MEDICAL INDUSTRIES IN AFRICA
A REGIONAL RESPONSE TO SUPPLY SHORTAGES
Medical Industries in Africa

A Regional Response to Supply Shortages
About the paper

COVID-19 has severely strained the supply of certain healthcare products. This report shows that Africa can position itself strategically and develop a regional response to avert future shortages of such products.

Supporting health and positioning the continent strategically in the future trade landscape of the global medical industry are compatible objectives. Opening markets, diversifying supply and reinforcing regional value chains to combat COVID-19 would build resilience to future pandemics and help Africa become a competitive supplier of certain health-related goods. The African Continental Free Trade Agreement (AfCFTA) has a vital role to play in supporting these value chains.
Foreword

The COVID-19 pandemic has severely burdened the global health system, especially in terms of accessing medical supplies. The World Health Organization warned in early March 2020 that global production of certain personal protective equipment would have to increase dramatically to meet the surge in international demand.

For many countries in Africa, access to these essential materials is complicated by the introduction of export restrictions from their already limited number of suppliers. Business surveys on non-tariff measures conducted by the International Trade Centre (ITC) provided evidence to show that complex regulatory requirements and rules of origin have added pressures on African trade of COVID-19-related products.

We are pleased to present this paper, which aims to support the recently launched UN Framework for the Immediate Socio-Economic Response to COVID-19, as well as the discussions around the implementation of the AfCFTA.

In the report, we examine the potential of the African medical supply industry and show how trade can be an important element of the continent’s health response, both in the short and long term. We suggest a strategic mix of open markets, diversified procurement and stronger regional value chains to combat the current health crisis, build Africa’s resilience against future pandemics and help the region become a competitive supplier of certain health-related products.

As we continue to respond to COVID-19, we hope this report demonstrates our capacity as an institution to produce prompt, targeted studies to meet immediate needs. We also hope it will serve as a springboard for future analyses of the health sector and other critical topics.

Dorothy Tembo
Executive Director a.i.
International Trade Centre
Acknowledgements

Julia Spies conceptualized and prepared this report with valuable research assistance from Maria Cantero, Dumebi Ochem and Sylvain Périllat. Xavier Pichot kindly shared all tariff and tax data. Ursula Hermelink and Abdellatif Benzakri kindly provided insights from ITC business surveys on non-tariff measures. Mondher Mimouni and Lionel Fontagné (Paris School of Economics) offered useful guidance and comments.

Natalie Domeisen and Anne Griffin managed the editorial production of the report and oversaw quality control. Jennifer Freedman edited the report. Serge Adeagbo and Franco Iacovino provided graphic and digital printing support.
Acronyms

Unless otherwise specified, all references to dollars ($) are to United States dollars, and all references to tons are to metric tons.

AfCFTA  African Continental Free Trade Agreement
ITC       International Trade Centre
Executive summary

On 3 March 2020, the World Health Organization announced that global production of certain personal protective equipment would have to ramp up by 40% to meet the surge in international demand due to COVID-19. Breaking the numbers down to the regional level implies that African health responders alone need 15.3 million masks, 5.2 million gowns, 273,300 goggles and 13.1 million gloves every month.

The World Health Organization also estimated that Africa would need half a million litres of disinfectant every month. Demand for other medical supplies, such as ventilators, test kits and therapy equipment, has been rising as well.

This report examines how Africa could strategically position itself and develop a regional response to these shortages. We suggest three solutions:

1. Keep the regional market open for essential health products

When many suppliers restrict exports of medical products, it becomes essential to consider facilitating market access by temporarily lifting tariffs and other regulations. While most developed countries had taken steps to liberalize trade by May 2020, developing countries in Africa and elsewhere were lagging behind.

ITC business surveys on non-tariff measures show that firms in Africa, more often than elsewhere, have difficulty importing health-related products. In this spirit, a ‘fast lane’, similar to the one in place for perishable goods, would allow quick customs clearance and rapid arrival of these goods where they are most needed.

