

Stefano Ponte
Professor of International Political Economy
Director, Centre for Business and Development Studies
Copenhagen Business School
Dalgas Have 15
Frederiksberg, 2000
Denmark
spo.msc@cbs.dk

The hidden costs of environmental upgrading in global value chains

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Author bio: Stefano Ponte is Professor of International Political Economy and the Director of the Centre for Business and Development Studies at Copenhagen Business School. His primary interest lies in transnational economic and environmental governance, with focus on overlaps and tensions between private governance and public regulation. Stefano's work analyzes governance dynamics and economic and environmental upgrading trajectories in global value chains — especially in developing countries and in Africa. He is the author of several books on these topics, including *Business, Power and Sustainability in a World of Global Value Chains* (Zed Books, 2019) and *Handbook on Global Value Chains* (Edward Elgar, 2019; co-editor with Gary Gereffi and Gale Raj-Reichert).

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Abstract. Sustainability has become important in the operation of the global economy and its regulatory structure, leading significant shifts in the way powerful ‘lead firms’ in global value chains approach sustainability. In this paper, I argue that private, value chain-oriented forms of sustainability governance are not addressing the environmental problems they are putatively designed to solve. Through the analysis of how lead firms stimulate economic and environmental upgrading along their value chains, I show that the mainstreaming of sustainability in business operations has allowed lead firms in value chains to accumulate ‘green’ profits and capital in ways that extract value from suppliers – especially those based in the global South. Drawing from analyses of the wine and coffee value chains, I show how lead firms extract value and push the hidden costs of sustainability compliance and related risks upstream towards producers. These processes have important redistributive repercussions as they raise entry barriers for smaller, less organized and/or more marginalized actors. Under the mantle of achieving environmental sustainability, lead firms in value chains stealthily capture value for themselves, while extracting more demands from their suppliers and promoting a further consolidation of their supply base. In the meanwhile, serious environmental challenges remain unaddressed.

Keywords: global value chains; green capitalism; environmental upgrading; hidden costs

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1. Introduction

The mainstreaming of sustainability management in business is providing new venues of value creation, capture and (re)distribution and new opportunities to transfer the hidden costs of environmental compliance along Global Value Chains (GVCs). Lead firms in GVCs are leveraging sustainability for profit maximization, while suppliers build new competences or sharpen existing ones to meet these demands. Suppliers, workers and farmers – often based in the Global South – create new value through sustainability in order to remain in the game but are seldom able to retain it. What is showcased by lead firms to consumers, governments and the general public is the value of environmental improvements, what remain hidden are not only the additional costs involved for suppliers but also the capture of this value by lead firms in GVCs. In the name of sustainability, a massive and stealthy transfer of value is taking place from the global South to the global North, from producers to global buyers and consumers, and from labour to capital. Drawing from analyses of the wine and coffee GVCs, this article contributes to unveiling the hidden costs of environmental upgrading in global value chains, especially for weaker actors and locales in the global South, and highlights how economic and environmental upgrading processes facilitate green capital accumulation by lead firms in GVCs while the actual impact on environmental outcomes remains limited.

As indicated in the introduction to this special issue, hidden costs encompass ‘unintended consequences, perverse effects, and unacknowledged impact on workers, communities and the environment’ (LeBaron and Lister, this volume). The can play out

at the micro-level (as a result of CSR, labour and/or environmental initiatives and strategies by individual companies), the meso-level (when collective and industry-level initiatives have unseen consequences for certain stakeholders and populations) and/or at the macro-level (as the collective effects of individual and sectoral initiatives may actually entrench the underlying causes of the problems they were supposed to address) (ibid.). As I have discussed the macro- and meso-level consequences elsewhere (Ponte, 2019), in this article I focus on the micro-level hidden costs that permeate environmental upgrading processes along selected GVCs. In my analysis, by ‘hidden costs’ I mean costs that: are not readily visible to consumers, governments, NGOs and/or the general public (‘hidden from whom?’); are hidden by lead firms in their respective GVCs (‘hidden by whom?’); are strategically hidden, rather than unintendedly hidden (‘hidden on purpose?’); are hidden under the mantle of strategies and initiatives that are purportedly addressing the same very problems they eventually continue to propagate (‘hidden how?’); and have negative distributional consequences for weaker players, often based in the global South, and for the environment (‘hidden with what consequences?’).

One of the objectives of this article is to document how the heightened information flows that are often entailed in environmental upgrading processes are intentionally used by lead firms to stealthily squeeze value out of suppliers (Grabs and Ponte 2019, Ponte 2019). Suppliers can indeed become more efficient and competitive through economic and environmental upgrading, but this value does not necessarily translate into improved profitability – as it can be captured by actors downstream in the value chain. As a result, global buyers benefit from sustainability management through value appropriation, and consumers feel good about their environmentally ‘sustainable’ purchases, which come at limited or no extra cost to them.

The next section discusses the analytical contribution of this article as it brings in a new angle to the international political economy of the environment. The following section provides a brief overview of economic, social and environmental upgrading in global value chains. Then, the article turns to the empirical analysis of how economic and environmental upgrading (and downgrading) in the wine and coffee GVCs are underpinned by value capture and hidden cost transfers – followed by a brief reflection on labour-intensive manufacturing and capital-intensive GVCs. A final section reflects on the main findings of the empirical analysis and what they bring to a more nuanced understanding of the hidden costs of environmental upgrading in GVCs and the IPE of the environment more broadly.

2. Analytical contributions

Until fairly recently, much of the existing work in international political economy that deals with environmental issues was focused narrowly on international agreements, institutions and regimes. This includes research on how international economic regimes and institutions (such as the WTO) address environmental issues, and work on the economic provisions of international environmental governance initiatives (such as carbon markets). But a rich literature on the rise of transnational private and hybrid governance initiatives has now emerged, addressing its political, economic and environmental interfaces (Clapp and Helleiner 2012). It has documented the fragmentation of governance instruments, the reconfiguration of regulation, various forms of institutional design, and the dynamics of legitimacy for different types of governing mechanisms (Biermann et al. 2009, Zelli and Van Asselt 2013).

