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Covid-19: Shaping the Nexus between State-Business Relations and Global Value Chains: The Case of Horticulture in Kenya

**Jodie Thorpe, Hannington Odame, Evert-jan Quak and
Seife Ayele**

April 2022

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Summary

The effect of the Covid-19 pandemic on global value chains has been topical of late, yet little work has been done to explore how interactions between value chain businesses and state actors, which we refer to as the state-business relations and global value chain nexus (SBR-GVC nexus), have responded. Focusing on the French bean and avocado sectors in Kenya, this paper shows how national and global measures to combat the pandemic significantly disrupted these horticultural sectors, affecting multiple aspects including the harvesting of avocado, monitoring of pesticide residue levels in French beans, and transport and logistics for both. As the SBR-GVC nexus in Kenyan horticulture has responded to these challenges, state actors have responded to business to facilitate logistics, and collaborated with business associations in hybrid regulatory structures. In these hybrid structures, leading exporters are monitoring and enforcing measures designed to protect human health and environmental effects as well as the quality of products. While it is too early to assess the longer-term impact of these dynamics, the paper explores their potential implications, identifying areas for future research.

Keywords

Covid-19, Global value chains, Horticulture, Kenya, State-business relations

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Acronyms

AAK	Agro-chemicals Association of Kenya
AFA	Agriculture and Food Authority
AfCFTA	African Continental Free Trade Area
ASOK	Avocado Society of Kenya
ASTGS	Agriculture Sector Transformation and Growth Strategy
CAADP	Comprehensive Africa Agriculture Development Programme
COLEACP	Europe-Africa-Caribbean-Pacific Liaison Committee
DEFRA	UK Department for Environment, Food and Rural Affairs
EAC	East African Community
ECS	Electronic Certification System
EPA	Economic Partnership Agreement
EU	European Union
FCDO	UK Foreign, Commonwealth and Development Office
FPC	Fresh Produce Consortium
FPEAK	Fresh Produce Exporters Association of Kenya
FSWR	Food Security War Room
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GoK	Government of Kenya
GVC	Global Value Chain
HCAS	Horticulture Competent Authority Structure
HCD	Horticultural Crops Directorate
IDS	Institute of Development Studies
IFS	International Featured Standard
KALRO	Kenya Agricultural Research Organization
KEBS	Kenya Bureau of Standards
KEPHIS	Kenya Plant Health Inspectorate Services
KEPROBA	Kenya Export Promotion and Branding Agency
KEPSA	Kenya Private Sector Alliance
KFC	Kenya Flower Council
KQ	Kenya Airways
MoALF&C	Ministry of Agriculture Livestock, Fisheries and Cooperatives
MoFA	Ministry of Foreign Affairs
MoTied	Ministry of Trade, Industry and Enterprise Development
MRL	Maximum residue level
MSC	MicroSave Consulting
NFSCC	National Food Safety Coordinating Committee
NPPO	National Plant Protection Organization
OECD	Organisation for Economic Co-operation and Development
PCPB	Pest Control Products Board

PPE	Personal protective equipment
SBR	State-business relations
SBR-GVC	State-business relations and global value chain nexus
Nexus	
SDGs	Sustainable Development Goals
SPS	Sanitary and phytosanitary
UK	United Kingdom
USA	United States of America
USAID	United States Agency for International Development
WHO	World Health Organization

1. Introduction

Destabilising events like economic shocks and pandemics create pressures and ruptures that can drive transformations in societies and economies. They can trigger a momentum through which existing relationships and interactions are disrupted, and new structures and processes emerge. However, such transformations are not guaranteed. They depend on having viable alternatives which overcome path dependence. Otherwise, negative feedback loops return the system to its former state, albeit with some adaptations (Geels and Schot 2007; Thorpe 2014; Unruh 2000).

Covid-19 has ravaged the health and livelihoods of people all over the world.¹ It has disrupted food systems and threatens to reverse progress towards achieving multiple dimensions of the Sustainable Development Goals (SDGs) (Laborde, Martin and Vos 2021; Pahl *et al.* 2021). While these effects are still unfolding, it is clear that those developing countries which are highly integrated into the world economy through global value chains (GVCs) are particularly vulnerable to disruption (Pahl *et al.* 2021).

While disruption to GVCs has been a topical theme of research (Aylor *et al.* 2020; Gölgeci, Yildiz and Andersson 2020; Pahl *et al.* 2021; Strange 2020), studies have paid little attention to the effects of the pandemic on state-business relations (SBRs) or how these relations in turn affect GVCs during and beyond shocks. Yet the importance of different actors – both within and beyond the state – in shaping value chains and their socioeconomic outcomes has been identified (Alford and Phillips 2018; Mayer and Phillips 2017; Pasquali, Barrientos and Opondo 2021; Tyce 2020).

During the Covid-19 pandemic, Kenya introduced several measures aimed at mitigating the adverse health effects of the pandemic which, as this paper will discuss, had significant implications for its value chains and for interactions within them. This paper explores these dynamics from the perspective of what we call the SBR-GVC nexus. This nexus encompasses vertical business-to-business interactions in GVCs, horizontal SBRs in domestic economic sectors and the interactions between them. It is an adaptation of Horner and Alford (2019) and their discussion of the state-GVC nexus, adding a stronger political economy focus.

We develop an in-depth case study of the Kenyan horticultural sector and use it to explore our primary research question:

¹ See the [World Health Organization \(WHO\) Coronavirus \(Covid-19\) Dashboard](#).

- How are strategic (short-term) responses to the Covid-19 pandemic in the horticulture sector affected by and affecting the SBR-GVC nexus?

We examine these developments using primary data collected through key informant interviews and focus group discussions, and an extensive review and synthesis of literature relevant to GVCs and SBRs, as well as papers specific to the Kenyan horticulture sector.

Our findings show that Covid-19 disruptions provoked key responses in the SBR-GVC nexus to facilitate and regulate the sector, in particular:

1. Horizontal public-private dialogue between business and state actors to facilitate value chain adaptations in response to Covid-19 triggered disruptions to transportation, flights, and shipments. These disruptions affected the delivery of inputs to the horticultural sector, and fresh vegetables and fruits to global markets.
2. Horizontal collaboration between industry and regulators working closely in tandem to overcome ongoing quality and food safety challenges that were exacerbated by Covid-19, due to impacts on the labour force, the cost and availability of inputs, and on monitoring processes. To overcome these challenges, state agencies and businesses have co-produced mandatory regulations in which private sector enforcement through industry associations plays a prominent role.

The rest of the paper is organised as follows: Section 2 reviews and synthesises concepts on SBRs and GVCs that are relevant to this paper, leading to the presentation of the framework we call the SBR-GVC nexus. Following an outline of the methods used in this study, Section 4 provides an overview of the governance and political economy of Kenyan horticulture. Section 5 sets out our empirical findings, first identifying the effects of Covid-19 on horticultural value chains in Kenya, and then discussing three key issues affecting specifically the avocado and French bean value chains, and how the SBR-GVC nexus has responded. Finally, Section 6 explores the implications of these findings for our understanding of the SBR-GVC nexus.

2. Literature review

2.1 Vertical and horizontal governance dynamics affecting value chains

2.1.1 Vertical governance of value chains

Introduction

Value chains encompass the full range of activities that are required to bring a good or service from conception through the different phases of production (provision of raw materials; the input of various components, subassemblies, and producer services; and the assembly of finished goods) to delivery to final consumers, as well as disposal after use (Cattaneo, Gereffi and Staritz 2010; Kaplinsky and Morris 2000). With approximately 50 per cent of all trade as part of GVCs (World Bank 2020: 2), they have become the ‘world economy’s backbone’ (Cattaneo *et al.* 2010: 7). The most powerful or ‘lead firms’ in these value chains are their de facto ‘governors’, setting terms for chain participation, and creating conditions that either stimulate or hinder upgrading of developing country firms and producers into more productive and higher value activities (Gereffi, Humphrey and Sturgeon 2005; Keane 2012). Much of the GVC literature focusses on this feature, to understand how the governance structure of value chains influences upscaling efforts or may also result in downscaling. While the GVC perspective focuses primarily on business-to-business relations, the Global Production Networks (GPN) approach (Coe *et al.* 2004; Henderson *et al.* 2002; Kano, Tsang and Yeung 2020) takes the broader view that development and integration in the global economy relies on both firms and non-firm actors (Coe *et al.* 2004).

Gereffi *et al.* (2005) discuss GVC governance in detail, identifying different types of governance based on their relative degrees of coordination and power asymmetry. Amongst the five forms² they discuss is ‘hierarchy’, a governance form characterised by vertical integration with ‘managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates’ (Gereffi *et al.* 2005: 84). They also discuss ‘captive’ forms, in which GVCs are governed by lead firms that concentrate on activities with the highest value added, often in retail and marketing activities. Producers and suppliers are not subsidiaries but are ‘transactionally dependent’ (*ibid.*: 84) on these more powerful lead firms; and hence monitored and controlled by them.

² The five forms are: market, modular, relational, captive and hierarchy.

