

DECEMBER 2025

Food & Farm for Health

Strengthening Air Cargo for Healthcare and Agriculture



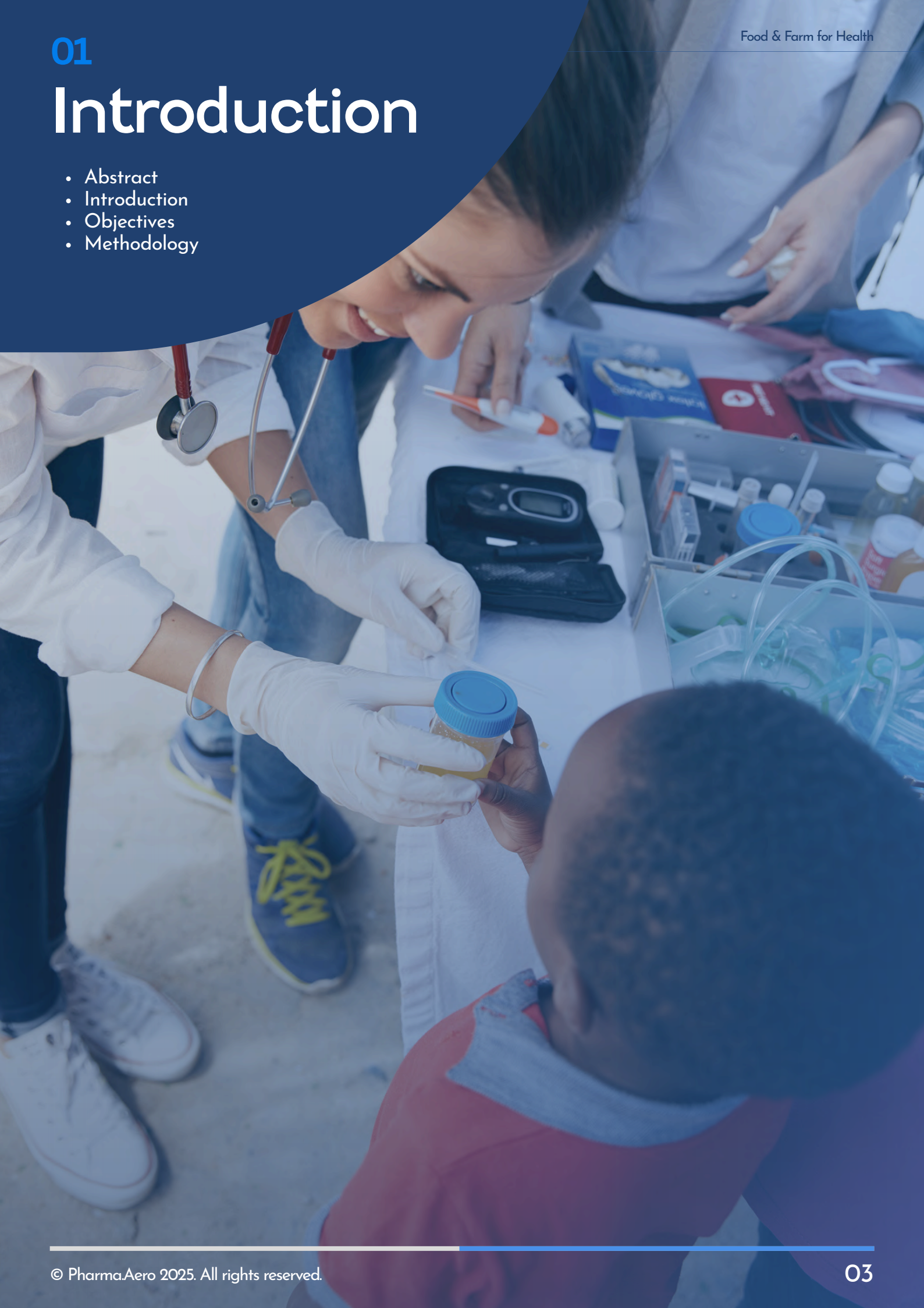
Table Of Contents

01. Introduction	03
• Abstract	04
• Introduction	04
• Objectives	05
• Methodology	06
02. Results	07
• Air Cargo & Pharmaceutical Market Trends	08
• Focused Analysis: sub-Saharan Africa Trade Flows	11
03. Conclusions	14
04. Acknowledgements	18



Introduction

- Abstract
- Introduction
- Objectives
- Methodology



The Food & Farm for Health initiative explores how stronger air cargo connectivity between Europe and sub-Saharan Africa (sSA) can simultaneously improve public health outcomes and support sustainable economic development. Airfreight plays a dual and interdependent role: supplying essential pharmaceuticals into the region while enabling the export of high-value perishables to global markets.

