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***Chris Elliott, Professor of Food Security, Thammasat University
Founder, Institute for Global Food Security, Queen's University, Belfast***



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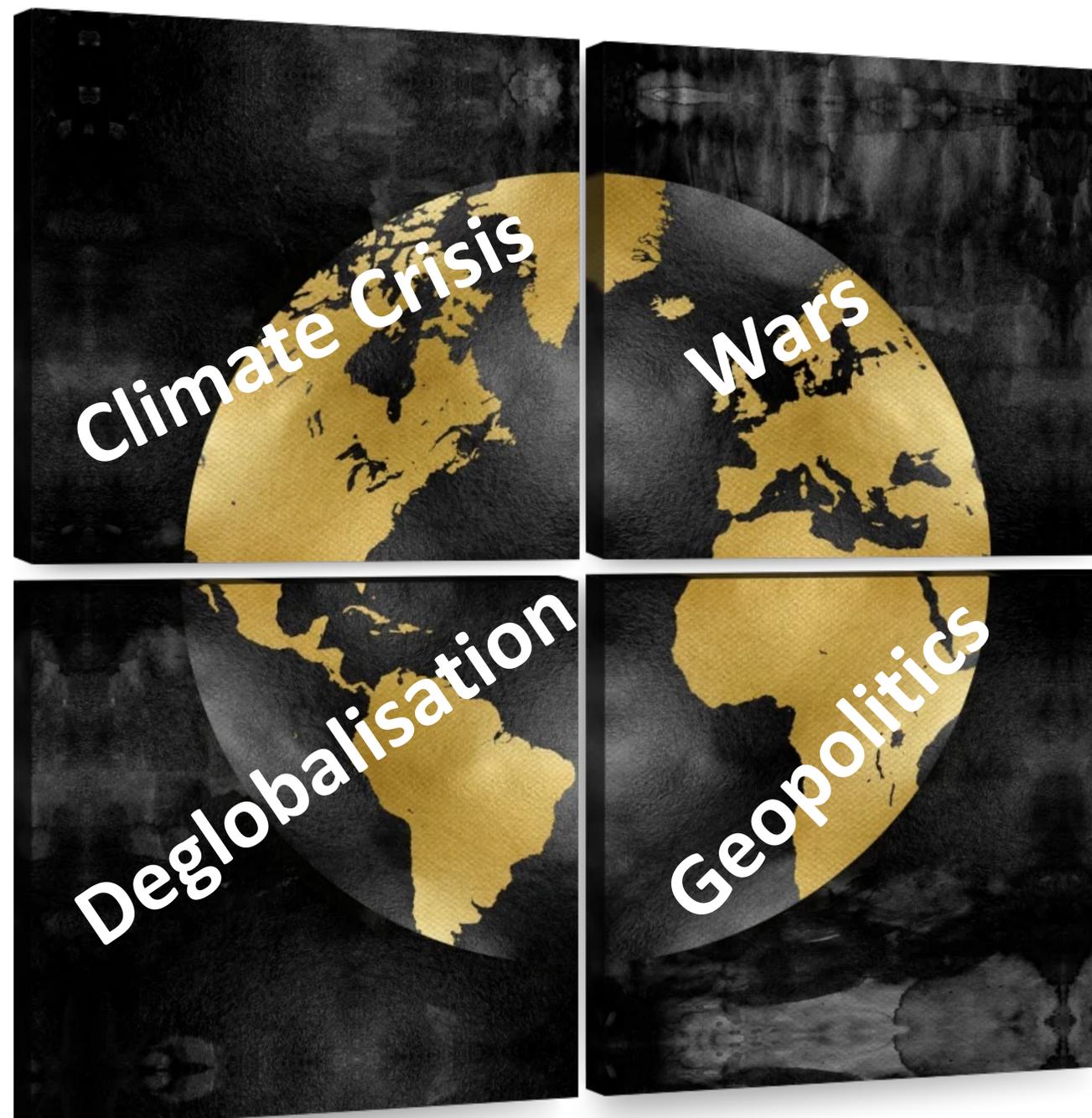
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The four big drivers of changes to the global food supply system.