GVCs and private sector self-regulation

In the last two decades, the rise of GVCs has seen a shift from government to private sector (self-) regulation through value chains (Dolan and Humphrey 2000, 2004; Ponte and Gibbon 2006). This private regulation involves nonbinding, voluntary standards of business conduct (Abbott 2009), including common norms and rules, memorandums of understandings, regulatory contracts, codes of conduct, and voluntary agreements. These are often between economic actors but could also involve social and civil society organisations (e.g., through multistakeholder governance) (Bartley 2022). Such schemes have become a common feature of GVC governance as businesses, mainly the ones that are highly visible in downstream consumer markets, use these mechanisms to control production and quality issues, especially in response to pressures to address social and environmental impacts (Cafaggi and Renda 2012; Mayer and Gereffi 2010). As voluntary regulation is adopted, and state or public regulation is put aside, it has fuelled demand for audits, management systems, traceability technologies, and assurances of best practices (Clark and Hussey 2016; Power 2019).

The arguments in favour of private self-regulation point to weaknesses in public approaches, specifically at the transnational level where coordination challenges, inconsistency between standard setting and enforcement, and divergence between administrative and judicial enforcement, and within the latter among domestic courts. These are said to make transnational public regulation an insufficient response (Caffaggi and Renda 2012). However, over the years, the potential for abuse has become clear. 'Private rules are routinely evaded, watered down, or redefined on the ground', and even on paper these regulations 'come with blind spots and countervailing processes' (Bartley 2022: 188-189). They can be used to 'capture' suppliers, to weaken the power of the state, or to divide civil society organisations. On the other hand, businesses and industry associations with a specific mission and a management board that reflects stakeholder concerns, often due to public opinion campaigns, can improve alignment with the public interest (Cafaggi and Renda 2012).

Mayer and Phillips (2017: 136) explain how this 'outsourcing' of governance has also changed the state. They take as starting point a threefold typology of the key governance functions of the state, classified as facilitative, regulatory, and distributive (Gereffi and Mayer 2006). Facilitative governance refers to state activities that enable actors in GVCs to flourish; regulatory governance refers to the state putting legislation, rules, and standards in place to secure a level playing field; while distributive governance refers to ways the state can intervene to ensure that some wealth accumulation by 'winners' is redistributed to support the 'losers'. The authors show that the state's main role has shifted towards 'facilitating' GVC efficiency, while regulatory governance has been delegated

towards either private self-regulation or hybrid public-private approaches (Mayer and Phillips 2017: 135). 'Distributive' governance (to reduce inequality and increase opportunity) has also faltered due to an emphasis on competitiveness (Mayer and Phillips 2017: 146).

Alford and Phillips (2018) offer empirical evidence showing how these dynamics played out in the political-economic context of the labour crisis in the South African fruit sector in 2012 and 2013. The South African government sought to strengthen labour regulations governing agricultural production; however, this was ultimately unsuccessful in spurring meaningful change. Their analysis shows that the labour crisis came about due to the failure of state governance to improve distributive outcomes when faced with the competitive commercial value chain dynamics of GVCs. For the same reasons, they argued, the state reaction to the labour crisis in the fruit sector, of bringing in more regulation aimed at improving conditions for producers and workers, was not successful.

2.1.2 Horizontal governance through state-business relations

State-business relations

A more political economy perspective on value chains emphasises that the interactions between state and business critically shape outcomes across different political and economic contexts (Neilson, Pritchard and Yeung 2014; Saha 2019; Tyce 2020). These SBRs, understood as processes of consultation, coordination and reciprocity between state and market actors (Ayele *et al.* 2016; Sen 2013), influence the policy environment in areas such as macroeconomics, trade, industrial development, taxation, public expenditure, infrastructure, competition, anti-corruption, transparency and accountability, and private sector development (Sen 2015). SBRs include both formal, regular, coordinated, and informal ad hoc interactions between state and business actors (te Velde 2013). They are not static, but emerge over time, reflecting power relations and interest differentiations that together influence interactions (Ayele *et al.* 2016).

Where SBRs are characterised by coordination and some degree of trust, they have been found to raise the rate of investment by minimising uncertainties in the minds of investors, and by creating an enabling institutional environment through the provision of infrastructure, effective public administration (or the lack of corruption) and secure property rights (Sen 2013). They can also promote productive investment and minimise rent seeking, which refers to the attempt to profit from policy changes without investing in wealth creation (te Velde 2009).

Recently, authors have begun to focus more explicitly on the state and value chains. The 'State-GVC Nexus' (Horner and Alford 2019) explores the roles that states may play role in value chains and their development; as facilitators,

regulators, buyers, and/or producers (Horner 2017). Behuria (2020) applies these ideas in the context of Rwanda, showing how public governance in the coffee sector combined with dynamics in global coffee value chains shaped upgrading pathways. Tyce (2020) and Lombardozzi (2021) apply a similar approach to horticultural value chains in Kenya and Uzbekistan, respectively. They find that by using coordinated interventions and a gradual approach to market reforms, states are able to promote economic transformation, even in highly competitive GVCs. Pasquali *et al.* (2021) go beyond the state to explore 'polycentric governance' in which private, public and social governance through civil society are intertwined and connect GVCs with domestic value chains and informal sectors.

Finally, one early study on states and GVCs for personal protective equipment (PPE) during the Covid-19 pandemic finds the state actively promoting value chain adaptation (Dallas, Horner and Li 2021). Looking across Europe, the US, and Asia, the authors find states interacting with private actors to overcome 'mutual constraints' affecting PPE value chains. Initially through actions which were complementary to GVCs, states facilitated value chain adaptation in ways that mostly maintained the flow of PPE. Once the crisis became global and systemic, states became much more interventionist, including implementing unilateral export bans and licensing restrictions. However, the effectiveness of state approaches, even under emergency interventions, was limited by structural factors in particular value chains, including geography and technological attributes of products.

SBRs, GVCs and the role of industry associations

Where businesses interact with the state, umbrella industry or sectoral associations can play an important role in aggregating and intermediating private interests and enabling more institutionalised interactions. They aggregate and communicate information on sectoral constraints and priorities to government, monitor the quality of public investments, and provide firms with information on regulations (Qureshi and te Velde 2013; te Velde 2009). They may engage in formal public-private dialogue with state actors, and in lobbying on a more informal or ad hoc basis. There is a risk that these interactions promote rent-seeking rather than productive investment. However, this risk is reduced where the state retains some autonomy from business (Evans 1995), and where associations representing a range of businesses limit the pursuit of particularistic benefits (Haggard, Sylvia and Schneider 1997: 49).

Industry associations may also play a governance role where public agencies lack resources or capacity, or where institutions are weak and regulatory quality is low (Sabry 2019; Streek and Schmitter 1985). They may promote policy innovations, monitor members for compliance with agreed standards, and

sanction transgressors where necessary. Papaioannou *et al.* (2015) offer an example from the health sectors in South Africa and India, showing how industry associations played a dual role in both the diffusion and governance of health innovations. In their knowledge diffusion role, associations seek, coordinate and/or promote common objectives. In their governance role they engage with governments to co-produce policies and regulations. Papaioannou *et al.* (2015) conclude that this duality weakens the political neutrality of associations but makes them more effective institutionally.

Effective associations can also play a role with respect to GVCs, by engaging global buyers to understand and transmit international standards, and accelerating members' capability improvements in line with these standards. However, whether in the domestic or global context, the challenge in many low and lower middle-income countries is the low capacity of industry associations limiting the quality of these interactions with global buyers and with the state (Bräutigam, Rakner and Taylor 2002; Charles *et al.* 2017; Taylor 2007).

2.1.3 Global value chain adaptation to deal with disruptions

As major shocks such as the financial crisis and natural disasters have highlighted vulnerabilities in the global economy, there has been an increasing preoccupation with the resilience of GVCs and their ability to withstand shocks. While originally GVCs were seen to offer cost-efficiency and lead firms prioritised running activities in the most efficient way (i.e., maximising firms' output-to-input ratio) (Clarke and Boersma 2017), it is now argued that efficiency and resilience are not mutually exclusive in the long run (Gölgeci *et al.* 2020).

Which sectors (and firms) adapt better than others depends on two factors, according to Aylor *et al.* (2020: np): the "impetus to change," such as economic or political pressures, and "the ease of adjustment", such as the ease or difficulty of replacing certain suppliers or the capital costs associated with moving to new locations. A focus on the impetus to change has become prevalent in recent years. For example, Qiang *et al.* (2020) mention the example of the USA and Japan. In the USA the government is working on proposals to push American companies to move operations or key suppliers out of China by offering tax breaks, while the Japanese government agreed on a US\$2.2 billion support package to subsidise manufacturers that move their production out of China (*ibid.*). Such pressures could increase even further due to Covid-19.

The impetus to change is also driven by vertical value chain governance. For example, more than half of the registered cut flower exporters in Kenya were reported to be on the verge of closure in 2009, due to reduced market opportunities in GVCs and increased costs of inputs such as fertiliser (Mwega 2010). Smaller farms were hit especially hard, although the nature of the impact

depended on value chain structures. Contract farming arrangements tightened the relationship between the contracted farm and the lead firm, while small-scale farmers outside these strongly coordinated value chains were forced to be adaptable to survive (Orr 2018). This included, for example, looking for new opportunities in (less tightly governed) shorter domestic or regional value chains.

In contrast to the GVC literature, studies on horizontal SBR linkages do not have the same preoccupation with resilience. Rather they often use external crises to understand the nature of governance arrangements between states and businesses, and changes to these structures that are engendered by the shock (see, for example, Silva 2002; also, Khan 2018). That said, SBRs do also respond to disruptions, including through supporting value chain adaptation and resilience, as already discussed with reference to PPE during the Covid-19 pandemic (Dallas *et al.* 2021).