This white paper presents key findings from the project, identifying actionable opportunities for cooperation across pharmaceutical manufacturers, logistics providers, agricultural exporters, industry alliances, NGOs and decision-makers. It highlights how hub-and-spoke models and cross-sector coordination can enhance reliability, efficiency, and long-term sustainability of airfreight networks, with benefits for healthcare access, livelihoods, and regional trade resilience.

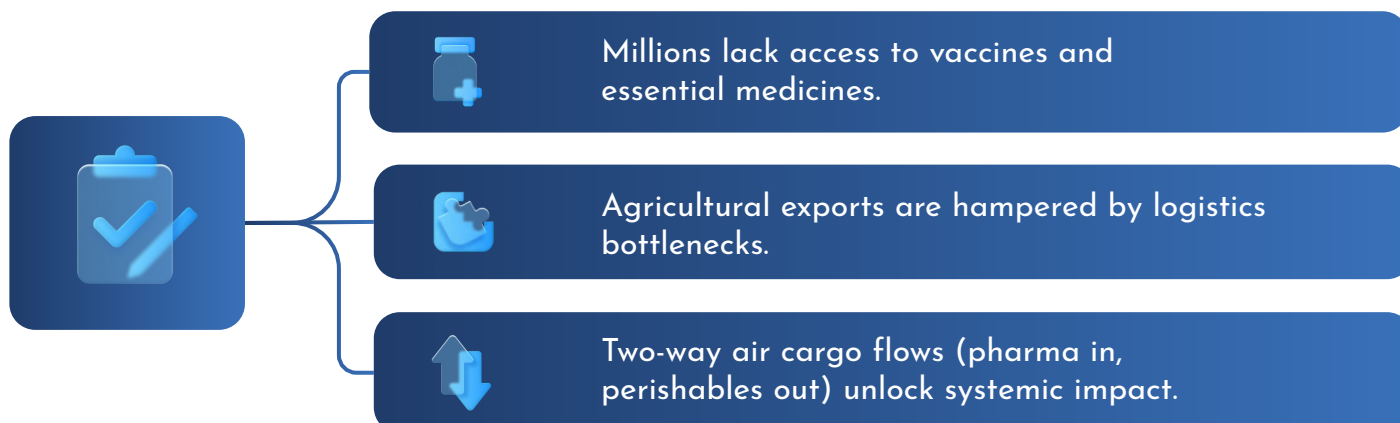
Introduction

In a period marked by geopolitical instability, military conflict, and economic volatility driven by escalating tariff disputes, the Food & Farm for Health initiative has gained strategic relevance since its launch. This white paper identifies critical global trends and underscores the need for coordinated, cross-industry collaboration to strengthen the role of air cargo in expanding healthcare access and supporting sustainable economic development in low- and middle-income countries. It calls for a reframing of priorities: alongside efforts to reduce CO₂ emissions, equal attention must be given to improving healthcare accessibility and reducing poverty and child mortality.

Although, reliable airfreight links between Europe and sub-Saharan Africa (sSA) are vital for two sectors that depend on pharmaceuticals moving into the region and perishables moving out, cargo flows remain uneven, capacity is constrained, and the long-term ripple effect of COVID-19 have reduced volumes, raised costs, and weakened access to medicines and export competitiveness.

This white paper examines how the Food & Farm for Health initiative, developed through collaboration between Pharma.Aero, TIACA, and partner organizations, can help address these structural challenges. The project assesses how integrated planning, shared infrastructure, and improved communication between the pharma and perishables sectors can strengthen air cargo ecosystems between Europe and sSA.

By reframing air cargo not only as a commercial service but as a catalyst for saving lives, reducing poverty, and enabling sustainable development, the white paper argues for a coordinated, cross-industry approach that aligns public health priorities with economic opportunity.

