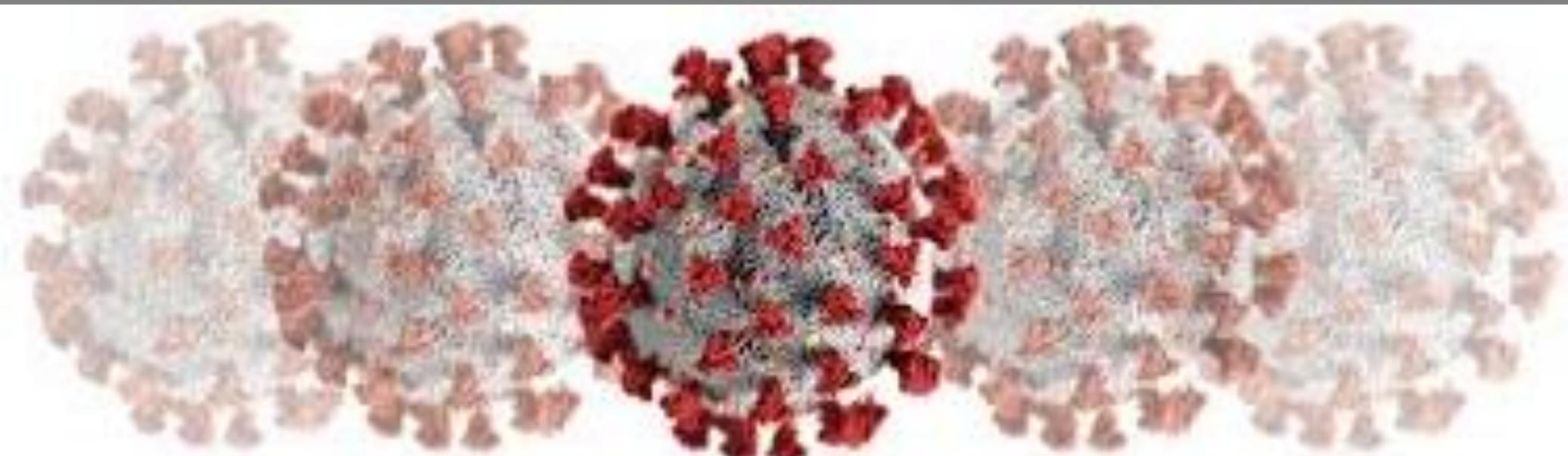




TONY BLAIR
INSTITUTE
FOR GLOBAL
CHANGE

COVID-19: Medical Equipment & Food Supplies

30 March 2020



Quickly assess and address supply-chain constraints



Why it matters

Sourcing critical medical equipment

Shortages of medical equipment worldwide and **procurement delays** are further complicated by border closures and **transport disruptions**. **Ventilators and treatment** are also unlikely to be available or sufficient for some time, emphasizing the importance of **lower-intensity technological solutions** in developing contexts.

Addressing food-supply-chain constraints

(next 90 days)

Countries worldwide are restricting the **movement of people and goods** and imposing **food bans**, threatening **global trade, commodity prices**, and **food availability**. This is particularly important for Africa given its current levels of **food imports, domestic production**, and **export revenues**.

What it entails

Governments need to **quickly assess, prioritise and articulate needs** to development partners and private suppliers, forecasting demand based on modelling and affordability. **Priority should be given to prevention** – protective equipment, thermometers, and dedicated medical facilities – and **ensuring the safety and adequate training of health-care workers**. In the short to medium term, there may also be opportunities to support the **manufacturing of PPE and equipment** locally.

Governments need to **quickly assess food needs and availability, ensure that supply chains remain open, and identify mitigation actions for vulnerable populations**. **Planting and expanded cultivation** should also be accelerated for the coming planting season (March to May) and plans made for **storage**. While addressing **national food security and domestic production**, countries should continue to leverage **private sector investment** and **regional economic cooperation**.

