

## RESEARCH STATEMENT

I am an applied economist with research interests at the nexus of agricultural, food, and international economics. The broad question guiding my research agenda is the resilience of supply chain actors within different institutional setups to frequently changing food safety regulations and agricultural market shocks. My research objective is to understand how these themes interact to produce a sustainable global food system. I achieve this goal using ideas, large administrative macro- and micro-level data and cutting-edge empirical methods. Economic theory often provides clear predictions to guide empirical work; my work seeks to draw out and test these predictions to support evidence-based policy-making. My research strategy emphasises knowledge generation and targeted dissemination to stakeholders. For researchers, I produce journal articles and user-friendly open-sourced datasets. Through my experience working with non-university-based research institutions, both at the World Bank Group and Agroscope, I know the value of reaching out to policymakers and practitioners via policy briefs and dialogue meetings. In this document, I summarise my research, including published works and advanced ongoing projects, under three broad themes.

### 1. Food safety standards, trade policy and global agricultural value chains

In this line of research, I analyse how economic agents react to policy changes in the agrifood sector. I focus mainly on how food safety regulations influence trade-related performance measures of producers and agribusiness firms. Why is this important? Food trade is a balancing mechanism for local and global food demand and supply. In developed countries, competition has moved from price to quality as consumers have developed a preference for food produced and sourced sustainably. But there is also a development angle. The agrifood sector is particularly subject to standards but forms a major share of exports and fiscal revenue in developing countries. Yet, the stringency of these food standards is determined in developed countries. Thus, food safety requirements (e.g., certification and traceability) can hurt poor farm households whose fates are essentially tied to serving high-value supply chains. Yet, a call for weaker standards ignores their potential consumer or societal benefits, e.g., addressing information asymmetries and mitigating consumption risks. That said, policymakers can also use standards to disguise protectionist intents, e.g., shielding domestic producers from international competition. Lastly, food safety regulations were initially the domain of public regulators, but the proliferation of voluntary sustainability standards (VSS) by private players adds another layer of complexity. The complex nature of regulating food safety raises many questions that my research engages with. This research area formed the core of my doctoral dissertation (Fiankor, 2020) which was awarded the RTG GlobalFood best dissertation at the University of Göttingen.

One fundamental VSS-related question is whether they marginalize developing country farmers from high-value markets. This is because VSS certifications — which are *de jure* voluntary, but fast becoming *de facto* mandatory — impose additional costs of production for farmers. We answer this question in Fiankor et al. (2020, ERAE) using the case of GlobalGAP standards — which is by far the most important VSS in the European retail sector. We find that GlobalGAP standards enhance trade but with heterogeneous effects across products and destination markets (see also, Fiankor et al., 2019, AgEcon). In ongoing work (Chen et al., 2023, under review), we analyse soy production and find that the Round Table on Sustainable Soy (RTRS) certification reduces exports. In this sense, the negative effects are welcome news given the very high environmental footprint of soy production.

Public standards work differently. Unlike VSS, they are mandatory and so condition market access. In Fiankor et al. (2021a, ERAE), we find that differences in pesticide regulations lower import volumes, increase market power for surviving firms and cause welfare losses to consumers (i.e., limited product varieties, higher prices with no changes in quality). One limitation of this literature is that existing estimates come from constant elasticity of substitution (CES) models that impose the limiting assumption that the estimated trade effect is constant. These lead to one-size-fits-all types of policy conclusions that we contest in Fiankor et al. (2021b, JAE). We show using a novel translog gravity model that the trade cost elasticity varies depending on how intensively two countries trade. For countries exporting large volumes, public standards have smaller effects.

I also assess region-specific effects. Over the last decades, many developing countries have undergone structural shifts from producing traditional cash crops to high-value agrifood products. Yet, Africa's agrifood exports are notorious for breaching EU food safety regulations. In Tchakounte and Fiankor (2021, JAFT), we disentangle both the trade cost and demand-enhancing effects of standards for fruits, nuts, and vegetable producers in Africa. We find that compliance guarantees market access to the EU and OECD. Successful suppliers also receive higher prices. I am currently collaborating with researchers in Ghana to assess how these mandatory standards affect commercial farm households (Onumah et al. 2023, under review).