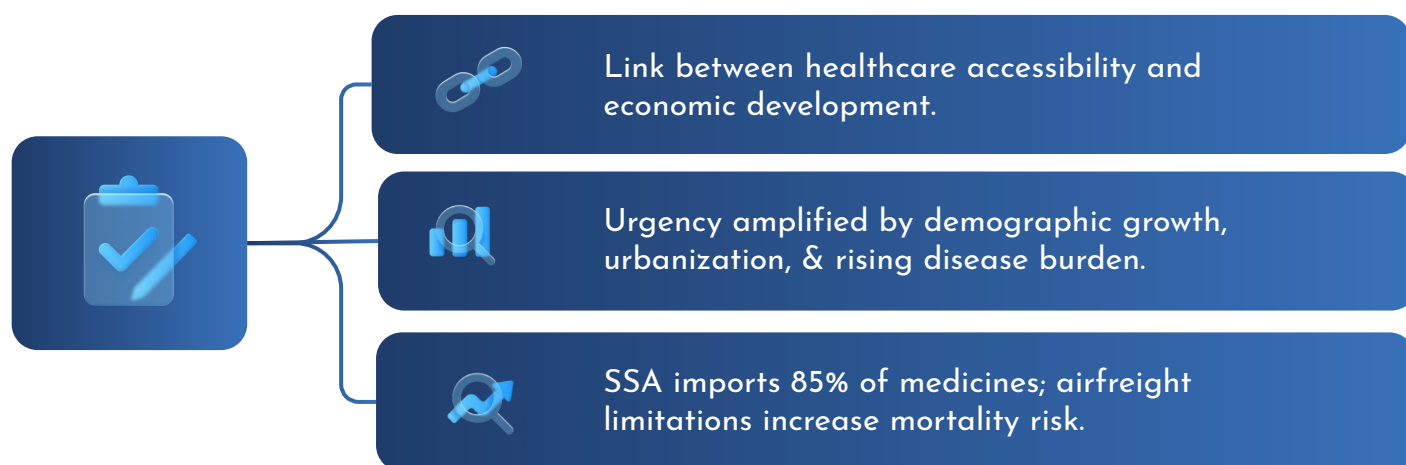


Air cargo is not just transport, it is health, growth, and security.

The project addresses a critical gap in the airfreight corridor between Europe and sub-Saharan Africa, where two essential sectors, pharmaceuticals and perishables, depend on reliable, temperature-controlled logistics but currently operate in fragmented and imbalanced flows. Europe is a major source of medicines and a key destination for premium perishables, while sub-Saharan Africa is simultaneously growing as both a major importer of pharmaceuticals and an exporter of high-value agricultural products.

Despite this natural complementarity, the region of sub-Saharan Africa faces high operating costs, limiting access to essential medicines and constraining the region's potential in global perishable markets. These inefficiencies drive available air cargo capacity availability in the region, have consequences for health outcomes, food and health security, and economic development.

By analysing the evolution of both sectors, identifying structural bottlenecks, and exploring opportunities for more balanced two-way cargo flows, the project positions itself as a strategic enabler for improved healthcare access, stronger agri-export competitiveness, and more resilient, sustainable trade between the two regions.



Understand market evolution

Analyse how trade flows and logistics performance for pharmaceuticals and perishables have changed over the past decade, particularly between Europe and sub-Saharan Africa.

Identify practical opportunities for improvement

Document real use cases where logistics solutions support both healthcare access and agricultural export performance.

Promote knowledge sharing and awareness

Disseminate insights across sectors and stakeholders to encourage collaborative problem-solving rather than isolated initiatives.

