# Tensions on the road toward just transitions in the latin american coffee value chain

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**Document version:**
Author accepted manuscript (pre-print)

**Citation for published version:**
Andrews, Katie, Noemi Sinkovics, and Rudolf R. Sinkovics (2023), "Tensions on the road toward just transitions in the Latin American coffee value chain," in *International business and sustainable development goals*, Rob van Tulder, Elisa Giuliani, and Isabel Álvarez (Eds.). Progress in international business research Vol. 17. Bingley, UK: Emerald Publishing Limited, 309-323. https://doi.org/10.1108/S1745-886220230000017016

# Tensions on the road towards just transitions in the Latin American coffee value chain

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## Abstract

This chapter investigates the coffee value chain in Latin America. By drawing on the concept of just transitions as a "connective tissue" between the Sustainable Development Goals (SDGs), the discussion zooms in on the promise of agroforestry for environmental upgrading. The chapter concludes by providing examples of trade-offs between environmental, social and economic aspects.

## Keywords

Just transitions, Sustainable Development Goals (SDGs), Global value chain (GVC), upgrading, Sustainability, Sustainable production, livelihoods

## 1 Introduction and motivation

This chapter examines whether and to what extent the pressure for environmental upgrading in the Latin American coffee global value chain (GVC) exhibits evidence of 'just transitions'. The underpinning motivation is that the coffee sector represents one of the most pervasive and globalised, yet most inequitable, GVCs. Coffee has an impact on communities and environments worldwide. Over 2.25 billion people consume coffee daily and 125 million people are dependent on its production throughout tropical regions in Latin America, Africa and Asia (Krishnan, 2017; Samper & Quiñones-Ruiz, 2017). The Latin American coffee industry accounts for 60% of the global production, in one of the most 'economically marginalised, but ecologically rich' regions of the world (de la Vega-Leinert et al., 2016, p.16). According to the International Coffee Organisation (ICO, 2021), all coffee-producing national economies in Latin America are classed as developing, and many are dependent on coffee exports despite some smaller nations representing only a marginal proportion of global coffee production (Krishnan, 2017; Ruben & Zuniga, 2011).

Sustainability concerns in coffee production arose with the 18th-century commodification of coffee by the colonial Global North as a cash crop that relied on extractive and exploitative labour on rural land in the Global South (Clarence-Smith & Topik, 2003; Krishnan, 2017; Panhuysen & Pierrot, 2020). These concerns, in terms of both environmental and social sustainability dimensions, have been further exacerbated in recent decades by changes in contemporary power structures. Daviron and Ponte (2005) highlight the existence of a 'coffee paradox', which refers to the exaggeration of power asymmetries between producers and buyers through buyer-driven governance structures within complex and internationally fragmented GVCs (Ponte, 2019). Roasting and retail lead firms in the Global North capture and control the majority of the downstream value-adding activities,

while at the same time dictating standards for upstream producing countries in the Global South that only capture around 7–10% of value through raw exports (Gereffi & Korzeniewicz, 1994; Grabs & Ponte, 2019; Pelupessy & Díaz, 2008). Moreover, volatile prices and unregulated markets have led to economic and social insecurity for producers, 95% of whom are smallholder farmers who lack bargaining power and must accept prices set by downstream traders and roasters (McCook, 2017; Ponte, 2002; Topik et al., 2010).

The coffee paradox has incited deagrarianisation and incentivised unsustainable production methods for short-term economic gain, such as sun-grown monocultures and the intense application of chemical inputs (Daviron & Ponte, 2005). The decrease of shade-grown coffee cultivation areas has increased environmental issues such as soil infertility, biodiversity loss, deforestation, increased susceptibility to disease and pests, and water contamination (Babin, 2020; Jha et al., 2014; McCook, 2017). Further, the effects of climate change are affecting coffee-growing regions through irregular rainfall patterns, extreme temperatures, and land degradation. In all, the interconnectivity between the global climate and social and economic issues within the coffee GVC threatens the ability of producers and their local communities to manage livelihoods through sustainable coffee production (Bunn et al., 2015; Roach et al., 2021).