This literature has often sought to identify ‘best institutional designs’ to achieve their putative sustainability objectives (Overdevest 2010, Tamm Hallström and Boström 2010), and has examined how government, civil society and business compete and/or cooperate to shape institutions and rule systems (Dingwerth and Pattberg 2006, Fransen 2012). Existing work has also highlighted that the complexity of sustainability governance can be used by individual actors to achieve their own goals (Alter and Meunier 2009, Schleifer 2013, van der Ven 2019), but also that some of these instruments can provide alternative, experimental and more flexible venues to solve sustainability issues where more comprehensive international regimes have so far failed to emerge (Hoffmann 2011, Keohane and Victor 2011, Overdevest and Zeitlin 2014).

The literature on transnational sustainability governance often assumes that institutional features can be understood separately from the characteristics and strategies of global value chain actors beyond their engagement in regulatory lobbying and participation in multi-stakeholder initiatives on sustainability (de Bakker, Rasche and Ponte 2019). On the contrary, the business-focused literature on sustainability in supply chain management is concerned narrowly with identifying the best strategies and approaches that can improve the competitiveness of individual firms, build corporate reputation and minimize risk.¹ Much of this literature has little regard for the actual impacts on the environment, with the exception of some of the work on Corporate Social Responsibility (CSR), which at least deals with the implications of failing to address sustainability issues in terms of reputation and the credibility of corporate claims.²

The approach adopted in this article contributes to a better understanding of how global value chain actors use sustainability management to place its hidden costs on suppliers, and how this generates new inequalities – especially in the global South. GVC analysis has been widely used in international political economy, development studies,

economic geography and economic sociology to explain the transnational organization of economic activities. It examines discrete ‘value chains’ (the full range of value-adding activities that firms, farmers and workers carry out to bring a product from its conception to its end-use, re-use, disposal or recycling) that are explicitly governed by one or more groups of ‘lead firms’, such as retailers or branded food processors (Ponte et al. 2019).

Two main dimensions of GVC analysis are usually examined in the literature. A first dimension concerns various forms of GVC governance.³ A second dimension, the focus of this contribution, refers to GVC upgrading – the paths for value chain actors to add value and extract more rent, eventually moving up the value chain to more sophisticated and skill-intensive operations (Gereffi 1999, Humphrey & Schmitz 2002, Gereffi 2014). However, until recently, research efforts were exclusively concerned with the economic and social dimensions of upgrading, rather its environmental dimensions, and failed to reflect on who carries the often-hidden costs that are behind upgrading. This article seeks to leverage the nascent debates on environmental upgrading in GVCs and on the hidden costs of supply chains – in view of exposing the micro sources of inequality that are emerging in contemporary capitalism, a topic of special interest to international political economy audiences.

3. Economic, social and environmental upgrading in global value chains

In GVC analysis, the term *economic upgrading* has been used to highlight paths for actors to ‘move up the value chain’ for economic gain. This body of work is often based on a typology defining four kinds of economic upgrading (Humphrey and Schmitz 2002, Schmitz 2004, Schmitz 2006): (1) product upgrading: moving into more sophisticated products with increased unit value; (2) process upgrading: achieving a more efficient transformation of inputs into outputs through the reorganization of productive activities;

(3) functional upgrading: acquiring new functions (or abandoning old ones) that increase the skill content of activities; and (4) inter-chain upgrading: applying competences acquired in one function of a chain and using them in a different sector/chain.

GVC scholars initially highlighted the importance of a ‘high road’ trajectory to upgrading (from process to product to functional upgrading) that could eventually lead to performing functions in a value chain that have more skill and knowledge content (Gereffi 1999). Others subsequently argued that a specific trajectory could not be an end in itself, and that attention should be paid to what conditions can improve the position of disadvantaged actors along GVCs and can more generally facilitate a ‘better deal’ for developing country-based operators (Glückler and Panitz 2016, Ponte and Ewert 2009, Tokatli 2012).⁴ These contributions show that ‘going up the value-added ladder’ is only one of the possible trajectories of economic upgrading, and that efforts to build and deepen capabilities at the same stage of the value chain are also important (Whitfield and Staritz 2017). Upgrading may also arise from abandoning innovations that did not work in view of meeting new buyer demands or changing kinds of consumption ‘content’, including those related to sustainability. In some cases, suppliers in developing countries may even adopt a downgrading strategy – to avoid losing orders in view of tightening buyer demands (Gibbon and Ponte 2005).⁵

Recent efforts in GVC scholarship moved beyond the analysis of economic upgrading to examine *social upgrading* and the relations between the two.⁶ The definition of social upgrading in this literature is generally drawn from the ILO ‘Better Work’ framework, and refers to improvements in wages, employment conditions and other social standards. In other words, social upgrading is seen as ‘the process of improvement in the rights and entitlements of workers as social actors, which enhances the quality of their employment’ (Barrientos et al. 2010: 324).⁷ Milberg and Winkler (2013: 252)

highlight four possible trajectories of social and economic upgrading: high-road growth (economic and social upgrading); low-road growth (economic upgrading and social downgrading); high-road decline (economic downgrading and social upgrading); and low-road decline (economic and social downgrading). Their national-level data suggest that economic upgrading does not automatically translate in social upgrading, as pressure from lead firms on costs may lead suppliers to cut wages and other labour costs. In other words, economic upgrading is a necessary but not sufficient condition for social upgrading,⁸ and economic upgrading itself may come with hidden costs – such as poorer labour conditions and ‘immiserizing growth’ (Kaplinsky et al. 2002).