Support long-term sustainability

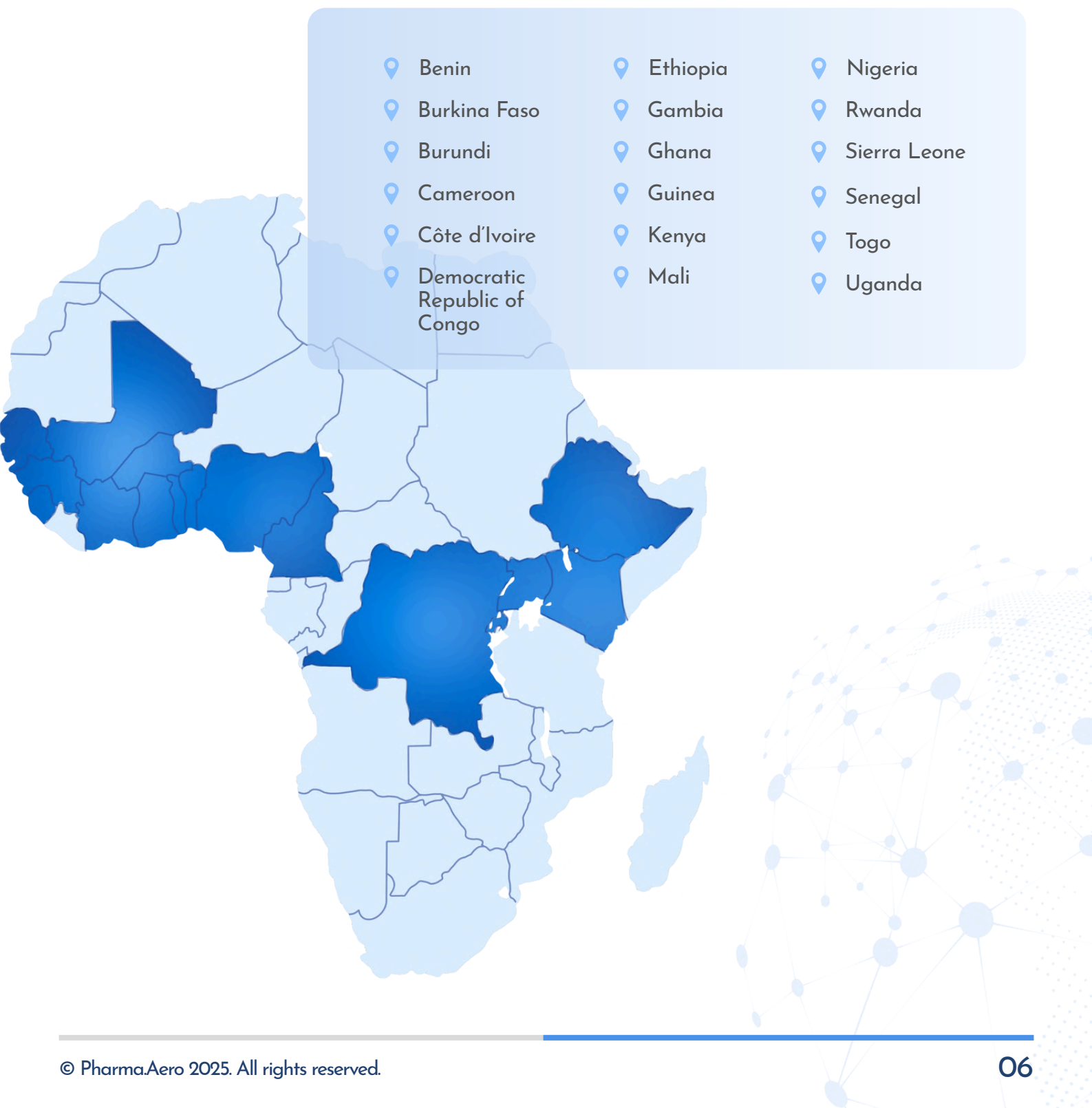
Create a framework for continued engagement, skills transfer, and structured planning beyond the project's first phase.



The project combined quantitative and qualitative assessment:

- Trade flow analytics across pharma and perishables
- Capacity and market monitoring from air cargo data providers
- Desk research on supply-chain vulnerabilities, healthcare needs, and export agriculture
- Expert input from supply-chain and logistics stakeholders and supply-chain associations
- Real-world use cases

The project research focused on eighteen countries in sub-Saharan Africa selected for both high pharmaceutical demand and strong potential in agricultural exports.



Results

- Air Cargo & Pharmaceutical Market Trends
- Focused Analysis: sub-Saharan Africa Trade Flows



Results

Air Cargo & Pharmaceutical Market Trends

a. Overall Air Cargo Capacity Trends in Data

Major trends on global level

Global capacity resilience:

Air cargo capacity and rates are slightly above 2019 pre-COVID levels despite geopolitical disruptions (Ukraine, Middle East) and U.S. trade tariffs.



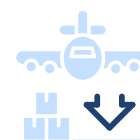
APAC flow shifts:

Since early 2025, chargeable weight rose +12% China/HK → Europe, dropped -7% APAC → US, while other APAC (excl. China/HK) → US surged +23%.



Capacity dynamics:

Full-freighter capacity declined globally but increased from APAC and MESA into Europe, while passenger belly capacity remained stable.



b. Global Pharmaceutical Air Cargo Capacity

Flat demand despite rising pharma production:

Despite the global pharmaceutical market growing yearly with a 6,5% CAGR, the global air cargo demand and tonnage remained unchanged.

Weak revenue performance and rate declines:

2025 shows +2% weight growth but -1% revenue growth, in comparison with the period between 2022-2024, while rates dropped sharply: Pharma Premium -30% (-1.42 USD/kg) versus General Cargo -19% (-0.55 USD/kg).