2. Diversify suppliers

Africa sources most medical products from the European Union, China and India. On average, the continent supplies just 8% of such goods to African markets.

The ITC export potential analysis, which takes into account supply and demand conditions as well as bilateral trade linkages, identifies suppliers with unrealized potential to export health-related products to Africa. Egypt, for example, would be a viable supplier of adhesive bandages with scope to increase exports to the continent. Other regional suppliers with export growth potential in selected products to the African market include Ghana and South Africa.

3. Build up regional supply capacities in medical products

Governments must look beyond current capacities to secure access to essential supplies. While Africa possesses many of the key inputs used to manufacture health-related products – such as rubber, fabrics and ethanol – these goods are often exported without any transformation.

Policymakers could support the development of regional value chains by channeling investments into these sectors and by leveraging negotiations in the context of the African Continental Free Trade Agreement (AfCFTA) to ensure that trade functions smoothly along these value chains.

---

1 World Health Organization estimates of total monthly requirements during COVID-19, broken down to the regional level based on population data from the International Labour Organization.
CHAPTER 1  KEEP THE MARKET FOR ESSENTIAL MEDICAL SUPPLIES OPEN

Africa’s import dependency

The supply of medical products is highly concentrated, particularly for personal protective equipment (i.e. masks, gloves and protective garments), where China alone accounts for 46% of global exports. More than half of the world supply of other COVID-19 medical supplies – such as disinfectants, ventilators and diagnostic apparatus – comes from six countries: the United States, Germany, Switzerland, Ireland, China and the Netherlands.

Africa sources mainly from the European Union, China and India. African countries are rarely among the major suppliers of medical products. Hydrogen medications are the most traded product in Africa, with exports amounting to $340 million, followed by test kits at $150 million and urine bags at $98 million. South Africa, Eswatini and Kenya together account for more than two-thirds of total intra-African exports.

Globally, the top five exporters account for 71% of African imports of personal protective equipment, 66% of imports of disinfectants and sterilizers, and 48% of imports of other medical products (Figure 1).

Some of the key suppliers of health products to Africa have restricted exports since the start of the pandemic, complicating the continent’s access to these vital materials. On average, 76% of African imports of personal protective equipment and 72% of other medical supplies were subject to temporary trade measures in May 2020. Access to both textile and filtered masks was particularly difficult, with 96% and 90% of African imports, respectively, facing trade restrictions.

Figure 1  Disinfectants and sterilizers top African medical supply imports

Note: Data as of May 2020. Product groups according to the list of COVID-19-related products from the World Customs Organization. Trade data are a weighted average of 2014–2018 direct and mirror reports (which contain information from partners when a country does not report its trade).

Source: ITC Trade Map and Market Access Map.
For many African countries, tariffs are an important source of government revenue and may be justified to protect emerging industries. Yet, an immediate response to facilitate access to key health products requires open markets.

**Temporary tariff and tax cuts could improve access**

The average protection level for medical supplies in Africa is high. On average, African countries apply a 10.3% tariff rate to imports of these products, compared with 7.9% in non-African developing countries and 2.9% in developed countries. Djibouti and Gabon charge the highest average tariffs, at 22% and 19%, respectively (Figure 2).

**Figure 2** Many countries have liberalized measures on medical imports

![Map showing tariff levels for medical imports worldwide](image)

*Note:* Data as of May 2020. For Egypt, the average tariff rate for alcohol solution 80- (HS 220890) encompasses national tariff lines for alcoholic beverages (with most-favoured nation tariffs of 3,000%) and undenatured ethyl alcohol (with most-favoured nation tariffs of 30%). We have used the applied tariff rates of the latter.

*Source:* Own calculations based on data from ITC Market Access Map.

High tariffs affect prices and the ability of companies to import sufficient amounts of some of the most vital materials needed to fight a pandemic such as COVID-19.