The research agenda has recently expanded to include *environmental upgrading*, commonly conceptualized as a process seeking to improve or minimize the environmental impact of GVC operations, such as production, processing, distribution, consumption and disposal, reuse or recycling (De Marchi, Di Maria and Ponte 2013b), or more precisely as ‘a process by which actors modify or alter production systems and practices that *result in positive (or reduce negative) environmental outcomes*’ (Krishnan 2017b: 117; emphasis in the original). As in much of the overall literature on upgrading, the tendency so far has been to focus on processes of upgrading, rather than on outcomes (see Jeppesen and Hansen 2004, De Marchi et al., 2013a, 2013b).

This emerging literature has usefully distinguished between different drivers of environmental upgrading. Internal drivers refer to the factors that lead firms or suppliers leverage to meet their strategic choices – e.g. they increase efficiency or reduce energy consumption. External drivers usually relate to new or changing regulation,⁹ pressure from civil society and/or to buyer-driven demands. Overall, the literature suggests that environmental upgrading is more likely to happen in unipolar GVCs (where power is exercised by lead firms that occupy one specific functional position) –

and especially in GVCs led by consumer-facing companies with higher reputational risks (Lister, Poulsen and Ponte 2015, Poulsen et al. 2016, Ponte 2019).

These bodies of research provide a number of useful suggestions on how to best proceed in examining economic and environmental upgrading in GVCs – coupled with a specific interest in unveiling their hidden costs. First, the original typology of upgrading (process, product, functional and inter-chain), while helpful, can be usefully repackaged to capture the nuances of different trajectories. For this reason, following Bolwig et al. (2010), I employ three broad categories of upgrading and downgrading, including their environmental aspects: (a) improving product, processes, volume and/or variety (in the same value chain node); (b) changing and/or adding functions (up- or downstream; across several nodes); and (c) transferring capabilities between chains (applying competences acquired in a chain and using them in a different sector/chain). Second, a distinction is necessary between upgrading as *process* from the economic and environmental *outcomes* of upgrading (as in Krishnan 2017b), including the hidden costs that are shaping these outcomes. This entails distinguishing between the costs and benefits accruing to lead firms and those accruing to their suppliers.

Overall, this article examines upgrading to serve the wider goal of understanding how lead firms use the environment to redistribute environmental compliance costs upstream along value chains – in ways that are not easily detected by consumers, governments, NGOs and the general public – to stealthily appropriate value for capital accumulation (Havice and Campling 2017). It contributes to explaining how ‘firm strategies are articulated with and through the environmental conditions of production’ (Havice and Campling 2017: 11) and whether and to what extent hiding the costs of environmental upgrading is an engine the extraction of value and for the management of risk (Meckling 2015).

4. Economic and environmental upgrading in the wine and coffee GVCs

This section draws from research on the wine and coffee value chains carried out by the author the past 15-20 years, together with some recent collaborative work. Details of methods and results are available elsewhere (see Grabs and Ponte 2019, Ponte 2019). In general, these research efforts entailed semi-structured interviews, focus groups and participant observation at the key nodes of value chains, with a geographical focus on African countries at the producer-end (South Africa for wine, several East African countries for coffee) and various European countries and the USA at the consumer-end. The logic of comparing wine and coffee is that, in the former producers are based both in the global North and more advanced economies in the global South, while in the latter they are located in the global South. One would expect producers in the wine value chain to be better able to push back against global buyers as they transfer hidden costs towards them. Yet, as I will see below, environmental upgrading in both cases led to similar outcomes, suggesting a broader significance of these phenomena in other agro-food value chains (see also Krishnan 2017b) and beyond.

4.1 The hidden costs of upgrading in the South African wine value chain

This section briefly examines the trajectories of economic and environmental upgrading in the wine GVC, with focus on the specific value chain from South Africa to the UK (see details in Ponte 2009, Ponte and Ewert 2009, Ponte 2019). Substantial upgrading has taken place in the South African wine industry in the quarter century following the formal end of apartheid in 1994. In relation to the broad category of upgrading as *improving product, process, volume and/or variety*, throughout much of the twentieth century, the wine industry in South Africa had been centred around co-operative wine cellars, which were responsible for a large proportion of total wine production (see summary in Table 1

below). They supplied bulk wine of low quality and their farmers were dependent on cheap black labour. Although some changes had taken place before the end of apartheid, the industry has upgraded substantially since (Ponte and Ewert 2007, Ponte and Ewert 2009, Ponte 2019).¹⁰ These include major growth of exports of certified organic and biodynamic certified wines,¹¹ and the development of a number of initiatives by government, industry and NGOs that seek to tackle specific environmental issues and/or to promote South African wine by leveraging the country's natural beauty and biodiversity – including the Integrated Production of Wine scheme, Sustainable Wine South Africa, and the Biodiversity and Wine Initiative, and the Biodiversity and Wine Initiative (see summary in Table 1).¹²

Environmental issues have played a distinguishing role in these upgrading trajectories, bolstered both by direct operators in the wine value chain and by other actors and institutions. Yet, much of the value created this way entails extra costs of compliance that are hidden from the purview of consumers and the general public. These are transferred upstream to primary wine producers and grape growers, while South African exporters and UK retailers capture the value of sustainability. An increasing number of South African wine suppliers are now complying with global, codified and standardized best practices that include environmental content (such as the BRC Global Standard-Food and/or the IFS-Food standard) and/or that are focused on these aspects (such as ISO 14001 certification). This trend is well known and publicized by supermarket chains in importing countries and by export marketers in South Africa. What is less known is that primary producers receive no price premium for these efforts – they go through them to continue supplying their major buyers and/or maintain or achieve preferred supplier status. Sometimes these hidden costs have to be covered by cuts in other realms, including labour conditions.

When it comes to upgrading via *changing and/or adding functions*, a series of important changes have taken place. Many wine producers-wholesalers have gradually shed off upstream functions linked to grape and wine production, especially in the past two decades or so. Even the largest and historically most important producer-wholesalers have been moving away from grape-growing on their own farms and in some cases even winemaking (Ponte and Ewert 2009; Ponte 2019). Large cooperatives (or ex-cooperatives) do not have outsourcing options because their members are grape growers. As a result, they are increasingly holding stock on behalf of other actors downstream in the value chain. This is an important hidden cost that is not known (or publicized) outside industry circles. Some of the most successful producer-wholesalers have actually largely abandoned even winemaking, thus divesting from holding fixed capital and becoming pure marketers and branders (Ponte 2009, 2019).

