

Impact Investing and Sustainable Global Value Chains: Enabling Small and Medium Enterprises Sustainability Strategies

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Abstract

Recent research on the sustainability of global value chains (GVCs) and organizational learning suggests that small and medium enterprises (SMEs) operating as suppliers pursue proactive strategies, independent of what multinational corporations (MNCs) and regulations demand in the context of their supplying relationships. However, SMEs in emerging markets (EM) confront a crucial barrier to implementing such strategies and achieving more sustainability in GVCs. They lack the financial resources to create new organizational capabilities and infrastructure for upgrading. EM SMEs' strategies require sustainable, long-term funding, which GVCs buyers and commercial banks seldom facilitate.

Emergent forms of impact investing aiming at measurable sustainability outcomes and financial returns promise to address EM SMEs' lack of funding. Evidence suggests that impact investors struggle to connect to SMEs in EM. Yet, impact investing has been studied limited to dynamics in financial markets, neglecting how the investors transform capital allocations into actionable resources for SMEs. In addition, the literature of GVCs has not studied enough how suppliers' production and upgrading are financed and the role of extra-GVCs financing. My Thesis contributes to addressing those gaps by answering the research question: How does impact investing influence the sustainability of SMEs in GVCs?

I apply qualitative methods to conduct two multiple inductive case studies of the interaction between international impact investors and Latin American SMEs in agro-industrial GVCs. First, I study how the proactive sustainability strategies of 66 coffee SMEs intertwine with their efforts to access loans from thirteen impact investors. I focus on how SMEs gain access to impact investments and how that influences their capacity to overcome entrenched barriers to upgrading. Second, I examine six "Financial Fairs" that a network of 23 impact investors facilitated to connect to 70 coffee and forestry SMEs. I focus on the knowledge creation dynamics that impact investors and SMEs activate to build new capabilities essential to connect the supply and demand of impact investing in GVCs.

I build on my findings to develop the new construct of *financial upgrading*. Financial upgrading is one firm's move to a new source of financing more advantageous than the existing ones in addressing its funding needs. I identify three types of financial upgrading: process, product, and channel. Financial process upgrading, i.e., the SMEs' creation of new capabilities in the financial

domain to meet impact investors' requirements, introduces unprecedented learning opportunities for SMEs in GVCs. Financial product upgrading, i.e., the SMEs' access to financing under improved and more sustainable conditions, unleashes new funding sources that catalyze proactive sustainability strategies that buyers would not support. Financial channel upgrading, i.e., the SMEs establishing higher value relationships with extra-GVCs financial actors, reconfigures the SMEs' supplying relationships.

In addition, I theorize the new notion of *collaborative learning*. Collaborative learning refers to a highly coordinated interactive dynamic of knowledge creation at the aggregated inter-group level of impact investors and SMEs. It captures how impact investors overcome knowledge-based barriers to connect their financial innovation to the SMEs' demand for sustainable financing. Collaborative learning represents a new mechanism for creating firm-level knowledge in GVCs, which relies on establishing and nurturing a highly diverse set of local and global knowledge flows without the involvement of the MNC. I conclude by outlining financial upgrading' and collaborative learning's practical implications for policymakers, development practitioners, MNCs, and impact investors.

Résumé

Des travaux de recherche récents sur la durabilité des chaînes de valeur mondiales (CVM) et l'apprentissage organisationnel donnent à penser que les petites et moyennes entreprises (PME) en activité en tant que fournisseurs poursuivent des stratégies proactives, indépendamment de ce que les multinationales et les réglementations exigent dans le contexte de leurs relations d'approvisionnement. Cependant, les PME des marchés émergents doivent composer avec un obstacle crucial à la mise en œuvre de stratégies proactives et à la réalisation d'une durabilité accrue dans les CVM. Elles ne disposent pas des ressources financières nécessaires pour créer de nouvelles capacités organisationnelles et infrastructures pour se moderniser. Les stratégies des PME des marchés émergents nécessitent un financement durable et à long terme, ce que les acheteurs des CVM et les banques commerciales facilitent rarement.

Des formes émergentes d'investissement d'impact visant des résultats mesurables en matière de durabilité et de rendement financier cherchent à répondre au manque de financement des PME sur les marchés émergents. Certaines données probantes indiquent que les investisseurs d'impact ont du mal à établir des liens avec les PME des marchés émergents. Par ailleurs, les études de l'investissement d'impact se sont limitées à la dynamique des marchés financiers et ont négligé la manière dont les investisseurs transforment les allocations de capitaux en ressources exploitables pour les PME. De plus, la littérature sur les CVM ne s'est pas suffisamment penchée sur la manière dont la production et la modernisation des fournisseurs sont financées et sur le rôle du financement offert en dehors des CVM. Ma thèse contribue à combler ces lacunes en répondant à la question de recherche : comment l'investissement d'impact influence-t-il la durabilité des PME dans les CVM?

J'applique des méthodes qualitatives pour mener deux études de cas multiples inductives de l'interaction entre les investisseurs d'impact internationaux et les PME d'Amérique latine dans les CVM agro-industrielles. D'abord, j'analyse comment les stratégies proactives en matière de durabilité adoptées par 66 PME du secteur du café sont liées à leurs efforts pour accéder aux prêts de treize investisseurs d'impact. Je centre mon analyse sur la manière dont les PME accèdent aux investissements d'impact et sur la façon dont cela influence leur capacité à surmonter les obstacles enracinés qui nuisent à leur modernisation. Ensuite, j'examine six « foires financières » qu'un réseau de 23 investisseurs d'impact a permis d'organiser pour tisser des liens avec 70 PME du secteur du café et de la foresterie. Je me concentre sur la dynamique de création de connaissances que les investisseurs d'impact et les PME insufflent pour développer de nouvelles capacités essentielles permettant d'arrimer l'offre à la demande d'investissements d'impact dans les CVM.

Je m'appuie sur mes résultats pour élaborer le nouveau concept de « mise à niveau financière ». La mise à niveau financière est le passage d'une entreprise à une nouvelle source de financement plus avantageuse que les sources actuelles pour répondre à ses besoins de financement. J'identifie trois types de mise à niveau financière : processus, instrument et canal.

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List of Acronyms

- CSR Corporate Social Responsibility
- EM Emerging Markets
- EU European Union
- FAO Food and Agriculture Organization
- GVCs Global Value Chains
- IB International Business
- MNCs Multinational Corporations
- NGO Non Governmental Organization
- SDGs Sustainable Development Goals
- SMEs Small and Medium Enterprises
- UN United Nations
- VSS Voluntary Sustainability Standards
- WB-World Bank
- WTO World Trade Organization

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CHAPTER 1

BACKGROUND AND MOTIVATION

Amidst the urgency to advance the Sustainable Development Goals (SDGs) Agenda, global value chains (GVC) face a mounting demand for higher social and environmental performance (Buckley, Doh, and Benischke, 2017; Gereffi, 2018; Ghauri, Strange, and Cooke, 2021; Kolk & Pinkse 2008; Narula, 2019; Pietrobelli, Rabellotti, and Van Assche, 2021; Van Tulder, Rodrigues, Mirza, and Sexsmith, 2021; Zhan, 2021). Starting in the 1960s, GVCs progressively became the dominant form of organizing production and trade, reaching their peak in the years preceding the financial crisis of 2008 (Gereffi, 2005 & 2014; Kaplinsky & Farooki, 2010). The concept of GVC captures the disintegration and geographical dispersion of production, which is sliced up into multiple value-adding functions performed by different firms at multiple locations (Coe and Yeung, 2015; Gereffi, Humphrey, and Sturgeon, 2005; Gibbon, Bair, & Ponte, 2008; Humphrey& Schmitz 2001; Kano, 2018; Kaplinsky 2000; Nadvi, 2008). Each value-adding function in GVCs represents a space and opportunity for achieving more sustainability, as it entails a set of economic activities with the potential to harm society and the natural ecosystem or to generate positive value instead (Montiel, Cuervo-Cazurra, Park, Antolín-López, and Husted, 2021). While sustainability concerns GVCs in their entirety, including firms integrated into global production at all its stages, the literature has focused primarily on the challenges that MNCs confront when trying to improve the social and environmental performance of their operations (Pinkse and Kolk, 2012; Van Zanten and Van Tulder, 2018). MNCs are the orchestrators of global trade and production and are looked at as the actors leading the reconfiguration of the relationship between business, society, and the environment (Buckley et al., 2017; Giuliani, 2018; Kolk, 2016; Matten & Crane, 2005; Ruggie, 2008; Rugman and Verbeke 2001; Scherer and Palazzo, 2011).

However, MNCs do not operate alone in GVCs. Rather, they are connected and interdependent with large numbers of suppliers whose capabilities are important for advancing sustainability, especially in emerging markets (EM) (Golgeci, Makhmadsohev, and Demirbag, 2021; Kano, 2018; Lund-Thomsen and Lindgreen, 2014; Maksimov, Wang, and Yan, 2019; Pitelis & Teece, 2018; Prashantham and Birkinshaw, 2020; Van Assche & Brandl, 2021). Small and medium enterprises (SMEs) from emerging markets (EM) comprise a significant share of suppliers in GVCs across different sectors (agriculture, manufacturing, services) (ITC, 2021a; World Bank, 2019). SMEs generate between 60 and 70% of formal employment in EM (UNCTAD, 2021). They are essential to poverty alleviation, as they are the economic actors operating the closest to the lowest income groups (Karnani 2007; Maksimov, Wang, and Luo 2017; Rodrik 2008). They dominate the agribusiness sector, which still is the driving force of most EM economies (World Bank, 2019). SMEs are responsible for a large part of the world's food production, which is directly linked to the depletion of water resources and biodiversity and the ability to counteract climate change in the context of agro-industrial GVCs (FAO, 2018a). They are the critical target of initiatives trying to reduce gender inequality and child labor, which are characterizing factors of the labor regime of EM suppliers in multiple industries, such as horticulture, chocolate, garments, and leather (Barrientos, 2019; Busquet, Bosma, and Hummels, 2021; Lund-Thomsen and Nadvi, 2010).

SMEs from EM are vital agents in the comprehensive effort to achieve the Sustainable Development Goals (SDGs) in the context of GVCs, but their sustainability challenges and

strategies have often been overlooked (De Marchi, Di Maria, Golini, and Perri, 2020; Golgeci et al. 2021; Kamal-Chaoui, 2017; McDermott & Pietrobelli, 2017; Sinkovics, Sinkovics, & Archie-Acheampong, 2021; Soundararajan, Jamali, & Spence, 2018). In particular, the lack of financial resources is a central issue hindering the contribution of SMEs in EM to the sustainability of GVCs (IFC, 2019; OECD, 2015). The deployment of robust financial investments is a cornerstone in the SDGs Agenda to develop strategic infrastructures, build market linkages, and transform the organization of production (Sachs, Schmidt-Traub, Mazzucato, Messner, Nakicenovic, and Rockstrom 2019; World Bank 2019). However, such priority clashes with an estimated investment gap of \$2.5 trillion annually in EM to achieve the SDGs by 2030, primarily affecting SMEs (UNCTAD 2020). SMEs' lack of financial resources is a severe barrier to the ability to upgrade their organizational capabilities, pursue internationalization strategies, innovate their products and processes, and become more resilient (Anand, McDermott, Mudambi, & Narula, 2021; Ayyagari, Demirguc-Kunt, & Maksimovic, 2011; Ayyagari, Demirguc-Kunt, & Maksimovic 2021; Epede & Wang 2022; Paul, Parthasarathy, & Gupta, 2017; Peng, Wang, & Jiang 2008; Navas-Aleman, Pietrobelli, & Kamiya, 2014). Financial resources are especially vital for the shift of SMEs to more sustainable forms of production, including the ability to adapt production practices to counteract the effects of climate change (Allet, 2017; Crick, Eskander, Fankhauser, & Diop, 2018; Fernandez-Stark, Bamber, & Gereffi, 2012).

Consistent with the recognition that substantial financial investments are required to achieve the SDGs, financial institutions increasingly play a developmental role by allocating sustainable forms of finance (EU Commission, 2018; IFC, 2019; Mawdsley, 2018; OECD, 2019; Watts & Scale, 2020). In 2020, private and institutional investors allocated \$700 billion in global impact investments, which pair financial returns with social or environmental value to achieve the SDGs (GIIN, 2019a). Yet, most financial resources labeled as 'sustainable finance' or 'impact investments' target publicly-listed MNCs in the stock market (Hochstadter & Scheck, 2015; OECD, 2021). That happens through mechanisms that aim to financially reward MNCs that are good sustainability performers, based on data often disclosed by the very same MNCs and only related to their direct operations (Chatterji & Toffel, 2010; Doh, Howton, Howton, & Siegel, 2010; Orlitzky, 2013; Slager, Gond, & Moon, 2012). No guarantee exists that such impact investments make their way to the suppliers of the MNCs upstream of their GVCs. The overall trend for MNCs in GVCs has been to reduce investments into infrastructure and the upgrading of their EM suppliers in favor of speculative investments in financial markets unless otherwise suggested by the firm's commercial interest (Mayer & Gereffi, 2010; Gereffi & Luo, 2014; Milberg & Winkler 2010).