Simultaneously, the quality of coffee is significantly influenced by the biophysical characteristics of its cultivation and post-harvest processing techniques and technology (Hernandez-Aguilera et al., 2018; Pico-Mendoza et al., 2020; Ruben & Zuniga, 2011). Consequently, the environmental sustainability of production is directly related to the quality of coffee. In turn, the production of high-quality coffee is linked to product differentiation, access to international markets and the ability to capture more value (de la Vega-Leinert et al., 2016). Therefore, engaging in environmental upgrading has direct benefits for companies (Sinkovics & Archie-Acheampong, 2020). However, such economically motivated environmental upgrading does not necessarily translate into socio-economic benefits for all actors involved (cf. Barrientos et al., 2011; Fernandez-Stark & Gereffi, 2019; Sinkovics et al., 2016).

The key question that we thus pursue in this chapter is whether attempts of public and private sector actors to counteract increased market pressures on upstream producers (cf. Grabs & Ponte, 2019) through sustainability certifications (cf. Basu et al., 2003; Krishnan, 2017; Panhuysen & Pierrot, 2020) and upgrading strategies (Beuchelt & Zeller, 2011; Topik et al., 2010) serves to transcend GVC system constraints (cf. Sinkovics & Sinkovics, 2019; Sinkovics et al., 2015), support upgrading and improve the value-capture for producers.

## 2 Just transitions

The scale and urgency of the climate challenge, with its threats to planet and society, has prompted policy actors to adopt frameworks that support rapid structural changes to governance and economic transitions. The ‘just transitions’ framework has gained traction as a policy tool to help achieve sustainable development actions and social worker and community protections with a view to a socially equitable distribution of benefits and consideration of the risks of such transitions (Cahill & Allen, 2020). The just transitions framework is seen as a ‘connective tissue’ between the Sustainable Development Goals (SDGs) and the three pillars of sustainable development – society, environment and economy (Robins et al., 2018; Robins et al., 2019). It follows the ILO (2015) guidance that ‘a just transition for all towards an environmentally sustainable economy […] needs to be well managed and contribute to the goals of decent work for all, social inclusion and the

eradication of poverty'. Just transitions overlap with several of the United Nations SDGs, in particular SDG 13 – Climate action and SDG 8 – Decent work and economic growth (Robins et al., 2019).

**Figure 1: Links between just transitions and the SDGs**


Source: Robins et al. (2019)

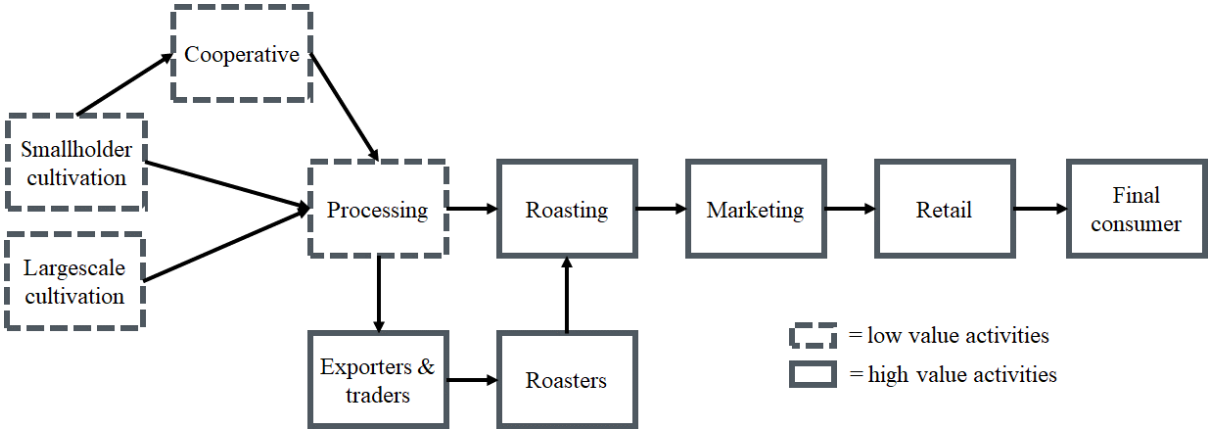
Just transitions are typically associated with the energy sector (McCauley & Heffron, 2018), but as the framework brings together climate, energy and social and environmental justice through exploring and promoting (1) distributional, (2) procedural and (3) restorative justice, it has relevance for multiple sectors. In light of climate change challenges and the symbiotic relationship between coffee conservation and human production and consumption (Ostrom & Janssen, 2005; Walker et al., 2004), transitions to a low-carbon economy and the development of resilient societies are particularly pertinent to this sector (cf. Galgóczi, 2018; ITUC, 2019; Stevis et al., 2021).