To facilitate market access, 88 countries had reduced import duties or internal taxes on health products by May 2020. Among those, 38 are developed and 50 are developing economies.
In Africa, Angola, Cameroon, Chad, Democratic Republic of the Congo, Niger, Nigeria, Senegal, Togo, United Republic of Tanzania, Zambia and Zimbabwe lifted or reduced import tariffs on medical products. Other governments may have decided to follow suit to improve immediate access to essential life-saving goods.

What products are the most protected? Figure 3 shows that alcohols, and in particular ‘undenatured, 75% ethyl alcohol’, has the highest average tariff, with prohibitive rates in Zimbabwe, Liberia and Angola. Although Angola and Zimbabwe temporarily exempted this product from import duties, Liberia still charged an ad valorem equivalent tariff of 81% at the time of analysis.

Specific types of protective garments are highly protected as well. Cabo Verde applies rates of 40% on surgical garments, gloves and hair nets, for instance.

Finally, soaps face a 37% tariff in Egypt (in bars) and 50% in Cabo Verde (liquid). Interestingly, the preference given to African suppliers is often quite small.

In addition to tariffs, internal taxes add to the price of medical supplies and make them less affordable. Alcohol solutions in both varieties, with less and with more than 80% ethanol, are most heavily taxed at 46% and 36%, respectively, followed by plastic bags, gloves and garments. Liquid soap, considered essential to follow World Health Organization hand hygiene recommendations, faces significant tariffs and taxes in Africa.

Algeria, Cameroon, Congo, Ethiopia and Equatorial Guinea all levy taxes of 20% or more on average on health-related goods. Ten countries, among them Cameroon, temporarily exempted products from value-added taxes to fight COVID-19.

---

2 Information as of the time of writing. The situation of temporary trade measures changes rapidly. To remain up to date, please consult macmap.org/covid19.

Figure 3  Equatorial Guinea, Ethiopia and Congo apply highest taxes on medical items

Note: Data as of May 2020. For Egypt, the average tariff rate for alcohol solution 80- (HS 220890) encompasses national tariff lines for alcoholic beverages (with most-favoured nation tariffs of 3,000%) and undenatured ethyl alcohol (with most favoured nation tariffs of 30%). We have used the applied rates of the latter. Dashed patterns show countries that have lowered taxes on medical items.

Source: Own calculations based on data from ITC Market Access Map.
Rules and procedural requirements hinder market access

Evidence from ITC business surveys on non-tariff measures conducted in 19 African countries in 2010–2017 suggests that regulatory and procedural trade obstacles further complicate access to COVID-19-related products. More than half of all interviewed African importers reported difficulties – a significantly higher share than in other regions (Figure 4).

Figure 4 African businesses face the most difficulty to import medical supplies

Challenges occur most often because of inspections and customs charges that apply when sourcing medical products. While about one-quarter of the problems relate to the strictness of the measure itself, three-quarters are at least partially due to procedures that frequently involve delays.

Administrative burdens, fees or informal payments, or problems stemming from the lack of facilities, also weigh in occasionally. More than 90% of these so-called procedural obstacles occur at home.

In the situation of a pandemic, governments can no longer afford delays or other hurdles that companies felt were already burdensome in ‘normal’ times.

Source: ITC business surveys on non-tariff measures in 19 African and 47 other countries.

The quality and standards of the medicine we are importing is checked by [the country’s authorities]. After making the necessary laboratory check, they give us a certificate. But it took them about one month to run the test and give the certificate due to lack of testing facilities at the authority. This will make us incur additional costs.

CHAPTER 2  DIVERSIFY SUPPLIERS

Africa sources most of its medical supplies from a limited number of countries, some of which had restricted their exports to avoid shortages at home. Diversifying procurement may allow the continent to ensure access to these products and increase resilience to future crises.

Africa relies on just a few health product providers

On average, Africa’s sourcing of medical supplies is as concentrated as global sourcing. For certain items, however, Africa finds it harder than other markets to diversify its suppliers.