In relation to *transferring capabilities between chains*, we should note that wine tourism is a well-developed industry in the Western Cape, with a number of organized wine routes, and that scenic beauty and the environment play a key part in the placement of the Cape Peninsula wine experience in international tourist markets. A good proportion of cellars are open to the public and have tasting facilities; others also have restaurants and hotels on site. Much is made in marketing materials of the beauty of farms and surrounding nature. Branding and marketing capabilities are used for promoting both wine sales and broader tourism-related income. Cellar and property visits tend to improve wine sales beyond the tasting room, and visibility in retail can bring tourist to a property as well. South Africa is considered a sophisticated player in the global tourism industry, it can offer great value for money, and has now moved strongly in the field of tourism sustainability branding and certification – benefiting the wine industry as well (Bruwer 2003, Ferreira and Hunter 2017). This façade of beauty and nature covers a much more

complex reality embedded in a racialized history of labour exploitation that is now hidden behind the tropes of Black Economic Empowerment initiatives in both farms and tourist facilities (du Toit et al. 2008).

A superficial reading of these trends would suggest a successful story of economic and environmental upgrading for South Africa's wine industry: delivery of demand-driven wine styles; increased offering of certified organic and biodynamic wines and compliance with demanding specifications, including environmental ones; better managerial and environmental practices in the cellar and the vineyard; and more systematized quality management systems, including environmental management (Ponte 2019).

Yet, the *economic outcomes* for South African primary wine producers and grape growers are deeply problematic. The extras (e.g. promotional support, certifications, sustainability) that the industry needs to deliver to obtain or even just maintain a listing with major retailers in the UK have become more complex and costlier in the past two decades, while margins remain extremely low. According to a 2005 Deloitte study of all South African wineries with a revenue of less than R25 million (approximately USD 4 million), 36% were making a loss. Of those with a revenue of R25-90 million (USD 4-14 million), 25% were making a loss.¹³ Fast-forward to 2016 – and several forward steps in economic and environmental upgrading – and the picture has become even worse. Returns to investment have dropped to less than 1%, with only 13% of the 3,300 producers operating at sustainable income levels, 44% at break-even and 40% at a loss.¹⁴ The implication of these findings is that South African grape and wine producers have made substantial strides in terms of economic and environmental upgrading *processes*, but these steps have not translated into positive economic *outcomes* in the aggregate as

they have had to absorb the extra costs that are hidden from the purview of consumers and the general public.

Comprehensive evaluations of the *environmental outcomes* of these upgrading processes in South Africa are not available. However, it is probably safe to assume that there have been some positive impacts in terms of biodiversity conservation, decreasing agro-chemical application (when farms convert to organic or biodynamic practices) and better environmental stewardship of the land and water resources. At the same time, grape growing is a mono-crop cultivation method that when applied to previously natural areas destroys rather than enhances biodiversity (McEwan and Bek 2009). Furthermore, biodiversity conservation provisions are fairly limited in scope (restore indigenous vegetation around tasting rooms and on the margins of vineyards) and apply to farms that have already cut down indigenous vegetation, such as *fynbos*, to establish vineyards planted with *vitis vinifera*, an alien species. Also, only a few operators (usually large and environmentally progressive cellars and marketers) can afford to set aside and manage large tracts of land for conservation. The average grape grower and small-scale winery have enough trouble getting by to afford using extra resources for conservation.

In sum, the case study of the wine GVC suggests that: (1) sustainability has been used opportunistically by lead firms for marketing, reputational enhancement and risk management purposes; (2) South African value chain actors, regulators, and some supporting institutions and NGOs have invested heavily in portraying the industry and individual companies as caring for the environment, and painted this portrait along with scenic and natural beauty of the winelands in this country; (3) actors not directly involved in the wine value chain, such as government, conservation groups and sustainability certification initiatives, have unwittingly facilitated a sustainability-driven supplier squeeze by lead firms; and (4) the hidden costs of economic and environmental upgrading

have been carried by primary grape and wine producers, with clearly deleterious impacts on their profitability (see summary in Table 1). Collectively, these lessons suggest that economic and environmental upgrading in the wine GVC in South Africa has led to capital accumulation by lead firms based in the global North, coupled with a supplier squeeze of South African producers. It also suggests that the lead firms can tout the putative benefits of environmental upgrading, while at the same time they place the hidden costs of compliance upstream.

4.2 The hidden costs of upgrading in East African coffee value chains

Coffee is a particularly interesting GVC in the context of the discussions carried out in this article because almost all its production takes place in the global South, while a large proportion of consumption takes place in the global North (notable exceptions are Ethiopia and Brazil, which have substantial domestic consumption markets). By examining how economic and environmental upgrading unfolds along the coffee GVC, this case study can provide new insights in view of identifying the North-South dimensions of value creation and capture and the handling of the hidden costs involved in these processes. The discussion that follows (on the side of production) arises from research carried out in East Africa in the past two decades, but is also informed by collaborative work with researchers who have worked in Latin America (Daviron and Ponte 2005, Grabs and Ponte 2019, Richey and Ponte 2020).

Major improvements related to *improving product, process, volume and/or variety* (including their environmental aspects) have taken place in East African coffee producing countries. In response to the quick growth of the specialty market in the past two-three decades, coffee processors, producers and their cooperatives have had to improve the range of product qualities they supply to the specialty and sustainable coffee markets. The coffee GVC in some ways is becoming more similar to that of wine, with a

multiplication of unique offerings and environmental content – and the increasing importance of economies of scope as well as scale. In time, with the mainstreaming of sustainable coffee and the entrance of mainstream roasters and traders in the specialty market, economies of scope have become indispensable for most producer countries. This demand dynamics has led to a wide differentiation of supply – in some cases going all the way to the production level, especially in large estates and more sophisticated cooperatives, but mostly in Latin America (Daviron and Ponte 2005, Ponte 2019).