Structural imbalance in global flows:

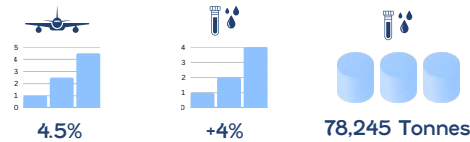
Europe remains the dominant export hub (18% to APAC, 14% to North America, 11% to Middle East), while sub-Saharan Africa receives only 4% from Europe & 3% from MESA, underscoring critically limited access to essential medicines for a population exceeding one billion.

Air Cargo & Pharmaceutical Market Trends

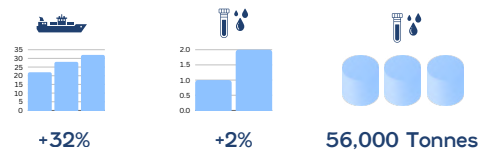
c. The European Pharmaceutical Export Market

Air Freight vs Sea Freight:

The European pharmaceutical export market (excluding antibiotics) grew by 4.5% from 2015 to 2024, reaching 349,663 metric tonnes, with Human Blood sub-products (including vaccines and cell/gene therapies) increasing from 17% to 21% of the total (78,245 tonnes in 2024).

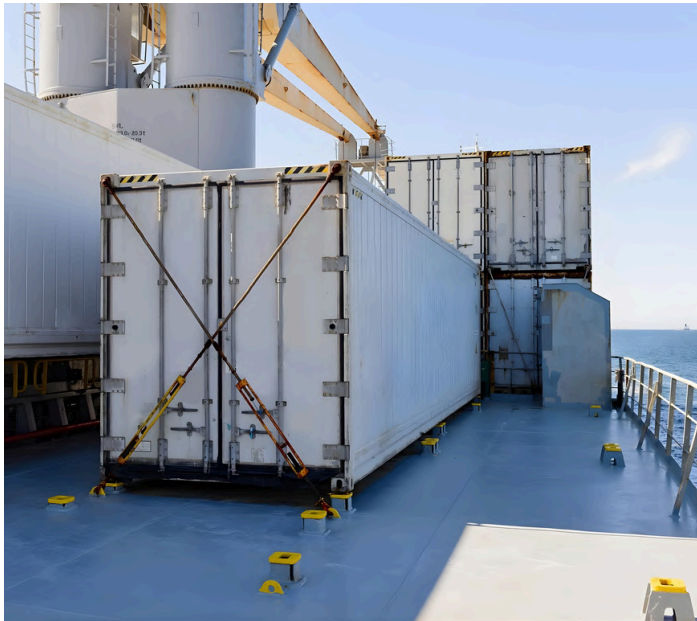
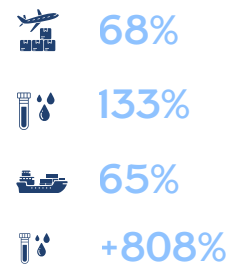


Sea freight volumes surged by 32% over the decade to 1.4 million metric tonnes, representing 4x airfreight volumes. Human Blood sub-products doubled in sea freight share from 2% to 4% (56,000 tonnes).



Value per Kilogram:

Airfreight pharmaceutical value rose 68% (€492/kg → €828/kg), while Human Blood sub-products jumped 133% (€980/kg → €2,290/kg), making up 54% of airfreight export value. Sea freight values grew 65% (€57/kg → €98/kg), with Human Blood sub-products skyrocketing 808% (€98/kg → €890/kg), representing 31% of sea freight export value.



d. Pharmaceutical Market: African Developments

Africa's Manufacturing Transformation:

Sub-Saharan Africa's pharmaceutical production is expanding due to economic growth, demographics, political will, and strategic collaborations, but faces barriers like fragmented regulations, weak infrastructure, and limited financing. Achieving resilience requires up to \$111 billion investment by 2030, regulatory harmonization, and strategic alliances to reduce dependence on external supply chains.