Another example of SBRs supporting value chain adaptation is the case of horticultural GVCs in Kenya during the global financial crisis. At that time, the government was arguably 'pushed into an increasingly reactionary, fire-fighting role', although it 'still made an important contribution to protecting the sector that would have been beyond the means of private actors alone' (Tyce 2020: 1888). The government increased its cooperation with horticultural associations, actively tried to mitigate Kenya's reliance on European markets by opening new trade and flight routes to other countries, strengthened regional markets for small- and medium-sized players, reasserted the state within the regulatory sphere, and started a process to convince the EU that Kenya should sign an individual trade agreement (an Economic Partnership Agreement (EPA)) without waiting for other East-African Community members to join as was originally planned.

2.2 The SBR-GVC nexus: Conceptual framework

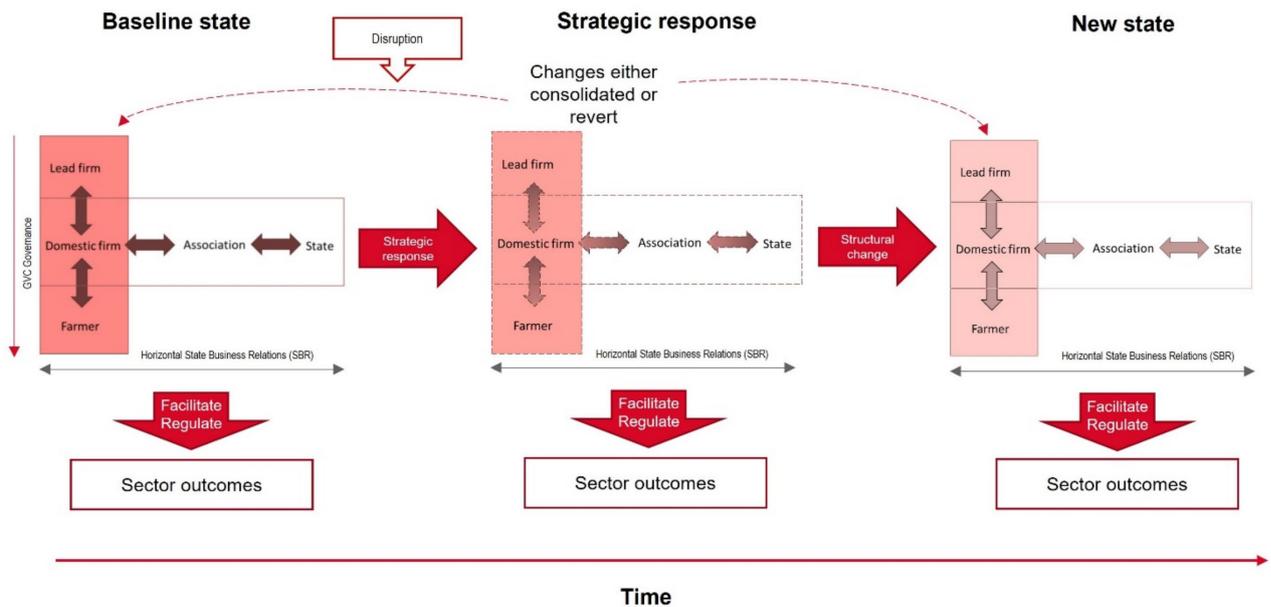
Based on the literature review, we develop a conceptual framework to integrate these vertical and horizontal governance arrangements, which we term the 'SBR-GVC nexus'. This framework draws inspiration from Horner and Alford's (2019) state-GVC nexus but focuses not only on roles of the state in GVCs but also the relationship between state and business actors. We expect that the ways in which value chains and sectors react to and are affected by shocks depends for a large part on this SBR-GVC Nexus.

Figure 2.1 (below) illustrates the SBR-GVC nexus. It involves vertical governance structures in GVCs (vertical brown/pink arrows), which represent the interactions and arrangements made between upstream and downstream business actors. It also involves horizontal governance structures between the state, industry associations and firms in the sector (horizontal brown/pink arrows). These vertical and horizontal structures interact, and therefore are

connected in our framework. These interactions influence sector outcomes which are both regulatory, restricting the activities of businesses in value chains, and facilitative, assisting value chains to respond to challenges, as discussed by Horner and Alford (2019).

In normal circumstances, the nexus is stable and does not change easily, but it can be disrupted by shocks, such as economic downturns, political upheavals, natural disasters, or health crises like the Covid-19 pandemic. At first, the pre-existing nexus will dominate, shaping the initial or ‘strategic’ response to the crisis (e.g., information sharing, support from lead firms to suppliers, adaptation to new technologies, and different forms of and fora for decision-making). However, the shock can also create the conditions for longer-term reconfigurations (Geels and Schot 2007; Thorpe 2014; Unruh 2000). These emerge where the intermediary structure of the nexus, as shaped by the initial strategic response, becomes institutionalised and leads to ‘structural’ (forward red arrow) change with a new stable governance nexus. Alternatively, a negative feedback loop may lead the nexus to revert to its previous stable state (reverse dotted red arrow). Each stage on the timeline (baseline, strategic response, new state) is likely to have different sector outcomes.

Figure 2.1: Conceptual framework on the dynamics of the SBR-GVD nexus due to Covid-19



Source: Authors' own

3. Methodology

The starting point for this research is the SBR-GVC nexus just presented, based on key GVC and SBR governance concepts (Figure 2.1). The rest of this paper applies these concepts to the study of governance dynamics shaping Kenyan horticultural value chains in response to Covid-19. Specifically, we ask how strategic responses to the Covid-19 pandemic are affected by and themselves affect the SBR-GVC nexus in Kenyan horticulture. We are also interested in exploring the longer-term implications of these dynamics.

We focus this exploratory case study on horticulture in Kenya. It is a sector that is: (a) highly globally connected, and (b) perishable and hence highly sensitive to disruptions. Within the horticulture sector, we focus specifically on French beans and avocados. French beans are grown in considerable quantities in Kenya, primarily as an export crop, and plentiful information is available on the history and development of this GVC. We add export avocados as a GVC which has been less studied but is gaining economic importance in the country. The area under avocado production has grown considerably in recent years, rising to 16,501 ha in 2018 and 20,240 ha in 2019, which is attributed to export-oriented medium and large farmers planting new orchards in non-traditional areas of the Rift Valley and Western regions of Kenya (HCD 2019, 2020). This growth has also been supported by the provision of seedlings by national and county governments.

To analyse the response of the SBR-GVC nexus to Covid-19 disruptions, we collected primary data from 28 respondents through both focus group discussions and key informant interviews (Table 3.1). These primarily took place between July and October 2021, with some follow ups taking place until January 2022. Respondents were drawn from different nodes of the avocado and French bean value chains in three counties of Kenya: Kirinyaga, Muranga and Nairobi, as well as from relevant regulatory authorities.

Table 3.1: Actors and number of individuals interviewed

Value chain node	Value chain			Number of key informant interviews conducted and with whom	
	Avocado	F. beans	Both	Groups	Individuals
Producer organisations	2	1	0	3	14
Exporters	1	1	2	4	4
Processors	1	0	0	1	2
Business associations	1	0	2	0	4
Government - regulation	0	0	2	0	2
Government - policy	0	0	2	0	2
Total	5	2	8	8	28

Source: Authors' compilation

Before we present the findings from these interviews and our analysis of the response by the SBR-GVC Nexus, we first set out the Kenyan context relevant to the value chains of French beans and avocado in the period before the pandemic.

4. SBRs and the horticulture value chain in Kenya before Covid-19

4.1 The political economy of Kenyan agriculture

Economic context

Agriculture is fundamental to Kenya's economy. It directly contributes 26 per cent of gross domestic product (GDP), a figure at least doubled if indirect linkages with other sectors are included (FAO nd). It also employs more than 40 per cent of the total population (*ibid.*). The major agricultural exports are tea, coffee, cut flowers, and fruits and vegetables. Kenya's agricultural trade balance is currently positive, which also highlights the strategic importance of the sector. Export-oriented horticulture and floriculture directly account for more than a third of Kenya's agri-GDP (Republic of Kenya 2019). Horticulture sector earnings stood at 24 per cent of total export earnings in 2019, making it the top export earner in the country (KNBS 2020), overtaking tea and coffee.

Europe is a major destination for Kenya's agricultural exports. Although Kenya's total exports to the European Union (EU) are smaller than to the East African Community (EAC) (21 per cent compared with 25 per cent for the EAC), Europe is the prime export destination for the country's agricultural goods, particularly the countries of the Netherlands, the UK and Germany (Rampa and Dekeyser 2020: 22). This is largely due to Kenya enjoying preferential market access to the EU (Republic of Kenya 2019), while the EAC has relatively high protection barriers against agricultural imports. Several non-tariff barriers including ad hoc import and export bans have at times depressed trade with neighbouring countries. Kenya is also a member of the future planned African Continental Free Trade Area (AfCFTA), which has had its implementation delayed by Covid-19.

The structure of the agriculture sector

Kenya's agricultural landscape is characterised by small-, medium-, and large-scale farming, depending on the region. Small-scale farmers account for approximately 80 per cent of horticultural production, with land sizes typically ranging from one to two and a half acres (Care Kenya 2016). The political elite connect to, or are themselves, medium or large farmers (Jayne, Chamberlin and Headey 2014), who create a system of incentives to their advantage, as is evident in the several input subsidies that favour them.