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Wheat

2022 Data - 1

Summary Forecast Stats Alerts Export

Wheat (USD/Bu) 759.00 -125.00 (-14.14%)

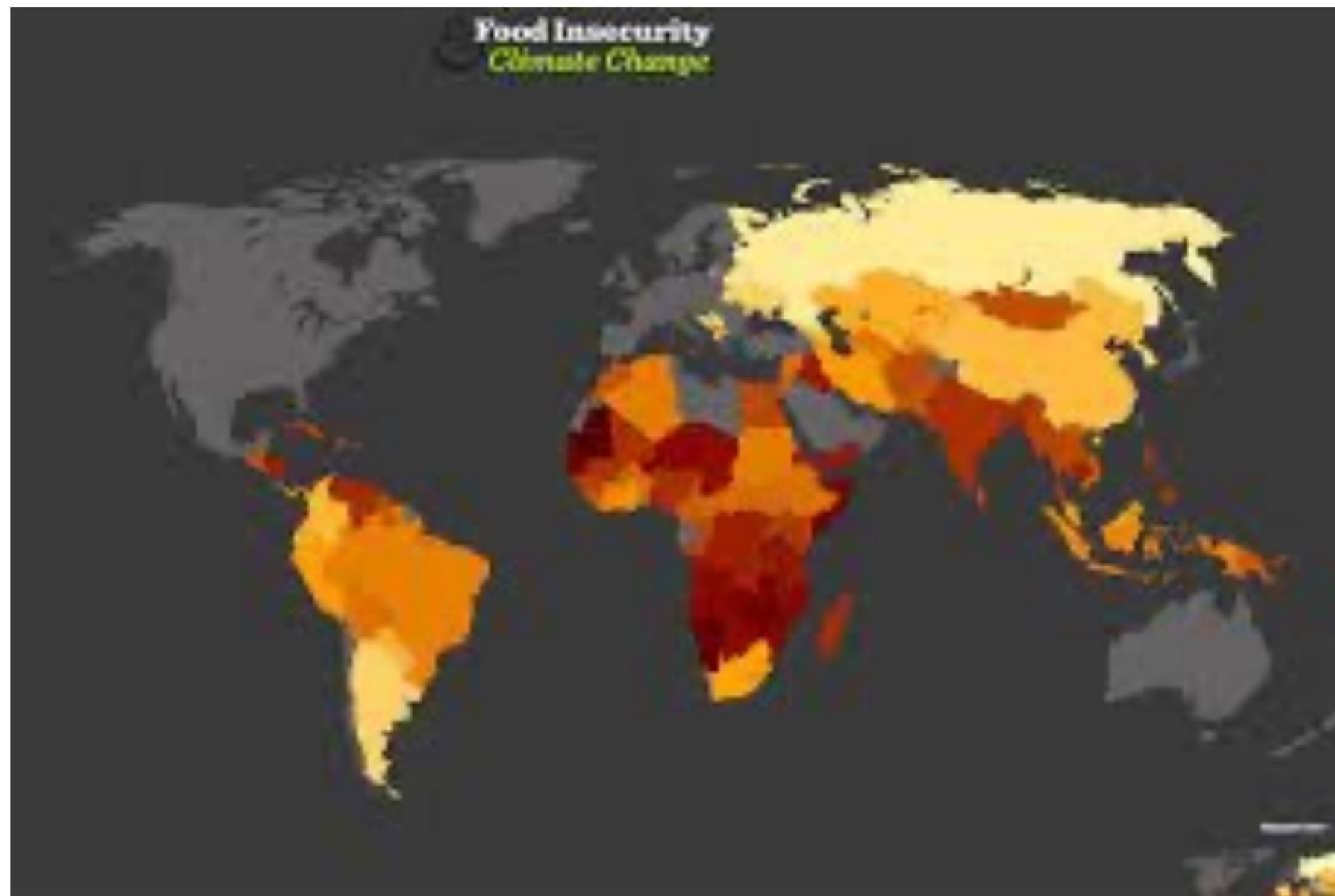






Food insecurity linked to climate change is a complex and multifaceted issue

- **Extreme Weather Events:**
- **Shifts in Growing Seasons:**
- **Temperature Increases:**
- **Water Scarcity:**
- **Sea-Level Rise:**
- **Reduced Fisheries:**
- **Displacement and Conflict:**
- **Rising Food Prices:**
- **Reduced Food Nutrient Content:**
- **Food System Vulnerability:**