Figure 5  Concentration of supply of African versus world imports, by product

Note: Concentration of supply is measured by the Herfindahl Index, which calculates the sum of squared import shares of each African country from any given supplier. For example, if for a given product, a country sources 50% of its imports from one supplier and 50% from another one, it would have a Herfindahl index of $0.5^2 + 0.5^2 = 0.5$. Trade data are a weighted average of 2014–2018 direct and mirror reports.

Source: Own calculations based on data from ITC Trade Map.
This is true for products above the diagonal 45°- line in Figure 5. The figure suggests that Africa diversifies its suppliers less than average for goods exported by a limited number of countries, such as scintigraphy apparatus, paper masks and garments or hair nets. On the contrary, when many suppliers offer a product, as is the case for stethoscopes or polymerase chain reaction test kits, known as PCR test kits, Africa diversifies its procurement relatively successfully.

**Diversification opportunities are available**

Some of the products for which Africa’s sourcing is more concentrated than global sourcing are essential in the fight against COVID-19. An analysis taking into account supply and demand conditions as well as bilateral trade linkages indicates which suppliers may be able to increase exports of these goods to Africa in the short run, and may therefore be considered in an attempt to diversify procurement.

Table 1 shows the market share and export values of the main supplier as well as the availability of other suppliers that could boost their exports to Africa of some of the products for which the continent’s sourcing is relatively concentrated. It shows that for many products, both the main supplier and the next best suppliers were restricting exports in May 2020.

Interestingly, Ghana is already Africa’s major supplier of ethanol with less than 80% alcohol content and had not introduced temporary export measures. Likewise, Egypt would be a viable alternative for adhesive bandages with scope to increase exports to the continent. Finally, South Africa, the continent’s main supplier of paper masks and garments, kept the exports of these products open.

Table 1 Alternative suppliers are available for many healthcare products

<table>
<thead>
<tr>
<th>Product</th>
<th>Main supplier (% of African imports, current export value)</th>
<th>Alternative suppliers with potential for additional exports to Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hair nets</td>
<td>China (79%, $97 million)</td>
<td>Viet Nam, Italy, Germany, United Kingdom</td>
</tr>
<tr>
<td>Scintigraphy apparatus</td>
<td>Germany (46%, $6 million)</td>
<td>United States, Israel, China</td>
</tr>
<tr>
<td>Alcohol solution 80-</td>
<td>Ghana (25%, $33 million)</td>
<td>China, United Kingdom, Lebanon</td>
</tr>
<tr>
<td>Adhesive bandages</td>
<td>China (36%, $22 million)</td>
<td>United Kingdom, Egypt, Finland</td>
</tr>
<tr>
<td>Hydrogen medicament</td>
<td>India (24%, $2 billion)</td>
<td>Switzerland, Germany, Belgium</td>
</tr>
<tr>
<td>Magnetic resonance imaging apparatus</td>
<td>Germany (25%, $25 million)</td>
<td>China, United States, United Kingdom</td>
</tr>
<tr>
<td>Ultraviolet/infrared ray apparatus used in medical sciences</td>
<td>United States (18%, $2 million)</td>
<td>Italy, China, Slovenia, Switzerland</td>
</tr>
<tr>
<td>Plastic gloves and garments</td>
<td>China (69%, $67 million)</td>
<td>Hong Kong SAR, Viet Nam, Canada</td>
</tr>
<tr>
<td>Protective goggles</td>
<td>China (60%, $35 million)</td>
<td>Thailand, United States, Hong Kong SAR</td>
</tr>
<tr>
<td>Paper masks and garments</td>
<td>South Africa (28%, $1 million)</td>
<td>Belgium, Portugal, Thailand</td>
</tr>
</tbody>
</table>

*Note:* Data as of May 2020. Blue = export ban/restriction. Trade data are a weighted average of 2014–2018 direct and mirror reports.

*Source:* Own calculations based on data from ITC Trade Map, Market Access Map and Export Potential Map.
CHAPTER 3 BUILD REGIONAL SUPPLY CAPACITIES IN MEDICAL GOODS

The strategic importance given to the medical supply sector likely will remain even after the pandemic. Africa could position itself by ramping up production capacities for certain healthcare products that rely on raw materials widely available on the continent.