Two distinct national horticultural systems have developed. One is based on small-scale production and informal networks. In this system, farmers mostly

produce under rainfed conditions, and have limited capital, storage, and processing facilities. These cash-strapped farmers often sell their surplus produce around the peak of harvest season at the lowest prices - to middlemen and informal traders. These middlemen are at the centre of a complex series of exchanges and economic intermediaries that link producers to rural wholesalers, urban wholesalers, global and local traders, supermarkets, shop owners, and street sellers. The other is based on contract-farming for higher value chains including export agriculture. Global standards required for agricultural exports are becoming increasingly more difficult to attain for the smallest producers, although those that can participate can sell at premium prices.

Meeting stringent market requirements set by EU regulators and retailers requires investments in systems and long-term structures which can be costly for small-scale farmers (Dolan and Humphrey 2000). As a result, foreign investors are teaming up with local elites, creating an overall incentive environment that favours fewer large and medium-sized producers, contributing to a cycle of underinvestment and underproduction for the latter. Foreign investors, notably from the Netherlands, the UK, and India, are also investing directly in Kenyan agriculture, particularly large export-oriented horticulture and floriculture operations (Kaag and Zoomers 2014). This causes inequality in income growth and investments between those engaged in high-value chains and those that are not, and between large and small producers.

Although export horticulture remains important, there has also been growth in regional and domestic value chains. Initially, these offered alternative markets for produce that was rejected from export markets due to poor quality and standards compliance. However, a more independent regional value chain has now developed to bring produce to regional supermarkets, and which acts as an alternative buyer to exporters and international retailers (Krishnan 2017). In addition, the government has a vision to promote access to new markets and reduce dependence on Europe, developing alternatives both regionally and internationally with destinations including China, Russia, East Asia, Middle East, and the USA (Heher and Steenbergen 2021; Tyce 2020). At the same time, Kenyans are also investing in land, and food production and distribution systems in neighbouring countries.

Policy context

Kenya's agriculture is governed by a changing configuration of public, parastatal, non-governmental and private sectors, affected also by the devolution process ushered in under the 2010 Constitution (Boulanger *et al.* 2018). At the national level, key government ministries with respect to horticultural value chains include the Ministry of Agriculture Livestock, Fisheries and Cooperatives (MoALF&C), Ministry of Trade, Industry and Enterprise Development (MoTIED) and Ministry

of Foreign Affairs (MoFA). Under devolution, while the national government is responsible for overall coordination and policy formulation in agriculture, increased responsibilities for agricultural development are delegated to the 47 county governments. Food transport between counties is often taxed at each county border, which has become a major concern because it raises the cost of food distribution within the country (Kenya Market Trust 2016).

This persistent poor agricultural sector coordination prompted the Government of Kenya (GoK), in collaboration with key stakeholders, to develop the Agriculture Sector Transformation and Growth Strategy (ASTGS) 2019-2029. The Agriculture Sector Transformation and Growth Strategy (ASTGS) is aligned to Constitutional Article 43, Kenya's Big Four agenda, the Comprehensive Africa Agriculture Development Programme (CAADP) and the Malabo Declaration, the African Union's Agenda 2063, and the SDGs (Republic of Kenya 2019). The ASTGS aims to modernise agriculture by 2029 by increasing farmers' income, output and value addition, and household food security, particularly in arid and semi-arid regions. The strategy also encourages the digitisation of agriculture, making data available, usable, timely, and interoperable. The strategy recognises the need for both traditional data such as censuses and surveys in addition to other innovative data sources.

Technical and financial actors active in the agri-food sector, such as bilateral donors and international organisations, often hold considerable power and influence (Rampa and Knaepen 2019). Development partners such as the EU Delegation and United States Agency for International Development (USAID) have been involved especially in strengthening the involvement of smallholder farmers (e.g., outgrowers) in the value chain. They have also assisted private and public sector stakeholders in the chain to meet regulatory requirements, and supported projects with a wider, more cross-sectoral remit (e.g., climate change). International NGOs such as Oxfam have played a role in highlighting issues related to social, labour, and environmental aspects.

4.2 The SBR-GVC nexus in Kenyan horticulture

Vertical governance of Kenyan horticultural value chains

Before the 1990s, export horticulture operated mostly through the spot market, based on simple quality indicators such as size and colour, and with little influence from exporters or buyers over production activities. European markets could be accessed through meeting basic food safety requirements which were easy to comply with (Jensen 2008). However, in the 1990s there was a shift from the spot market to more structured and integrated value chains. This change was at least in part a response to changing regulations, stemming from both public

policies that resulted from EU food safety crises in the 1990s and private quality standards, especially those imposed by British supermarkets (*ibid.*). Exporters began sourcing more from contracted farmers through outgrower or contract farming arrangements which also provided farmers with information, training, and inputs. Kenyan exporters also began to move into higher-value product lines (e.g., preparation and packaging of French beans in Kenya), thereby creating more value addition in-country (Gereffi and Kaplinsky 2001).

European retailers are key actors in these horticultural GVCs, influencing production volumes and prices, and setting production and processing standards such as GlobalGAP for production, and International Featured Standard (IFS) food for processing (Heher and Steenbergen 2021). Although initially voluntary, GlobalGAP has essentially become a mandatory requirement to enter European markets (Ponte and Gibbon 2006), driving Kenyan farmers to adopt EU-compliant practices (Krishnan 2017). In the 2000s, exporters also made significant investments to upgrade packhouses to meet UK standards (Heher and Steenbergen 2021).

As Kenyan exporters conform to market requirements, they have also become influential in the patterns of production, processing, and trading within Kenya, such as the partial shift away from smallholder production towards larger-scale farms. They employ independent technical advisors to ensure compliance with standards in key areas such as chemical application, enabling them to essentially control farmers' compliance decisions and activities (Ajwang 2020). Exporters are also a key provider of market information in areas like food safety requirements (Jensen 2008).

Horizontal sector governance through state-business relations

Compared to traditional commodities such as sugar, maize, coffee, and tea, the GoK had a limited role in the early development of export horticulture. The sector had little access to subsidy and extension programmes (Care Kenya 2016), and marketing was left up to the private sector rather than being controlled through state marketing boards. From as early as the mid-1970s, however, the Kenyan state has played a more significant role (Tyce 2020), including in facilitating access to markets, infrastructure, and inputs. National public agencies active on the ground include the Kenya Plant Health Inspectorate Services (KEPHIS), the Horticultural Crops Directorate (HCD), the Pest Control Products Board (PCPB), the Agriculture and Food Authority (AFA) and the Kenya Agricultural Research Organization (KALRO).

In particular, KEPHIS plays a quality assurance role, regulating the sanitary and phytosanitary (SPS) requirements of importing partners. KEPHIS is also the National Plant Protection Organization (NPPO) in Kenya and is responsible for

the certification of fresh produce exporters to ensure compliance to SPS and quality standards (Kamuti 2015). KEPHIS, in collaboration with horticultural stakeholders, ensures early detection of pests and pesticide residues and trains smallholder farmers on produce quality management and traceability (Kleih *et al.* 2017). For their part, HCD is responsible for licensing exporters and setting rules for compliance. These include the Horticulture Regulations 2020 and the national Horticulture standard KS1758.

On the business side, the Kenyan horticultural sector is organised to engage with the state through influential and capable industry associations, which take a guiding role in sector development and lobby the government to foster an enabling environment (Tyce 2020). These include the Fresh Produce Exporters Association of Kenya (FPEAK); the Fresh Produce Consortium (FPC) and the Avocado Society of Kenya (ASOK); as well as the Agro-chemicals Association of Kenya (AAK). FPEAK along with Kenya-GAP also plays a role in co-producing and monitoring the implementation of SPS and quality regulations.

Box 4.1: The maximum residue level (MRL) crisis

The maximum residue level (MRL) crisis began in early 2013, following an increase in the number of interceptions of Kenyan beans at EU borders for exceeding the legal limit for pesticide residues in preceding years. In January 2013 alone more than 25 per cent of Kenya's vegetable exports to the European market were rejected after being found to contain traces of dimethoate (Kleih *et al.* 2017). Produce that did not meet legal standards was entering export channels through 'backstage arrangements' and the diversion of crops intended for domestic markets, as well as poor documentation and inadequate inspection at Kenyan ports (Pasquali *et al.* 2021: 19).

As a result, Kenyan beans were listed as 'high-risk' under Regulation EC 669/2009 and subjected to increased testing on EU entry at a level of 10 per cent. In other words, a sample of 10 per cent of all French beans imported from Kenya were subjected to checks. This Directive hit the competitiveness of Kenyan exports through a delay in products reaching EU supermarkets, led to an increased the cost of MRL testing and a potential loss of consumer confidence (USAID/KAVES 2015).

Within Kenya, the sector responded by setting up of the National Food Safety Coordinating Committee (NFSCC) and a national action plan to improve practices and procedures in the supply chain, and to improve inspection services and pesticides residue monitoring (COLEACP 2020). Europe-Africa-Caribbean-Pacific Liaison Committee (COLEACP) was asked to support

implementation, including working with other agencies and donors. A troubleshooting mission was undertaken to review the implementation of Good Agricultural Practices (GAP) in 37 companies, focusing on pest management issues, training technical staff and middle managers, and providing coaching sessions and follow ups with spraying teams. These efforts were supported by KEPHIS, Pest Control Products Board (PCPB), KALRO and HCD through laboratory support and training sessions, among other elements. Following monitoring by EU authorities of public and private sector actions, French beans from Kenya were delisted from being high-risk and subject to reduced testing on EU entry at a level of 5 per cent.