Sustainability features have now become a central part of the demands placed by coffee roasters, which are then transmitted by international traders to domestic coffee operators and eventually to farmers in producing countries (see recent work by Grabs 2019 and Millard 2017). This has led to the emergence of a sophisticated assemblage that provides environmental and social sustainability certification or verification options to coffee farmers and traders to deliver these demands. Coffee producers around the world used to supply a relatively homogenous product at volume, with their rewards propped up by the quota system of the International Coffee Agreement until 1989. They now deliver coffee of many different physical, social and environmental quality specifications (Neilson et al. 2018), at different volumes (including micro-shipments), and sometimes through direct-trade relations (Vicol et al. 2018). In other words, there has been a clear improvement in upgrading related to product, process, volume and/or variety in coffee value chains in producing countries, with important environmental components.

At the same time, changes in the *functional division of labour* along the coffee GVC have been relatively limited, especially in coffee producing countries. Functional upgrading in terms of moving into roasting coffee for export has been limited in East Africa, given the shorter shelf-life of roasted coffee in comparison to green coffee, the general preference by mainstream roasters for blending various origins and the

prohibitive costs of importing green coffee from other producing countries outside the region. In other regions, however, some origin roasting for export is starting to happen for small-batch production at the very top of the specialty coffee market, especially in Latin America. Internationally, traders have had to take over some of the functions that roasters have willingly shed. Demands from specialty and sustainability coffee buyers have also led international traders to vertically integrate into some estate coffee production (Grabs 2017), also in East Africa. *Inter-chain capability transfer* has also been limited at the production level in East Africa, given that advanced knowledge acquired in specialty and sustainable coffee production cannot easily be transferred to other export crops (and vice versa) that are grown in similar agro-ecological conditions.

In relation to whether these upgrading trajectories have translated into positive *economic outcomes* for farmers, existing research clearly shows that the distribution of value added along the coffee GVC has progressively moved to the detriment of producers and to the benefit of consumer-country based operators. This trend applies both to mainstream coffee and to sustainable coffee. Talbot (1997: 65), for example, estimated that in the 1970s, an average of 20 per cent of total value generated by roast and ground coffee sales globally was retained by producers, while the average proportion retained in consuming countries was almost 53 per cent. In the 1980s, producers still controlled almost 20 per cent of total value, but after the collapse of International Coffee Agreement in the late 1980s, their share dropped to 13 per cent in the mid-1990s. Work on ‘direct trade’ relationships show that the distribution of value in these coffee value chains is no different from that of mainstream coffees (Borrella, Mataix and Carrasco-Gallego 2015). This represents a hidden and substantial transfer of resources from producing to consuming countries, irrespectively of price levels (Fitter and Kaplinsky 2001a, Fitter

and Kaplinsky 2001b). The collapse of international regulation, coupled with market liberalization in producing countries, played a major role in allowing this transfer.

Much of the recent literature on coffee also shows that indications of geographic origin (Neilson et al. 2018) and sustainability certification focused on environmental issues (including in Uganda) have not translated in improvements in farmers' income and livelihoods (Chiputwa, Spielman and Qaim 2015, Akoyi and Maertens 2018, Jena, Stellmacher and Grote 2017). Some exceptions to this picture are organic certification (in Uganda) (Bolwig, Gibbon and Jones 2009) and sustainability standards that are embedded in quality-based schemes, such as Nespresso AAA (Alvarez, Pilbeam and Wilding 2010). At the other end of the quality scale, entry-level standards, such as those embedded in 4C, are having very limited impacts on farmers' livelihoods (Kuit, Van Rijn and Jansen 2010).

International traders are actually complaining that decreasing premia are making it difficult to afford the cost of their maintain their sustainability outreach activities that are needed to maintain certification, let alone pay a premium to farmers (Grabs 2017, COSA 2013). Farmers, in order to remain in the game, need to deliver environmental sustainability even when the financial gains arising from it are limited or non-existent. At the same time, sustainability systems are proving useful to international traders and roasters because they provide assurance, traceability, and plausible deniability of wrongdoing (Grabs 2017: 21). Again, primary producers are saddled with the hidden costs of environmental improvements. Roasters and supermarkets tout their wares as certified sustainable, but consumers are not aware that these usually entail extra costs for producers. Transparency only works selectively.

In relation to the *environmental outcomes* of upgrading, some impact studies have found a positive link between sustainability certification or verification systems and

environmental practices among coffee farmers.¹⁵ Research on private, individual supply chain sustainability systems suggests that coffee farmers included in these schemes achieve better environmental performance than control groups, but mainly limited to management systems, resource efficiency improvements and recycling activities in (Giuliani et al. 2017). Finally, when sustainability certification pushes for both productivity and environmental improvements, this usually translates into the intensification of production on existing land and thus to lower on-farm biodiversity (COSA 2013).

In sum, sustainability certification and verification systems are being used by mainstream roasters and international traders as marketing and reputation management tools (Solér et al. 2017), with only modest environmental outcomes at the farm level. Despite the good intentions of coffee sustainability initiatives and certifications, and the support of bilateral donors in helping small producers to meet new and stringent environmental standards, the hidden costs embedded in these processes are placed on the shoulders of farmers – who are also receiving small or decreasing environmental premia. This means that the value produced by farmers through environmental upgrading is captured mostly by roasters.

4.3 Interim reflections

The analysis of the wine and coffee GVCs suggests that suppliers have undergone impressive upgrading trajectories and yet have achieved limited economic gains (see Table 1 for a summary of findings).¹⁶ Suppliers are offering more content, including sustainability features, often to simply keep participating in value chains – as buyers place increasing demands on them. This normally leads to lower margins for suppliers unless productivity gains can more than compensate for the higher hidden costs involved. When

suppliers do manage to receive higher prices, it is usually in the context of much larger gains that buyers obtain in the same GVC.