I also study other more traditional trade policy measures such as tariffs. I have looked at how trade costs affect product quality upgrading at the firm and/or country level. A strong empirical regularity in trade data is firms charging different prices for the same product in different destinations. For instance, in Fiankor (2023, ERAE) I find that Swiss cheese can yield free-on-board (FOB) prices — which exclude cost, insurance and freight costs — ranging from 11 CHF/kg in Peru to 16 CHF/kg in South Korea. I exploit firm-level data to assess if these price differences reflect product quality differences or variable markups. I find evidence in favour of the latter. However, the level of markups is lower for higher-quality products. In Fiankor and Santeramo (2023, AEPP), we replicate and extend existing country-level studies on this empirical regularity and caution that while the theoretical prediction holds, it does not depend on the development level of the exporter. In Fiankor et al. (2023, under review), we test whether this price-varying behaviour varies by the seller's chosen mode of transport using for the first time a dataset that decomposes agricultural and food trade flows by mode of delivery, i.e., marine, land, or air cargo. The dataset is the product of a project with UNCTAD and the World Bank that I am engaged in as a Consultant.

I am also keen on environmental and food policy implications of trade policy. Global trade policy could be a powerful lever for change since around a quarter of global CO<sub>2</sub> is emitted in trade-related supply chains. I explore ways to use trade policy to “save the climate” without undermining the gains from trade. Kammer and Fiankor (2023, in preparation) assess how opening up to agricultural trade influences CO<sub>2</sub> emissions from farm gates and land use change. Existing studies offer no such distinction but consider aggregate emissions. In Mkandawire et al. (2023a;b, in preparation), we show that making explicit environmental provisions in preferential trade agreements (PTAs) can be used as a targeted trade policy strategy to promote economic and environmental sustainability.

Trade policy also has food security implications. In theory, preferences increase exports by offering recipients higher prices in the donor country. However, this new price regime will also prevail in the domestic market of the recipient as producers will not be willing to sell at home for less than they could get abroad. As such, these preferences may (in)directly impact food availability in both the donor and recipient countries. We bring these theoretical predictions to test using data covering multiple decades and countries in Ritzel and Fiankor (2023, in preparation). Finally, in Afesorgbor et al. (2023, under review), we conduct a meta-analysis that brings together existing empirical evidence on the effectiveness of PTAs in the agricultural sector.

So, what do I want to do going forward? Increasingly, applied economists have turned their attention to trade not only as an important phenomenon in its own right but as a potential source of causal identification more broadly. Changes in trade flows create meaningful variations in economic conditions across industries, firms, and workers, which serve as a test bed to answer questions beyond trade specifically. In future research, I seek to exploit this exogeneity to predict changes in the food system.

## **2. The resilience of agrifood supply chains to shocks and uncertainty**

The resilience of the global food system depends on the resilience of supply chain actors to shocks and uncertainty. In this line of research, I am interested in how these actors respond to global and local shocks. This is important to maintain food security for the most vulnerable in times of crisis.

Fiankor et al. (2023, under review) consider local country-specific uncertainties in the form of frequently changing country-specific pesticide regulations. Consider the case of farmers whose GAP-compliance production today may not be sufficient for them to access specific markets tomorrow

because of policy changes. We investigate the effect of this uncertainty on firm-level agrifood imports and decompose the effect by firm size and global value chain (GVC) activity. We combine Swiss customs transaction data with country-product-year-specific maximum residue limits (MRLs). We find that participation in GVCs and product diversification improves the ability of Swiss agribusiness firms to cope with heterogeneous regulations.

I have also investigated the issue of structural food market shocks. For instance, in spite of the long-term decline of world hunger, food security is still low in Sub-Saharan Africa (SSA). This is due in part to frequent and sudden food price shocks. Many of the most severe food price shocks that threaten food security, at least in the short term, originate from extraordinary local or regional crisis events. This motivates the work in Dalheimer and Fiankor (in preparation) where we estimate food supply elasticities for regional SSA food markets. We find fundamental differences with other parts of the world, which we relate to the absence of stock-keeping within the sub-region.