Practitioner analyses have identified a critical breach between the supply of impact investing by financial institutions and the demand for it by SMEs in EM, especially in agroindustrial GVCs (CSAF, 2020; ITC, 2021b; Oxfam, 2017; SAFIN, 2019). A crucial issue determining the disconnection of supply and demand of impact investing would lie in the lack of the demand side's capabilities to satisfy the impact investors' expectations and the underlying financial products meeting the impact investors' needs but not the SMEs' (Oxfam, 2017). As the urgency of implementing the SDGs agenda in GVCs makes the creation of effective impact investing solutions more and more relevant, so does the need to understand how impact investors and SMEs in EM build the capabilities to connect and transform mere financial allocations into actionable resources for SMEs' upgrading. However, we know very little about impact investments that directly target the sustainability of SMEs in EM instead (Agrawal & Hockerts,

2021; Cunha, Meira, & Orsato, 2021; Busch, Bauer, & Orlitzky, 2016; Watts & Scales, 2020). Equally, little attention has been given to how SMEs in EM leverage participation in GVCs to enhance access to financial sources, especially when linkages to MNCs do not facilitate the needed funding (Navas-Aleman et al., 2014). This gap is part of a broader unexplored area of GVCs, which is the interaction between finance and the structure of GVCs (Coe, Lai, & Wójcik, 2014; Kano, Tsang, & Yeung, 2020).

How does impact investing influence the sustainability of SMEs in GVCs? By answering this question, my thesis addresses the yet largely unexplored nexus between SMEs in EM, finance, and sustainability in the context of GVCs. SMEs matter for the sustainability of GVCs and require access to the financial resources they currently lack to implement strategies and innovate products that will increase their social and environmental performance. However, the literature has not researched enough on the sustainability strategies of SME suppliers in GVCs (Sinkovics et al., 2021; Soundararajan et al., 2018). In addition, the way SMEs in EM establish relationships with emergent impact investors and how those relationships benefit their strategies in GVCs is a largely unexplored area in IB (Agrawal & Hockerts, 2021; Kano et al., 2020). Moreover, while a lot of attention has been paid to how impact investment markets emerge in the financial domain, we must improve the understanding of how those financial capitals make their way to the realm of production and become actionable financial resources for firms participating in GVCs. My thesis casts light on three dimensions of the interdependence of access to impact investments and the strategies by which SMEs in EM upgrade their sustainability performance and innovate their products: 1) What it takes for SMEs in emerging markets to access impact investments; 2) How impact investing enables specific SMEs strategies that put sustainability at the center; and 3) how impact investors connect to the SMEs operating in production,

transforming mere financial allocations into concrete resources for the sustainability transition in GVCs.

To answer my research question, I use qualitative methods to investigate original data concerning 98 Latin American SMEs in the coffee and forestry sectors. The analysis focuses on the SMEs' efforts to engage with 23 international impact investors, mediated by the facilitating role of a Canadian NGO pursuing the goal of matching the SMEs and the impact investors. Agro-industrial GVCs are the ideal context to explore my research question for two main reasons. First, agro-industrial GVCs involve production and trade activities that are directly related to a multiplicity of sustainability issues, from conservation of biodiversity, water depletion, and food security to poverty, child labor, and gender inequality, to mention a few (FAO, 2018b; UNCTAD, 2020; IISD, 2020). Second, SMEs from EM dominate the lower stages of agro-industrial GVCs, where they perform essential production functions despite operating under resource restrictions and power asymmetries (Barrientos, Knorringa, Evers, Visser, & Opondo, 2016; Ponte, 2019). The SMEs composing the sample are agribusiness enterprises that actively engage in building the organizational capabilities required to shift to more sustainable production. They seek access to impact investing to overcome issues affecting their profitability and their operations' social and environmental sustainability. The impact investors with whom they interact are a composite group of international financial institutions and foundations wanting to engage with agricultural GVCs to generate the impact mandated by their mission.

The thesis is structured as follows. In Chapter 2, I review the relevant literature on SMEs from emerging markets participating in GVCs. I focus on the factors that determine their sustainability and the creation of new organizational capabilities. I also examine how finance interacts with such factors, with a special emphasis on how existing research intends the

relationship between finance and the organization of GVCs. In addition, I review relevant contributions studying the emergent phenomenon of impact investing, focusing on how new financial innovations can connect to SMEs' funding needs. The review highlights the critical gaps in understanding the tripartite nexus of SMEs, finance, and sustainability in GVCs. In Chapter 3, I outline the research design by describing the research question and the setting, strategy, and data I adopt to answer it. In Chapters 4 and 5, I expose the core empirical findings of my data analysis. Chapter 6 builds on the empirical sections to develop a new theory about the interaction of impact investing and SMEs in GVCs. Finally, in Chapter 7, I draw the most critical practical implications of my work and identify the future research avenues it opens.

CHAPTER 2

LITERATURE REVIEW

2.1. Emerging Markets SMEs, Sustainability-Related Capabilities, and Upgrading in GVCs

2.1.1. Economic, Social, and Environmental Upgrading in GVCs

The strategies of SMEs participating in GVCs have been studied primarily through the lens of the construct of economic upgrading. Understanding how economic upgrading unfolds and how it relates to the sustainability of SMEs and GVCs is thus an essential starting point for my inquiry. Economic upgrading is *"the process by which economic actors – nations, firms and workers – move from low-value to relatively high-value activities in global production networks"* (Gereffi, 2005; p.171). The scholarship specified four main typologies of upgrading by studying the firm-level strategies that suppliers pursue to become more competitive in GVCs, which primarily rely on increasing the firm's ability to compete based on knowledge rather than cost (Gereffi, 2019). *Process upgrading* refers to how suppliers achieve changes in production processes to make them more efficient. *Product upgrading* concerns introducing more advanced products. *Functional upgrading* is the performance of new, more complex tasks in the GVC. *Channel upgrading* is the move to different or more technologically advanced markets (Barrientos, Gereffi, & Rossi, 2011; Humphrey & Schmitz, 2002).

SME suppliers' economic upgrading can determine economic development and progress toward production's social and environmental sustainability, especially when combined with policy support and local interactivity (Gereffi & Lee, 2016; McDermott & Corredoira, 2010; Perez-Aleman, 2011; Pietrobelli & Rabellotti, 2011). However, sometimes upgrading does not entail social and environmental benefits. When a firm follows the *"low road"* to competitiveness in GVCs by squeezing costs, wages, and revenues, economic upgrading can worsen the social and environmental conditions under which the supplier operates and negatively affect the communities at its location (Pietrobelli & Rabellotti, 2011). To expressly differentiate between upgrading that is just economic and upgrading setting forth advancements in the sustainability of production, the literature developed the notions of environmental and social upgrading (De Marchi, DiMaria, Golini, & Perri, 2020; De Marchi, Di Maria, Krishnan, & Ponte, 2019; Rossi, 2019). Environmental and social upgrading are thus important constructs for framing how SMEs in EM can achieve more sustainability.

Environmental upgrading is the process by which a supplier changes its production system to reduce its negative impact on the natural environment (De Marchi, Di Maria, Krishnan, & Ponte, 2019; De Marchi, Di Maria, & Micelli, 2013). Environmental upgrading emerged due to the increased pressure on GVCs actors to reduce their ecological footprint, which requires firms to interact with their suppliers and buyers to change the production and trade practices harming the ecosystem (Poulsen, Ponte, & Sornn-Friese, 2018). Environmental upgrading can result from a firm's reaction to regulations or customer demands and/or as an active effort part of its green strategy, which maps to the supplier's attempt to increase its competitiveness (Poulsen, Ponte, & Lister, 2016). In fact, suppliers operating in GVCs can engage in environmental upgrading as part of their efforts to improve their product, processes, and managerial practices so as to reorganize and transform their system of production towards a more environmentally sustainable model, for example, by reducing energy and water

consumption, recycling inputs, avoiding toxic emissions and waste, complying with standards (De Marchi et al. 2019).

Social upgrading consists of the process that leads to the recognition of workers' rights and entitlements, improving the quality of their employment as a result (Gereffi & Lee, 2016; Rossi, 2019). The first dimension of social upgrading, thus is accessing better employment, which might or might not result from economic upgrading (e.g., a worker who has acquired skills in one job can move to a better job elsewhere). A second and broader dimension of social upgrading is the achievement of enhanced working conditions, protection, and rights resulting in the improved well-being of the workers, their households, and the communities they are part of (Barrientos et al., 2011). The scholarship also developed the notion of social upgrading to complement and expand the concept of corporate social responsibility (CSR), which, by focusing on the internal initiatives of MNCs, ignored the role of governments and NGOs in increasing the social performance of GVC organizing (Gereffi & Lee, 2016).

The notion of organizational capabilities is central to the understanding of a firm's upgrading (Nelson & Winter, 1982). Organizational capabilities are forms of organizational knowledge that account for the organization's ability to perform and extend its characteristic 'output' actions, such as creating a tangible product or service (Dosi, Nelson, & Winter, 2000; Jacobides & Winter, 2012). Capabilities thus refer to the collective nature of the knowledge required to perform specific tasks related to production and the overall life of the firm. Such a collective feature entails that shifting to different, more advanced forms of production and management relies on the group-level interactive access to knowledge flows providing the knowhow to recombine for building new capabilities (Amin & Cohendet, 2004; Brown and Duguid, 2001; Nelson & Winter, 1982; Perez-Aleman, 2011; Tsoukas, 2009). In GVCs, SMEs' vertical

relationships with buyers and suppliers and horizontal relationships with peers, support institutions, and service providers influence the collective learning needed to develop new capabilities setting forth dynamics of process, product, channel, and functional upgrading (De Marchi, Giuliani, & Rabellotti, 2018; Epede & Wang, 2022; Pietrobelli & McDermott, 2017). Organizational capabilities are, in fact, essential to SME suppliers' environmental and social upgrading.

SMEs require specific capabilities to become better social and environmental performers. For example, Spanish SMEs from the automotive repair sector need improved capabilities of shared vision, strategic proactivity, and stakeholders' management to implement eco-efficient strategies (Aragon-Correa, Hurtado-Torres, Sharma, and Garcia-Morales, 2008). Another study finds that those same capabilities foster the adoption of proactive CSR initiatives by Australian SMEs in the machinery and equipment sector (Torugsa, O'Donohue, & Hecker, 2012). Taiwanese technology firms operating as suppliers require green knowledge-processing and green R&D capabilities to maximize their ability to access and elaborate external knowledge relevant to co-create eco-products with GVC partners (Cheng, 2020). The study of a sample of 193 Egyptian SMEs indicates that the firms' sustainable orientation and collaboration capabilities are critical to adopting green innovations (Aboelmaged & Hashem, 2019). However, there are still many aspects we do not understand about how SMEs create sustainability-specific organizational capabilities to pursue green innovation and as part of their broader commercial and R&D goals, especially in the context of EM and participation in GVCs (Anand et al., 2021; Cuervo-Cazurra, Newburry, & Park, 2020; McDermott & Pietrobelli, 2017).

The literature also pays scant attention to how SMEs in EM proactively build sustainability-specific capabilities and lead social and environmental upgrading, which

determines a shift to more sustainable production practices and relationships in GVCs (Golgeci et al., 2021; De Marchi et al., 2020). Seminal contributions interpret SMEs' upgrading strategies and sustainability as the result of the SMEs supplying relationships with MNCs, which, to address external pressures to operate responsibly, make the supplying relationship conditional upon the SME's compliance with a voluntary sustainability standard or a code of conduct (Bager & Lambin, 2020; Ponte, 2019; Strange & Humphrey, 2019). From this perspective, economic, social, and environmental upgrading would be a consequence of SMEs improving their processes to achieve standard compliance and meet buyers' requirements or benefitting from buyers' CSR initiatives (Epede & Wang, 2022; Gereffi & Lee, 2016; Kano, 2018; McDermott & Pietrobelli, 2017). Only very recently, the proactive strategies and the sustainability challenges of SMEs in EM have become independent objects of analysis. I analyze this evolution in the rest of section 2.1 of this chapter. First, I highlight how the study of upgrading and knowledge creation in the context of GVCs sustainability has focused on the MNCs and relegated SMEs to a rather passive or ancillary role. Second, I show how changing paradigms in how we think about capabilities, upgrading, and knowledge creation in GVCs fostered increased attention to SMEs as collaborators and partners of the MNCs to achieve more sustainability. Finally, I describe the most recent stream of research that emphasizes the proactive contribution of SMEs to sustainability through their strategies and the ability to create new organizational capabilities.

2.1.2. SMEs as Overlooked Actors in the MNC-Centric Study of GVCs Sustainability

While SMEs confront barriers to upgrading and achieving sustainability, existing analyses address primarily the challenges that MNCs face as they pursue sustainable markets and improved social and environmental outcomes in GVCs (Buckley, Doh, & Benischke, 2017; Ghauri, Strange, & Cooke, 2021; Kolk & Pinkse 2008; Kolk, 2016; Kolk & Van Tulder, 2010; Montiel et al., 2021; Narula, 2019; Pinkse & Kolk, 2012; Van Tulder, Rodrigues, Mirza, & Sexsmith, 2021; Van Zanten & Van Tulder, 2018). Greening supply chains and improving the livelihoods and working conditions of those involved became central to sustainability initiatives of MNCs in response to pressures from activist societal actors (Gereffi & Lee, 2016; Kolk, 2016; Lambin & Thorlakson, 2018; Levy, Reinecke, & Manning, 2016; Lund-Thomsen & Nadvi, 2010; Perez-Aleman & Sandilands, 2008; Ponte, 2002; Thorlakson, 2018; Wettstein, Giuliani, Santangelo, & Stahl, 2019). The study of such interventions engages EM SMEs primarily as passive takers of MNCs' sustainability initiatives centered around developing, adopting, and diffusing international voluntary sustainability standards (VSS) (Sinkovics et al., 2021).