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Tarrifs and Trade



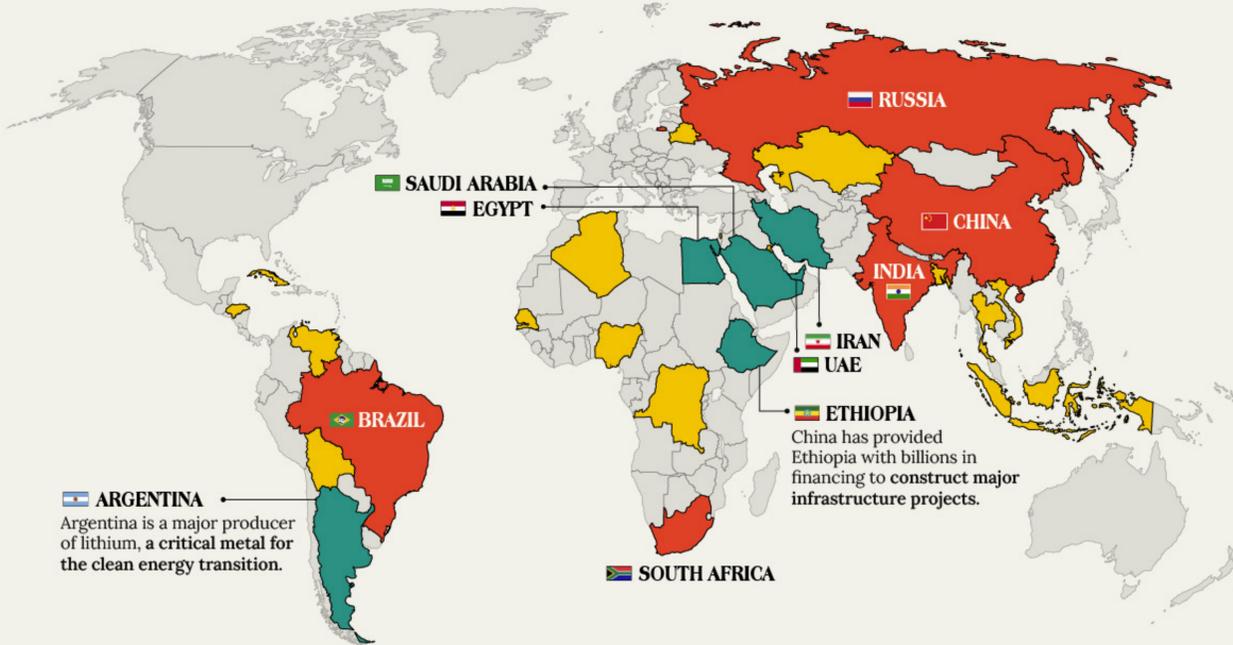


Supply Chains Disruptions+Tariffs

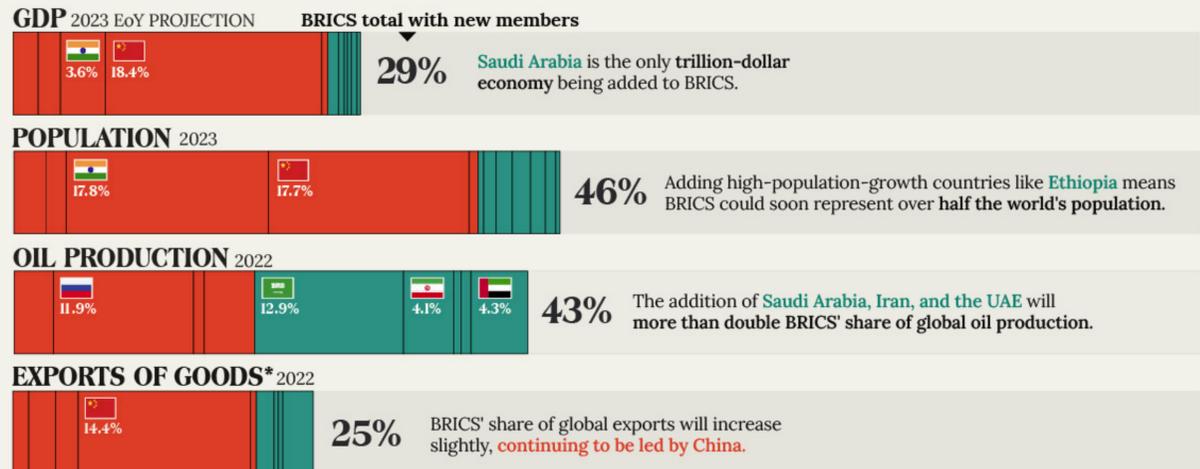
VISUALIZING THE 2023 BRICS EXPANSION

BRICS, a bloc of developing countries formed in 2010, is set to welcome six new members at the beginning of 2024.