The just transitions framework is thus seen as a useful perspective to examine whether and to what extent coffee producers have the resources, initiatives and support to shift towards environmentally sustainable production (Galgóczi, 2018). Next to the physical environment and the connection to SDG 13 – Climate action (Stevis & Felli, 2020), SDG 8 – Decent work and economic growth is of particular importance, involving multilevel collaboration from a diverse group of multipartite stakeholders, and inclusive and meaningful social dialogue and decision-making (CSIS & CIF, 2021; Galgóczi, 2018; ITUC, 2019; van Tulder & van Mil, 2023; van Zanten & van Tulder, 2020).

# 3 An overview of the coffee GVC connected to Latin America

Despite some transformation towards more 'sustainable' forms of production, the sector remains dominated by 'mainstream coffee firms and practices' (Levy et al., 2016, p.364). However, coffee GVCs tend to be long and fragmented, adding further complexity to the transformation process that goes beyond environmental aspects. The industry is estimated to emit 33.3–125.6 billion kg of $CO_2$ per annum, exacerbated by the transport required, and has significant energy and water footprints (De Marchi et al., 2013; Giraldi-Díaz et al., 2018; Nab & Maslin, 2020). Cultivation, processing and roasting comprise the main production activity nodes prior to coffee becoming a marketable product for consumption (Martinez-Torres, 2006). Cultivation and processing occur in countries in the Global South, which capture the least amount of value, while roasting, trading, marketing and retailing form part of the lead firm activities, which capture the most value (Grabs et al., 2016; Panhuysen & Pierrot, 2020). While individual GVCs have distinct actors and governance structures, GVCs connected to Latin America are typically organised as outlined in Figure 1.

**Figure 2: Coffee production activity nodes in Latin American global value chains**




Source: Authors, based on the literature

*Cultivation*: Coffee producers manually cultivate coffee plants, which take approximately three years to mature and require intensive manual inputs of water, fertiliser, pest and disease control, and weeding (Acosta-Alba et al., 2020; Krishnan, 2017). Once mature, the red coffee berries are manually harvested biennially, with alternate years of high and low yields. Smallholder producers may join a cooperative at this stage to pool resources for market access and environmental upgrading opportunities (Giuliani et al., 2017).

*Processing:* This occurs on the same day as harvesting, using either the wet or the dry method to wash and de-pulp the berries, then dry and process the beans, resulting in parchment coffee (Giraldi-Díaz et al., 2018). The wet method produces a higher-quality bean, but involves immense amounts of water, energy, time and specialised equipment (Bravo-Monroy et al., 2016). The dry method involves sun-drying the berries manually in the sun or mechanically (Krishnan, 2017). The next step involves hulling the residual parchment layer and silver skin on the bean, which produces green beans that are then graded and sorted according to quality standards (Bravo-Monroy et al., 2016; Krishnan, 2017).

*Roasting:* This step represents the first bottom-up GVC activity that captures significantly more value for firms. Actors involved in this node have increased power to govern the requirements of prior processing and cultivation stages concerning bean quality.