VSS are developed by either individual MNCs as part of their CSR efforts (i.e., Unilever Sustainable Agriculture Code), groups of MNCs in the context of multi-stakeholder initiatives which may or may not involve other actors (i.e., Global Gap, Forest Stewardship Council), NGOs (i.e., Fairtrade, Rainforest Alliance), or governments (i.e., USDA Organic) (Fransen & Kolk, 2007; Lambin & Thorlakson, 2018). They are conceived as instruments to transfer knowledge to suppliers in EM about more sustainable production practices (Lambin & Thorlakson, 2018). Standards allow SME suppliers to access and reconfigure the knowledge they enclose about more sustainable production practices and develop the ability to access valueadded markets and productive functions by shifting to such practices (Corredoira & McDermott, 2014; Perez-Aleman, 2011). Achieving social and environmental upgrading is thus observed as an outcome of the suppliers building the capabilities to comply with various standards and buyers' demands. MNCs and private governance are the factors determining the social and environmental areas in which SMEs learn and build new capabilities in sustainable production (Ambos, Brandl, Perri, Scalera, and Van Assche, 2021; Gereffi and Lee, 2016; Kano, 2018;

McDermott and Pietrobelli, 2017). Actors in EM, especially low-tier suppliers, remain marginalized in identifying the priorities for sustainability (Dallas, Ponte, & Sturgeon, 2017; Fransen, Kolk, and Rivera-Santos, 2019; Sinkovics et al., 2021).

Significant contributions in this stream of research developed a deep understanding of how SMEs build the know-how and know-why to create products according to the buyers' sustainability specifications enclosed in voluntary sustainability standards (VSS) (Gereffi & Lee, 2016; Perez-Aleman, 2011; Pietrobelli & Rabellotti, 2011). Important work found partnerships and horizontal collaborations with actors at the location essential to foster the creation of SMElevel capabilities for sustainability compliance. For instance, coffee producers in Central America created green production capabilities thanks to the support from a partnership between their MNC buyer Starbucks and the NGO Conservation International, which aimed at addressing Starbucks' willingness to make its supply chain more sustainable (Perez-Aleman & Sandilands, 2008). New transnational safety and environmental regulations pushed dairy and coffee producers in Nicaragua to upgrade their production capabilities toward greener and safer practices to meet their buyers' requirements (Perez-Aleman, 2013). IKEA's developmental governance of its internal supplier support program in China and South-East Asia leveraged complex audit processes and long-term assistance to upgrade the environmental capabilities and labor standards of SMEs producing labor-intensive goods (Ivarsson & Alvstam, 2010). In the absence of MNCs' active involvement and support, it is often the standard-setter to push knowledge top-down to address the capabilities-gap of SMEs in sustainable production, as in the case of Rainforest Alliance and Global G.A.P. with Kenyan horticulture producers (Krishnan, 2018).

This stream of research understands sustainability-related production capability creation to meet the buyers' product requirements. Such requirements depend on the MNCs opening new sustainable markets, which build value by answering consumers' and civil society's demand for more sustainability (Fransen et al., 2019; Ponte, 2019; Wijen, 2014). The environmental and social upgrading of SMEs would then be a consequence of the SMEs participating in GVCs where MNCs seeking more sustainability develop standards and support their suppliers in building the capabilities required for compliance. MNCs constitute here the leading unit of analysis to study the sustainability transition in GVCs.

The view that SMEs create sustainability-related capabilities primarily because of their vertical interaction with buyers and MNCs and that MNCs are the actors entrusted with leading the sustainability transition in GVCs is at odds with how knowledge creation and innovation are organized in GVCs. GVCs represent an open and interactive system of innovation (Ambos, Brandl, Perri, Scalera, & Van Assche, 2021; Cohendet & Simon, 2017). Their spread generated a fine slicing of production activities associated with the progressive dispersion of the innovation processes. MNCs' R&D activities became increasingly fragmented across different locations and beyond the boundaries of the firm, sometimes separated from other activities that firms perform in GVCs, which emphasized the globally networked nature of upgrading activities (Andersson, Dasí, Mudambi, & Pedersen, 2016; Bathelt & Cohendet, 2014; Cano-Kollmann, Cantwell, Hannigan, Mudambi, & Son, 2016; Perri, Scalera, & Mudambi, 2017; Scalera, Perri, & Hannigan, 2018). New actors and locations contribute to or lead the development of new technologies, reshaping the geography of innovation (Fifarek & Veloso, 2010; Lema et al., 2015; McMahon & Thorsteinsdóttir, 2013; Morrison, Pietrobelli, & Rabellotti, 2008; Perez-Aleman & Alves, 2017; Petricevic & Teece, 2019). GVC actors build new technological capabilities and

upgrade new products and services by leveraging access to distributed pools of knowledge internally and externally to the firm's boundaries (Chesbrough, 2003; Laursen & Salter, 2006).

As a result, creating new capabilities relevant to the sustainability transition is no longer an internal affair of the MNC nor solely a question of establishing vertical linkages to induce suppliers' upgrading through the provision of new knowledge flows. Creating new capabilities involves interactivity within and outside the MNCs with varied actors such as peer MNCs, SMEs, research centers, financial institutions, epistemic communities, cities, national policymakers, international agencies, and so on (Ambos et al., 2021; Amin & Cohendet, 2004; Bathelt & Cohendet, 2014; Cano-Kollmann et al., 2016; Coe & Yeung, 2015; Lema, Pietrobelli, & Rabellotti, 2019). Innovation processes leading to product, process, functional, and channel upgrading are decentralized and distributed and focus on identifying, allocating, and managing resources (knowledge-based, material, financial, and human capital) across any value chain stage. They rely on establishing and nurturing linkages with multiple locations and actors, each contributing through specific activities and knowledge. Therefore, SMEs in EM can play an important role in upgrading and creating sustainability-related organizational capabilities. Existing literature studying capabilities creation and upgrading as a consequence of vertical ties to MNCs and standard compliance does not fully address such an aspect.

2.1.3. SMEs as MNCs' Collaborators for Sustainability Upgrading and Innovation

More recent contributions began to look at SMEs suppliers as essential collaborators of MNCs' effort to improve social and environmental performance in their chains, not just as targets of their CSR efforts (Alexander, 2020; Buckley & Prashantham, 2016; Maksimov et al., 2019; Prashantham & Birkinshaw, 2020). Failures and shortcomings of past top-down sustainability initiatives pushed the literature to increasingly recognize the interdependence

between MNCs and SMEs in EM and encouraged calls for broadening the focus of analysis (and MNCs' interventions) to include SMEs and low-tier suppliers in a more active role (Golgeci et al., 2021; Kano, 2018; Maksimov et al. 2019; McDermott & Pietrobelli 2017; Pitelis & Teece, 2018; Prashantham & Birkinshaw, 2020; Van Assche & Brandl, 2021). For example, in the context of labor standards and social upgrading initiatives, Narula (2019) highlights the need for MNCs to engage more with the informal sector where low-tier suppliers operate. MNCs should also collaborate with first-tier suppliers to ensure that they and their suppliers comply with standards and codes of conduct (Narula, 2019). In their critique of the cooperative paradigm for CSR interventions in GVCs, Lund-Thomsen and Lindgreen (2014) remark there is still a lot we do not understand about the conditions under which the involvement of local actors and the creation of new capabilities in low-tier suppliers concretely contribute towards better working conditions. They call for more research on the cooperative dynamics characterizing novel CSR approaches by leading MNCs. Krishnan, De Marchi, and Ponte find that Kenyan farmers in the period 2015-2019 experienced negative environmental downgrading across multiple indicators such as soil erosion, freshwater availability, and biodiversity loss despite their adoption of environmental upgrading practices as required by UK buyers and local exporters (2022). This highlights how MNCs-designed processes of environmental upgrading to meet market and regulatory demands in the North can determine negative environmental outcomes at SME-level in the South. Bird and Soundararajan (2020) find that MNCs should redistribute the cost of producing and sub-contracting more sustainably to generate greater resources to invest in suppliers' and GVCs' sustainability. Alexander (2020) signals the need for MNCs to increase their efforts and adopt more efficient solutions to connect to low-tier suppliers in order to achieve effective sustainability outcomes.

The unavoidable interdependence between MNCs and SMEs represents a critical dimension when thinking about the sustainability of GVCs. EM SMEs have a crucial role in the value chain activities associated with the sustainability challenges and targets outlined in the SDGs (Montiel et al., 2021, Prashantham & Birkinshaw, 2020; Sinkovics et al., 2021; Van Assche & Brandl, 2021). They constitute a vast majority of firms responsible for manufacturing and agro-industrial GVCs closely connected to natural resource use, poverty, human rights, biodiversity, and climate change (Bacon, 2005; Bager & Lambin, 2020; Barrientos et al., 2016; Busquet et al., 2021; Contreras, Carrillo, & Alonso, 2012; Grabs & Ponte, 2019; McDermott & Corredoira, 2010; Middendorp, Boever, Rueda, & Lambin, 2020; Rueda, Thomas, & Lambin, 2015). The ability to build sustainable value chains depends not only on what the MNCs do. The behavior and capabilities of other enterprises associated with the complex and disintegrated production system are equally important. Cooperation and connectedness between MNCs and SMEs as suppliers are central to building the capabilities to advance toward the SDGs (Maksimov et al., 2019; Prashantham & Birkinshaw, 2020).

For example, SMEs' upgrading and creation of new capabilities can positively influence MNCs' innovation capacity. After Western MNCs in the automotive and information technology industries moved innovation activities related to their production operations in Brazil and India, SMEs leveraged local horizontal networks and direct involvement in R&D activities to increase their innovation capabilities further. This pushed the MNCs further to delegate innovation activities to Brazilian and Indian suppliers while benefitting from the new technological advancements that originated (Lema et al., 2015). After an initial learning process connected to upgrading, the Chinese suppliers of Western manufacturing MNCs develop new frontier capabilities. The supplier-MNC relationship shifted from one focused on the supplier's learning gap to one of mutual learning. MNCs systematically leverage the new capabilities of their suppliers to innovate through collaborative experimentation and the recombination of their global products, standards, and metrics at the local discretion of Chinese firms (Herrigel et al., 2013). Suppliers in EM play an important role as co-innovators and innovators in manufacturing GVCs, showing their potential as MNCs' partners for knowledge creation and building sustainability-related capabilities.

As EM suppliers and subsidiaries are critical innovators in GVCs, it is a priority to understand more about their role, and particularly that of SMEs, in determining the sustainability of the MNCs' value chain operations. For example, Prashantham and Birkinshaw (2020) call attention to the cooperation of MNCs and EM suppliers as a central factor in build-up capabilities to progress toward the SDGs. The connectedness of MNCs to suppliers, subsidiaries, and non-market actors is also crucial for MNCs to build green capabilities to reduce their negative environmental impact (Maksimov et al., 2019). Investing in operations and enterprises at all stages of the supply chain to either reduce the negative externalities or increase the positive externalities of production should constitute the guiding principle for MNCs to move forward in the implementation of the decade of action, for which the involvement of SME suppliers is central (Montiel et al. 2021). Yet, even this much-needed direction does not consider SMEs from EM as the primary units of analysis in the study of GVCs sustainability. It overlooks their role as proactive contributors to the sustainability of GVCs, in contrast with a new line of emergent evidence signaling that SMEs in EM can lead to social and environmental progress in global production (Golgeci et al., 2021; Sinkovics et al., 2021; Soundararajan et al., 2018).

2.1.4. SMEs as Proactive Contributors to GVC Sustainability

Increasing empirical evidence indicates that SMEs in EM pursue proactive sustainability strategies (Golgeci et al., 2021). By proactive, I mean upgrading strategies to improve their environmental and social performance, which they develop voluntarily or independently of the demands of current buyers or what is legally required by private or public regulation, including compliance with sustainability standards (Sako & Zylberberg, 2019a). Although traditionally constrained in terms of resources available, SMEs have wide margins to decide whether and how to pursue more sustainability, as MNCs' governance is often loose and limited to compliance with voluntary standards that only address a fraction of the SMEs' sustainability-related concerns (Sinkovics et al., 2021; Soundararajan et al., 2018; Ponte, 2019). Strategies that put social and environmental upgrading components at the center beyond the specifications set in the private sustainability governance of GVCs can secure long-term competitiveness and resilience.

For example, SME suppliers in Latin America proactively adopt environmental policies and practices that are not required by national regulations nor by regional market demand to increase their chances of succeeding in new export markets (Arora & De, 2020). Malaysian second-tier suppliers implemented the European Union's environmental and safety regulations in the computer industry without any lead firm request or national public agencies and buyers' support (Nadvi & Raj-Reichert, 2015). Similarly, Ecuadorian cocoa-producing SMEs applied greener production practices, such as organic production, even if their buyers' sourcing policy did not require that (Middendorp et al., 2020). For SMEs producing wine in South Africa, the prospect of improving product competitiveness drove investments in best environmental practices more than regulatory pressure (Hamann, Smith, Tashman, and Marshall, 2017). Rural SMEs in Kenya and Senegal seek to develop new agricultural practices allowing climate change

adaptation, but lack of funding is a barrier to achieving that goal. Standard or buyer's product specifications do not define any of those new practices (Crick et al., 2018).