Sourcing medical equipment



Immediate steps to take	Key challenges	Other considerations
 <p>Assess current equipment stocks and prioritise needs based on anticipated rate of transmission and standards requirements</p>	<p>Data availability, reliability, and accuracy of prediction models</p>	<p>Monitor stocks and orders regularly and reorder on a need basis¹</p>
 <p>Develop a supply-chain plan based on scenario planning and affordability (worst/best case, ratios of equipment per population)</p>	<p>Fluctuating shipping prices and limited shipping capacity</p>	<p>Identify alternative options and contingency plans, including makeshift temporary quarantine facilities and medical oxygen in the absence of ventilators</p>
 <p>Identify sourcing opportunities and contact development partners, foreign governments,² and/or <u>reputable suppliers</u> to place orders³</p>	<p>Lack of coordination platform, supplier reliability, timely manufacturing/delivery</p>	<p>Develop more extensive networks of hardware agents and suppliers</p>
 <p>Develop safety guidelines and facilitate training of health-care workers on specific equipment, including oxygen-therapy training</p>	<p>Needs assessment and adapting/applying guidelines to context</p>	<p>Facilitate training of civil authorities, police, military, health inspectors, etc.</p>
 <p>Tackle quick wins (e.g. continued flow of goods, stakeholder coordination mechanism)</p>	<p>Freight restrictions and shipping bottlenecks</p>	<p>Encourage domestic and foreign investors to invest in local PPE and equipment production that could satisfy national and regional needs</p>

Source: TBI analysis

1. Orders should be placed at least 2 weeks (typical delivery time) before stocks completely run out. 2. Foreign governments, through diplomatic channels, can provide lists of reliable suppliers and/or help place orders. 3. Most suppliers will require some upfront payment, if not 100% down payment.

Some countries/regions have implemented innovative approaches to addressing medical supply-chain gaps



China

Developing a comprehensive strategy to address supply gaps

The government: 1) **centralised coordination** of production, transportation and use of essential products; 2) **requisitioned production capacity** from factories producing essential products; 3) encouraged introduction of **new production lines**, with government committing to purchase excess production; 4) requested SoEs and mobilised private sector to **procure medical supplies overseas**; 5) mobilised the **international Chinese community** to donate money or materials to individuals and organisations in need.



United States

Implementing policy flexibility to ensure expediency

As the country faces shortages of medical equipment, the Food & Drugs Administration (FDA) issued **emergency use authorisations** covering certain respirators to enable them to be used in health-care settings, including authorising the use of **non-approved imported disposable respirators** (e.g. from Australia and Japan). The FDA is also looking to import PPE and other devices¹ and to minimise **import disruptions** based on pre-determined criteria. The FDA also issued **guidance** to help increase the availability and use of ventilators for emergency.



EU

Coordinating procurement to address production shortfalls

The EU launched a **joint public procurement** with member countries for testing kits and respiratory ventilators, and presented **guidelines on border measures** to national governments. The EU also imposed an **export ban** for some medical protective equipment to keep sufficient supplies within the bloc. Meanwhile, member states are also requesting national automakers, appliance makers and aerospace manufacturers to **repurpose production** and develop vital medical hardware such as ventilators and masks.