I also study global shocks, which are getting more relevant in light of recent happenings. Cross-border mobility of animals and food products is a vector for disease transmission. This is crucial in agriculture where bio-security concerns are high. This century saw many epidemics affecting human and animal health, e.g., avian flu, BSE, FMD and ASF. These shocks were more localised affecting particular countries or regions. Hence, supply chain actors dealt with the shock by reallocating market shares to non-affected regions. This was different for the COVID-19 shock which was global in nature. Early studies on COVID-19's effect on agriculture showed that the sector proved resilient. However, these analyses were done at the country level using aggregate data. Countries as a whole may have survived the pandemic, but we know nothing about how individual agribusinesses fared. Also, given the short-lived nature of the pandemic, the use of aggregate data masks many of the underlying heterogeneity. In Fiankor et al. (2023, Food Policy), we address these shortcomings and provide the first firm-level evidence of the pandemic on the agrifood sector using daily import data for Switzerland. We find that a 10% increase in daily domestic case counts decreases daily product-level imports by 3%. The effects were driven mainly by a reduction in the number of active firms. We validate this finding by testing two mechanisms: (i) third-country supply-side effects and (ii) changes to consumer demand using consumer mobility and scanner data.

Shortly after the COVID-19 shock, came Russia's invasion of Ukraine. This further increased wheat prices that were already high post-COVID. In Curzi et al. (2023, in preparation), we consider the universe of Italian exporting firms of pasta and other wheat derivatives from 2004 – 2021 to assess the resilience of agribusiness firms that depend on wheat as an intermediate input to global wheat market shocks. First, we estimate the response of global wheat prices to different shocks: supply, consumption demand, economic activity, and inventory. We then regress the growth in firm-level export prices on the different determinants of global wheat prices to understand their contribution to agribusiness firms' price formation. We find that pasta and wheat-derivative-producing firms survive global shocks by passing on all the extra costs of production to consumers.

Bringing together the evidence from Fiankor et al. (2023, Food Policy) and Curzi et al. (2023, in preparation), my work provides evidence that larger agribusiness firms suffer more from global shocks while they are more insulated from local shocks.

In future work, I seek to understand the role of zoonosis in structural transformation and participation in GVCs. Zoonotic disease outbreaks have been rampant in many agricultural-dependent countries. For instance, from 2012 to 2022, zoonotic disease outbreaks in SSA rose 63% compared to 2001–2011. From 2001 to 2022, 33% of public health emergencies were zoonotic disease outbreaks. Almost 70% were caused by Ebola virus disease (EVD) and other viral hemorrhagic fevers and 30% by dengue fever, anthrax, plague, monkeypox, and others. The question is whether outbreaks of this sort hasten the process of structural transformation in these countries or regions. I plan to further investigate the relationship between global and local risks in the agrifood sector. In particular, I am collaborating on a USDA grant proposal, led by Bernhard Dalheimer, to analyze how human and natural events affect GVC activity.

### 3. Institutions and agricultural economic outcomes

Institutions remain the rule of the game in a society. Whether within or across countries, the role of institutions in determining aggregate outcomes cannot be understated. In this line of research, I assess how governance and institutions affect agricultural, economic and environmental outcomes.

My work (e.g., Fiankor et al., 2021, ERAE) and that of others show that globally, producers are embracing food standards as quality signals to access high-value markets. To what extent do these market access provisions of standards hold for exporting countries with poor domestic institutions? Standards may have increased signalling effects among countries with extreme institutional quality differences or vice versa. Take, for example, corruption; it erodes trust in public sector efforts to regulate the conduct of firms, thereby increasing the signalling value of private certifications. But corruption can also extend distrust to private standards and reduce their credibility and signalling value. We address this question in Fiankor et al. (2019, AgEcon). We show that when institutions differ across countries, private standards act as substitute governance institutions. GVC linkages that depend on institutional quality are particularly sticky and call for reputational mechanisms that substitute the absence of formal ones. In this regard, my work documents the critical role of VSS.