This is predominantly because roasters define quality and quality attributes while possessing the knowledge and resources to craft and communicate differentiated blends to end consumers (Quiñones-Ruiz, 2020). Producers who engage in successful upgrading and vertical integration of activities at this stage, or who operate a 'seed to cup' process, secure a larger portion of the value, control, market share and overall economic sustainability (Morais & César Pinheiro da Silva, 2021). Moreover, although green coffee has a longer shelf life than roasted coffee, exporting roasted coffee from the producer country has a significantly smaller carbon footprint, thus providing environmental benefits for the entire GVC (Nab & Maslin, 2020).

# 4 The promise of agroforestry

Harvey et al. (2021) identify seven transformation patterns for coffee-growing landscapes across Latin America that highlight nexus challenges between socio-economic and environmental aspects (cf. van Tulder & van Mil, 2023). For example, the replacement of Arabica coffee varieties with more resistant varieties that produce higher yields, deforestation or reduction of shade to create more production capacity, and the increased use of agrochemicals may contribute to SDG1 – No poverty, SDG2 – Zero hunger and SDG8 – Decent work and economic growth in the short to medium term; however, by negatively affecting SDG13 – Climate action and SDG15 – Life on land, these positive effects are likely to be eradicated over time (cf. Goparaju et al., 2020; Harvey et al., 2021). In contrast, fostering agroforestry practices can simultaneously contribute to SDG1 – No poverty, SDG2 – Zero hunger, SDG11 – Sustainable cities and communities, SDG13 – Climate action and SDG15 – Life on land (Goparaju et al., 2020). Agroforestry production works in harmony with natural cycles, relying on a combination of polyculture elements and minimal inputs (Folch & Planas, 2019) to enhance the landscape (Andreotti et al., 2020), vegetative structure and environmental management (Roach et al., 2021). This integrative system produces environmental benefits with social and economic spill-overs that improve farm-level resistance and resilience to external economic shocks and adaptive capacity to climate change (Babin, 2015; Rahn et al., 2014).

The environmental benefits of agroforestry include improvements to biodiversity conservation (Haggar et al., 2017), water conservation (Bro et al., 2019; Jimenez-Soto, 2021), soil quality and temperature regulation (Bro et al., 2020; Folch & Planas, 2019; Toledo & Barrera-Bassols, 2017), nitrogen fixation (Hernandez-Aguilera et al., 2018; Roach et al., 2021; van Rikxoort et al., 2014), soil erosion control (Jezeer et al., 2019) and pest and disease management (Cerda et al., 2020). This leads to reductions in energy consumption (Millard, 2011), runoff (Fain et al., 2018), land-use change (Nab & Maslin, 2020) and deforestation through the maintenance of shade-cover (Toledo & Moguel, 2012). Further, such systems protect coffee plants from solar radiation, wind and rain, while enhancing pollination (Fain et al., 2018; Toledo & Barrera-Bassols, 2017), and provide pathways towards integrated sustainable adaptation and mitigation strategies for carbon sequestration (Birkenberg & Birner, 2018; Cerda et al., 2020; Fain et al., 2018).

As agroforestry systems involve cultivating diversified trees and crops, they can create an alternative source of economic value to supplement income streams through sales of timber, firewood, food and seeds while mitigating the degradation of natural resources, thereby demonstrating opportunities for inter-sectoral upgrading (Andreotti et al., 2020; Babin, 2015; Bro et al., 2020; Toledo & Moguel, 2012; van Rikxoort et al., 2014). The domestic use of repurposed wood or fruit reduces external input costs, allowing farmers to

become more self-sufficient (Fain et al., 2018; Hernandez-Aguilera et al., 2018; Rahn et al., 2014). Additionally, agroforestry systems create habitats that promote fauna biodiversity, which indirectly improves product quality and saves costs on pesticides due to the natural aviary control of insect pests (Hernandez-Aguilera et al., 2018). Using less pesticides also reduces chemical-related health risks (Cerda et al., 2020).