Immediate steps to take	Key challenges	Other considerations
 <p>Collect real-time, disaggregated data on food balance sheets¹ and be ready to access strategic grain and food reserves</p>	<p>Data availability and reliability</p>	<p>Monitor needs, prices, availability, affordability and access, including by using adapted tracking systems</p>
 <p>Assess supply-chain disruptions and tackle quick wins (e.g. ensure flow of goods, import procedures, product-requirement waivers)</p>	<p>Lack of coordination on border closure and movement of goods</p>	<p>Identify and engage with key partners, producers, manufacturers and retailers to address supply-chain constraints (e.g. customs reforms, logistics, cold chain)</p>
 <p>Identify, address immediate food needs of vulnerable communities and sectors (e.g. school feeding programs, export farmers)</p>	<p>High-density suburbs, informal camps, last mile</p>	<p>Food distribution, reaching low production rural areas. Reduce food waste (40% current post-harvest losses) and invest in circular agri-food economy</p>
 <p>Continue immediate planting and input requirements for the March-May planting window, and make storage plans, incl. processing²</p>	<p>Access to labour, inputs, machinery, fuel, timely planting, respond to new food need demands</p>	<p>Leverage harmonised seed agreements and fertiliser supply already in place (e.g. RECs), emergency regulatory waivers, and consider larger-scale farming</p>
 <p>Develop, communicate, and implement emergency guidelines for key stakeholders (markets, shops, producers, retailers, exporters, etc)</p>	<p>Stringent movement restrictions (e.g. lockdowns, curfews)</p>	<p>Advocate for agriculture and food security to form the basis of economic recovery plans and plan for new global market dynamics, leveraging private sector value chains</p>

Source: [Agrilinks](#), [IFPRI](#), TBI analysis

1. Including total weekly/monthly demand, last 3-6 months of local production, imports/exports and carry over. 2. E.g. drying, canning, and freezing of fruits and vegetables.

Some countries have implemented innovative approaches to addressing food-supply-chain gaps



China

Setting up “green channels” to deliver food in lockdown areas

In response to the leadership’s call, local authorities coordinated with **wholesale market owners** and **e-commerce platforms**¹ to ensure effective **logistics** between provinces, including waiving toll fees. **Bulk orders** were made through the local government and ‘organised communities as central **distribution points**, while **delivery services** stayed open. **Price controls** for basic goods were also essential during this period. Additional steps included reducing **land-use fees** and directing state-owned banks to give **loans** on easy terms.



UK

Strengthening collaboration to address supply-chain gaps

The government, supermarkets and retailers worked on a “**feed the nation**” plan – a good example of public/private collaboration under a “**Food Chain Emergency Liaison Group**.” The UK environment ministry also hired a former **private-sector executive** to oversee a “**war room**” to ensure Britain’s food security during the pandemic, with the job of director of food supply at the department. **Logistics workers** are also treated as emergency/health-care staff to access testing and keep their children in school.



Rwanda

Addressing loss of air traffic to ensure exports and imports

To address the loss of passenger and freight air traffic supporting the **export of fresh produce** – on which a lot of smallholder farmers are dependent – and the **import of food and medicines**, Rwanda’s National Agriculture Exports Board (NAEB) is working with exporters to secure **charter flights** and additional **freight operators**. In the longer term, the country is considering **lease options** to secure logistics for Rwanda's high-value horticulture to European markets.

Source: [The Economist](#), [Financial Times](#), [The Guardian](#), TBI analysis

1. Cainiao, a logistics company owned by Alibaba, set up a joint logistics initiative for sending medical supplies to Hubei and across the country, providing free shipping from all over the world and ensuring timely end-to-end shipping. Cainiao also set up a toll-free number and collaborated with China Eastern Airlines to accommodate and prioritise shipping.

Appendix 1: Medical-equipment procurement benchmark

For more details, see [WHO disease commodity package - novel coronavirus \(COVID-19\)](#)