In addition, SMEs in EM are generally well-equipped to operate as innovators in GVCs by creating new organizational capabilities that foster upgrading, especially developing new products and services and expanding markets (Anand et al., 2021; McDermott & Pietrobelli, 2017). SMEs are uniquely positioned in the chain in proximity to both critical production processes and the communities and ecosystem impacted by them, which provides an essential understanding of the issues affecting the social and environmental performance of GVC activities (Sinkovics et al., 2021; Sinkovics, Hoque, & Sinkovics, 2016). Their embeddedness in the local context and the need to overcome resource constraints typical of EM push them to develop creative alternatives to seek value creation and product development (Sinkovics, Sinkovics, & Yamin, 2014). That often happens with an emphasis on green capabilities. For example, firms in India and China confront the lack of adequate physical infrastructure and institutional support by pursuing resource-constrained green product development approaches (also known as "*jugaad*"), which emphasize the environmental sustainability of the final product (Sharma & Iyer, 2012).

Overcoming resource constraints could also be facilitated by the SMEs usually being better than MNCs at finding creative ways of bundling limited resources, which results in an increased ability to bridge across different pools of knowledge and support the creation of capabilities for upgrading (Soundararajan et al., 2018). When trying to identify and use new knowledge flows, SMEs may confront a lack of infrastructural capacity and scientific capabilities (Chesbrough, 2010), but that often represents an incentive for engaging more and more in search of and access to external knowledge sources (Spithoven, Vanhaverbeke, & Roijakkers, 2013). These

characteristics are critical to confronting the innovation challenges of achieving more sustainability. Such challenges are broader and more complex than the issues addressed through capabilities created via standard compliance and participation in CSR initiatives.

For example, SMEs in agribusiness GVCs such as coffee, chocolate, coconuts, and horticulture require complex upgrading strategies involving new capabilities for creating improved products and processes, moving to higher value functions, and connect to value-added markets that secure the economic rewards of those innovations. They must create new genetic varieties, restore biodiversity in their plantations, improve agroforestry systems, introduce renewable energies for processing activities, and shift to more advanced water and waste management systems (FAO, 2016; ITC, 2021b). These innovations are essential for the SMEs' adaptation to climate change and their long-term productivity and competitiveness, as well as for the broader social and environmental sustainability of the GVCs. For example, in coffee GVCs, critical sustainability-related capabilities are highly embedded in the productive activities taking place at the SME level. Planting, collecting, drying, and milling the coffee beans in more sustainable forms entail new knowledge creation at the farm level and interactions with multiple actors, which do not necessarily involve the MNC. Still, the sustainability outcomes of this innovation will ultimately benefit the entire GVC. Consistently with this reality, recent conceptual work highlights that sustainability requires lead firms' investments into implementing the SDGs at any level of the GVC, not just avoiding harm in the internal MNCs' operations (Montiel et al., 2021; van Tulder & van Zanten, 2018).

Yet, in the design of their sustainability interventions, MNCs and policymakers do not rely enough on the SMEs' capacity to understand and contribute to addressing the issues that affect the social and environmental performance of GVC activities (Sinkovics et al., 2021; Sinkovics,

Hoque, & Sinkovics, 2016). This often results in a lack of MNCs' investments in creating SME suppliers' capabilities that do not align with the lead firm's commercial interest (Meyer & Gereffi, 2008; Ponte, 2019). Access to financial resources to feed knowledge creation and help overcome resource constraints to upgrading becomes a central challenge for SMEs' proactive sustainability strategies (Navas-Aleman et al., 2014; Golgeci et al., 2021; Sinkovics et al., 2021). The SMEs' perspective on sustainability and the independent space in which they operate to set strategic goals are largely unexplored aspects of upgrading and sustainability in GVCs (Epede & Wang, 2022; Golgeci et al., 2021; Krishnan, De Marchi, & Ponte, 2022; Sinkovics et al., 2021; Soundarajan et al., 2018).

SMEs operating as suppliers in GVCs are not just passive recipients of MNCs' corporate social responsibility (CSR) initiatives and sustainability compliance (Sinkovics et al., 2021; Soundararajan et al., 2018). They are also capable of contributing to sustainability beyond their role as collaborators of the MNCs but rather as individual firms seeking to upgrade and achieve more sustainability and competitiveness (Gogelci et al., 2021; Sako & Zylberberg, 2019a). They pursue proactive sustainability-centered strategies to achieve goals they at least in part set independently from buyers and compliance requirements. They have a series of advantages to address existing constraints in terms of resources and support if provided access to knowledge for building new capabilities relevant to sustainability. Our understanding of the barriers and enablers of proactive sustainability strategies is still limited, especially in building environmental and social capabilities (De Marchi et al., 2020; Gogelci et al., 2021; Jamali, Lund-Thomsen, & Jeppesen, 2017; Sako & Zylberberg, 2019b; Soundararajan et al., 2018). In particular, we know little about how SMEs gather the financial capital to fund their strategies, given the general lack of investments from MNCs and scarce involvement in the definition of shared solutions (Anand

et al., 2021; Ayyagari et al., 2011; Epede & Wang, 2022; Navas-Aleman et al., 2014). We need more research on this topic.

2.1.5. Key Constructs and the Way Forward

The sustainability of SMEs from EM has been studied in connection to economic, social, and environmental upgrading concepts. The SMEs' upgrading strategies have been examined through MNCs' driven efforts to make GVCs more sustainable in response to stakeholders' and civil society's demands. In the context of agro-industrial GVCs, environmental upgrading is critical to interpreting the learning dynamics and organizational capabilities that SMEs must develop to shift to more sustainable forms of production. However, future research must improve the understanding of how SMEs in EM contribute proactively to the sustainability of GVCs, through sustainability strategies that seek upgrading beyond the demands of their GVC counterparts. The nature and the enablers of SMEs' proactive sustainability strategies deserve more attention, especially how SMEs access and leverage sources of knowledge and financial capital to create new capabilities to implement complex projects focused on complex combinations of economic, social, and environmental upgrading goals. The concept and typologies of upgrading, the notion of organizational capabilities, and of proactive sustainability strategies are summarized in Table 2.1 below.
Table 2.1 – Ke	y constructs fro	n the literature o	n upgrading and	sustainability in GVCs
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Construct	Definition	Typologies	Key Contributions	
Economic Upgrading	The process by which economic actors move from low-value to relatively high- value activities in GVCs, increasingly	Process: Changes in production processes to make them more efficient	- Barrientos et al. 2011 Gereffi, 2005	
	compete on the base of knowledge rather than cost.	Product: Introduction of technologically more advanced products		
		Functional: Performance of new, more complex tasks in the chain	Gereffi et al., 2005 Humphrey & Schmitz, 2002	
		Channel: Move to different or more technologically advanced markets		
Social	The process that leads to the recognition of workers' rights and	Better employment		
Opgrading	entitlements, improving the quality of their employment and the livelihoods of their communities.	Enhanced protection and rights	- Barrientos et al., 2011 - Gereffi & Lee, 2016 Rossi, 2019	
		Improved well-being (workers)		
		Improved well-being (community)	-	
Environmental Upgrading	The process by which a supplier changes its system of production to reduce its negative impact on the natural environment.	Process: Changes in production systems to achieve eco-efficiency		
		Product: Development of an environmentally friendly product line	De Marchi et al., 2019 De Marchi et al., 2013 Poulsen et al., 2018	
		Organizational Improvements: Enhancements of the firms' managerial capacity to increase environmental performance		
Organizational Capabilities	Forms of organizational knowledge that account for the organization's ability to perform and extent its characteristic 'output' actions, such as the creation of a tangible product or service.	-	Nelson & Winter 1982 Dosi et al. 2000 Jacobides & Winter 2012	
Proactive Sustainability Strategies	Strategies to improve the environmental and social performance, which the firm develops voluntarily or independently of the demands of current buyers or what is legally required by private or public regulation.	-	Author's definition	

2.2. Impact Investing in GVCs: The Learning Foundations of Supply-Demand Interactions

Lack of financial resources is a crucial barrier to EM SMEs' ability to build new organizational capabilities and pursue proactive sustainability strategies in GVCs. There are about 2 million formal micro, small, and medium enterprises in EM with unmet yearly financing needs of \$5.2 trillion (IFC, 2017). The financing gap is a central obstacle to job creation, economic growth, and sustainability transition in EM and GVCs (World Bank, 2019; ITC, 2021a). The issue is particularly critical in agro-industrial sectors. The introduction and expansion of investment solutions financing SMEs' upgrading and sustainability are critical to keeping up agri-food productivity levels with the challenges of climate change and demographic growth (FAO, 2022). New financing solutions addressing EM SMEs' funding needs can foster the creation of technologies and infrastructures that increase the resilience of rural communities, food systems, and international trade (FAO, 2022). Impact investments providing financing to generate measurable sustainability outcomes in addition to financial returns therefore are a critical and unavoidable development that will shape the future achievement of the SDGs in GVCs (Zhan, 2021).

Yet, the way SMEs develop access to impact investing and use such resources to feed their GVCs strategies has received scant attention in the literature (Navas-Aleman et al., 2014). On a broader level, the very relationship between finance and GVCs has many grey areas that must be addressed (Coe et al., 2014; Coe & Yeung, 2015; Kano et al., 2020). In this section of the chapter, I first describe the magnitude and underlying issues of SMEs' lack of access to financing in EM and link it to the existing gaps in the scholarly understanding of the nexus between financing, sustainability, and GVCs. Then, I introduce the emerging concept of impact investing and summarize how the literature of management and international business has

focused on its study in the context of financial markets without penetrating how the supply of this financial innovation connects to the domain of production in GVCs. Finally, I describe the nature of the breach between supply and demand of impact investing and show how insights from the literature of organizational learning and innovation are critical to understanding the issue and examining potential solutions.

2.2.1. SMEs' Lack of Access to Financing: A Barrier to Upgrading and Sustainability in GVCs

SME suppliers in EM must overcome an endemic lack of access to financing, possibly the biggest barrier to their upgrading and internationalization (Epede & Wang, 2022; Peng, Wang, & Jiang, 2008; ITC, 2019). Lack of capital is a central barrier to SMEs' ability to export (Paul et al., 2017). In Latin America, public and even more private sources of funding are essential drivers of SMEs' expansion and participation in global trade and production (Cardoza et al., 2016). SMEs' access to external financing in EM is associated with greater firm innovation (Ayyagari et al., 2011). Access to credit is also essential for their ability to recover from major crises and disruptions, i.e., becoming more resilient (Ayyagari, Demirguc-Kunt, & Maksimovic 2021). Increased access to financing solutions other than credit from GVCs' buyers would benefit SMEs' strategy development and implementation by generating previously absent resources and reducing the risk connected to inter-firm collaborations for product and process upgrading (Tsai & Peng, 2017; Yeung, 2016).

The financing challenge is especially severe for the sustainability of SMEs that participate as suppliers in agro-commodities GVCs (Fernandez-Stark et al., 2012; Navas-Aleman et al., 2014). Lack of financial access primarily affects agro-industrial SMEs situated in the so-called "missing-middle," meaning SMEs whose financing needs are too large to be addressed by microloans solutions (i.e., below \$5,000) and too small to be addressed by traditional equity

investments (i.e., above \$500,000) (Doran, McFayden, & Vogel, 2009). For example, the lack of suitable financing products is a crucial barrier hindering agricultural SMEs in Kenya and Senegal from adapting their production practices to the challenges originating from climate change (Crick et al., 2018). In El Salvador, government-backed microfinance programs' inefficiencies deeply challenged agri-food SMEs' ability to create the capabilities required to adopt greener business practices (Allet, 2017). Generating investments in green-related capabilities, upgrading, and infrastructure at all stages of agro-industrial GVCs targeting SMEs in the missing middle thus is critical to the sustainability transition of food production and trade (FAO, 2022).

Despite the relevance of SMEs' access to financing for the sustainability transition, research on GVCs neglects the role of finance in the organization of production (Coe & Yeung, 2015; Kano et al., 2020). Except for analyses on the impact of financialization on MNCs' corporate strategies (Winkler & Milberg, 2010; Davis, 2009), we know little about how financial resources from outside the GVCs interact with suppliers' upgrading (Kano et al., 2020). For example, we know that MNCs tend to invest in the capabilities of their EM suppliers only when it aligns with the creation of competitive advantage, including social and environmental upgrading limited to the goal of meeting consumers' demands for sustainability (Mayer & Gereffi, 2010; Ponte, 2019). Fixed investments in upgrading have been declining overall due to the increased emphasis of MNCs on generating shareholder value within financial markets, not in production (Gereffi & Luo, 2014; Milberg & Winkler, 2010).

Beyond those aspects, the literature largely overlooks how production is financed, despite financial institutions being critical in shaping local, regional, and global inter-firm linkages structuring agricultural and manufacturing activities (Coe et al., 2014). For example, recent work calls for a more empirical study of the heterogenous spectrum of financial innovations labeled as

"fintech" (i.e., financial technology), which, by providing new lending solutions, paying, and investing, reconfigure the interaction between production and financial markets and promise to foster financial inclusion in EM (Lai & Samers, 2021). In addition, the MNC-centric study of innovation has neglected the contribution of financial institutions to local-global knowledge creation dynamics (Ambos et al., 2020; Papanastassiou, Pearce, & Zanfei, 2021). Moreover, we still know little about how SMEs in EM can access external finance and under what terms and conditions external financing fosters their sustainability strategies in GVCs (Navas-Aleman et al., 2014).