Table 1 around here

But these trends are not limited to the wine and coffee GVCs. Remaining for the time being within the agro-food sector, a comprehensive study of environmental upgrading trajectories in Kenyan horticulture (Krishnan 2017b) shows positive income effects for farmers, but only when they perform product environmental upgrading with high-complex tasks, while other forms of environmental upgrading do not seem to pay off. Because of these limited economic returns, farmers tend to quietly cut corners in time and thus are likely to actually cause yet-to-be-seen long-term environmental downgrading (see Brandi 2017 for a similar experience in the Indonesian palm oil GVC).

Despite the vast differences between these value chains, in terms of product characteristics and geography of production, the consequences of environmental upgrading are similar. Substantial upgrading processes have led to a very specific ‘contested value regime’ (Levy, Reinecke and Manning 2016) – one characterised by moving the hidden costs of environmental upgrading upstream towards producers.

5. Lessons from selected labour-intensive manufacturing and capital-intensive GVCs

In *labour-intensive manufacturing GVCs*, which are commonly buyer-driven, the picture emerging on the hidden costs of environmental upgrading is similar to that of agro-food value chains. The case study of furniture, for example, shows that the main lead firm (IKEA) offered technical support, financial assistance and advice (on sourcing materials,

the organization of production, and production layout) – leading to improvements in the operations of over 50% of its suppliers in China and Southeast Asia, especially in relation to the sourcing of certified wood, improved chemical storage and handling, better wastewater control and emission reductions (Ivarsson and Alvstam 2010, Ivarsson and Alvstam 2011). The environmental upgrading of suppliers included improvements in operational capacity, in the capacity to expand production, and in the adaptive capacity to produce under new design and environmental specifications. At the same time, Ivarsson and Alvstam (2010) show that a large share of cost-savings achieved through environmental upgrading was captured by IKEA itself, even though the formal agreement was for a 50-50% share with suppliers.

In the garment industry, Goger (2013) reported that no price premia were offered for garments produced in ‘green factories’ in Sri Lanka, and that suppliers have come to question the business rationale of their investment in environmental upgrading. They managed to reduce costs (on energy, waste disposal, water) and improve productivity and efficiency through organizational change, aspects that have been highly publicized by garment retailers. However, they had yet to fully recoup their initial investment at the time of Goger’s fieldwork – something they had expected to have achieved by then. When suppliers became involved in this process, they were looking for additional competitive advantage in a risky and unstable industry that had already led to the consolidation of the supply base. They now argue that while buyers benefited from building their ‘green image’, these gains are not being adequately shared with suppliers – something that is hidden from the public view.

Khattak et al. (2015) show that the achievement of lower operational costs through environmental upgrading of garment factories in Sri Lanka has been accompanied by consistent orders, knowledge spill-overs and enhanced reputation – all positive outcomes.

However, environmental upgrading did not lead to higher prices paid by buyers and entailed extra hidden costs for suppliers – meaning that supplier profitability overall did not improve. In other words, suppliers need to deliver environmental upgrading to remain in the game. Similar trajectories have been reported in the garment value chains in Turkey (Tokatli et al. 2008, Tokatli 2012) and Pakistan (Khan et al. 2020), and the sporting goods value chain in Pakistan (Khattak and Stringer 2017). In sum, as environmental upgrading becomes more widespread, early movers are losing their competitive advantage, and buyers capture a disproportionate share of sustainability value at the expense of suppliers who are saddled with the hidden costs of compliance.

Overall, in buyer-driven value chains, we observe a multiplication and expansion of markets for sustainable products and services – and the standard development, certification, auditing, accreditation and consulting industry that goes with it (Lernoud et al. 2016, van der Ven 2019), rather than the achievement of sustainability in production and processing along value chains (Ponte 2012). So far, this has led to many well-publicized efforts to better include suppliers in ‘sustainable GVCs’ through value chain interventions (DeFries et al. 2017, Humphrey and Navas-Alemán 2010, Taglioni and Winkler 2016, Neilson and Shonk 2014), but much less so in ensuring that certifications, standards and other sustainability initiatives actually lead to improved environmental outcomes.

In *capital intensive GVCs*, however, the picture emerging is quite different. Value chain governance in these value chains is often producer-driven (Gereffi 1994) or is characterized by more than one group of firms vying for control along the value chain (as in bipolar or multipolar value chains, see Ponte and Sturgeon 2014). The case of container shipping is instructive in this context. Container shipping often involves transporting consumer goods that are purchased by branded merchandisers or retailers (which are the

cargo-owners) that are often lead firms in their own GVC. Cargo owners are starting to ask questions to shipping companies regarding various forms of emissions (carbon dioxide, sulfur oxides, nitrogen oxides and particulate matter) and fuel efficiency (Poulsen et al. 2016). But cargo-owners neither seem to have developed sophisticated environmental demands nor to have placed them at the core of negotiations on procuring shipping services. Only a few cargo-owners have begun to integrate environmental performance into their shipping procurement decisions – and even fewer have included them into their pricing models. This has led to very limited environmental upgrading in shipping, which can be attributed to a relative balance in the power relations between cargo-owners and shipping companies – with the latter mainly interested in cost-saving environmental measures, such as lower fuel consumption.

Overall, environmental upgrading seems more likely to happen in unipolar, rather than in bipolar or multipolar, value chains (see also Ponte 2019), and where power is concentrated in the hands of consumer-facing global buyers with high reputational risks. Yet, this is accompanied by primary producers being saddled with hidden costs. The value created by producers through economic-cum-environmental upgrading is mostly captured by buyers and showcased to consumers. Consumers can enjoy a wide variety of special and/or ‘sustainable’ products that deliver a feel-good factor, with very little knowledge of the costs born by primary producers. In specialty markets, this is accompanied by a consumer price premium, which is unequally distributed along the GVC. In mainstream markets, consumer prices tend to remain the same thus leading to pressure on margins upstream along the chain all the way to producers. These processes have been facilitated by deregulation and market liberalization and are unwittingly abetted by conservation and sustainability initiatives and certification systems.