Type	Medical equipment	Price ranges ¹ (USD / piece)		Specifications
Protective	Disposable gloves (latex/nitrile)	\$ 0.05	\$ 0.10	Examination, non-sterile
	Disposable surgical mask	\$ 0.40	\$ 1.50	95% antibacterial, ranges from 3-4 layers
	Disposable surgical cap	\$ 0.50	\$ 1.15	
	Disposable isolation clothing	\$ 10.00	\$ 15.00	
	Gowns	\$ 1.00	\$ 2.00	Ranging from disposable, isolation cover, surgical and examination gowns
	Medical protective mask (N95)	\$ 1.00	\$ 10.00	Many countries banned exports, low stocks in China
	Disposable medical protective clothing	\$ 20.00	\$ 25.00	With or without tape
	Medical goggles	\$ 2.00	\$ 3.00	
	Full-face respiratory protective devices	\$ 55.00	\$ 200.00	
Medical	Infrared forehead thermometer	\$ 40.00	\$ 70.00	Need to specify type
	Medical oxygen supply	-	-	Highly specialized with extreme price volatility
	Oxygen concentrator/cylinder	-	-	Highly specialized with extreme price volatility
	Oxygen flowmeter + regulator	\$ 14.00	\$ 15.00	Regulators and flowmeters usually come together
	Ventilator	\$ 5,000.00	\$ 15,000.00	From normal, emergency to portable types (takes 20 days to ship)
	Powered air-purifying respirator	\$ 1,500.00	\$ 7,500.00	Shortages worldwide, production booked until May/June
	ICU beds/stretchers	\$ 200.00	\$ 450.00	Mobile and foldable stretchers for use in isolation chambers
	Isolation tents	\$ 3,000.00	-	
Sanitizing	Medical alcohol	\$ 20.00	\$ 35.00	75% alcoholic, 25L
	Hand sanitizer gel	\$ 1.00	\$ 2.00	75% alcoholic, 100g
	Disinfectant	\$ 3.00	-	500mL
Test kits	PCR Test	\$ 25.00	\$ 40.00	Widely used but takes time (between 5h and 24h)
	Antibody test	\$ 6.00	\$ 40.00	Not widely available but fast (10 minutes)

Source: TBI analysis

1. Wholesale prices (not including delivery) referenced are indicative and fluctuating rapidly based on the high volume of demand. Price variation also depends on parameters and standards. It is worth noting that some private suppliers and intermediaries currently charge a mark-up of up to 400%.

Appendix 2: Covid-19 personal protection (PPE)



Protection level	Protective equipment	Scope of application
Level I protection	<ul style="list-style-type: none"> • Disposable surgical cap • Disposable surgical mask • Work uniform • Disposal latex gloves or/and disposable isolation clothing if necessary 	<ul style="list-style-type: none"> • Pre-examination triage, general outpatient department
Level II protection	<ul style="list-style-type: none"> • Disposable surgical cap • Medical protective mask (N95) • Work uniform • Disposable medical protective uniform • Disposable latex gloves • Goggles 	<ul style="list-style-type: none"> • Fever outpatient department • Isolation ward area (including isolated intensive ICU) • Non-respiratory specimen examination of suspected/confirmed patients • Cleaning of surgical instruments used with suspected/confirmed patients
Level III protection	<ul style="list-style-type: none"> • Disposable surgical cap • Medical protective mask (N95) • Work uniform • Disposable medical protective uniform • Disposable latex gloves • Full -lace respiratory protective devices or powered air-purifying respirator 	<ul style="list-style-type: none"> • When the staff performs operations such as tracheal intubation, tracheotomy, bronchofibroscope, gastroenterological endoscope, etc, during which the suspected/confirmed patients may spray or splash respiratory secretions or body fluids/blood • When the staff performs surgery and autopsy for confirmed/suspected patients • When the staff carries out NAT for Covid-19

Appendix 3: Africa food-supply benchmark



○ Low (< 10%)¹ ● Medium (<30%) ● High (>30%)