By overlooking the interaction between finance and SMEs, we miss a critical mechanism shaping the organization of production and the complexity of SMEs' role in GVC. EM SME suppliers proactively pursue complex upgrading strategies that contemplate a variety of interconnected projects and goals (Golgeci et al., 2021; Sako & Zylberberg, 2019b; Sinkovics et al., 2021; Soundararajan et al., 2018). For example, seminal research shows that operating across multiple production value chains (global and regional; local markets; different sectors) unlocks more opportunities for economically and socially rewarding forms of SMEs upgrading (Barrientos et al., 2016; Brandt & Thun, 2016; Navas-Aleman, 2011). However, no work has examined what strategies SMEs in EM pursue to secure access to financial resources other than the credit they access formally or informally from their GVC buyers. Such resources, as shown, are essential for SMEs to pursue more sustainability. Even less investigated is how SMEs connect to emerging forms of impact investments to enable sustainable solutions to the social and environmental challenges of agro-industrial production in GVCs (Agrawal and Hockerts, 2021). We know little about how SMEs access impact investments, what opportunities to learn

and develop new sustainability-related capabilities that unlock, and which implications the new form of financing has on the enterprises' strategies.

2.2.2. Impact Investing: Linking Financial Innovation to Sustainable Production

The connection of impact investments to the capabilities and upgrading of SMEs in EM is an important novelty yet to explore in the sustainable GVCs landscape. Impact investments are financial investments that purposefully target the creation of measurable social and environmental value alongside financial returns (Hockerts, Hehenberger, Schaltegger, & Farber, 2022; Hochstadter & Scheck, 2015; OECD, 2019). The financial industry is increasingly allocating impact investments and other forms of sustainable finance, playing a more and more developmental role that replaces or complements that of governmental policies and intergovernmental organizations (Cunha, Meira, & Orsato, 2021; EU Commission, 2018; IFC, 2019; Mawdsley, 2018; OECD, 2019; Watts & Scale, 2020). In 2020, private and institutional investors deployed \$700 billion in global impact investments to contribute to the SDGs agenda (GIIN, 2020). Impact investments promise to be crucial for addressing MNCs' slow commitment to the SDGs, which are not enough to fill the \$3.2 trillion annual investment gap in EM (IFC, 2019; UNCTAD, 2021). Impact investors are thus critical actors in the sustainability of GVCs, with SME-related infrastructure and capabilities in EM representing the ideal target of their assets (IFC, 2019; SAFIN, 2019). Yet, existing research on impact investing pays scarce attention to how impact investors connect to the organization of production while focusing instead on two dimensions of the phenomenon unfolding within financial markets.

The first critical focus of analysis in the study of impact investing has been on the mechanisms underlying impact investments targeting publicly-listed MNCs in the stock market (Hochstadter & Scheck, 2015; OECD, 2021). In that context, impact investments are designed to

reward MNCs that are good sustainability performers financially. Sustainability performance, however, is assessed through metrics and indicators, usually taking the form of sustainability indexes, which are defined by private entities and use data often disclosed by the same MNCs being assessed (Chatterji and Toffel, 2010; Doh, Howton, Howton, and Siegel, 2010; Orlitzky, 2013; Slager, Gond, and Moon, 2012). In addition, sustainability index-makers develop their methodologies upon a range of heterogenous sustainability criteria, which lack a uniform definition and operationalization across the different ratings present in the market, generating diverging impact measurement categories, processes, and outcomes (Carroll, Primo, and Richter, 2016; Delmas, Etzion, and Nairn-Birch, 2013). The measurements are developed out of divergent theorizations of what sustainability is, which entails that investors operate based on different understandings of sustainable production (Eccles, Lee, & Stroehle, 2020; Chatterji et al., 2016). Partially because of the problems of divergent theorization, social indices also make use of different types and volumes of data, operate on different scales and across different industries, and operationalize differently similar constructs. As a result, finance is deployed for impact based on sustainability measurements that are hardly commensurable (Chatterji et al. 2009). Moreover, it is hard for an index to detect MNCs falsifying their commitment to sustainability, which encourages publicly listed corporations to strategically accommodate only a few aspects of their behavior to the thresholds set for impact investing (Orlitzky, 2013). Therefore, there is no guarantee that impact investments targeting MNCs in the stock market will make their way to upgrading suppliers upstream of the MNCs' GVCs.

The second important focus of analysis has been the emergence and consolidation of impact investment markets and organizations, limited to dynamics unfolding in financial markets. For example, a series of contributions investigates the challenges of establishing impact

investing markets in Europe and North America, contributing to the literature on market creation from performativity, institutional, and economic sociology angles (Beunza & Ferraro, 2019; Casasnovas & Ferraro, 2022; Hehenberger, Mair, & Metz, 2019; Giamporcaro & Gond, 2016). For example, multiple works highlight the ability of specific organizations to develop and control impact measurement tools, framed as calculative devices, as a critical factor for pushing the creation and consolidation of the French impact investment market (Dejean, Gond, & Leca, 2004; Gond & Boxenbaum, 2013; Giamporcaro & Gond, 2016). Other analyses emphasize the need to develop cultural and market infrastructures through collective learning (Casasnovas & Ferraro, 2022) and the negotiation of values and ideas shaping processes and decisions in the sector (Hehenberger et al., 2019) to enable the emergence of impact investment markets. At the organizational level, other important contributions study how financial institutions integrate sustainability criteria into the investment practices of their employees (Arjalies & Bansal, 2018; Arjalies and Durand, 2019; Chatterji, Durand, Levine, and Touboul, 2016) and how institutional context influences the allocation of financial resources for sustainability goals in microfinancing organizations (Cobb, Wry, & Zaho, 2016). While casting light on the emergence and expansion of impact investing, all these contributions remain circumscribed to the realm of financial markets and only analyze supply-side dynamics.

Recent contributions began to focus on the shortcomings emerging in the impact investing paradigm, also highlighting the poor understanding of the link between impact financing and sustainable production. For example, Hockerts and co-authors (2022) urge for the need of verifying whether impact investing is still operating as a "market catalyst" to mobilize finance for good or is rather attracting "trespassers" financial actors that enter the market without the ethical predisposition to generate sustainability outcomes. Similarly, others remark the

progressive mission drift of impact investing. On the one hand, the number of financial actors entering the game increased rapidly, causing exponential growth in the capital allocated. On the other, we register a loss of focus on creating positive environmental and social outcomes in favor of a risk-minimization and profit-maximization approach typical of mainstream financial markets (Casalini & Vecchi, 2022; Hehenberger et al., 2019). The current role of financial markets in promoting the sustainability transition would still be very modest, with the scaling up of impact investing not determining real changes in production practices (Busch et al., 2016). Casasnovas and Jones (2022) signal the lack of research on how impact investing contributes to reducing socio-economic inequalities. They also highlight the importance of investigating and theorizing about how impact investors can connect to targeted beneficiaries to develop more inclusive approaches to define impact metrics, structures and processes of investment deployment, impact and financial returns balance, and best practices for the sector (Casasnovas and Jones, 2022). Agrawal & Hockerts (2021) complement these views by registering that most of the existing knowledge about impact investing concentrates on financial markets but does not examine how impact investing creates sustainability improvements in production. It is thus being recognized that impact investing struggles to fulfill its mission and that we need to research more about how it connects to its demand side.

2.2.3. Organizational Learning to Sustain the Matching of Supply and Demand of Impact Investing

The literature on organizational learning provides an ideal framework for investigating how the demand and supply sides of a new market create the capabilities to connect. International impact investors are confronted with the challenge of developing an innovative product, the impact investment, which satisfies the counterparts' needs, i.e., the SMEs' demand for financing to fund upgrading strategies and the move to sustainability. The SMEs located in rural areas in EM face a lack of capabilities to access and manage financial resources, which intertwines with a structural exclusion from traditional financial circuits and an endemic lack of connectivity to knowledge sources locally and internationally. Bringing impact investors and SMEs closer together and enabling their transaction, i.e., the deployment of impact investment, is about addressing those capabilities gaps by fostering learning for both.

Existing contributions that focus on the EM context highlight how local firms overcome resource constraints to upgrading by establishing social interactions horizontally at the location and vertically with buyers, which activate knowledge channels enabling the acquisition, recombination, and creation of new know-how (Amin and Cohendet, 2004; Anand et al., 2021; Bathelt & Cohendet, 2014; Jandhyala & Phene, 2015; Perez-Aleman, 2013; McDermott & Corredoira, 2010). Local and international interactivity with different sources of knowledge generates the collective learning of groups of SMEs, which develop the production capabilities to meet the standards and requirements of their international buyers (Perez-Aleman, 2011; Corredoira & McDermott, 2014). Collective learning refers to the creation of cumulative knowhow in a spatial dimension through the coordinated action of multiple actors to achieve a shared solution to a common problem (Dosi et al., 2000; Nelson & Winter, 1982). Collective learning is traditionally connected to the achievement of interactivity and access to diverse knowledge sources in a determined geographical space, being proximity an important factor for a group of actors to identify relevant pools of knowledge and competencies and tackle their recombination and creation collectively (Capello, 1999; Cohendet & Llerena, 1997; Foray, 2018).

However, the fragmentation of production activities on the global stage, the increased necessity for firms to deal with globally dispersed knowledge, and technological advancement

fostering distant collaborations and knowledge-sharing processes suggest that interactivity can overstep the traditional boundaries of the firm and the geographical location to generate new products, services, and markets (Bathelt & Cohendet, 2014; Cano-Kollmann et al., 2016; Scalera et al., 2018; Van Assche, 2017). The cross-border creation of new capabilities increasingly leverages more dynamic spaces of knowing, defined as "organized spaces of varying length, shape, and duration, in which knowing, depending on circumstances, can involve all manner of spatial mobilizations, including placements of task teams in neutral spaces, face-to-face encounters, global networks held together by travel and virtual communications, flows of ideas and information through the supply chain, and transcorporate thought experiments and symbolic rituals" (Amin & Cohendet, 2004). The notion of spaces of knowing is thus relevant to explore how SMEs at the location and international impact investors approach cross-border knowledge exchange and creation to develop the needed capabilities. In addition, casting light on similar dynamics addresses an overall lack of understanding about the nature of multi-level and multiactor cross-border knowledge creation processes in the literature of international business and strategy (Grant & Phene, 2022).

The relevance of local-global interactivity and collective learning to connect the supply and demand of a financial innovation is also consistent with studies focusing on the nexus between product innovation and the emergence of new markets. For example, in their study of the emergence of the UK impact investing market, Casasnovas and Ferraro (2022) captured inter-organizational efforts to build cultural and material market infrastructure and found them essential to market formation as they offered the involved organizations the opportunity to enter processes of collective learning. Collective learning enables the market actors to *"understand what works, and for whom, and their resulting actions shape the emerging market in different*

directions" (Casasnovas & Ferraro, 2022; p.830). Callon (2017 & 2022) argues that connecting supply and demand to form markets ultimately is about the countless interactions (*'encounters'*) between supply organizations and demand organizations, and between them and other organizations owning technical knowledge, to progressively learn how to refine the product object of the potential transaction until it meets the expectations of the market actors. In this sense, collective learning and creating new know-how on the supply and demand side of a nascent market would reveal critical to enable market encounters by filling the knowledge gaps separating product innovation from the demands' needs. In alignment with such perspective, interactions between impact investors and SMEs, and between them and other local and international actors, are essential units of analysis to study how impact investing connects to the demand side. Existing research does not investigate how new to the GVC linkages between SMEs at multiple locations and global impact investors generate knowledge flows and stimulate novel learning paths, creating the premises for establishing market transactions.

Moreover, interactivity and learning also matter to overcome resource constraints, such as in the case of EM contexts. For example, in the European Union, "smart specialization" policies structure new interactions and knowledge mobilization to generate products and markets to revamp stagnant economic regions (Capello & Kroll, 2016; Foray, 2014 & 2018). Smart specialization consists of discovering and giving value to previously untapped sources of knowledge at the location by connecting them, integrating them with foreign knowledge where necessary, and linking them to transformative activities to pursue new market opportunities (Foray, 2014). Crucial to the process of creating new resources for innovation and market creation where they were absent is *"the discovery and coordination capacity of private agents"* who map, select, and put into good use different pools of knowledge and existing infrastructure

(Foray 2014). SMEs and impact investors confront a similar issue, where they operate in resource-constrained contexts and must coordinate their actions to identify and create the knowledge necessary to enable their transactions. Linkages between organizations and between organizations and individuals to access untapped knowledge and the collective learning that originates can be critical to address the breach separating supply and demand of impact investing.

2.2.4. Key Constructs and the Way Forward

Innovative impact investing products promise to address the lack of financial access of SMEs in EM, enabling their upgrading and sustainability strategies in GVCs. However, there is a scarce understanding of how impact investments interact with the domain of production and, more specifically, with the sustainability of GVCs. In particular, the gap concerns how SMEs and impact investors can connect and transform the capital allocated in the financial impact investing market into actionable resources for the SMEs to build sustainability-related capabilities. Despite the lack of contributions to studying this dimension of impact investing, two constructs emerge as critical to addressing this gap. Supply-demand actors' interactivity and collective learning are crucial to understanding how impact investors and SMEs can connect. I summarize the crucial constructs identified in section 2.2 in Table 2.2 below.