▲ Members ▲ New Members ▲ Applied for membership



SHARE OF GLOBAL



Sources: IMF, World Population Review, EI Statistical Review of World Energy, World Trade Organization



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A 'food power' is born

By OVIGWE EGUEGU | China Daily Global | Updated: 2023-09-11 08:10





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Food Fraud





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RISKS ON THE HORIZON FOR THE FOOD INDUSTRY







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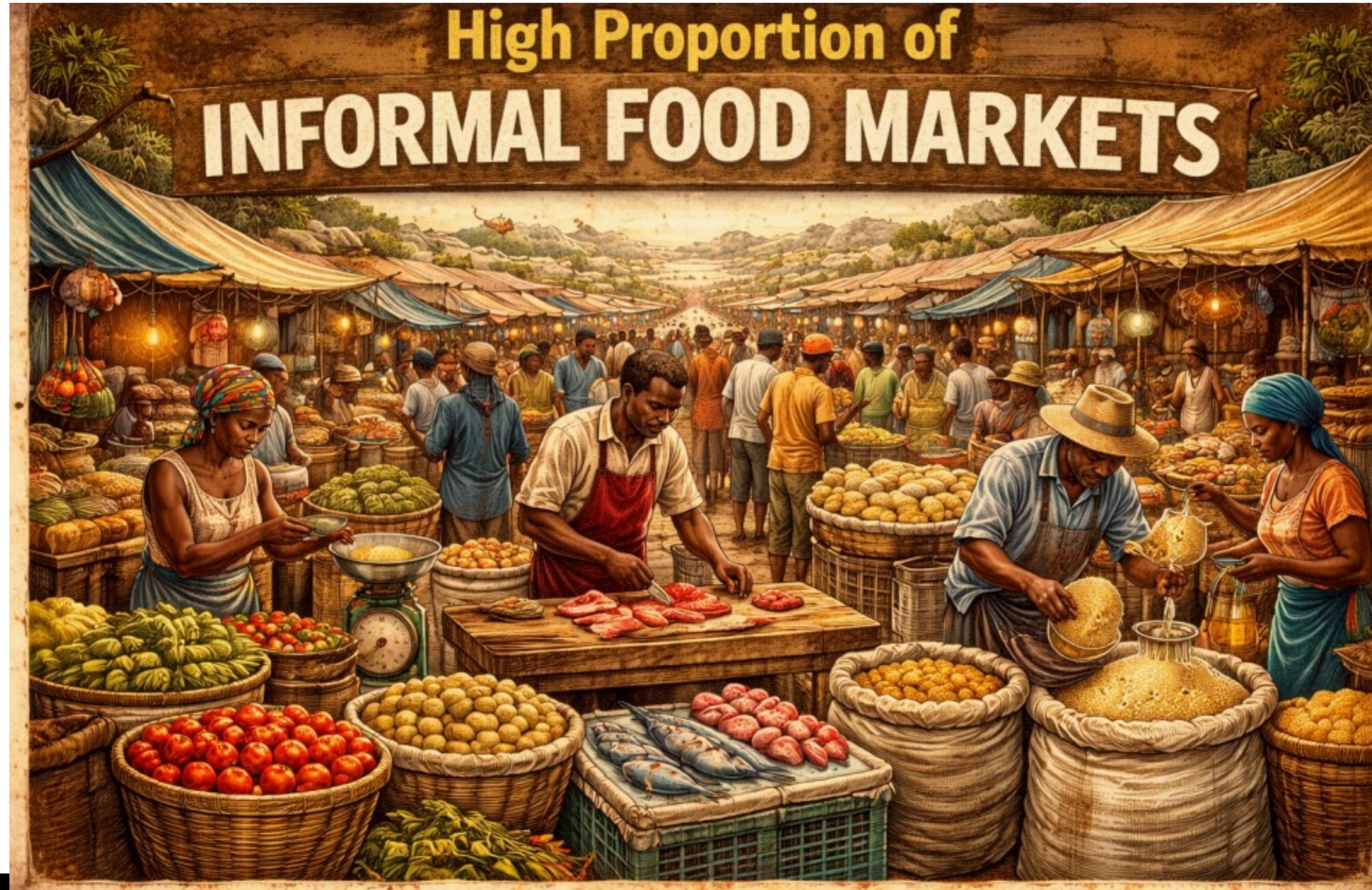