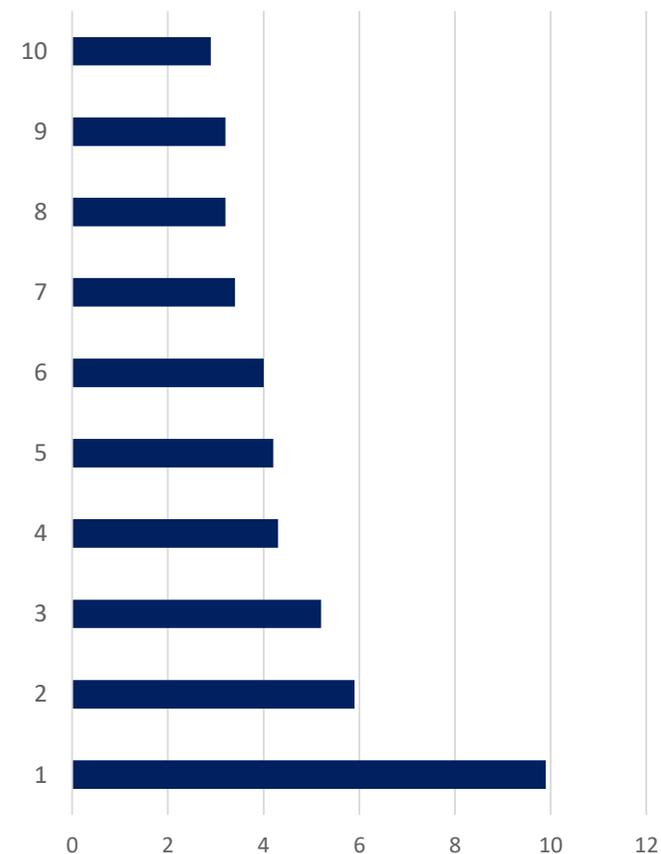
Value chains



Top 10 basic food items imported by Africa

Billion USD – Average 2016-2018

	NGA	CIV	GHN	BFA	TGO	SRL	RWA	ETH	KNY
Local²	Cassava & products	○	○	○	○	○	○	○	○
	Banana	○	○	○	○	○	○	○	○
	Maize & products	○	○	○	○	○	●	○	●
Regional	Pelagic fish	●	●	●	●	○	●	○	●
	Poultry meat	○	●	●	○	●	○	○	○
	Palm oil	●	●	●	○	●	●	○	●
Global	Rice	○	●	●	●	●	○	●	●
	Wheat & products	●	●	●	●	●	●	●	●
	Tomatoes & products	○	●	●	●	●	○	●	●
	Sugar	●	●	●	●	●	●	●	●



Sources: FAOSTAT, UNECA, ITC, TBI analysis

1. Country dependence on imports: imports as % of the domestic supply. 2. As long as internal logistics remain open, these items should be mostly available.

Appendix 4: Food and agriculture considerations



Key challenges	Considerations	Mitigation examples
 <p>Stabilising food supplies</p>	<ul style="list-style-type: none"> • Vulnerable populations • Rural-urban linkages • Imports/exports 	<ul style="list-style-type: none"> • Ensure freight and goods traffic is kept open (both internal and external) • Analyse/monitor global market shifts (e.g. major demand increase for orange juice, drop in specialty-coffee demand) • Air freight charter to overcome loss of passenger carriers that normally carry freight • Reduce post-harvest losses from 40% through aggressive actions and processing (e.g. drying, freezing, canning) • Forward purchase to secure crop inputs • Food import planning if necessary • eCommerce tools to ensure good supply-demand planning, traceability, accurate food balance sheets • Support health and safety of farm workers and SHF to ensure continued labour availability • Provide soft loans to farmers, local food producers/manufacturers, logistics for trade, seasonal finance (short-term loans, factoring) • Aggressive positioning into export markets
 <p>Responsive-ness to market changes</p>	<ul style="list-style-type: none"> • Demand shifts and new niche opportunities • Pricing instability • Quality requirements 	
 <p>Ensuring logistics and access to markets remains open</p>	<ul style="list-style-type: none"> • Local food movement and cold chains • Imports/exports • Food reserves 	
 <p>Production continuity and resilience</p>	<ul style="list-style-type: none"> • Access to inputs¹ • Labour health, availability, movement • Seasonal finance 	

Source: TBI analysis

1. For this season and longer term.