While Africa accounts for a small share of world exports of personal protective equipment, the continent holds a significant share of exports of certain inputs into these products (Figure 6). The relative abundance of some ingredients into medical supply production in Africa opens up possibilities to develop regional value chains and contribute to the global supply of these items in the medium term.

Figure 6 Africa exports many key inputs for personal protective equipment

Note: The following inputs are considered. Disinfectants (HS 380894 & 380840) – Alcohol solution 80+ (HS 220710), Gloves (HS 401511) – Latex (HS 400110), Masks with filters (HS 902000) – Synthetic nonwoven fabrics (HS 560311). Trade data are a weighted average of 2014–2018 direct and mirror reports.
Source: Own calculations based on data from ITC Trade Map.

Africa could develop regional value chains for medical supplies

Today, only one in six litres of Africa’s disinfectant imports comes from regional suppliers. By strengthening regional and global cooperation, this share could grow.

Disinfectants require three inputs: ethanol diluted with distilled water, glycerol and plastic bottles. As Figure 7 shows, Africa already produces ethanol, plastic bottles and caps in sufficient quantities. Providing nearly half a million bottles and caps corresponds to a fraction of Africa’s monthly exports of these products (0.2% and 0.1%), with Egypt and South Africa being the main suppliers.

Likewise, the required 374,000 litres of ethanol constitute just 1.5% of the continent’s (and 2.2% of South Africa’s) current monthly exports.

Local glycerol production, however, might be insufficient to meet the requirements to produce disinfectants. This means a global sourcing strategy would be needed.

South Africa, the continent’s only net exporter of disinfectants, sources glycerol mostly from Malaysia and Argentina. An alternative supplier could be Germany, which has an unrealized export potential for glycerol of $2.9 million to South Africa, and $6.9 million to all of Africa.
For surgical gloves, Africa now relies almost entirely on imports from non-African suppliers. Malaysia, China and India account for 76% of total imports. While surgical-grade gloves can be produced using different types of materials, the most common is latex. Figure 6 shows that while Africa accounts for only 0.2% of the global supply in gloves, it exports 1.5% of the world’s latex.

Some African countries with abundant rubber resources could earmark a share of these resources for the production of gloves. Côte d’Ivoire, Ghana and Cameroon have exported significant amounts of latex over the past years, but they do not export any surgical gloves.

Using 5% of Africa’s monthly exports of latex would be sufficient to produce the 13 million gloves that health responders across the continent need each month during the pandemic.

Masks and gowns – subject to trade measures in 75 countries – require synthetic nonwoven fabrics, of which Africa contributes 3.5% to world exports. Despite the local availability of this input, mask and gown production has been limited so far.

By allocating 7% of synthetic nonwoven fabrics, Africa could meet its own monthly requirement of filtered masks.

Figure 8 visualizes the value chain for masks. It shows that while Egypt largely exports synthetic nonwoven fabrics, both Egypt and South Africa export large quantities of the primary ingredient (polypropylene in primary forms) used to produce these fabrics.
Figure 8  South Africa and Egypt could supply inputs used to produce masks with filters

Note: Trade data are a weighted average of 2014-2018 direct and mirror reports.  
Source: ITC Trade Map.

Box 1  African countries innovate to produce medical supplies

Africa has procured medical supplies internationally in the past. Due to the urgent need to have supply capacities at home, several countries have started to produce critical health-related goods in response to COVID-19. These initiatives will help build the expertise and productive capacities to serve local, regional and international markets.

- In South Africa, a team of engineers has developed a low-cost bag-valve resuscitator for less critical cases. The Government launched a National Ventilator Project that aimed to produce 1,500 ventilators by the end of May and 10,000 by the end of June.

- Under the umbrella of the Kenyan Association of Manufacturers, a prototype of an intensive care unit respirator has been developed in Nairobi that is estimated to become available at a quarter of the cost of an imported device.