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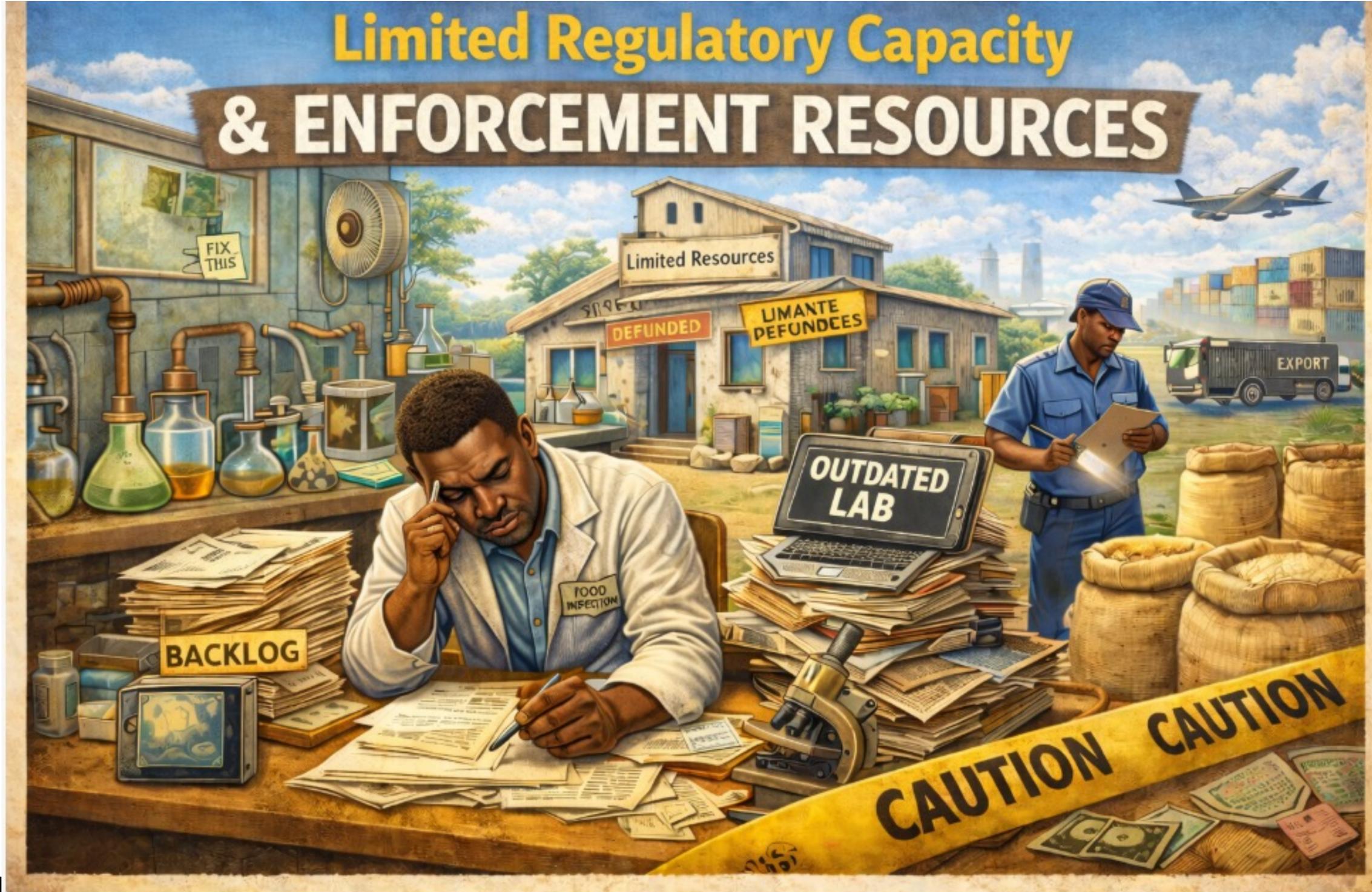


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Economic pressures within the food system also play a major role





Another key issue is fragmented supply chains and weak traceability systems





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Health and trade impacts of food fraud in Africa





Huge untapped agricultural potential – Africa holds around **60%** of the world's uncultivated arable land, giving it enormous capacity to expand global food production if investment and infrastructure continue to grow.





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ARTICLE

Out of Africa – the future of global food security

Africa is often seen through the lens of food insecurity, but a quiet revolution is underway. Professor Chris Elliott explores how the continent could become a global food powerhouse.