I address how institutions affect environmental outcomes in Chen et al. (2023, CAER). Carbon storage in protected land is a practical climate stabilisation strategy. It is increasingly being recognised as an essential means of safeguarding biomass carbon and improving local ecological conditions. Yet, increasing carbon sequestration by setting aside nature reserves does not depend only on the scale of the reserve, but more importantly, on how effectively the nature reserve protection policy is enforced. In Chen et al. (2023, CAER), we exploit China's distinct four-layered hierarchical nature reserve management system to show how nature reserves established and managed by different administrative levels affect carbon sequestration. Our findings show that higher administrative level (i.e., national and provincial) nature reserves have no effects on the carbon dynamic. However, reserves managed by lower administrative levels (i.e., prefecture- and county-level) are associated with reduced carbon sequestration. This implies that local institutions fail in their responsibilities to protect nature reserves. It appears that at local levels economics trump ecological protection.

In Lin et al (ongoing), we assess how dynamic changes in institutions across countries determine variations in different agriculture productivity outcomes. Existing studies date back to the 2000s and consider institutions as static. However, many countries have since then undergone institutional changes that have affected their governance and socio-economic structure. We link variations in agricultural productivity measures to changes in country-level measures of institutional quality.

Going forward, I seek to assess how trust in governments and institutions affects the functioning of local and global food systems. Functional institutions — whether these are national or agricultural-specific — can influence agricultural market access and vice versa. Take for instance inadequate rural road connectivity. It hampers agricultural production, reduces agricultural incomes and may affect trust in institutions. I intend to contribute to the literature by isolating the effect of infrastructure quality on trust in institutions within agricultural and food-producing regions. The basic argument is that citizens are more likely to trust state institutions when they are satisfied with the provision of services that make their agricultural and food-producing processes easier. I seek to establish a causal link between infrastructure and trust in institutions by combining spatial data on road upgrades with geocoded surveys.

### Summary of Research Agenda

Table 1 summarises how the papers discussed in this statement are connected to each other and how my research agenda has evolved over time. There is also a lot of intersection between the three research themes, e.g., agri-food trade policy and institutions (Fiankor et al. 2019, AgEcon), GVCs and resilience (Fiankor et al. 2023 Food Policy; Fiankor et al. 2023, under review; Curzi et al., 2023, in preparation). My research in the next years will continue to expand on the intersection of these three fields. I collaborate with researchers from a broad set of institutions — universities and international organisations — spread across Europe, Africa, Asia and North America.

Table 1: Summary of Research Agenda

Research theme	Research completed	Work in preparation	Planned research
1. Food safety standards	Fiankor (2023; ERAE)	Chen et al. (TWE)*	— Consumer perception of safety measures applied at entry borders
	Fiankor et al. (2021; ERAE)	Afesorbor et al. (AEPP)*	— Pesticide regulations and Swiss-EU trade: any lessons for BREXIT?
	Fiankor et al. (2020; ERAE)	Onumah et al. (JID)*	— Trade preferences and food security in donor and recipient countries
	Fiankor et al. (2021; JAE)	Fiankor et al. (AE)*	— Food standards and aggregate health outcomes
	Fiankor & Santeramo (2023; AEPP) Tchakounte & Fiankor (2021; JAFT)	Kammer & Fiankor Mkandawire et al.	
2. Market shocks	Fiankor et al., (2023; FP)	Curzi et al.	— Zoonosis outbreaks and agricultural structural transformation
		Fiankor et al., (AJAE)*	— Shocks and GVC activity (grant proposal)
		Dalheimer & Fiankor (2022)	
3. Institutions	Chen et al. (2023, CAER)	Lin et al.	— Road upgrades and trust in Africa: is there a causal link?
	Fiankor et al. (2019; AgEcon)		

Notes: ERAE = European Review of Agricultural Economics, JAE = Journal of Agricultural Economics, AgEcon = Agricultural Economics, FP = Food Policy, AEPP = Applied Economics Policy and Perspectives, CAER = China Agricultural Economics Review, JAT = Journal of African Trade, TWE = The World Economy, AJAE = American Journal of Agricultural Economics, JID = Journal of International Development. \* means the corresponding works in preparation are under review or revisions have been requested.