Agroforestry explicitly provides for the inclusion of coffee farmers, rural workers, indigenous peoples, women and other marginalised groups in GVCs. Agroforestry has thus been regarded as a key factor of social and political movements throughout history to uphold lifestyles, territories and cultures intertwined with natural resources and biodiversity conservation (Toledo & Barrera-Bassols, 2017). Coffee crops fit well within existing indigenous agroforestry systems, thereby preserving living cultures and allowing for traditional indigenous polyculture systems and knowledge to be retained in practice (Folch & Planas, 2019; Toledo & Barrera-Bassols, 2017). As such, agroforestry systems may improve farmer autonomy in line with local values, ecological development and connectivity needs, thus recognising and supporting the most vulnerable throughout sustainable transitions (de la Vega-Leinert et al., 2016).

Agroforestry systems can foster collaborative, multi-actor action by increasing producer access to cooperatives or relationship coffee models (Hernandez-Aguilera et al., 2018), which can provide educational and technical support to farmers (Hochachka, 2021), alongside access to international sustainability certification (Jezeer et al., 2019), thereby resulting in additional social and economic upgrading opportunities and multilevel support reminiscent of just transitions. Lead firms are likely to favour agroforestry production systems because of their pre-existing understanding of sustainable business risks, abilities and commitments, which might enable private entities to lead large-scale rapid progress through agroforestry market mechanisms that public entities would likely not be able to achieve in the same time, scope and scale (Millard, 2011).

# 5 The role of voluntary standards and certifications

(Harvey et al., 2021) find that there has been an increase in the area used for coffee production managed through voluntary standards and certifications, and conclude that standards and certifications have the potential to be effective tools for environmental upgrading even though their impact on the structure and composition of coffee landscapes has not been sufficiently documented. Further, the extent to which standards and certifications facilitate the social and economic upgrading of farmers and producers will depend on a number of factors, including how far developmental criteria are prioritised in these standards (Fransen et al., 2019). The multiplicity of standards in a given sector as well as the different dimensions thereof will also have an effect on their effectiveness (Fransen et al., 2019). Nevertheless, standards and certifications can play an important role if they factor in compensation mechanisms for lower productivity during environmental upgrading transitions (cf. de la Vega-Leinert et al., 2016).

Additionally, certifications can prompt cooperatives to collaborate with a wider range of diverse stakeholders, thereby providing improved advisory, training and resource services for farmers and influencing attitudes towards sustainable agricultural practices (Snider et al., 2016). Bitzer et al. (2013) find that combining certification with inter-sectoral partnerships in Peru improved infrastructure, knowledge dissemination and training, resulting in increased capabilities for farmers to environmentally upgrade production practices. Increased access to training, education and support services through certification adoption can result in

improvements to producer health, sanitation, hygiene and labour conditions (Piao et al., 2019), while the increased opportunities to engage with GVC actors may strengthen knowledge sharing, transparency, technology transfers and network connections (Millard, 2011; Pinto et al., 2014). However, understanding how local producers integrate management with biodiversity and conservation is key to the success of multilevel, collaborative sustainability initiatives (cf. Araujo et al., 2022; Roach et al., 2021). In addition to understanding local practices, needs and challenges, strong government institutions are essential for transitioning to sustainable production; in their absence, certifications and cooperatives can enhance sustainability initiatives but are limited in the extent of upgrading and scale they can achieve (Giuliani et al., 2017). A sector's institutional capacity, the national industry stance and the international image of a given country will also influence national strategies to adopt, repurpose or replace private standards (Grabs, 2021).