Source: Authors' own

Following the MRL crisis, HCD sought to increase their regulatory oversight by introducing new licensing for third-party brokers (middlemen) in 2014, in order to formalise their activities, as well as requiring annual renewal of exporters' licenses (versus every five years previously). Harvested beans became subject to checks for pesticide residues at an accredited KEPHIS laboratory and inspection for the presence of pests at the port of exit (Fulano, Lengai and Muthomi 2021). KEPHIS also strengthened phytosanitary controls through electronic export certificates via the Electronic Certification System (ECS) (Ajwang 2020).

More recently, the national horticulture standard, KS-1758, was set out by the GoK, a process which also involved the private sector and the EU (Ajwang 2020; Pasquali *et al.* 2021; Tyce 2020). KS-1758 specifies hygiene and safety requirements in the horticulture sector which apply to the whole value chain (not only to production activities). The first phase of KS-1758, launched in 2019, focuses on exporters and importers who could have their licence revoked if they do not comply, but who are most easily able to comply because they already work to GlobalGAP standards. However, the intention is to reach the whole sector eventually, including domestic value chains and informal markets (Pasquali *et al.* 2021).

Hybrid governance through public-private structures and processes

A notable feature of state-business relations in the horticulture sector over the last decade is the growing role of hybrid public-private governance (Tyce 2020). These structures are often set up to respond to important or urgent issues related, for example, to regulations in overseas markets. Public sector participants often include institutions like HCD, KEPHIS, AFA, KALRO, PCPB and the Kenya Bureau of Standards (KEBS), as well as universities. Private sector participants often include FPEAK and AAK, as well as the Kenya Flower Council (KFC).

A key example is the Horticulture Competent Authority Structure (HCAS), which was established in response to the MRL crisis. HCAS members included the MoALF&C, KEPHIS, HCD, KALRO, PCPB, FPEAK, AAK and KFC. HCAS met with members twice a month to discuss critical issues, with decisions taken through HCAS communicated by the industry associations back to their members. Peer pressure encouraged compliance with these decisions, although cases of non-compliance were reported to HCD and KEPHIS, which could apply a sanction. HCAS therefore relies on trust, reciprocity, peer pressure and persuasion to actualise regulation, which has proved to be a productive approach to resolving contested issues that are difficult to address through more straightforward regulation (Ajwang 2020). This structure nevertheless raises a number of issues, as processes are opaque and it is unclear, for example, how much influence business associations had in these arrangements (*ibid.*). Some private sector stakeholders are not represented, notably farmers, while tensions between exporters and middlemen also meant that the latter did not participate (*ibid.*).

Another example is the Kenya National Horticulture Task Force, which was first set up in 2004 to respond to challenges in global value chains. In the past, activities have included awareness raising, capacity building, coordination, accreditation, risk assessment and market diversification, as well as dealing with specific issues like interceptions and marketing standards (Kigamwa and Kedera 2011). Current membership is similar to HCAS, but it also includes the Ministry of Health, the State Department for Trade, the National Treasury, and the Kenya Export Promotion and Branding Agency (KEPROBA).

Notably, this type of public-private structure is not confined to horticulture but represents a wider governance trend in Kenya, following the adoption of the new Constitution which requires the government to actively engage stakeholders in decision-making. This has seen public-private dialogue processes used as a means of coordinating economic problem solving towards an enabling business environment across the economy. The main overarching public-private dialogue platform is the Presidential Round Table, first set up in 2013. The Round Table is led by the President and his cabinet in cooperation with the Kenya Private Sector Alliance (KEPSA), the apex body of the private sector in Kenya.

4.3 Summary: The SBR-GVC nexus in horticulture before Covid-19

At the time immediately preceding the pandemic, the SBR-GVC nexus in Kenyan horticulture (Table 4.1) was dominated vertically by EU retailers as lead firms, especially in the French bean value chain, although the Kenyan government was also actively promoting access to alternative markets (Heher

and Steenbergen 2021; Tyce 2020). Kenyan exporters also acted as chain governors, vertically integrating production through contract farming relations with small-scale producers, and increasingly on their own plantations. Other key actors are traders and brokers, which collect and transport produce. In the avocado value chain, the number of these brokers have been proliferating, including also informal and illegal actors.

Horticultural industry associations include FPEAK and FPC, with FPEAK playing a key role. Other influential associations include KFC and AAK. KEPSA is the umbrella private sector association in Kenya, and important in national dialogues such as the Presidential Round Table, for which it is the main private sector voice.

The most important state regulatory agencies which engage with the horticulture sector are HCD and KEPHIS. However, there are a number of other relevant agencies and ministries that regulate, facilitate and engage with horticultural value chain businesses. Finally, the SBR-GVC nexus in Kenyan horticulture prior to the pandemic was also characterised by hybrid public-private governance structures. These included, for example, HCAS. The Presidential Round Table, although not specific to horticulture, is also relevant.

Table 4.1: Actors in the SBR-GVC nexus in Kenyan horticulture before Covid-19

Value chain actors	Industry associations	State agencies	Hybrid public-private structures
<u>Lead firms</u> EU retailers			
<u>Kenyan lead firms</u> Kenyan exporters	<u>Horticultural associations</u> FPEAK FPC ASOK <u>Other relevant associations</u> AAK KFC KEPSA	<u>Key regulatory agencies</u> HCD KEPHIS <u>Other agencies</u> AFA PCPR KALRO <u>Ministries</u> MoALF&C MoTIED MoFA	Presidential Round Table (led by President and KEPSA) HCAS (members include MoALF&C, KEPHIS, HCD, KALRO, PCPB, FPEAK, AAK and KFC) Kenya National Horticulture Task Force (similar to HCAS)
<u>Other actors</u> Intermediaries (traders, brokers) Farmers Input suppliers			

Source: Authors' summary

5. Covid-19 and the SBR-GVC nexus in Kenyan horticulture

This section presents our key empirical findings. It describes the overall challenges presented by Covid-19 for export horticulture in Kenya, and the ways in which the SBR-GVC nexus has tried to respond. To illustrate these dynamics, we focus in Section 5.2 on three specific issues: constraints in transport and logistics; challenges in complying to SPS regulations in green beans; and the harvesting of immature avocado fruits.

5.1 Covid-19 and Kenyan horticulture GVCs

5.1.1 Introduction

The effects of Covid-19 on horticultural value chains emanated principally from public measures put in place to restrict movement and contain the spread and impact of different waves of the virus, as well as the type and extent of private sector responses, rather than from direct health impacts. Key policy measures included night-time curfews, originally from 7 pm to 5 am, although later reduced to just six hours; suspension of international and domestic air travel; land border controls restricting entry without evidence of a negative Covid-19 test result; and temporary bans on movement into and out of certain areas including Nairobi, Mombasa, and Mandera (except for essential goods and services). There were also closures of bars, restaurants, small shops, and open-air markets, which later re-opened but with strict Ministry of Health guidelines and measures to ensure social distancing.

Agricultural value chains faced significant supply and distribution challenges due to closing borders across the globe, movement restrictions in Kenya and social distancing. Movement of people and goods in Kenya was permitted only to support essential service providers, and farming was initially not listed as an essential service. This led to post-harvest losses, reduced incomes, and job losses for over 3.5 million Kenyans employed in agriculture (MoALFC 2020). While the pandemic affected horticultural value chain at all levels, the impacts were unevenly felt as explained below.

5.1.2 Effects at production level

Farmers faced reduced availability and increased cost of agricultural inputs, such as seeds and fertilisers, reductions in farm labour availability, and uncertainty about the marketing of some products. Pressure on inputs were exacerbated by

Covid-19 testing regimes at East African borders causing transport bottlenecks that led to delivery delays and shortages and increased costs. One study found that over 70 per cent of farmers paid a higher price for inputs between June and October 2020 (Aggarwal *et al.* 2020).

These pressures affected farming decisions, leading to a delayed planting of next season's crops and some reduction in cultivated areas, with a knock-on effect for businesses further downstream. New plantings of annual crops like beans, which have short production cycles, were particularly impacted. Avocados were less affected as avocado orchards were already established.

The harvesting of crops was also impacted due to travel restrictions affecting the movement of labour. According to farmers and exporters, the delayed collection of produce and delivery to packhouses contributed to losses for both parties. The subsequent relaxation of restrictions partially improved the situation, but demand remained low. At least 45 per cent of farmers saw their household income fall by October 2020 (Singh, Siddiqui and Shukla 2021).

In addition to rising costs, Covid-19 complicated liquidity challenges. Farmers and exporters reported that inputs were no longer being advanced to farmers on credit, and there was limited access to cash advances. Although a survey (Singh, Siddiqui and Shukla 2021) found that 47 per cent of farmers were able to secure loans after the pandemic, the other half of farmers lacked access to credit, due to rigorous lending rules and conditions. They had to opt for credit from informal sources or relied on family and social networks for support. Laying off casual workers and placing some permanent staff on paid or unpaid leave was another coping mechanism which, however, aggravated the vulnerability of typically poorer agricultural labourers.

5.1.3 Effects for processors and exporters

The transportation of horticultural products such as fruits, vegetable and flowers emerged as one of the prevailing challenges created by the pandemic. Measures adopted to contain the spread of Covid-19 led to disruptions in transport and logistics, affecting the transit of these perishable products with significant severe consequences for the sector. These measures included temporary border closures, more stringent restrictions on movement, and the imposition of quarantine restrictions among logistics personnel, especially truck drivers. Social distancing regulations also limited the number of import and export inspectors at the borders, leading to increased clearance time (OECD 2020a). The export of Kenya's horticultural products was also affected due to the dramatic decline in air freight capacity, high freight costs, and quarantine regulations. The exact nature and impact of the disruptions varied across crops.