Concept	Definition	Key Contributions
Impact Investing	Financial investments that purposefully target the creation of measurable social and environmental value alongside financial returns	OECD, 2019 Agrawal & Hockerts, 2019 Höchstädter & Scheck, 2015
Financial Gap	Financial investments are required to achieve the SDGs by 2030. The financial gap concentrates in EM, and it is estimated in \$3.5 Trillion per year until 2030.	UNCTAD, 2021 IFC, 2020
Collective Learning	The creation of cumulative know-how in a spatial dimension through the coordinated action of multiple actors to achieve a shared solution to a common problem	Nelson & Winter, 1982 Dosi, 1992 Capello, 1999 Perez-Aleman, 2011
Spaces of Knowing	Organized spaces of varying length, shape, and duration, in which knowing, depending on circumstances, can involve all manner of spatial mobilizations, including placements of task teams in neutral spaces, face-to-face encounters, global networks held together by travel and virtual communications, flows of ideas and information through the supply chain, and transcorporate thought experiments and symbolic rituals	Amin & Cohendet, 2004
Market Encounters	The countless interactions between supply organizations and demand organizations, and between them and other organizations owning technical knowledge, to progressively refine the product object of the potential transaction until it meets the expectations of the market actors and exchange becomes possible.	Callon, 2021

Table 2.2 – Key Constructs on Impact Investing, Learning, and Supply-Demand Interactions in GVCs

CHAPTER 3

RESEARCH DESIGN

3.1. Research Question

Chapter 2 highlights that SMEs in EM increasingly pursue proactive sustainability strategies while participating in GVCs. However, a lack of financial resources represents a challenging barrier to their economic, social, and upgrading goals. Emergent forms of impact investing promise to address the lack of financing and propel the sustainability transitions of SMEs. The literature recognizes the importance of the nexus between SMEs and impact investing for the sustainability of GVCs but also acknowledges that such areas have not been researched enough. On the one hand, we know little about the nature of SMEs' proactive sustainability strategies and how they access the financial resources to implement them (Coe et al., 2014; De Marchi et al., 2020; Kano et al., 2020; Golgeci et al., 2021; Navas-Aleman et al., 2014; Soundararajan et al., 2018). On the other, a breach exists between supply and demand of impact investing, but no attention has been paid to how impact investors connect to production by generating actionable resources for SMEs (Agrawal & Hockerts, 2021; Casalini & Vecchi, 2022; Casasnovas & Jones, 2022; Hockerts et al., 2022). To address these interconnected gaps, I leverage the analytical traction provided by the literature of organizational learning and capabilities to answer the following research question: How does impact investing influence the sustainability of SMEs in GVCs?

My research question is purposefully broad because it aims to generate new theory about a complex set of interrelated and emergent phenomena that have received scant attention in the literature so far (sustainability in GVCs, impact investing, SMEs proactive sustainability strategies). The research question allows room to develop relevant contributions to multiple lines of inquiry focused on how traditionally neglected actors such as EM SMEs and impact investors contribute to progress in the SDGs agenda. Those lines of inquiry comprise the study of upgrading and innovation in GVCs, sustainability strategies, organizational learning and capabilities in EM contexts, and sustainable market creation, linking to the literature of international strategy and sustainability.

To answer the research question, this thesis focuses on two essential empirical aspects of the SMEs-impact investing nexus in the context of sustainable GVCs. The first aspect is the relationship between the proactive sustainability strategies of SMEs participating in GVCs and impact investing. We do not know how the push for sustainability by individual SMEs intertwines with their strategies to access the needed financial resources to feed the dynamics of economic, social, and environmental upgrading. The second aspect is how impact investors and SMEs can connect, overcoming an entrenched breach between supply and demand of impact finance in the resource-constrained context of EM. We have a limited understanding of how the interaction between impact investors and SMEs emerges and evolves to enable impact investors' deployment of a financial innovation meeting the SMEs' needs.

I address the two empirical dimensions of my inquiry in two core empirical studies. First, I examine how SMEs strategize to access impact investments and how accessing impact investments affects the firms' participation in global trade and production, with an emphasis on the formation of new capabilities for upgrading and sustainability. Second, I study processes of

coordinated interactions and learning involving the impact investors, SMEs, and other local and global organizations to understand how the supply and demand side of impact investing create the knowledge and capabilities required to sustain the deployment of impact financing. In the rest of Chapter 3, I provide a detailed description of the research setting and design that inform the two studies.

3.2. Research Setting

3.2.1. Impact Investing and Latin-American SMEs in Agro-Industrial GVCs

To understand how impact investing influences the sustainability of SMEs in GVCs, I focus on the study of the interactions between international impact investors and EM SMEs participating in agro-industrial GVCs, specifically in the coffee and forestry industry. Agroindustrial GVCs represent an ideal context of analysis for my thesis. SMEs in agro-industrial GVCs still confront numerous barriers to sustainability, which they find challenging to address due primarily to the lack of financial resources (FAO, 2016; IISD, 2020; Ponte, 2019). The CSR initiatives of MNCs and the diffusion of VSS generated progress in terms of adopting more sustainable practices and increasing revenues for firms in EM. Still, SMEs integrated into GVCs, such as cocoa, cotton, coconuts, coffee, forestry, and horticulture, engage proactively with sustainability and economic upgrading to further increase their social and environmental performance and improve the livelihoods of their members and local communities. In addition, many SMEs still struggle to enter GVCs and create the capabilities to comply with VSS, which is essential to access the economic benefits of participation in markets for sustainably certified products. Significantly, agro-industrial SMEs interact directly with multiple dimensions of the SDGs, from poverty reduction, gender inequality, and access to health and education to climate change adaptation, the conservation of biodiversity, and water management.

Consequently, SMEs' strategies in the context of agro-industrial GVCs are highly composite. They touch upon different aspects of the SDGs and concern SMEs at different maturity levels in their engagement with sustainability. For example, lack of funding and the proactive push for social and environmental upgrading characterize different types of SMEs: SMEs that still do not participate in GVCs; SMEs that are integrated into GVCs but are still seeking to obtain a sustainability certification such as Fairtrade or Rainforest; SMEs that are already active in multiple commercial channels for certified products; and SMEs starting to seek alternative solutions, such as focusing on local and regional markets and contributing to the development of local VSS.

Such diversity offers the analytical opportunity to observe various firm-level approaches to sustainability based on the type of barriers the SMEs consider more urgent to address. Therefore, an analysis of SMEs' sustainability strategies and upgrading goals in agro-industrial GVCs allows one to appreciate a diversity of problems and solutions. Moreover, it enables the identification of common patterns across a highly diverse SME population, providing fertile ground for theorizing about supplier-level sustainability strategies and capability creation.

In addition, agribusiness GVCs have constituted a critical experimental ground for impact investing (CSAF, 2020; FAO, 2018; ISF, 2019; SAFIN, 2019). Impact investments in agriculture are on the rise for multiple reasons. First, agro-industrial GVCs provide private financial institutions with the opportunity to contribute to achieving food security, economic growth in rural areas, and engaging with a multiplicity of dimensions of the SDGs (GIIN, 2018; IISD, 2019; IFC, 2019). Second, agro-industrial SMEs are attractive investees due to higher food prices and long-term growth trends characterizing agribusiness (CSAF, 2020; FAO, 2018). However, financial institutions also consider such investments highly risky. SMEs in EM usually

lack the capabilities to manage credit. Rural contexts in EM feature a high likelihood of disruptions of different types (political instability, economic crises, natural catastrophes, pest and diseases outbreaks), which can endanger agricultural production and the SMEs' ability to repay their obligations (IISD, 2020; OECD, 2019; Oxfam, 2017; SAFIN, 2019).

As a result, impact investing in agro-industrial GVCs is a dynamic and evolving sector. Financial institutions, the public sector, and interested stakeholders engage with the development of new financial products able to address the credit needs of SMEs while preserving the ability to generate financial returns (OECD, 2021; Oxfam, 2017; SAFIN, 2019). Access to such resources is essential for SMEs, which need both short-term and long-term financing they struggle to access through their vertical GVCs channels with larger firms (Bird & Soundararajan, 2020; Dalberg, 2016; FAO, 2016; Navas-Aleman et al., 2014). Extra-GVC funding is essential to boost the SMEs' economic growth and sustainability by maintaining or increasing competitiveness in GVCs and shifting to more sustainable production practices, which improve their resilience, especially by enabling adaptation to climate change (FAO, 2022; IIED 2015; ITC, 2021b). Consequently, focusing on impact investing in agro-industrial GVCs represents a live lab of innovative financial solutions for suppliers' sustainability in GVCs.

The analysis will focus on the Latin American context, specifically the coffee industry in Nicaragua, Honduras, and Costa Rica; and Peru and Bolivia's forestry and coffee sectors. The focus on the Latin American context is justified by the analytical leverage it provides for observing SMEs' proactive push for sustainability in connection to their participation in GVCs and the attempt to access impact investments. Agro-industrial SMEs in Latin America have a tradition of organizing for and engaging with sustainability issues from both a social and environmental standpoint (Escobar, 2018). For example, the most notorious VSS, Fairtrade, was

first embraced and quickly diffused among Latin American producing organizations (Fairtrade, 2020; Raynolds, 2002). Latin American SMEs are also highly integrated into GVCs, compared to Asian and African SMEs (FAO, 2020; UNCTAD, 2010). Similarly, Latin America has a long tradition of social lenders and, more recently, impact investors and public and regional institutions engaging with the lack of financing affecting firms in rural areas (FAO, 2018; SAFIN, 2019). Moreover, while I recognize that inevitable cross-country institutional differences apply, the choice of two relatively homogenous sub-regions (Central America: Honduras, Nicaragua, and Costa Rica; Andean Region: Peru and Bolivia) enhances the possibility of comparing the findings concerning the firms' participation in GVCs, which remain the essential context for the analysis of the SMEs' strategies and product innovation processes.

Finally, the analytical breadth of my project benefits from my direct knowledge of agroindustrial GVCs and the Latin American region. During the last nine years, I have worked for and collaborated with the United Nations in the implementation and design of multi-stakeholder initiatives targeting the sustainability of EM SMEs in agribusiness. I experienced and understand the field dynamics involved in stimulating more sustainable GVCs, the barriers to sustainability that firms in EM confront, and the business and institutional context in which the SMEs and the impact investors operate. This puts me in the conditions as a researcher to engage in-depth with the topic I intend to study and improve my analytical capacity to interpret data and identify relevant patterns.

3.2.2. Sustainability and Impact Investing in Coffee GVCs

Coffee GVCs represent an ideal agro-industrial sector for my analysis because they exemplify how agro-industrial SME suppliers proactively engage with creating sustainable products but still face crucial barriers to economic, environmental, and social upgrading. The coffee industry has seen dramatic shifts in international regulations and market demand since the 1990s, marked by the expansion of sustainable certifications that introduced an alternative distribution of value in GVCs (Bager and Lambin, 2020; Grabs & Ponte, 2019; Levy et al., 2016; Ponte, 2003). Certified production and CSR initiatives opened new upgrading trajectories to SMEs. For example, sustainable product certifications and partnerships with buyers and NGOs unlocked opportunities for SMEs to access higher prices for their coffee and enabled learning in connection to specific production practices, often more environmentally sustainable (Bacon, 2005; Perez Aleman, 2013; Perez Aleman & Sandilands, 2008). Developing new sustainable coffee products offers SMEs an alternative to the existing vulnerabilities of conventional coffee markets. In conventional markets, SMEs are exposed to negative commodity price fluctuations, low farm-gate prices, and competition from producers of comparable commodity-grade beans (ITC, 2021b).

Certified coffee products generate higher revenues, stabilize prices, and foster the adoption of more sustainable practices. For example, Fairtrade-certified Costa Rican coffee producers sold higher volumes at higher prices than those producing conventional coffee, creating higher household revenues (Dragusanu & Nunn, 2018). The premium payments and related community investments linked to Fairtrade-certified production counteracted the collapsing income of coffee producers in Northern Nicaragua in the face of falling prices (Bacon, 2005). Rainforest and Fairtrade price premiums in Mexico and Peru contributed to 5 to 10% gains in the producers' total income, respectively (Barham & Weber, 2012).

However, only 25% of the world's coffee production happens today under the regime of at least one voluntary sustainability certification (ITC, 2021b). Thousands of coffee SMEs in EM are still excluded from participation in GVCs and certified production, although they often

engage in forms of sustainable production and could potentially be certified. Compliance with VSS and certification imposes costs that SMEs are often unable to pay for lack of credit and the reduced gains they generate through their commercial channels (Starobin, 2021). Sometimes, SMEs are unwilling to cover those costs because they perceive that certification will not generate as many benefits as reinvesting into on-farm infrastructure and upgrading (Starobin, 2021). Even when they overcome the cost-related barrier and the lack of production capabilities to comply with VSS and meet buyers' demands, coffee SMEs still face major issues in operating sustainably from economic, social, and environmental standpoints (Ponte, 2019).

For example, coffee SMEs in Central America and the Caribbean struggle to create the capabilities to confront climate change, lack of infrastructure, international price volatility, and the risk of demand shocks (Guido, Knudson, Finan, Madajewicz, and Rhiney, 2020; ITC, 2021b). Despite Fairtrade certification, Nicaraguan producing organizations could not confront declining productivity and low farm-gate prices, which increased their indebtedness (Wilson, 2010). The specialty market segment, which extracts value by connecting coffee quality to sustainability-related narrative and provenience, rewards roasters and retailers while producing SMEs in Guatemala remain in lower value-added activities (Fischer, 2021). Even when they comply with sustainability standards and sell new sustainable coffee products in GVCs for certified coffee, SMEs have no access within the GVCs to the financial resources they need to continue pursuing social and environmental upgrading beyond the requirements of lead firms and VSS (IISD, 2019; ITC, 2021b).

Therefore, it is essential for the sustainability strategies of coffee SMEs to access new financing channels securing the short- and long-term funding required to either access GVCs, comply with standards, or further increase the sustainability of production and trade beyond the

specification of VSS and MNCs. New financial resources are needed in the coffee sector to reduce production costs, rejuvenate coffee plantations, develop new plant varieties to increase resistance to the effects of climate change, and improve biodiversity and water management practices (ITC, 2021b). Impact investing promises to address the financing gap of coffee SMEs, but we know very little about how the relationship between impact investors and coffee SMEs plays out. Access to impact investments represents a new type of relationship for SME suppliers in agro-industrial GVCs, which they struggle to establish (SAFIN, 2019). Coffee SMEs traditionally lack the skills, competencies, linkages, and experience to engage with financial institutions (World Bank, 2015; IISD, 2019).