- Growing & urbanizing population
- Expanding economies with rising incomes
- High prevalence of communicable & non-communicable diseases
- Government initiatives toward universal healthcare coverage
- Technological advancements like digital health solutions, e-pharmacies and telemedicine



- Scarcity of trained personnel
- Inadequate infrastructure
- High regulatory compliance and uniformisation costs
- Very limited access to capital
- Scattered and low governmental support and investment
- Extreme fragmented regulatory environments that allow counterfeit medicines to proliferate



Focused Analysis: sub-Saharan Africa Trade Flows

This research focuses on **air freight volumes and values of pharmaceuticals** across **18 sub-Saharan African countries** (population: **628 million**) between 2015 and 2025. These countries were selected for their high demand for vaccines and treatments for diseases such as **Malaria, Yellow Fever, Ebola, HIV, and Typhus**. These countries also serve as major exporters of agricultural perishables, creating a unique trade lane dynamic with Europe.

Key Findings

01. Pharmaceutical Air Freight Trends

Pre-COVID (2015-2020) vs Post-COVID (2021-2024) shows a **31% decline** in **European pharmaceutical exports** by air to these African nations.



Despite **exponential price increases post-COVID**, overall market value **stabilized by 2023**, returning to pre-COVID levels.



Commodities analyzed: **general pharmaceuticals including vaccines (excluding antibiotics)**.



02. Perishable Air Freight Trends

Four major categories—**flowers & plants, fresh seafood, tropical fruits, fresh vegetables**—grouped under “fresh perishables.”



Similar pattern: **35% decline in airfreight volumes post-COVID**, despite market value **nearly doubling**, driven by inflation and rising retail prices in Europe.



This price surge likely contributed to **reduced export volumes** from Africa.



03. Sea Freight Comparison

No compensatory growth observed in sea freight for either pharmaceuticals or perishables.



Volume declined by 14% (-520,000 metric tonnes) and **market value dropped by 22% (-€0.34/kg)** between pre-COVID and post-COVID periods.



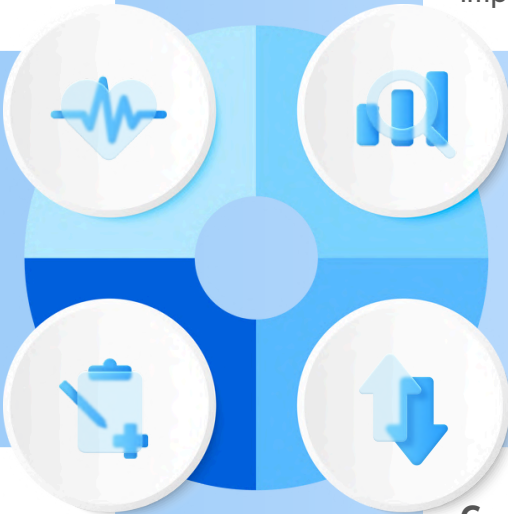
04. Strategic Implications

Healthcare Access Risk:

Declining pharma airfreight volumes to Africa amid rising prices threaten timely delivery of critical vaccines and treatments.

Agricultural Export Vulnerability:

Inflation-driven price hikes in Europe reduce competitiveness of African perishables, impacting rural economies.



Infrastructure & Policy Needs:

Lack of sea freight compensation stresses the need for **logistics diversification**, **cold-chain investment**, & **regional trade facilitation**.

Cross-Sector Collaboration:

