrastructural resources they need (Zeng, 2016). Backing from top government officials sends a powerful signal to investors, demonstrating a firm commitment to attracting FDI and supporting SEZ development (Page and Tarp, 2017; Farole, 2011; UNCTAD, 2021). Establishing an SEZ authority that reports directly to the head of state can help ensure SEZs remain a national priority, bolstering investor confidence and facilitating more efficient program implementation.

D. Vision: building future-proof next-generation SEZs

SEZs must embrace sustainability and digitalization to foster regional growth and resilience. The rapid pace of megatrends, like the shifts in global value chains and the push towards sustainable development and digitalization (UNCTAD, 2024), demands a resilient approach to SEZ development to handle disruptions in global value chains and changing investment flows. These trends bring new challenges to SEZs in Africa and beyond, especially as economies strive for low-carbon, digitalized models. This is critical for the pharmaceutical sector, given its environmental footprint – 55% higher greenhouse gas (GHG) emissions per revenue dollar than the automotive industry (Berry, 2023).

Build pathways for sustainable pharmaceutical production within SEZs. For African pharma SEZs to thrive, they must enable greener production practices beyond basic ESG compliance, promoting environmental stewardship across manufacturing processes. This means facilitating the adoption of renewable energy, low-carbon packaging and other sustainable technologies. Only by leveraging advanced technologies can African pharmaceutical SEZs remain resilient against policy changes and meet evolving global regulatory standards.

Establish core principles to guide SEZ policies for long-term impact. First, SEZs must be adaptive, continually refined to stay relevant to changing realities. Second, they should be holistic, acknowledging that broader environmental and economic factors affect their success, with expanded policies' scope beyond SEZ authorities. Third, SEZs need to be sustainable, integrating ESG standards with economic goals. Achieving these principles requires coordinated government and societal effort but can position SEZs as engines of innovation, productivity, and resilience, vital for regional economic strength and essential industries like pharmaceuticals (UNCTAD, 2021).

[10] See The magic of Mali's digital pharmaceutical registry | UNCTAD, 7 February 2024, available at https://unctad.org/news/magic-malis-digital-pharmaceutical-registry.

Concluding remarks

Local production of pharmaceuticals has become a priority for stakeholders in Africa. The inability of the African countries to secure needed health products during the recent Covid-19 crisis underlined the urgency of scaling up local capacity to provide the continent with access to critical medicines and other health products such as test kits and vaccines.

This report argues that SEZs are well-placed to enhance the business case for investors considering the manufacture of medicines in Africa. SEZs can provide the necessary physical infrastructure required for pharmaceutical manufacturing while enabling access to wider markets on a preferential basis. Both the public health and commercial imperatives associated with scaling up local production of pharmaceuticals in Africa require SEZs to tailor their governing rules and structures carefully. Meeting public health needs, in particular, will require SEZs to be able to sell the medicines they produce both in the host country and to the countries in the region they are in, beyond exporting to distant markets worldwide.

While locating pharmaceutical firms in African SEZs is not a panacea, the long-term benefits of a well-coordinated approach across African regions are substantial. Most notably, local production can improve access to medicines both in the host country and across the region, aligning with SDG 3. By leveraging customized duty-free imports of raw materials, including APIs, alongside export incentives within Africa enabled by agreements such as the AfCFTA, local producers in SEZs may find more sustainable business models. Achieving these outcomes will require close cooperation between SEZ authorities and national government agencies in areas like health, investment, and industry, among others.

This collaborative approach is particularly valuable when considering the diversity of feasibility conditions across countries in Africa. Not every country may be equally equipped to provide the same level of efficiency or specialization in local pharmaceutical production. Therefore, regional value chains where each country can contribute according to its strengths and capabilities are the most viable approach. Robust coordination between SEZs on a regional and continental scale is therefore essential, facilitated through platforms and organizations, like for example the African Economic Zones Organization. This coordinated framework enables SEZs to concentrate on complementary stages of the pharmaceutical value chain – such as raw material processing, formulation, or distribution – thereby building a network that supports shared interests and maximizes regional benefits.

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