However, farmers who are unable to meet production or certification requirements are often economically and socially disadvantaged (Piao et al., 2019). Thus, without external support, the administrative procedures and transformation costs form large access barriers (Hajjar et al., 2019). Additionally, some certifications are only available to cooperative members (Ortiz-Miranda & Moragues-Faus, 2015) or selectively target farms with a certain land area or altitude, which consequently favours producers that have the contextual means to comply despite incurring losses, while excluding the participation of those inhibited by financial constraints (Haggar et al., 2017). Further, Jimenez-Soto (2021) highlight concerns regarding the conservation narrative used as a marketing technique for organic and shade-grown coffee, which ignores the producer's role in labour-intensive production, conceals wellbeing concerns, and frames social and environmental issues as a consequence of individual management rather than repercussions of macro-level systemic challenges. Producer identities are further excluded when the GVC is arranged with value-added roasting and retailing activities located in consuming countries in the Global North, which adds complexity to the transparency and validation of environmental upgrading activities (Nab & Maslin, 2020). Therefore, efforts to build transparency and collaborative relationships between upstream and downstream actors will continue to be hampered if producers are not included in or empowered to contribute to quality, sustainability and business conversations that facilitate the elimination of colonial patterns embedded throughout the GVC (Daviron & Ponte, 2005; Fransen et al., 2019; Quiñones-Ruiz, 2020, 2021).

# 6 Trade-offs and concluding remarks

Although transitions to agroforestry systems provide biodiversity and food security benefits, they may also bring health and safety risks to producers given the venomous fauna that inhabit biodiverse coffee-growing areas (Jimenez-Soto, 2021). Further, organic production and adherence to certification requirements often produces financial stress because of higher costs (Dietz et al., 2020). This may affect producers' ability to improve their living conditions and overall social welfare (Jimenez-Soto, 2021) As a consequence, to facilitate transition, there is need for social and economic support (cf. Blackman & Naranjo, 2012). Similarly, Roach et al. (2021) point to tensions between conservation plans and livelihood issues. Trade-offs also exist between carbon emissions and quality, particularly given that the most common de-pulping method in Latin America is wet processing, which produces substantially more emissions than dry processing (van Rikxoort et al., 2014). Further tensions and trade-offs exist when using bioenergy to reduce emissions, because of the substitute grid energy being produced from hydro-electricity and fossil fuels, which in turn increase greenhouse gas emissions (Garcia-Freites et al., 2020).

These tensions and trade-offs between environmental, social and economic aspects of sustainability, and by extension the corresponding SDGs, in the Latin American coffee value chain are not unique to the coffee sector; nor Latin America. However, the above-mentioned examples highlight the importance of paying closer attention to the interaction effects between SDGs (Nilsson et al., 2016; van Tulder & van Mil, 2023). To facilitate just transitions, initiatives need to simultaneously consider the constraints of multiple inter-connected systems together with feedback loops to avoid or mitigate unintended consequences (Sinkovics et al., 2016; Sinkovics et al., 2015; van Tulder & van Mil, 2023). The three SDG logics identified by van Zanten and van Tulder (2020) form a 'hybrid' governance system that provides guidance for the design of more inclusive and flexible interventions. The governance logic embodies a top-down approach that provides companies with direction. Working within this frame, companies set their own strategies to work towards the SDGs from the bottom up. The third, bridging logic – systems logic – seeks to continuously identify and analyse the positive and negative interaction effects between the public and private domains (van Tulder & van Mil, 2023; van Zanten & van Tulder, 2020).

Applying systems logic through the lens of just transitions offers a way to ensure that the voices and interests of farmers, workers, communities, consumers and citizens are sufficiently considered (cf. Robins et al., 2018; Robins et al., 2019). Bringing the thinking around just transitions to the fore in coffee value chains is now even more important as, given the increasing 'mainstreaming of sustainability in coffee markets and corporate strategies, a period of reconsolidation of bargaining power in favour of buyers is starting to re-emerge' (Ponte, 2019: 128). This signals that the gap between reporting and actual progress towards the SDGs has not been sufficiently closed (cf. van Zanten & van Tulder, 2018). Although there are pockets in the Latin American coffee value chain that are beginning to show a certain degree of just transition (cf. Parente-Laverde, 2020), they still represent the exception rather than the rule.

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