## Published work\*

- [1] Chen, Y., Fiankor, D.-D. D., Kang, K. and Zhang, Q. (2023). [Assessing the role of institutional effectiveness on carbon sequestration: the case of China's nature reserve policy](#). *China Agricultural Economic Review*.
- [2] Fiankor, D.-D. D. and Santeramo, F. G. (2023). [Revisiting the impact of per-unit duties on agricultural export prices](#). *Applied Economic Perspectives and Policy*.
- [3] Fiankor, D.-D. D. (2023). [Distance to destination and export price variation within agri-food firms](#). *European Review of Agricultural Economics* 50: 563–590
- [4] Fiankor, D.-D. D. (2020). [Trade and Welfare Effects of Standards in Agricultural Markets](#). PhD thesis, University of Göttingen.
- [5] Fiankor, D.-D. D., Curzi, D. and Olper, A. (2021a). [Trade, price and quality upgrading effects of agri-food standards](#). *European Review of Agricultural Economics* 48: 835–877.
- [6] Fiankor, D.-D. D., Flachsbarth, I., Masood, A. and Brümmer, B. (2020). [Does GlobalGAP certification promote agrifood exports?](#) *European Review of Agricultural Economics* 47: 247–272
- [7] Fiankor, D.-D. D., Haase, O.-K. and Brümmer, B. (2021b). [The heterogeneous effects of standards on agricultural trade flows](#). *Journal of Agricultural Economics* 72: 25–46
- [8] Fiankor, D.-D. D., Lartey, A. and Ritzel, C. (2023). Agrifood importing firms amid a global health crisis. *Food Policy*
- [9] Fiankor, D.-D. D., Martínez-Zarzoso, I. and Brümmer, B. (2019). [Exports and governance: the role of private voluntary agrifood standards](#). *Agricultural Economics* 50: 341–352.
- [10] \*Tchakounte, D. A. and Fiankor, D.-D. (2021). [Trade costs and demand-enhancing effects of agrifood standards: Consequences for Sub-Saharan Africa](#). *Journal of African Trade* 8: 51–64.

## Papers under review

- [11] Afesorgbor, S., Fiankor, D.-D. D., and Binyam A. (2023). Do RTAs affect agri-food trade? Evidence from a meta-analysis. Under review at *Applied Economics Policy and Perspectives*
- [12] Chen, Y., Fiankor, D.-D. D., and Fuli, T. (2023). [An assessment of the effect of the Round Table on Responsible Soy certification on soybean exports](#). R&R at the *World Economy*.
- [13] Fiankor, D.-D. D., Dalheimer, B., Curzi, D., Brümmer, B. and Hoffmeister, O. (2023). Specific tariffs, transport mode and agricultural export prices. Under review at *Agricultural Economics*.
- [14] Fiankor, D.-D. D., Dalheimer, B., and Mack, G. (2023). Regulatory heterogeneity, trade and global agricultural value chains. Under review at the *American Journal of Agricultural Economics*
- [15] Onumah, E., Martey, E., and Fiankor, D.-D. D. (2023). Non-tariff measures and household welfare: evidence from Ghana. R&R at the *Journal of International Development*

## Works in preparation (drafts available)

- [16] Curzi, D., Solazzo, R., Valenti, D. and Fiankor, D.-D. D. (in preparation). Unravelling the relationship between global wheat market determinants and the price of pasta exports. [Target journal: *Journal of International Economics*].
- [17] Dalheimer, B. and Fiankor, D.-D. D. (2022). Food production shocks and agricultural supply elasticities in Sub-Saharan Africa. Paper prepared for the Agricultural & Applied Economics Association (AAEA) meeting. Anaheim, USA. [Target journal: *AJAE*].

---

\*Indicates outputs from Master and PhD theses I was (or currently) involved in supervising.

- 
- [18] \*Kammer, M. and Fiankor, D.-D. D. (in preparation). How does trade openness affect emissions from agriculture? [Target journal: *Food Policy*].
- [19] \*Mkandawire, P, Fiankor, D.-D. D. and Brümmer, B. (in preparation). Do environmental provisions in preferential trade agreements affect climate protection performance?
- [20] \*Mkandawire, P, Fiankor, D.-D. D. and Brümmer, B. (in preparation). Heterogeneous trade effects of environmental provisions in preferential trade agreements.
- [21] Lin, J., Fiankor, D.-D. D., and Rosero, G. (in preparation). Institutions and agricultural productivity. [Target journal: *PNAS*].
- [22] Ritzel, C., and Fiankor, D.-D. D. (in preparation). Trade preferences and food security in donor and recipient countries [Target journal: *World Development*].