On the one hand, avocado relies on sea transportation. Here delays to destination markets meant that some deliveries took up to 60 days, versus the 15-20 days that was normally expected, although freight costs remained low (Accenture 2020). These delays affected fruit quality and shelf life. Some consignments had to be disposed of, meaning a loss of revenue. One processor reported that delays in shipment extended payment periods, which had a backward ripple effect on producers whose avocados could not be picked in a timely manner.

There was also a 50 per cent increase in shipping charges from US\$1 per kg and to US\$1.5 per kg, coupled by an increase in delivery time by about one-week delays in shipments from 25 to 32 days. These high shipping costs affected Kenya's market share in international trade.

(Interviewee one)

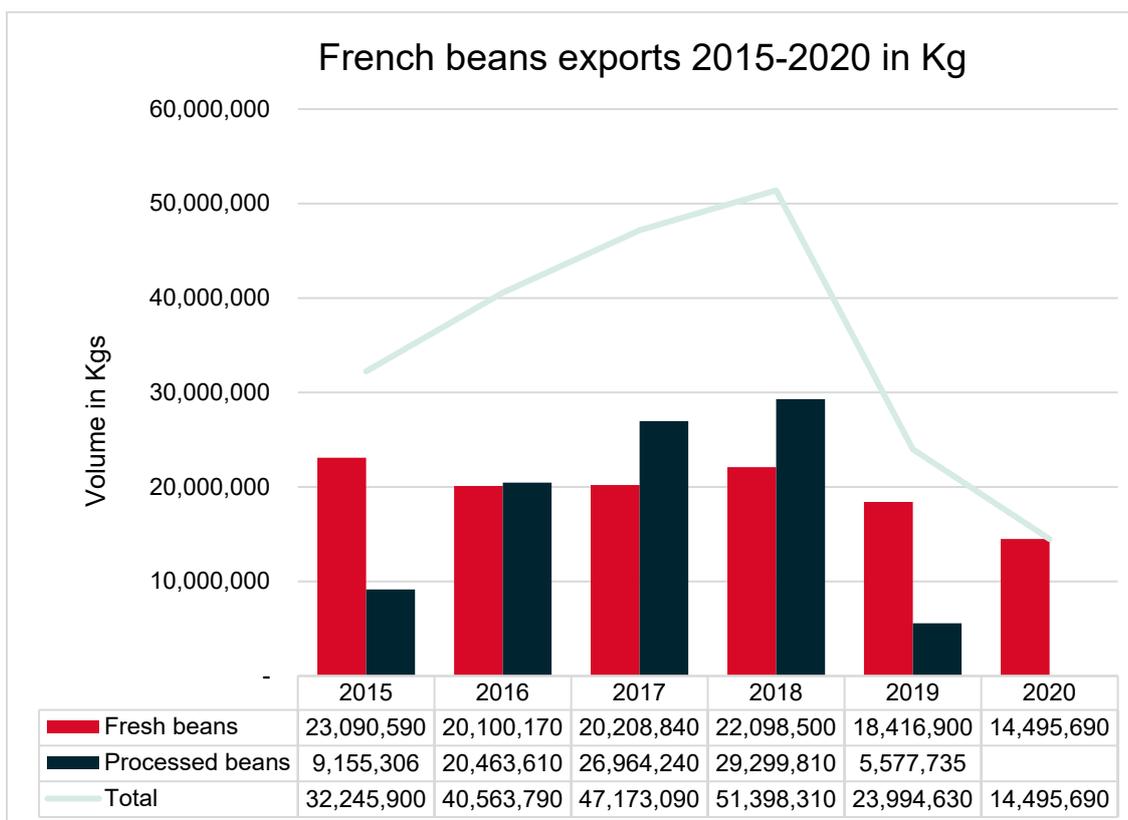
Despite these setbacks, the demand for and prices of avocado fruit in international markets such as the United Arab Emirates and Europe remained high (Igunza 2022). In fact, increased production costs and production shortages also raised selling prices. One piece of avocado fruit increased in price to Ksh30, from Ksh20 previously (Andae 2021). A four-kilogram pack shot up by 200 per cent to Ksh600, up from Ksh200, as buyers scrambled for limited supply (Munene nd). Interviewees cited different dynamics contributing to price rises. One cited 'a rise in demand for avocado products in Europe (oil and fresh) which led to more business for the company' (interviewee one), while another pointed to the rise being 'due to competition with private packhouses – the reserve price was Ksh8 per piece, which increased to Ksh20 per piece' (group participant one).

On the other hand, the impact of transport disruptions for French beans was much greater, since these highly perishable products rely on air transport, predominately as air freight in the hold of passenger planes. The shutdown of the tourism sector and grounding of passenger flights to Kenya's export destinations significantly reduced air freight capacity (Mwaniga 2020). According to the Organisation for Economic Co-operation and Development (OECD), a 26 per cent decline in cargo capacity following the decline in passenger air travel also led to significantly increased freight charges (OECD 2020b) and contributed to a decline in sales and revenues. These effects were compounded by decreased demand in export markets due to lockdowns and partial closure of the same markets, with one exporter reporting a sustained decline in orders from clients abroad.

Figure 5.1 and Table 5.1 show the decline in French beans exports from Kenya during the pandemic, a trend that resulted in layoffs and business closures of export companies and related businesses at the onset of Covid-19. The

horticulture sector was estimated to lose roughly US\$3 million every day during the Covid-19 lockdowns (Fleming 2020).

Figure 5.1: Export trend in French beans before and during the pandemic (2015-2020)



Source: AFA-HCD data 2020, unpublished, internally generated

Table 5.1: Fresh French bean exports comparison between 2020 (Covid-19 period) and 2019 by volume (MT)

	2019	2020	Difference	%
JAN	1,752	1,175	-576	-33%
FEB	1,482	986	-496	-33%
MAR	1,558	1,326	-232	-15%
APR	1,470	1,111	-359	-24%
MAY	1,433	1,026	-407	-28%
JUN	1,707	1,333	-373	-22%
JUL	1,416	1,184	-232	-16%
AUG	1,541	1,190	-350	-23%
SEP	1,401	1,412	11	1%
OCT	1,516	1,600	85	6%
NOV	1,417	1,072	-344	-24%
DEC	1,725	963	-762	-44%

Source: AFA-HCD data 2020, unpublished, internally generated

Exporters of French beans also reported an increased level of interceptions on products arriving into Europe, due to exceeding MRL and the presence of harmful organisms. According to one of Kenya's regulators, 'the early stages of the Covid-19 pandemic saw changes in the behaviour of overseas buyers, who associated poor food hygiene with Covid-19' (interviewee two). Chinese buyers, for example, required Kenyan exporters to confirm measures on Covid-19 infection prevention and control. Such fears may have also led to EU protocols being more strictly enforced.

Other issues reported by processors and exporters include a reduced working time due the curfew, especially in the early part of the pandemic, limiting time available to process and package orders, and contributing to reduced shipping volumes. Restrictions on the movement of goods into Kenya also led to a shortage of packaging materials and further raised costs for exporters. On a more positive note, shipping lines were able to ease documentation processes through digitisation leading to faster clearance and exportation. One respondent also reported that the 'facilitation of imports was easier as KEPHIS has become more amenable to approving electronic phytosanitary certificates for imports' (interviewee three).

5.2 Covid-19 and SBRs in the horticulture sector

During the pandemic, SBRs affecting horticulture were characterised by close working relationships between segments of public and private sectors in a bid to

mitigate the economic impacts of Covid-19. These began as early as 20 March 2020, when KEPISA met with President Uhuru Kenyatta for the 11th meeting in the series of Presidential Round Tables that had begun in 2013. This time, the focus was on developing an economic response framework to Covid-19. KEPISA sought to enable a coordinated private sector response, with private sector participants drawn from various sectors presenting proposals to government, aimed to both protect employees and mitigate disruptions to business. Whereas before Covid-19, the Presidential Round Table had met once or twice a year, this increased to every two weeks at the start of the pandemic.

In addition to the Round Table, there were concerns that enforced market closures could threaten food security and incomes. In response, the government, through the Cabinet Secretary of the MoALFC, Peter Munya, launched the Food Security War Room (FSWR) and hotline in April 2020. FSWR was coordinated by the County Government Co-ordination and Food Supply Working Group made up of the key sector Ministries and Council of Governors. The FSWR met weekly for a period of two months to monitor food availability and implemented various sub-working groups. These groups convened twice per week to tackle emerging issues affecting food availability, market access, input supply and food prices, and to advise the food security committee. The focus was initially on major food and cash crops such as potatoes, maize, rice, tea, and beans, and key interventions sought to maintain flow of produce from farms to markets and access to food by consumers, managing input price increases, and supporting continuous extension services to farmers, among other issues.

Other platforms mentioned by interviewees include the Situation Room, which was set up by the MoTIED in partnership with UK Aid's Manufacturing Africa programme to address the economic and job impact of Covid-19. The platform enabled the government to convene companies and private sector associations to rapidly identify issues, conduct analyses, and propose solutions. It also coordinated with other Ministries, including the Ministry of Health and the MoALF&C. The Situation Room even had a 24/7 hotline for inquiries and to identify key issues across the economy. The Horticultural Task Force and HCAS also reportedly met daily to coordinate and prioritise issues.