6. Conclusion

Lead firms in global value chains, under the guise of stimulating environmental upgrading among suppliers, have been extracting extra value and pushing the hidden costs of compliance and its related risks upstream. This article shows that these costs are not readily visible to consumers and the general public (and sometimes to governments and NGOs as well), that they are intentionally hidden by lead firms in global value chains at the same time as they publicize their environmental upgrading strategies, and that they have negative distributional consequences for weaker players, often based in the global South, and for the environment.

These dynamics are taking place especially in value chains (e.g. in agro-food and in labour-intensive manufacturing) that are governed by global buyers. In the meanwhile, environmental upgrading has failed to address the serious environmental challenges that it was supposed to address – as processes trump outcomes. These observations imply that private, value chain-oriented forms of sustainability governance are not only failing to address sustainability problems, they have also become the conduit of major redistributive dynamics that are working against primary producers in the global South. In other words, lead firms limit their risk and generate capital accumulation by asking their suppliers to solve the environmental problems that they themselves contributed to create through their everyday practices (Havice and Campling 2017). This is arising with the connivance of governments and international organizations via processes of deregulation and market liberalization – and the unwitting support of other non-value chain actors, such as some conservation groups and multi-stakeholder sustainability initiatives and certification systems.

While research on the IPE of the environment has provided important insights for a better understanding of sustainability governance, it has often assumed that institutional features can be understood in isolation from the strategies and everyday practices of dominant actors in global value chains. The environmental upgrading approach employed in this article can help pushing our understanding of sustainability governance further, as it seeks to explain how it is entangled in value chain dynamics. It can also show how the re(distribution) of hidden costs leads to increased North-South inequality under the guise of sustainability.

Since business is leveraging sustainability mainly for its own purposes, governments and international organizations need to consider appropriate forms of re-regulation and find ways of better orchestrating a variety of sustainability governance initiatives if they actually wish to achieve fair and just environmental protection. Social movements and civil society organizations also need to find new ways of advocate change that are cognizant of value chain dynamics and of the unexpected outcomes and inequalities that may arise from otherwise valuable initiatives to promote sustainability. Both public authorities and civil society groups need to be aware of the major limitations of what business can achieve through self-regulation and multi-stakeholder cooperation. Therefore, public orchestrators need to adopt strategies that include knowledge of how value chains operate, and of the pressure points within these chains where they are most likely to stimulate positive change and tame inequalities.

In this article, space considerations worked against a proper treatment of other important analytical elements, which future research should address. First, although we know how value chain governance shapes environmental upgrading trajectories and with what distributional effects, more knowledge is needed on the kinds of value chains, products, tasks and environments where these hidden costs are more likely to occur. We

also need more insight on the conditions under which suppliers are compelled to share or invest in newer technologies or re-organization of work that can yield better distributional outcomes. The research design underpinning this article does not allow firm conclusions on whether ‘unhiding’ the costs of environmental upgrading would lead to a better deal for producers in the global South, something that needs to be addressed in future work. Finally, more insight is needed on the broader political economy within which the currently popular concepts of value chain governance and upgrading are embedded – given that approaches such as ‘making markets work for the poor’ are currently considered the most effective (if not the only) way of taming the excesses and hidden costs of capitalist growth.

Table 1: Summary of Upgrading Trajectories and Outcomes in the Wine and Coffee GVCs

		Upgrading trajectories					Economic outcomes		
		Improving product, process, volume and variety	Changing, adding and/or dropping functions	Inter-chain capability transfer	Drivers of upgrading	Hidden costs for primary producers	for lead firms	for suppliers	for consumers
Wine	general	substantial improvements	many wine producers moving out of grape growing; exporters dropping downstream functions in importing countries	observed between wine and tourism sectors in South Africa	retailers and international wine merchants	internalizing stock management costs; bearing fixed capital costs; reduced profitability	positive	supplier squeeze	positive: availability of larger variety of quality wines at competitive prices
	sustainability elements	limited pressure from buyers; pro-active sustainability management within South Africa	none	limited	wine producers	costs of compliance with environmental 'content' and multiple certifications at no or small price premium; smaller suppliers unable to bear costs of improved 'conservation'	positive: wider portfolio of wines and delivery of sustainability at no extra cost	pro-active delivery of sustainability elements by producers does not improve their profitability	one of the elements of differentiation, but not a key one
Coffee	general	substantial improvements	limited within producing countries; international traders incorporating functions downstream and (to some extent) upstream	limited	roasters and international coffee traders	diversification of demand puts downward price pressure on less sophisticated, poorer producers of lower quality coffee	positive	supplier squeeze	positive: availability of larger variety of quality coffees
	sustainability elements	strong demand by retailers and roasters as part of sustainability mainstreaming and product differentiation	important, due to traceability and risk minimization, especially in private, corporate verification systems	no influence	originally, NGOs and specialty roasters; later, mainstream roasters and international traders	massive expansion of sustainability certification and related compliance costs at the farm level; costs of complying with multiple certifications covering the same aspects; very limited price premium for environmental content	important element of green capital accumulation	substantial factor in supplier squeeze	key element in the delivery of a feel-good factor to consumers

Source: own analysis, based on empirics presented in Grabs and Ponte (2019), Ponte (2019)

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Endnotes

¹ See, inter alia, Ahi and Searcy (2013), Ahi and Searcy (2015), Gold, Seuring and Beske 2010), Seuring and Müller (2008) and Lund-Thomsen and Lindgreen (2014)

² See, for example, Epstein and Buhovac (2014), Levy and Newell (2005), Matten and Moon (2004), Matten and Moon (2008), Meckling (2015), McWilliams and Siegel and Wright (2006)

³ See Dallas, Ponte and Sturgeon (2019), Gereffi (1994), Gereffi, Humphrey and Sturgeon (2005), Gibbon and Ponte (2005), Milberg and Winkler (2013), Ponte and Sturgeon (2014).