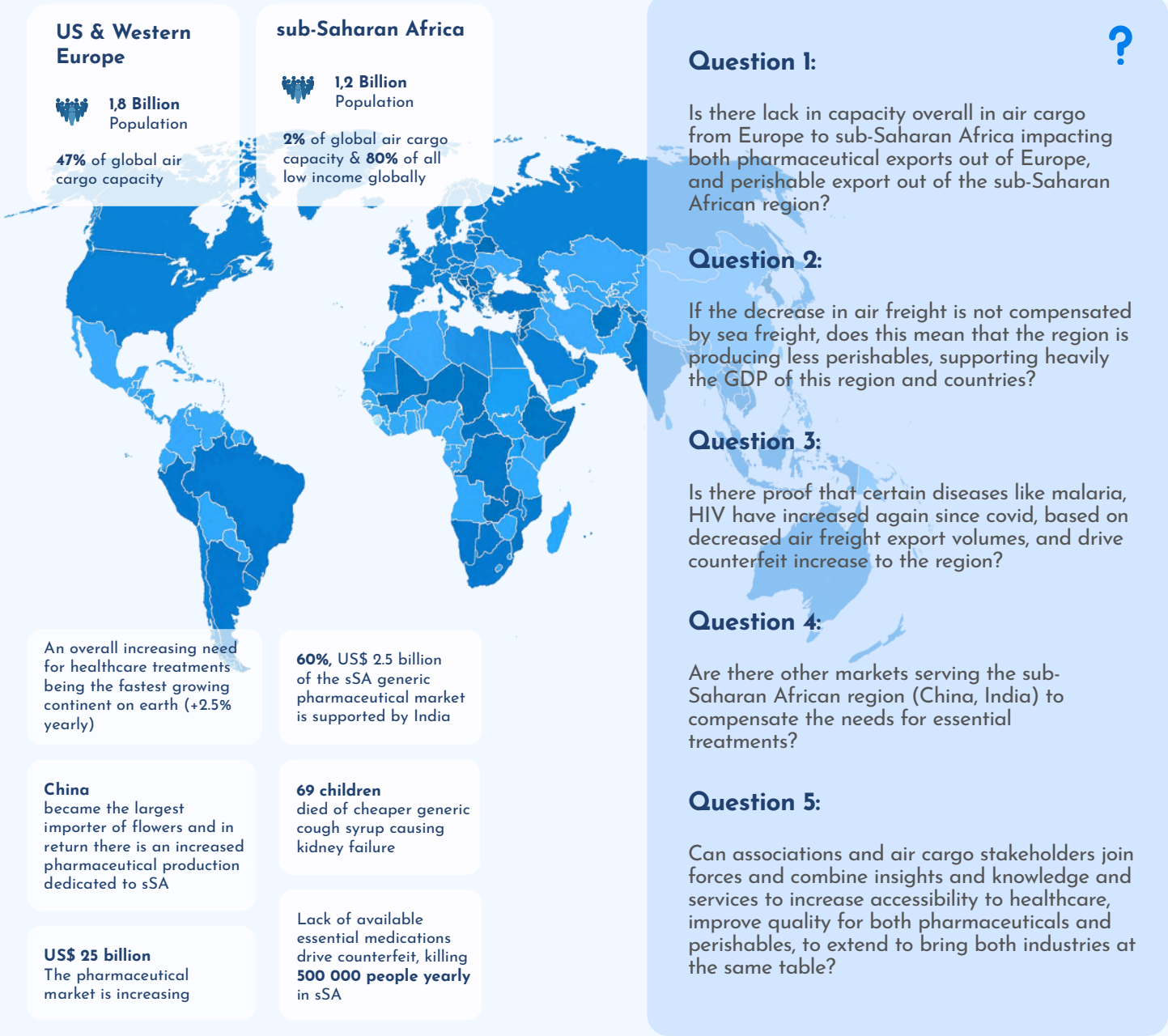
Aligning **agriculture modernization** (e.g., AfDB's TAAT, SAPZ zones) with **pharma supply chain resilience** is essential for sustainable growth.



Based on the findings of the research, 5 questions arose and were addressed with supporting evidence data, detailed in the technical report.

World Bank Group country classification by income level

● High Income ● Upper-middle income ● Lower-middle income ● Low income



03

Conclusions



Limited Air Cargo Capacity



Sub-Saharan Africa has only 2% of global air cargo capacity, far below Europe and North America (21 and 26%, respectively). This shortage affects both imports and exports, creating bottlenecks for essential goods like pharmaceuticals and perishable food products. Trade lanes between Africa and Asia are particularly weak, with a 40% drop in cargo volumes.

Underserved Pharmaceutical Market



Africa relies on imports for about 85% of its medicines. European air exports to 18 sub-Saharan countries fell 31% after COVID-19, even as demand for vaccines and treatments for malaria, HIV, Ebola, and other diseases grew. Limited airfreight capacity contributes to health risks, including increased malaria deaths and potential setbacks in disease control. It dramatically illegal markets and counterfeit..

Perishable Food Exports



Air shipments of perishable goods from sub-Saharan Africa (fruits, vegetables, seafood, flowers) dropped by 35% post-COVID. Prices nearly doubled due to inflation, making exports more expensive and less competitive. Sea freight did not compensate, highlighting a gap in logistics and potential impact on local agricultural income and GDP.

Agriculture and Health Link



Agriculture accounts for 40% of GDP and employs 70% of the workforce in sub-Saharan Africa. Disruptions in export logistics affect farmers' livelihoods and access to global markets, while also limiting the region's ability to import essential medical supplies efficiently.

Growing External Support



China and India are increasingly supplying pharmaceuticals to Africa. China views Africa as a high-growth market, while India provides roughly 60% of African medicine needs, particularly generics. These markets help fill gaps left by limited European airfreight, but regulatory and partnership challenges remain.