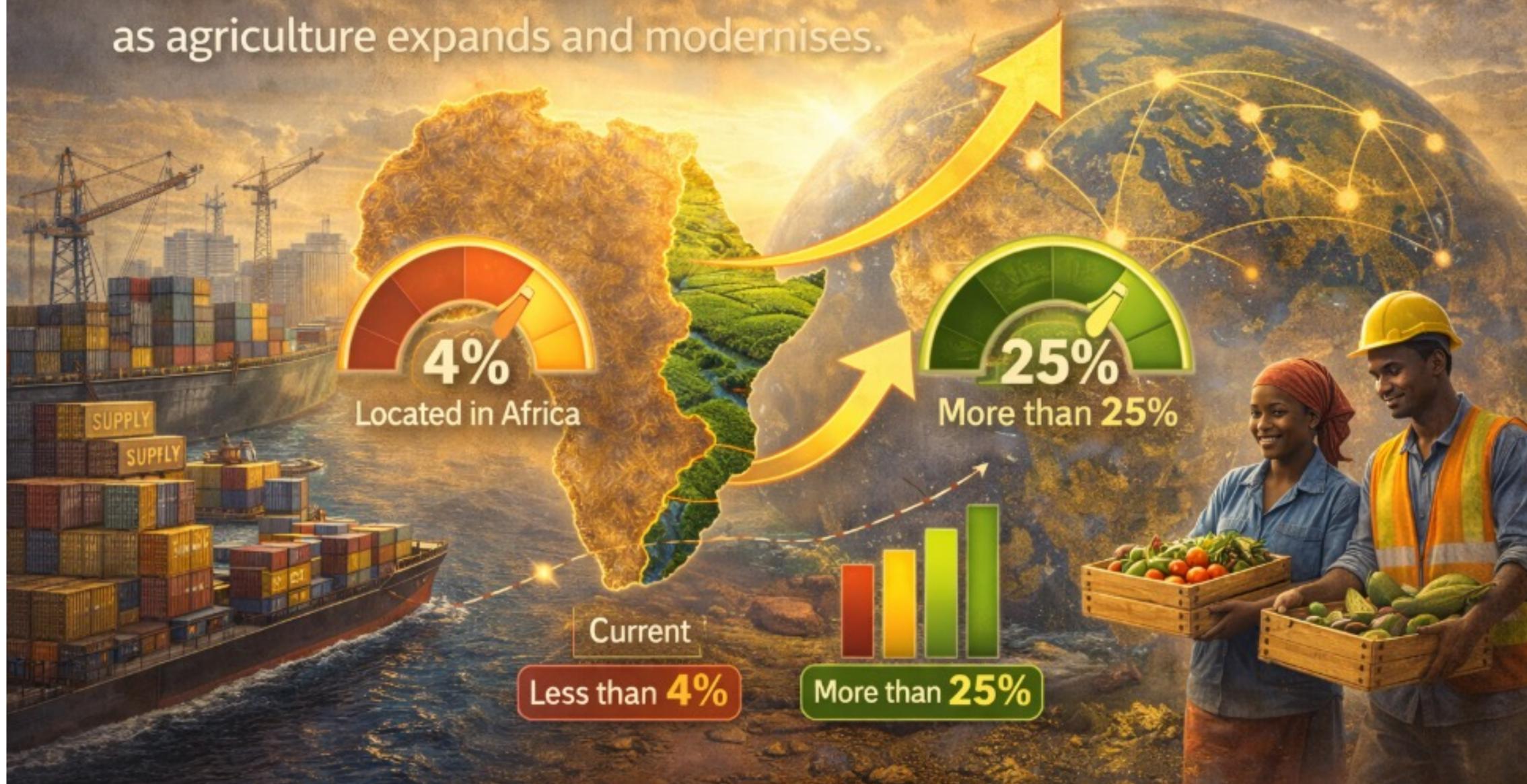
Growing international investment and modernisation

Governments, international banks and private companies are investing in irrigation, mechanisation, processing capacity and modern supply chains, helping industrialise agriculture and strengthen Africa's role in feeding the world.





Although Africa currently accounts for less than **4%** of global food exports, projections suggest the continent could eventually supply **more than 25%** of global food exports as agriculture expands and modernises.