Yet, impact investors tend to privilege coffee GVCs among many other chains for their investments. Coffee constitutes a restively profitable market with consolidated commercial flows and structured sustainability governance derived from the spread of VSS and the commitment of many MNCs to the sustainability of a product with high visibility in the civil society of Western countries (Ponte, 2019; World Bank, 2015). These aspects contribute to de-risking financial investments in GVCs compared to other commodities and agribusiness products and facilitate the tracking and measurement of positive social and environmental impact (ITC, 2021b).

Coffee GVCs thus represent an ideal setting to explore how the proactive engagement of SMEs with sustainability interacts with nascent forms of impact investing and how such interaction influences GVC inter-organizational and innovation dynamics. Moreover, coffee GVCs share many structural characteristics with other essential agro-industrial GVCs, such as cocoa, shea, and cotton. By examining this proposal's research question in the context of coffee GVCs, I can develop critical insights that find application to an extensive set of economic and policy actors operating in other agro-industrial GVCs, not just coffee.

3.2.3. Sustainability and Impact Investing in Forestry GVCs

Forestry GVCs represent another excellent setting to examine how impact investing enables the move to sustainability of SMEs in GVCs, both as an independent research context and as a term of comparison with coffee GVCs. Forestry and coffee GVCs share similarities as well as critical differences. For example, compared to coffee, only 10.4% of the global forest area is certified, according to a VSS (versus 25% of world coffee production) (ITC, 2021a). The proliferation of VSS for the sustainable management of forestry resources began in 1993 with the creation of the Forestry Stewardship Council (FSC), the leading forestry certification to this day (Stringer, 2006). Fairtrade coffee and cocoa certifications were first introduced in 1988 and 1994, which hints at a timeline similar to the one for forestry in developing the sustainable governance of the GVC. However, lead forestry firms have been slower than coffee ones to commit to CSR initiatives (Panwar & Hansen, 2008). Lead forestry firms from the US are mostly production and sales oriented and have weakly engaged with their global value chains' social and environmental sustainability, despite increasing societal expectations concerning the sustainable exploitation of forests (Panwar, Hansen, & Kozak, 2015). From the perspective of SMEs operating in timber-producing EM, certifications such as FSC promise access to niche, valueadded markets, just as for Fairtrade or Rainforest coffee, and the opportunity to enter learning trajectories leading to economic, social, and environmental upgrading of the production processes (Murphy & Schindler, 2011; Stringer, 2006)

Despite the market opportunities that forestry VSS can unlock, the growth rate of certified forestry production is slowing down globally, suggesting a struggle to support further shifts to more sustainable production practices in the sector (ITC, 2021a). Recent work shows that wood producers received scarce incentives to seek FSC certification, especially in tropical regions such

as Brazil, Peru, and Bolivia (Rafael, Fonseca, & Jacovine, 2018). Forestry SMEs find it especially challenging to comply with principles 4 and 6 of the FSC standard (Rafael et al., 2018). The FSC principles integrate the requirements that the companies managing forestry resources must meet to obtain the certification. Principle 4 is about community relations, and it asks firms to "contribute to maintaining or enhancing the social and economic wellbeing of local communities" (FSC, 2015). Principle 6 is about environmental values and impacts and requires the forestry companies to "maintain, conserve and/or restore ecosystem services and environmental values" and to "avoid, repair or mitigate negative environmental impacts" of the forestry extraction and wood processing activities" (FSC, 2015). This is due to a lack of organizational capabilities to confront such requirements, especially at the SME level. In fact, the FSC certification process would favor the certification of large industrial firms managing huge forestry areas and disadvantage SMEs and community-based forestry operations (Guedes-Pinto & McDermott, 2013). SMEs lack the financial and human resources to develop FSC compliance (Rafael et al., 2018).

Lack of investments is a recognized limitation to the sustainable management of forestry GVCs, especially the absence of financial support to small forestry companies in EM to shift to new production practices and certify their products (FAO, 2016). Impact investments in the forestry sector have been on the rise, as for coffee, to address such a financing gap (PRI, 2018). On the one hand, impact investing in forestry offers interesting opportunities to financial institutions. Forestry is a long-term investment, with most tree species requiring around 25 years to mature, which aligns with the long-term vision of many sustainable investors and the need to diversify the impact investment portfolios (GIIN, 2019b). Moreover, timber supply is mostly disconnected from the economic cycle, which makes it highly predictable and, therefore, low in

risk. The ecosystem of services related to forestry is considered undervalued today and destined to grow in the future. The global demand for sustainable forestry GVCs would be on the rise in connection with the SDGs agenda (GIIN, 2019b). On the other hand, impact investing in forestry GVCs also shows constraints. First, the business model behind return creation in forestry is extremely complex for both the investors and the producing organizations, which limits the ability to deploy assets in the field. Second, numerous impact investments in forestry performed badly during the last decade, discouraging further market entry by new financial institutions. Finally, despite the rise in the volumes of capital invested in forestry, the number of funds operating in these GVCs is still limited and not dense enough to generate a solid track record of successful impact investing models (GIIN, 2019b).

Therefore, forestry GVCs provide additional analytical leverage to investigate the interaction of impact investing and SMEs' sustainability strategies and innovation needs. The lack of financial resources to enable sustainability innovation is a central issue for SMEs in forestry GVCs, amidst the poor commitment of MNCs in the sector. Impact investing is a potential solution, but existing financial products still need to be refined to meet the investors' expectations and the SMEs' credit needs. In particular, impact investors are not as knowledgeable about forestry as they are about coffee. In addition, forestry certifications (namely FSC) show more trouble in fostering their adoption from SMEs than VSS in coffee. Their expansion has been slowing down compared to other agro-industrial VSS. These differences make it interesting to compare patterns emerging in forestry versus coffee GVCs concerning the interaction of impact investing and SMEs' sustainability.

3.3. Research Strategy

3.3.1. Analytical Approach and Data Sources

To investigate how impact investing influences the sustainability of SMEs participating in GVCs, I carry out two inductive multiple case studies (Eisenhardt, 1989; Yin, 2009) of coffee and forestry SMEs seeking access to impact investing. The empirical findings of the two case studies are described in Chapters 4 and 5. The two case studies allow me to deepen the understanding of two essential empirical aspects of my research question. In Chapter 4, the first study focuses on how the SMEs' proactive sustainability strategies integrate the need to access financial resources to feed social and environmental upgrading beyond compliance with VSS and MCNs' requirements. In Chapter 5, the second study cast light on how impact investors overcome existing challenges to connect with SMEs demanding resources for their transition to sustainable production.

As outlined in the theoretical background in Chapter 2, existing contributions have a scarce understanding of how impact investing can foster SMEs' proactive sustainability strategies and how it connects to its demand side. In fact, the nexus between SMEs and impact investments in GVCs and its implications for the sustainability of production represents a nascent topic area for the study of which multiple inductive case studies are excellently suited (Eisenhardt, 1989). As Eisenhardt suggests, I engage with the data with a clear research question defined a priori and a pre-selected set of potentially important constructs from the existing literature shaping my iteration with qualitative data (Eisenhardt, 1989).

Importantly, I strengthen my findings' generalizability and causal power by integrating the inductive approach to theorizing from case studies with strong contextual explanations (Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mantymaki, 2011). The inductive nature of the

theorizing process derived from the multiple case studies approach aims to uncover new constructs and relationships with the purpose of further testing (Eisenhardt, 1989). In the dominant view, such an approach entails that the explanation generated through case studies is weak in terms of both causality and contextualization. Theorizing is approached as a *generalizing away from context* to identify a set of regular patterns whose value as causal factors is yet to be verified, possibly quantitatively (Welch et al., 2011). Instead, causal factors are not homogenous. Rather, they operate differently across different cases, which makes context extremely relevant to determining outcomes and identifying the conditions for generalizability (Ragin, 2000).

Context, defined as the contingent conditions that generate an outcome in combination with a causal mechanism, represents a resource to generate strong causal explanations (Tsui, 2007; Whetten, 2009). The potential of contextualization for the strength of the theorizing outcomes is especially true for case studies, as *"case studies can generate causal explanations that preserve rather than eradicate contextual richness"* (Welch et al., 2011; p.750). Moreover, contextualization fosters a much-needed pluralism and diversity of perspectives in international management and international business research. Past research in these fields has converged towards a North American paradigm while neglecting the examination of novel contexts, such as emerging markets, which are essential to understanding the cross-national nature of the managerial and economic dynamics underlying globalization (Tsang, 2013; Tsui, 2007).

My case studies unfold in the context of EM SMEs' participation in agro-industrial GVCs, specifically coffee and forestry, which has been deeply studied in the past, as described in section 3.2 (this Chapter). Thus, I benefit from in-depth knowledge about the context in which the SMEs and the impact investors operate, including the nature of relationships, governance,

and institutions in the specific GVCs that I will examine. As a result, the two case studies are designed to provide strong causal explanations thanks to their embeddedness in a highly characterized context of analysis. My case studies help develop explanations whose generalizability is clearly identifiable, as we have a rich understanding of the similarities and differences between coffee and forestry GVCs, and between those two industries and other agro-industrial sectors. For example, there is enough contextual knowledge to assess the extent to which causal explanations developed in the context of coffee GVCs could be transferable to cocoa or coconut GVCs.

My research is qualitative (Patton, 2002). Qualitative research is best suited to explore topics that are still at the nascent stage in the current literature, as is the case for the nexus between SMEs, impact investing, and sustainable GVCs (Edmondson & McManus, 2007). In addition, qualitative research aims to generate a richly nuanced contextualized account (Mintzberg, 1979), which is consistent with my attempt to leverage the depth of the GVCs context of analysis in the case-study theorizing process to develop strong causal explanations (Welch et al., 2011). Qualitative methods also permit the transferability of findings to other settings and contexts (Lincoln & Guba, 1985). I analyze the qualitative data through three stages coding (Charmaz, 2006), which I conduct with the support of the software ATLAS.ti. First-order coding, or incident coding, focuses on defining "what is happening with the data" and begins to uncover meanings (Charmaz, 2006). Second-order coding, or focused coding, consolidates the most significant and/or frequent by incident codes (Charmaz, 2006). Finally, third-order coding consists of developing theoretical codes that specify the relationship between the categories matured in the focused coding (Charmaz, 2006). As described above, the theorizing process, whose outcomes are reported in Chapter 6, benefits from a rich contextual explanation to

increase the casual strength of the relationships among constructs that have been inductively developed.

The two case studies engage with an original set of qualitative data concerning a sample of 98 SMEs from Latin America. 63 SMEs are from Nicaragua, Honduras, Costa Rica, Peru, and Bolivia and participate in coffee GVCs. 35 SMEs are forestry firms from Peru and Bolivia. The 98 SMEs are part of a larger sample of 135 agro-industrial SMEs involved in a total of 9 Financial Fairs facilitated by a Canadian NGO whose goal was to match the SMEs and a total of 23 international impact investors to unlock new financial resources enabling the expansion of sustainable agribusiness production. The Financial Fairs were not mere events. Rather, each Fair consisted of an independent process lasting between 8 and 12 months to connect the supply of impact investments to the SMEs' demand for funding.

The Financial Fairs processes are unique. They extensively document the interactions between a large number of impact investors and coffee and forestry SMEs committed to building sustainability-related capabilities to upgrade strategies. Through multiple sources of qualitative and quantitative data that I specify at the end of this chapter, the Financial Fairs track the challenges and opportunities, as well as the goals and limitations of impact investing in agro-industrial GVCs. This depth and variety of data are very special for a context of analysis such as one of rural organizations in EM that traditionally lacks reliable micro-level data; and for the phenomenon under scrutiny, such as impact investing in agro-industrial GVCs, which has only very recently begun to take off. The original data collected in the framework of the Financial Fairs comprise archival documents and original interviews, which I described in more depth below. I then provide further detail concerning the data structure when describing the case studies design in sub-sections 3.3.2 and 3.3.3.

Original Archival Documents. The original archival documents include multiple sources. The first data source is the 98 business plans documenting the upgrading and innovation goals, commercial strategies, buyers, value chain bottlenecks, and financial history of the 98 SMEs that are investigated in the two Case Studies. The SMEs developed business plans to support their impact investment applications. The business plans are rather heterogeneous across the sample, with some documents being just seven to ten pages long and others being more than fifty pages long. This suggests a very diverse baseline of managerial capabilities within the sample. In total, the business plans data amount to over 2500 pages, which also include quantitative data concerning the production volumes and financial situation of the SMEs. Quantitative data will be used to develop descriptive statistics to characterize the participation of SMEs in agro-industrial GVCs and to triangulate the qualitative findings of the case studies.

Second, the data comprise the applications that the SMEs submitted to the impact investors in the context of their participation at the Financial Fairs. The applications include essential information such as the amount, type, and conditions of the capital the organizations require and the reasons for their request. The applications were also accompanied by 'info-sheets' documenting the SMEs' commercial channels, including product type, sales, price, buyers, and volumes of certified production. The SMEs' application package and info-sheets account for additional 700 pages of documentation.