Strategic Need



To support health and food security, sub-Saharan Africa needs stronger air cargo capacity, improved local production, and better trade links. Addressing these gaps is critical for delivering medicines, supporting agriculture, and stabilizing both public health and local economies.

Airfreight efficiency in sub-Saharan Africa is **no longer a purely commercial concern**. It has become a **development priority** with direct implications for:



Access to medicines,
vaccines & diagnostics



Poverty reduction and
food security



Prevention of counterfeit
pharmaceuticals



Climate-resilient
economic development



Stability of agricultural
income

The evidence is clear:

Air cargo limitations in sub-Saharan Africa are not logistical inconveniences, they are life-threatening barriers to health, prosperity, and sustainability.

When medicines and vaccines fail to arrive on time, preventable diseases claim lives and communities remain locked in cycles of poverty. These gaps also fuel counterfeit drug markets, compounding public health risks and eroding trust in healthcare systems. Incremental fixes are no longer enough; what is needed is a fully integrated, end-to-end logistics ecosystem that guarantees timely delivery of essential treatments to even the most remote regions.

At the same time, improved outbound capacity can unlock agricultural trade, boost incomes, and enable climate-smart investments that strengthen resilience. Logistics is no longer a support function, it is a catalyst for systemic change, capable of reducing mortality, dismantling counterfeit supply chains, and driving economic growth.

Achieving this transformation demands unprecedented collaboration among pharmaceutical manufacturers, perishables exporters, airlines, regulators, NGOs, and development institutions.

The moral, economic, and environmental stakes are too high to ignore: every delay costs lives, every inefficiency perpetuates poverty, and every missed opportunity undermines global climate goals. Building a reliable, equitable air cargo network is not optional, it is an urgent imperative for survival and progress.

The path forward requires bold investment, shared responsibility, and relentless commitment to turning logistics into a lifeline for millions.

Recommendations:

Based on the report findings, we recommend the continuation of the project, Phase 2 Awareness event and Phase 3 Training, with the key objectives described below (figure 17):



Acknowledgements & References

The Food & Farm for Health project was developed under the leadership of Pharma.Aero and TIACA, with participation and support from the Humanitarian Logistics Association, Cool Chain Association, FairMiles, Qatar Cargo, Mediconed and numerous supply-chain experts across the pharmaceutical and perishables industries.

Their collaboration and expertise were fundamental to the findings and insights presented in this report.



References

- **African Development Bank Group (AfDB)** – A new frontier for African pharmaceutical manufacturing industry(2022).
- **African Leadership Magazine** – The next frontier in the African Agricultural Revolution (2024).
- **Awuor, E., & Amponsah, P.** – Local manufacture of pharmaceutical commodities in sub-Saharan Africa: Literature review (2023).
- **Banda, G., Mugwagwa, J., Mackintosh, M., & Mkwashi, A.** – The localisation of medical manufacturing in Africa, IEJ Research Reports, The Open University (2022).
- **Brookings Institution** – Vaccine inequity: Ensuring Africa is not left out (Sidibé, 2022).
- **de-Graft Aikins, A., et al.** – Tackling Africa's chronic disease burden (2010).
- **Ekeigwe, A. A.** – Drug manufacturing and access to medicines in Africa (2019).
- **Eurostat** – International trade statistics based on Customs ID by means of transport (2015-2024).
- **European Central Bank (ECB)** – Economic implications of rising protectionism (Gunnella & Quaglietti, 2019).
- **Grand View Research** – Africa pharmaceutical market analysis 2018-2030 (2023).
- **Medic East Africa / Medlab East Africa** – Pharmaceutical market in East Africa: New avenues towards growth(2024).
- **ODI (Overseas Development Institute)** – What do we know about health spending in sub-Saharan Africa? (Lacroix & Long, 2024).
- **Pharma.Aero** – Pharmalytics Reports 2025, Vols. 1-4.
- **Springer (Cham)** – Disease burden and mortality (Niohuru, 2023).
- **United Nations** – World urbanization prospects: The 2018 revision (2019).
- **USP (United States Pharmacopeia)** – Expanding the capacity to produce vaccines in Africa (2023).
- **World ACD** – Air cargo data (2025).
- **World Health Organization (WHO)** – The Malaria report (2024).

Strengthening Air Cargo for Healthcare and
Agriculture Between Europe and
sub-Saharan Africa

Pharma.Aero VZW
Bedrijvenzone Machelen Cargo 706B (mailbox 92)
4th floor, room 411
B - 1830 Machelen
Belgium