- In Zimbabwe, universities across different provinces are driving the production of masks, gloves and hand sanitizers, which they provide to hospitals and government institutions.

- In Mozambique, Cornelder de Moçambique, a cargo concessionaire, has teamed up with non-profit initiatives to produce 2,000 protective masks and visors each day.

- In Morocco, micro, small and medium-sized enterprises can submit projects to seek investment from the National Agency for the Promotion of Small and Mid-Sized Enterprises to manufacture masks, medical bibs, antiseptic gels, medical alcohol, hygiene products, ventilators and hazmat suits.

- In Tunisia, the Ministry of Industry gathered a multidisciplinary team of volunteers from the public and private sectors and civil society to produce 5,000 medical face shields.

- Burkina Faso launched an operation to produce masks for students and teachers as part of measures to fight COVID-19.

The African Continental Free Trade Agreement has a role to play

Differences between the average tariffs charged to African and to non-African suppliers of medical products are often small (Figure 3).

The average tariff rate for disinfectants from African suppliers is 7.1%, while imports from outside Africa face an average tariff level of 8.8%. The average tariff on highly concentrated ethanol – the main ingredient in disinfectants – is 14.2% for intra-African trade and 16.7% for extra-African imports. Likewise, the average
African suppliers enjoy just a slightly more attractive average tariff (2.9% versus 3.3% for non-African suppliers).

Evidence from ITC business surveys on non-tariff measures suggests that trade-related regulations disproportionately affect intra-African trade. While African countries export just 32% of their medical products to African markets, they are responsible for 72% of the burdensome non-tariff measures faced by African exporters.

Most challenges when exporting to Africa stem from rules of origin that make it difficult for companies to benefit even from the small tariff advantages they enjoy today on African markets.

The African Continental Free Trade Agreement therefore has a vital role to play.

Tariff cuts and trade facilitation measures to support the free flow of health products and their ingredients regionally will be an important step in supporting regional value chains in selected medical products. Such measures will help build the continent’s resilience to global health crises and diversify the global supply.

It remains important for AfCFTA negotiations and implementation to prioritize these aspects. In the interim, the regional integration organizations must consolidate efforts and serve as building blocks for the AfCFTA.

A regional response to pandemics

Securing the health of the African population and positioning the continent strategically in the future trade landscape of the global medical industry are compatible objectives. Africa may choose a strategic mix of open markets, supply diversification and stronger regional value chains to combat the current health crisis, build the region’s resilience against future pandemics and become a competitive supplier of certain healthcare products.

To fight COVID-19 in the short term, policymakers could consider:

- Critically reviewing the tariffs and taxes imposed and removing them temporarily where required.
- Examining import regulations, e.g. licensing and registration requirements, and temporarily lifting (or easing) them where feasible without compromising on health or other security standards.
- Reviewing import procedures for critical products and streamlining them across the different regional economic communities. Also weighing a ‘fast lane’ with quick customs clearance similar to the ones used for perishable goods.
- Diversifying suppliers to reduce dependency and protect against temporary export restrictions.

In the long term, to prepare for future health crises and strengthen the African medical industries, government responses may include:

- Identifying goods for which key inputs are available locally or regionally, making the development of regional value chains feasible.
- Facilitating investments into these sectors to ensure the availability of cost-efficient production technology.
- Leveraging the AfCFTA to ensure a smooth functioning of trade along these regional value chains (i.e. ensuring that these goods trade duty-free within Africa and that other regulations are harmonized).
- Promoting these products in non-African markets that aim to diversify their procurement.
FSC is an independent, non-governmental, not for profit organization established to promote the responsible management of the world's forests. Printed by ITC Digital Printing Service on FSC paper, which is environmentally-friendly paper (without chlorine) using vegetable-based inks. The printed matter is recyclable. A free pdf is available on ITC's website at: www.intracen.org/publications
The International Trade Centre (ITC) is the joint agency of the World Trade Organization and the United Nations.