The pandemic added a digital aspect to these public-private platforms due to the introduction of virtual meetings and use of other digital platforms such as WhatsApp communication. While attendance was low initially, it became a regular way of meeting once participants got used to the format, and according to one participant led to enhanced flexibility, participation of more stakeholders and greater ownership of deliberations, as well as faster decision making: 'Covid-19 pandemic has catalysed the increased relationships through online interactions which has improved decision making, information sharing, and inclusivity where several stakeholders are now participants and providing

comments freely' (interviewee five). According to another respondent: 'The virtual forums with directors of exporting companies and growers have become mandatory. Moreover, the resolutions made during these meetings were put down as agreements and shared with growers to adopt' (interviewee three).

Digital platforms also provided space for immediate feedback from regulators on licensing and certification status. This meant that '... where the licenses of non-compliant companies are suspended, the industry associations are promptly informed about such suspensions' (interviewee five).

5.3 The response of the SBR-GVC nexus to three key issues emerging from the pandemic

In this section, we illustrate in more detail how different elements in the SBR-GVC nexus responded to three specific challenges facing Kenyan horticultural as a result of the pandemic. The first issue: constraints in transport and logistic was a new and critical issue arising directly from the measures brought in to contain the spread of Covid-19. The other two challenges: compliance to phytosanitary regulations related to pesticide residues and harmful organisms, and harvesting of immature avocado fruits, were already present before the onset of the pandemic. However, aspects of these challenges have been aggravated by the pandemic, as explained below.

5.3.1 Constraints in transport and logistics

Public measures to contain the spread of the virus, including the suspension of international and domestic air travel, land border restrictions, and temporary bans on movement were among the most significant direct impacts of Covid-19 on horticulture. The implications were manifold, as described in Section 5.1, including decreased availability and increased cost of inputs, a disruption to the agricultural labour force, and delays to and increased cost of exports, all affecting jobs, incomes, and profits. Although these disruptions had some reverberations across all of the horticulture sector, the biggest impact was on value chains reliant on air freight, including French beans.

In response, state and business actors met to coordinate and facilitate solutions. The FSWR, chaired by the Cabinet Secretary of MoALFC, saw industry bodies like FPEAK, FPC and ASOK lobbying for changes in pandemic response measures, particularly to have agricultural services declared as essential. Essential services in Kenya were those deemed to be critical to ensure the economy kept working, including the pharmaceutical, utilities, and transport sectors. Although initially agriculture was not included, one interviewee involved in the FSWR meetings reported that the strong push by industry associations

resulted in agriculture being added to the list, restoring the freedom of movement of people and goods, even during times of curfew. These changes affected not only crops for domestic food security but also export horticulture, which was recognised as an important foreign exchange earner.

The industry also lobbied to address the challenges associated with freight capacity, cargo space, and the price of freight. Freight capacity was a particular concern for FPEAK as membership fees are based on the volume rather than the value of exports. Alongside other industry stakeholders, FPEAK petitioned various ministries, including MoALF&C, MoTIED and MoFA, proposing a stimulus package to support exporters and to subsidise air freight. In addition, industry actors led by KFC lobbied for a stimulus package to be channelled to Kenya Airways (KQ) to increase cargo capacity. Alongside the FSWR, the Presidential Round Table was important here:

The consultative meetings on logistical support for the Global Value Chain between the state and industry associations offered an opportunity for a key industry association to lobby for logistical support from the government to increase the cargo space, which was achieved through establishment of [the] Private Sector-Presidential Round Table which met every two weeks (and still meets but less frequently).

(Interviewee six)

Overall, the Round Table was perceived to be dominated by KEPISA, as KEPISA had produced two studies on the impact of Covid-19 on Kenyan business which were said to be influential in shaping policy responses. Nevertheless, the result of these dialogues on logistics was positive for the horticulture sector: ‘... the liaison between the government and the industry associations played a major role in ensuring that the offered stimulus package supported the logistics for horticulture to continue and be competitive despite the pandemic’ (interviewee two).

The government offered a stimulus package to KQ for increased cargo shipment space and to support businesses during the pandemic. KQ modified its passenger planes to create room for cargo shipments, while Ethiopian Airlines also availed seven more freighters.

Despite this progress, at the time of the fieldwork some shortages of fresh cargo space persisted, along with high costs, due in part to airlines concentrating on shipping vaccines. One exporter reported an ongoing shortfall of 1,500 metric tons per week, or a loss of 25 per cent of shipping capacity compared to before the pandemic. As this is likely to take time to normalise, there are calls for developing alternative logistic channels and enhanced trade facilitation arrangements with partner countries, to ensure continued exports of horticultural

products, to expedite the clearance process and to ease imports of essential agricultural inputs.

5.3.2 Maximum residue levels and notifications in French beans

As discussed in Section 4.2, regulatory issues related to SPS protocols for the quality and traceability of fruits and vegetables are an ongoing concern for the export of French beans. These relate to both exceeding MRLs and the presence of harmful organisms. Despite the measures implemented since 2013 to control these issues, the pandemic contributed to a rise in cases of Kenyan French beans exceeding MRLs. For example, one survey of 24 samples of beans collected between October and November 2020 found three samples containing pesticide residue above the MRL, including one from Kenya which was double the allowable limit.³

These rising cases reflect a failure to comply with technical standards (Fulano *et al.* 2021) due to non-optimal agronomic practices, limited market information, poorly supported producer groups, and lack of coordination among value chain actors. However, they are also likely to reflect the movement restrictions described above, leading to a reduction in the number of farm workers carrying out pest and disease management and/or a shortage and high prices of adequate agro-chemicals. 'The rising cases of non-compliance may also reflect stronger inspection on the part of overseas buyers, where poor food hygiene was associated with Covid-19 in the early stages of the pandemic' (interviewee two).

In response, state agencies and industry associations worked together to develop and implement new protocols and guidelines to increase compliance to environmental and social standards and strengthen documentation of all harvested produce to enhance transparency in terms of variety, quantity, weight, and use. 'HCD is actively sensitising exporters to monitor agrochemical use and strengthen internal testing to avoid exporting products with traces of delisted molecules' (interviewee one).

Awareness forums were held with growers in Makueni, Machakos and Kajiado counties:

These forums were different because they were practical in nature and targeted the decision makers on the farms and not junior staff. They also provided an opportunity for the private sector players [export companies] to be involved. In the past, the industry associations would call meetings and didn't care who attended, but because the situation was so bleak, they insisted that decision-

³ See this DEFRA 'Report on the Pesticide Residues Monitoring Programme'.

makers from exporting companies had to be there. Whatever is discussed must be enforced.

(Interviewee three)

Key informants report that 'additional quality control measures that have been agreed are being effectively promoted by the industry, including checking quality, weighing, handling, and initiating processing of payment' (interviewee seven), and that the resolutions made during these meetings were put down as agreements and shared with growers to adopt (interviewee two).

Alongside on-site inspection, the online monitoring and documentation of products and processes was introduced. Since July 2020, these detection systems have started to make more interceptions at farm level. Although this should reduce notifications by importing countries, it leaves farmers facing more challenges in the issuance of phytosanitary certificates.

5.3.3 Harvesting of immature avocado fruits

The high price and growing demand for avocados in US and European markets has led to a proliferation of informal brokers or agents, including organised crime gangs willing to 'buy everything' from farmers; both mature and immature fruits. According to one key informant these are unscrupulous and unregistered traders who are seeking to make huge profits (interviewee four). While this problem existed before 2020, the pandemic has allegedly added fuel to the fire by provoking an increase in the theft of avocados, including immature fruit, by jobless youth. 'The cases of theft have been increasing since March 2020 because many youths are unemployed and stealing avocados to sell to agents; even under 18 kids sell' (interviewee one).

Farmers believe that brokers buying stolen avocados are enabled by weak regulatory enforcement and poor traceability, which has been made more difficult since the onset of the Covid-19 pandemic in March 2020: 'The regulation was thought to be weak because the production inspectors let immature fruits pass which the nation[al] media reported that Kenya had lost about Ksh17 billion to immature exported avocados' (interviewee one).

Farmers have responded by trying to protect their investment in the avocado crop. They have hired guards or installed surveillance devices. However, farmers say they are forced to pre-emptively harvest their crop and sell immature fruit to informal buyers. In addition, the ability to sell everything at once without risking rejections by exporters or processors, and receiving quick payment, is attractive: 'Farmers find brokers attractive because they advance more money (almost at the onset of harvesting) and make spot payments. Brokers also pay a slightly higher price than exporters, thus, most avocados in

the region are sold through brokers' (group participant three). 'Out of the reported theft cases from contracted farmers, only 3 per cent are more [sic] genuine because there are farmers who took advantage and sold to [the] spot market for faster payments' (interviewee one).

The problem with premature fruits is that they do not ripen in storage but darken and begin rotting, leading to substantial losses (Korir 2019). Four respondents argued that this rampant harvesting and export of immature fruit is negatively affecting the image of Kenyan avocados in overseas markets. 'There is huge global demand for avocados and... the Kenyan avocado is growing positively. The only challenge is the issue of quality and immature fruit which is preventing Kenya from demanding a premium value for its fruits' (interviewee eight).