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Production, importation and sale of adulterated food is a **major barrier to Africa** reaching its potential as a global powerhouse in food security



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TWO-TIER TESTING SCHEME FOR FOOD FRAUD

Based on the Work of Professor Chris Elliott

TIER 1: SCREENING

Broad Testing for anomalies



NIR SCANNERS- DNA TEST

TIER 2: TARGETED ANALYSIS

In-Depth Investigation



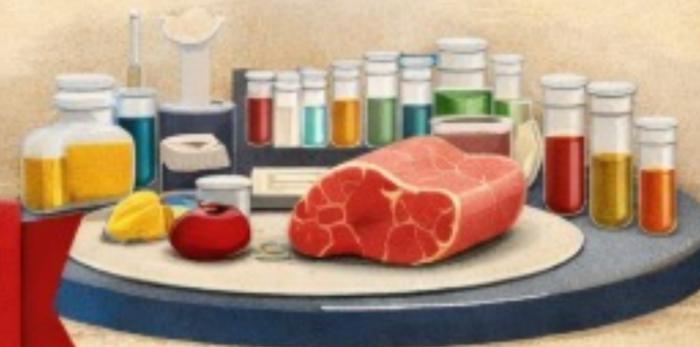
FORENSIC TESTING MASS SPECTROMETRY ISOTOPE ANALYSIS



MANY SAMPLES



FOOD FRAUD IDENTIFIED



APPROPRIATE ACTION TAKEN

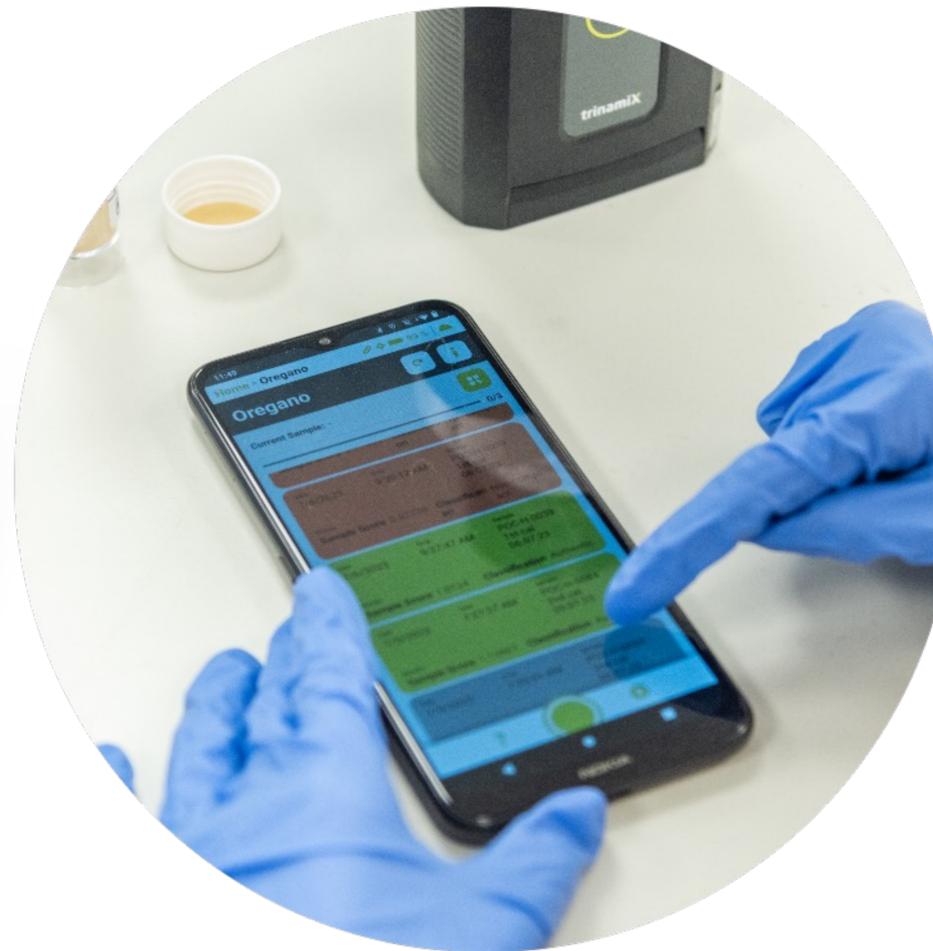




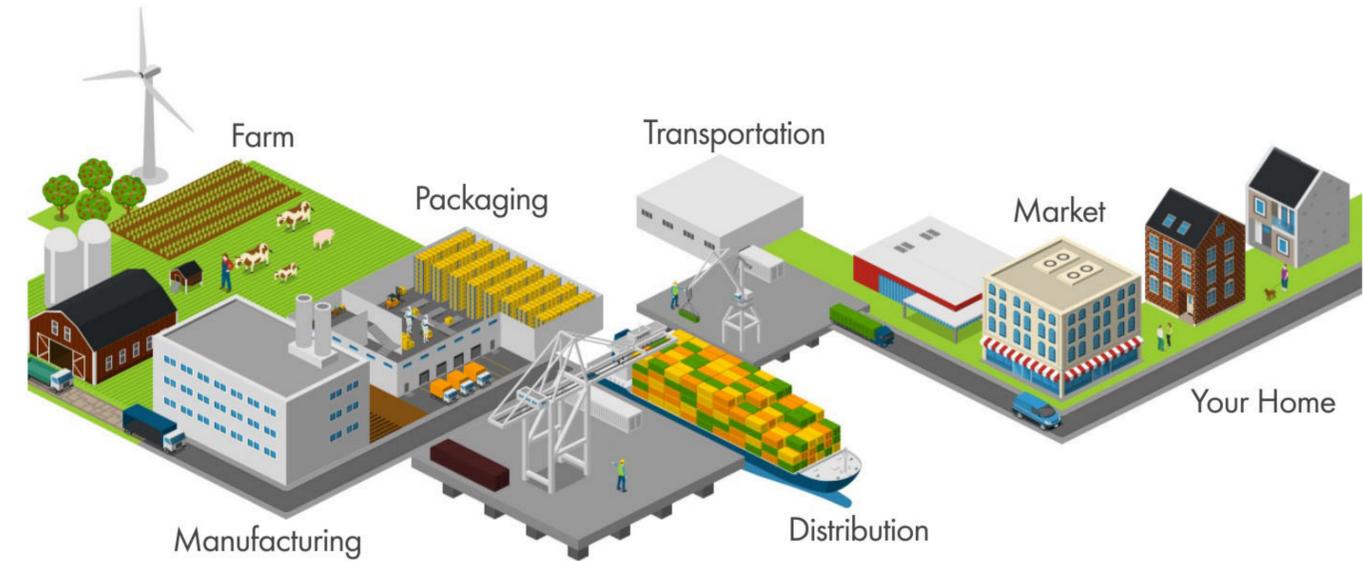
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The Food Supply Chain