⁴ See work examining ‘value capture trajectories’ (Coe and Yeung 2015, Yeung and Coe 2015, Neilson, Wright and Aklimawati 2018) and related upgrading and downgrading trajectories that are emerging (see, i.e. Bernhardt and Pollak 2016, Blažek 2015, Cattaneo, Gereffi and Staritz 2010, Gereffi and Lee 2016, Gibbon 2001, Gibbon and Ponte 2005, Glückler and Panitz 2016, Hansen, Fold and Hansen 2014, Mitchell and Coles 2011, Ponte and Ewert 2009, Tokatli 2007, Tokatli 2012).

⁵ Other scholars have sought to further widen the classic typology of economic upgrading (product, process, functional, and inter-chain) by adding other forms such as: *whole chain upgrading*, a shift of the whole GVC ‘towards more demanding segments of a market’ (Blažek 2015: 855) possibly as a result of strengthening backward linkages (Morris and Staritz 2014) and/or better horizontal coordination (Bolwig et al. 2010, Mitchell and Coles 2011); *strategic coupling* (and decoupling/recoupling), which occurs when local actors, supported by regional institutions and policies, interact dialectically with global actors in GVCs (Coe and Yeung 2015, Horner 2013, Liu 2017, MacKinnon 2011, Yeung 2016), or more narrowly when government policy paves the way for upgrading trajectories (Larsen 2016, Ponte et al. 2014); *reversal of power hierarchies*, when producers succeed in reshaping governance structures and manage to capture a larger share of value (Patel-Campillo 2011, Blažek 2015); and *relational upgrading*, when firms achieve better positionality in production networks thus improving their ‘know-who’, in addition to their ‘know-how’ (Glückler and Panitz, 2016, Krishnan 2017a, Krishnan 2017b). Distinctions have also been made within the category of *functional upgrading* (and downgrading). Blažek

(2015), for example, distinguishes between: lower tier suppliers moving to upper tier positions; abandoning lower value functions; transferring some high value functions from buyers to their suppliers; developing new markets, products and functions (see also Morris and Staritz 2014, Ponte and Ewert 2009); and buying up firms to improve technological capabilities, a kind of functional upgrading that occurs through M&As (Hansen et al. 2014).

⁶ See, inter alia, Barrientos, Gereffi and Rossi (2010), Barrientos and Visser (2013), Bernhardt and Pollak (2016), Coe and Hess (2013), Gereffi and Lee (2012), Gereffi and Lee (2016), Milberg and Winkler (2013), Pegler (2015), and Rossi (2013).

⁷ Gereffi and Lee (2016) have highlighted several possible trajectories of social upgrading: a market-driven trajectory, when demand for goods produced with higher social standards pushes producers to improve work conditions; a CSR-driven trajectory, when the same process is stimulated by private standards or codes of conduct set by global buyers/retailers (Lund-Thomsen and Lindgreen 2014, Lund-Thomsen and Nadvi 2010); a multi-stakeholder path, based on the cooperation of private (business, industry associations, NGOs) and sometimes public actors; a labour-centred trajectory, where workers and their labour unions assert their rights and succeed in promoting social upgrading (O'Rourke 2006, Selwyn 2013); and a public governance path driven by public regulation (Locke, Rissing and Pal 2013, Mayer and Gereffi 2010). These paths coexist and interact, sometimes displacing, other times complementing each other.

⁸ These observations also hold at the level of country/GVC combinations (see Bernhardt and Pollak 2016, Bernhardt and Winkler 2011, Milberg and Winkler 2011) and are confirmed by other case study research (Pegler 2015, Riisgaard 2011, Rossi 2013) showing that process upgrading is linked to social upgrading in terms of working conditions, but not in terms of enabling rights. Because of the possible effects of the fallacy of composition in upgrading, in situations where most suppliers upgrade to meet new or more stringent demands from buyers, they may not succeed in capturing more value added; but even when they do, it does not necessary lead to social upgrading (Milberg and Winkler 2013: 282)

⁹ Tewari and Pillai (2005), for example, observed successful environmental upgrading via regulatory intervention in the India-to-Germany leather value chain. This occurred as a result of two policy changes: new standards applied by regulators in Germany (one of the main importers of Indian leather), who banned Azo dyes and the use of pentachlorophenol; and the decision by the Indian government to institutionalize compliance with the new German regulation by banning not just the use of these chemicals but also their production in India – thus affecting the whole leather value chain rather than only firms exporting to the German market.

¹⁰ Source : <http://www.sawis.co.za>

¹¹ Source: <http://www.sawis.co.za>

¹² There are also a number of initiatives seeking to address social issues, which are particularly important in South African due to the history of apartheid and labour exploitation. Among these, the most important are various Black Economic Empowerment initiatives and legislation (du Toit et al. 2008).

¹³ Source: H. Krige, ‘Writing on the wall for haphazard finances – Deloitte benchmarking study’, *Wineland*, Cape Town, July 2005.

¹⁴ Source: Mike Veseth, ‘South Africa Wine Industry: Serious Problems, Lofty Goals, Progress Update,’ *Wine Economist*, 14 February 2017. <https://wineeconomist.com/category/south-africa/>

¹⁵ See, inter alia, Ibanez and Blackman (2016), Blackman and Naranjo (2012), Rueda, Thomas and Lambin (2015), Takahashi and Todo (2013), Solér, Sandström and Skoog (2017), and Nguyen and Sarker (2018).

¹⁶ The short empirical analysis provided in this article provides mainly a snapshot of the contemporary situation. A historical analysis of how these dynamics have changed in time is available elsewhere (Ponte 2019).