In Dubai, where the immature-sized fruits are often dumped, the price of a unit of Kenyan avocado has fallen significantly, from 35 dirhams (Ksh945) previously to 16 dirhams (Ksh432) (Erezi 2021). According to the industry, Kenya produces good avocado fruits which compare well with those from other countries like Peru. However, stakeholders fear that international buyers will increasingly shun fruit from Kenya:

...the international demand for the fruit is high, which enticed farmers who want quick cash to harvest avocados early. The European market where our avocados are traded; sometimes buyers opt to buy from other countries when they find out fruits are not mature. It is therefore evident that exporters who purchase the fruit from farmers without considering whether the avocados have reached maturity are largely to blame.

(Interviewee eight)

The response from the state has been highly regulatory, with agencies seeking to register all brokers and set up sound knowledge management systems. However, this has not proved easy. Whereas other crops can be inspected and regulated at central locations where aggregation takes place (packhouses or collection centres), with avocados, aggregation is done by brokers' agents at farm level. The proliferation of brokers makes it difficult for the government to police this trade, due to limited resources; a problem that became even harder to manage as the pandemic affected the state's capacity to carry out inspections. Therefore, in November 2021, HCD took even more interventionist measures, imposing an export ban on popular varieties (Fuerte and Hass varieties). This ban was instituted at the end of the regular harvesting seasons, which runs between February and October (Erezi 2021; Ojina 2022) and was due to continue at least until January 2022.

So far, however, these processes appear to be having little effect on the ground, and the control of trade in immature fruits is still unresolved (interviewee two). As a result, five of the respondents argued that to address this challenge directly at the source or farm level and sustain compliance with regulations there is a need for greater industry self-regulation and traceability, in addition to the formal rules set by government. For example, it has been suggested that industry associations open offices in devolved counties, enabling them to have a greater role in monitoring and enforcement on this issue. Another countermeasure that has been advocated is the continued training of farmers and capacity building of stakeholders involved. It is argued that farmers will benefit in the long term if the quality and maturing of the fruit can be sustained.

6 Conclusion: Lessons and implications of the responses of the SBR-GVC nexus to the challenge of Covid-19

Based on the empirical findings in Section 5, this final section presents broader learning regarding the SBR-GVC nexus in Kenya's horticulture sector and Covid-19. In particular, we highlight the relative importance of the horizontal dimension of the nexus, manifested in regulatory and facilitative public-private governance. We point to the relative absence of responses emanating from the vertical dimension, while highlighting how vertical value chain structures shaped the effectiveness of both the public and public-private measures introduced. We also pinpoint areas for future research.

6.1 The SBR-GVC nexus and strategic responses to Covid-19

6.1.1 Horizontal state-business relations: Public regulation and private enforcement

In line with trends seen over the last decade in Kenyan horticulture (Ajwang 2020; Mayer and Phillips 2017), SPS compliance issues in French beans were addressed through horizontal hybrid regulatory governance. In these arrangements, horticulture sector associations are doing more than simply coordinating and promoting common objectives through the type of aggregation and communication activities that are the familiar terrain of industry associations (Qureshi and te Velde 2013; te Velde 2009). They co-produce regulations and monitor compliance by members using peer pressure and persuasion as an enforcement mechanism. This hybrid governance has been further enabled by digital technologies employed during the pandemic, which deliver more immediate feedback from regulators to associations on licensing and certification status, as well as supporting online engagement between state and business actors.

The relative effectiveness of this hybrid governance approach to compliance issues, both prior to (Ajwang 2020) and during the pandemic, relies on certain contextual conditions, mostly notably a private sector counterpart with both the motivation and the capability to address relevant issues. In the case of French beans in Kenya, exporters are well organised, most notably through FPEAK, and

are motivated to act due to clear threats to competitiveness from MRL notifications. The ability of exporters to act is also enhanced by vertical governance structures, specifically their influence over production activities through value chain arrangements, either via contracts with farmers or through vertical integration on their own land.

In the case of avocado, the state regulator, HCD, eventually responded with a directly interventionist solution via an export ban (Dallas *et al.* 2021). Results were limited, however, due to a lack of regulatory reach and enforcement power, which was further hampered by Covid-19. Similar to the case of PPE value chains during the pandemic, structural factors undermine government activism. These include the dispersed nature of aggregation activities, which take place at the farm level, as well as the proliferation of informal traders. In response, some stakeholders are advocating more hybrid regulatory governance, especially through a greater presence of industry associations at county level. While this will bring associations closer to the problem, a hybrid governance approach is likely to face numerous challenges. First, the brokers that are implicated in driving the theft and collection of immature fruit are unorganised, unregistered and even criminal. They have a strong short-term incentive to collect and sell immature fruit, and unlike French bean exporters, they are not involved in production, so have a relatively limited stake in the longer-term health of the sector. Importantly, they are not subject to pressure either through membership of industry associations or through vertical integration with value chain partners.

6.1.2 Horizontal state-business relations: Public-private dialogue to facilitate value chain adaptation

Alongside regulation, the horizontal dimension of the SBR-GVC nexus is involved in facilitating value chains (Gereffi and Mayer 2006; Mayer and Phillips 2017), supporting them to adapt to the pandemic. These responses were enabled by existing public-private dialogue platforms, notably the Presidential Round Table, and newly formed spaces like the FSWR. Together, these platforms drove an increased level of state-business engagement in terms of both the number of platforms and the frequency of meetings. There were also qualitative changes from the past, including the use of digital tools to regularise engagement and speed up decision-making. The crisis of Covid-19 also meant a more direct involvement of decision-makers such that resolutions made during these meetings could be immediately actioned.

These efforts across the different platforms restored functionality to the horticulture sector, through overcoming bottlenecks and delays in transport and logistics. These were not gradual state reforms to promote economic growth and value chain upgrading (Horner and Alfred 2019; Tyce 2020), or a proactive design of lockdown rules to protect significant GVCs, as happened in countries

like Malaysia (Dallas *et al.* 2021). In the case of the designation of agriculture as an essential service, industry lobbying through the FSWR drove the government to issue exemptions from movement restrictions. These exemptions enabled planting, production and harvesting operations to resume, alongside produce collection and supporting services like farm inspections.

With respect to logistics, KEPISA drove the process to secure more cargo space using the Presidential Round Table as a dialogue platform for urgent problem resolution. Although the industry 'consensus' was heavily influenced by the interests represented by KEPISA, as the most powerful association present, the cargo space that was facilitated helped the recovery of French bean exports. Still, constraints persist. As in the case of the harvesting of immature avocados, the effectiveness of horizontal governance is shaped by vertical value chain dynamics; in this case, the competition between different chains for the same cargo space.

6.2 Limitations and future research

The findings in this study are affected by three key limitations. First, as an exploratory case study, the findings reflect the unique context of the SBR-GVC nexus in Kenyan horticulture. For example, the dynamics of the case are affected by the strong industry associations and broad experience with public-private dialogue in Kenya, which are uncommon in many low- and middle-income countries. Nevertheless, we intend that these findings from Kenya make the case for the value of reflecting on the SBR-GVC nexus in other economies. Second, although our selection of interviewees (Table 3.1) represents a wide range of relevant insights, project limitations meant some perspectives were not gathered, such as from logistics companies or importers, which may have provided additional nuances.

Finally, our timing affects the analysis. The fieldwork took place primarily between August and October 2021, a point at which we could already see many of the impacts of and responses to the pandemic. However, it was too early to identify longer-term changes; whether observed developments in the SBR-GVC nexus were being consolidated, or whether governance would return to its pre-Covid configuration. Future research on the nexus could therefore assess these structural changes. This would require understanding whether new trends, such as virtual dialogues, have become permanent, or structures have reverted back to their pre-pandemic state. Conversely, it may be that elements of the pre-pandemic structure were further deepened and reinforced by the response to Covid-19.

Our early reflection is that the hybrid governance structures which were leveraged – with some success – to respond to the pandemic are likely to have been reinforced. To further investigate this dynamic, researchers could track the evolution of relationships between exporters, industry associations and regulators, and how they confront future constraints in GVCs or within the Kenyan political economy. It will also be interesting to consider how hybrid governance reflects developments in the local horticulture sector, notably the rising importance of regional and domestic value chains (Pasquali *et al.* 2021). Observing dynamics related to the implementation of the next phases of KS-1758 could provide an opportunity for such a study.

Another area for research relates to the dynamics of horizontal public-private governance, and especially issues of transparency, inclusivity, and political neutrality (Ajwang 2020; Papaioannou *et al.* 2015). Our research did not surface changes in the SBR-GVC nexus that would address these concerns, although key informants were optimistic that the virtual spaces that were created or ramped up during the pandemic brought different voices into deliberations, even if not necessarily changing decision-making procedures. At the time of the fieldwork, virtual meetings were still being used, and follow up research could look for longer-term effects with respect to participation and decision-making. Another question is the degree to which the greater direct involvement of decision-makers and faster decision-making spurred by the pandemic is maintained as the crisis dissipates.

Finally, it is notable that the main responses to the pandemic were situated in the horizontal rather than the vertical dimension of the SBR-GVC nexus. The structure of horticultural GVCs and their global position vis-à-vis other value chains were important factors in determining what types of horizontal regulation and facilitation were feasible. However, we did not identify significant adaptations to respond to the pandemic that were generated through vertical governance relationships. This finding may partially reflect limitations in the range of interviews secured and data generated, as noted above. Nevertheless, we believe it raises interesting questions regarding the ability of GVC governance and governors to respond to disruptions, at least to global disruptions of the magnitude of Covid-19.

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