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Agilent Technologies + **AFRAF**
African Food Regulatory Authorities Forum

TRANSFORMING FOOD FRAUD DETECTION IN AFRICA

- SHARE DATA
- STANDARDIZE METHODS
- BUILD CAPACITY
- FAST DETECTION
- DETER FRAUD

Improved Detection | Stronger Regulation | Trusted Food Supply | Safer Consumers

Working Together for a Safer Africa





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CALL TO ACTION

1 Action 1

Collecting data on the public health impacts of food fraud in Africa



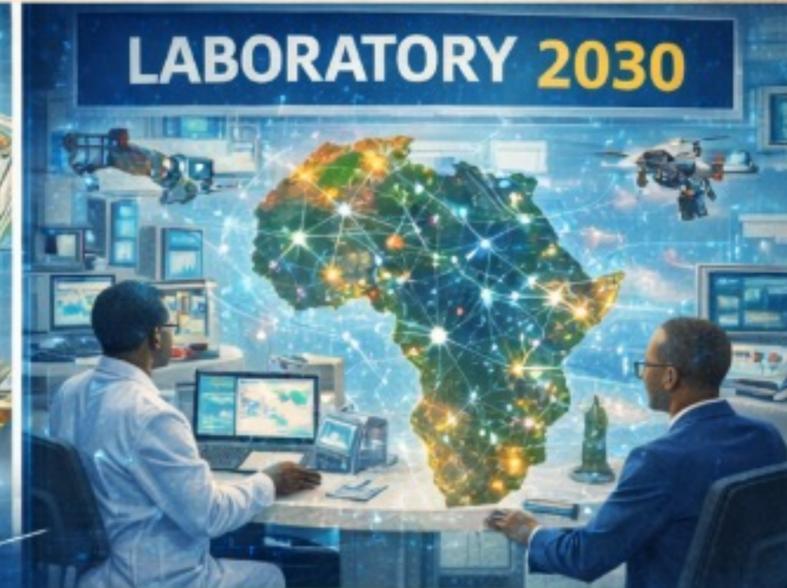
2 Action 2

Collecting data on the economic impact of food fraud in Africa



3 Action 3

Working towards building Laboratory 2030 with the 2-tier system



TIER 1
SCREENING

TIER 2
TARGETED
ANALYSIS

Chris.Elliott@qub.ac.uk