The third source of archival data consists of detailed reports, communications, and informative materials from the Canadian NGO that facilitated the organization of the Financial Fairs. This extensive body of knowledge summarizes the outcomes of the SMEs' investment applications and gathers and organizes the feedback that the impact investors provided to justify the success or failure of single loan applications. It also comprises an in-depth reporting of the issues the impact investors confronted when approaching investing in agro-industrial GVCs, and a detailed description of the local business and institutional context, including the mapping of the relevant organizations (public, private, plural) to support the matching of supply and demand of impact investing. In addition, this source includes detailed information to track all the interactions that were established at each Financial Fair to address the lack of resources hindering product innovation and to foster the SMEs' access to impact investing. Moreover, this last set of documentation includes a rich body of presentations, briefs, and analyses that the support institutions involved in the Financial Fairs process developed to support SMEs and impact investors in building knowledge about the opportunities related to impact investing and sustainable agro-industrial products. This third set of data amounts to more than 2000 pages of documentation.

Original Interviews. The archival data is integrated with additional 48 interviews with members of the Canadian NGO that facilitated the Financial Fairs, the SMEs, the impact investors, and sustainable coffee and forestry GVCs experts. The interview will be in-depth and semi-structured (Spradley, 1979/2016, Hennink, Hutter, & Bailey, 2010). The interview will aim at obtaining insights about the unit of analysis of the case studies, as well as triangulating the results of qualitative coding at a more advanced stage in the research process. The interview will follow a guide, which will be characterized based on the role of the interviewee (SME, impact investor, or expert).

Next, I describe in detail the design for the two case studies. Study 1 focuses on the relationship between impact investing and the proactive sustainability strategies of SMEs in EM participating in GVCs. Study 2 focuses on how the impact investors connect to the SMEs, addressing the traditional breach between the supply side and demand side of impact financing to

overcome resource constraints to SMEs' upgrading. Finally, I will describe the qualitative data that was collected and analyzed.

3.3.2. Study 1: Design

The literature on GVCs and sustainability strategies in EM has focused on the MNC-SMEs dynamics stimulating social and environmental upgrading and, more recently, on how SMEs seek more sustainability independently from their buyers' policies. However, the existing analyses do not address a step prior to the proactive pursuit of sustainability upgrading, which is the SMEs overcoming their endemic lack of access to financial resources. SMEs' strategies in production GVCs are evidently linked to strategies to access financial resources, especially in impact investing markets that expressly aim at generating sustainability outcomes, but we have a scarce understanding of such. To answer how impact investing influences the move to sustainability of SMEs participating in GVCs, it is thus important to study how the SMEs' proactive sustainability strategies integrate the need to access financial resources, and how those resources in the form of impact investing interact with the SMEs social and/or environmental upgrading efforts. How does impact investing influence the proactive sustainability strategies of SMEs in GVCs?



Figure 3.1 – Interaction of SMEs sustainability strategies in GVCs and access to impact investing

For that purpose, I designed an embedded multiple inductive case study of 63 SMEs based in Nicaragua, Honduras, Costa Rica, Peru, and Bolivia participating in coffee GVCs. I examine how the SMEs' proactive sustainability strategies integrate the need to access financial resources and how the new interaction with impact investors offering such resources influences their participation in GVCs. The proactive sustainability strategies of the SMEs are the unit of analysis of this case study, with an emphasis on the interplay of the strategies with the effort to access impact investments (Yin, 2009). The case study is also embedded because it has multiple different levels of analysis (Yin, 2009). More specifically, at the firm level, the case study examines how the economic, social, and environmental upgrading strategic priorities of the SMEs intertwine with the development of specific organizational capabilities (Nelson & Winter, 1982) and the features of the impact investment products they are trying to access. At the GVC level, the high number of case studies (63) and the richness of the context (coffee industry) allow for examining how impact investing interacts with the upgrading dynamics of SME suppliers.

The sample of 63 SMEs was configured through a theoretical sampling process. Theoretical sampling aims to enable the observation of the unit of analysis and enhances its replication and contrast across the different firms included in the sample (Yin, 2009; Pettigrew, 1990). The 63 SMEs were selected from a larger group of 135 Latin American SMEs participating in agro-industrial GVCs, and all formally engaging with impact investors as part of their proactive push to sustainability. The critical criteria underlying the theoretical sampling were the SMEs' participation in the same product GVCs, i.e., coffee, which enables comparability and contrast between the SMEs' upgrading strategies, and the specific structural and sustainability features of the coffee industry described above in section 3.2. The sample allows me to focus on and compare coffee SMEs' sustainability strategies and their interaction

with impact investing. The richness of the data available facilitates this analytical approach. The data collected for Study 1 are summarized in Table 3.1 below.

Data source	Content	Analytical Method	
Business plans (63 documents)	In depth description of the SMEs' commercial strategies, sustainability challenges, GVC bottlenecks. They include financial statements.	Qualitative Analysis Three-levels coding of barriers to upgrading, proactive upgrading goals, funding needs, efforts to access financing.	
Impact investment applications (63 documents)	Amount and type of capital required, activities to be funded, reasons justifying the financing needs.	vities cing Qualitative Analysis Three levels coding of upgrading strategies and organizational capabilities connected to capital needs.	
'Info sheets' with market data (63 documents)	Commercial volumes, product type, prices, buyers, product sustainability certifications.		
Investment application reports (23 documents)	Success/failures of investment application, reasons for the outcome.	Quantitative Analysis Descriptive statistics of application failure rates, market channels, etc.	
Interviews to industry expert and selected SMEs (48 interviews)	Background information about impact investment ecosystem in the coffee GVCs. Latin American coffee SMEs-specific information about financing needs and socio- environmental upgrading.	Qualitative Analysis In-Depth Interviews coded to triangulate the findings of the case studies and capabilities framework	
Archival data (57 documents)	Background data on impact investing in coffee GVCs enclosed into industry reports of development agencies (i.e. FAO, IFAD, World Bank), coffee MNCs, and impact investors.	Qualitative Analysis Triangulation with the findings of the case studies. Provision of overall context for the analysis.	

Table 3.1 – Data Summary Case Study 1

The SMEs in the sample participated in international programs facilitated by a Canadian NGO to promote access to impact investing to fund their sustainability-centered strategies. Interacting with a total of thirteen impact investors, the 63 SMEs submitted multiple loan applications that were either accepted or rejected by the investors based on the assessment of a broad set of documentation accompanying their application and in-person negotiations. The SMEs requested impact investments in the framework of their proactive attempts to build new organizational capabilities to upgrade socially and environmentally and create sustainable coffee products, which they cannot fund through traditional financing channels such as buyers' credit

and micro-loans from local commercial banks. Each SME has specific funding priorities connected to its sustainability strategies. The amount and composite nature of the funding (i.e., long versus short term, working capital versus infrastructural) thus varies among the different cases. The SMEs also differ in terms of previous credit history and debt ratio. Finally, the SMEs' loan applications were either rejected or accepted, adding a further comparison layer. The SMEs' financial needs and situation constitute a key aspect that boosts comparison between cases, providing an excellent opportunity to explore the existence of recurrent patterns.

Moreover, all the SMEs in the sample are engaging to different extents with sustainable production. For example, 52% of the SMEs in the sample comply with two or more sustainability standards; and 32% comply with one sustainability standard. The SMEs (16%) that are not certified are in the process of obtaining their first certification (see Figure 3.2). The nature of their participation in coffee GVCs is also a varying factor. For example, some SMEs operate in different GVCs and are directly linked to numerous international buyers, while others have a reduced portfolio of commercial counterparts, which often are local traders and exporters. Such heterogeneity in the maturity of the SMEs' engagement with sustainability and in the structure of their commercial GVC operations provides further dimensions for analytical comparison among the cases. A summary of the SMEs composing the subjects of this multiple case study is exposed in Table 3.2.

Figure 3.2 – Study 1 Sample: Coffee SMEs and VSS (N=63 SMEs)


I analyzed the qualitative data concerning the 63 cases through three stages-coding (Charmaz, 2006), which I conducted with the support of the software ATLAS.ti. The by incident coding emphasized the activities that the SMEs plan to conduct to upgrade and access impact investments. The focused coding consolidated the initial incidents through a categorization shaped by the existing constructs of organizational capabilities (Nelson & Winter, 1982), which are required to upgrade and engage with impact investors and specific sustainability issues. New categories emerged at this stage, consistently with the emergent nature of the phenomena under scrutiny, to capture SMEs' upgrading through new capabilities directly linked to the new interactions with the impact investors. This contributed to improving the characterization of the proactive sustainability strategies of the SMEs vis a vis the access to impact finance. Finally, the third stage coding specifies the relationships between the categories identified at the focused stage and the new ones that have been developed, so to move the analytical story in a theoretical direction. In particular, it is at this stage that I consolidated the emergent categories into the new construct of "financial upgrading" (see chapters 4 and 6) and clarified the relationships between financial upgrading and other existing categories.

SME N#	SME ID	SME Country	Debt Ratio (%)	N# of VSS Certifications	Direct Export (Y/N)	Local Buyers	International Buyers
1	1F1	Nicaragua	54,93%	3	Y	2	1
2	2F1	Honduras	166.32%	2	Y	1	5
3	3F1	Nicaragua	35.74%	1	N	2	0
4	4F1	Honduras	32.89%	0	N	1	0
5	5F1	Honduras	29.40%	1	N	4	0
6	7F1	Honduras	21.74%	3	N	2	0
7	8F1	Honduras	97.69%	4	Y	5	3
8	9F1	Honduras	39.90%	2	N	2	0
9	10F1	Honduras	70.24%	4	Y	1	6
10	11F1	Honduras	47.54%	6	Y	1	1
11	13F1	Honduras	63.20%	3	N	2	0

Table 3.2 –	 Sampling 	Case S	Study :	1
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SME N#	SME ID	SME Country	Debt Ratio (%)	N# of VSS Certifications	Direct Export (Y/N)	Local Buyers	International Buvers	
12	14F1	Honduras	48.94%	3	Y	0	3	
13	15F1	Nicaragua	83.16%	6	Y	2	3	
14	17F1	Costa Rica	81.43%	4	Y	0	15	
15	18F1	Nicaragua	48.13%	4	Y	0	4	
16	19F1	Nicaragua	63.78%	2	Y	2	3	
17	6F1	Honduras	51.40%	2	Y	1	2	
18	12F1	Honduras	38.50%	3	Y	2	3	
19	20F2	Nicaragua	12.91%	1	N	1	0	
20	25F2	Costa Rica	21.00%	1	N	1	0	
21	26F2	Nicaragua	32.03%	1	Y	3	2	
22	33F2	Nicaragua	42.38%	2	Y	0	4	
23	35F2	Nicaragua	29.00%	1	Y	2	7	
24	36F2	Nicaragua	51.46%	2	Y	3	19	
25	37F2	Nicaragua	68.60%	3	Y	0	5	
26	56F4	Nicaragua	74.22%	3	N	1	0	
27	57F4	Nicaragua	7.98%	1	Y	2	3	
28	58F4	Nicaragua	79.91%	4	Y	2	2	
29	59F4	Nicaragua	69.11%	2	Y	2	1	
30	60F4	Nicaragua	81.12%	4	Y	1	12	
31	61F4	Nicaragua	32.03%	1	Y	3	2	
32	62F4	Nicaragua	43.23%	2	Y	0	2	
33	63F4	Nicaragua	73.87%	1	Y	1	4	
34	64F4	Nicaragua	81.94%	4	Y	2	9	
35	66F4	Nicaragua	47.34%	4	Y	0	4	
36	69F4	Nicaragua	85.23%	1	Y	0	9	
37	70F4	Nicaragua	73.15%	1	N	1	0	
38	71F4	Nicaragua	62.45%	1	N	3	0	
39	72F4	Nicaragua	26.19%	1	N	1	0	
40	73F4	Nicaragua	92.49%	5	Y	2	17	
41	82F5	Peru	2.74%	2	Y	0	5	
42	83F5	Peru	19.73%	0	Y	0	1	
43	99F7	Honduras	63.80%	3	Y	15	13	
44	100F7	Nicaragua	7.44%	0	Y	0	3	
45	102F7	Honduras	59.37%	5	Y	0	6	
46	103F7	Nicaragua	62.99%	2	N	1	0	
47	104F7	Nicaragua	87.52%	2	Y	2	15	
48	105F7	Nicaragua	34.12%	0	Y	1	1	
49	107F7	Nicaragua	84.20%	1	N	2	0	
50	108F7	Honduras	58.84%	6	Y	2	1	
51	141F11	Honduras	33.65%	2	N	1	0	
52	142F11	Honduras	58.28%	4	Y	0	9	

Table 3.2 – Sampling Case Study 1 (Continuation)

SME N#	SME ID	SME Country	Debt Ratio (%)	N# of VSS Certifications	Direct Export (Y/N)	Local Buyers	International Buyers
53	143F11	Honduras	64.85%	2	N	1	0
54	144F11	Honduras	38.21%	1	N	2	0
55	145F11	Honduras	52.57%	5	N	1	0
56	146F11	Honduras	24.53%	0	N	3	0
57	148F11	Costa Rica	26.33%	3	Y	2	2
58	149F11	Honduras	55.19%	0	Y	0	1
59	150F11	Honduras	72.00%	0	Y	0	1
60	151F11	Honduras	90.58%	3	Y	1	2
61	152F11	Honduras	12.53%	0	Y	1	1
62	153F11	Costa Rica	64.44%	0	N	2	0
63	154F11	Nicaragua	100.00%	0	Y	1	1

Table 3.2 – Sampling Case Study 1 (Continuation)

3.3.3. Study 2: Design

The review in Chapter 2 highlights the lack of knowledge about how impact investors and SMEs connect to deploy financial resources for the transition to sustainable production. Impact investing represents a potentially vital solution to the limitedness of SMEs' resources. The sustainability of coffee and forestry SMEs participating in GVCs requires access to funding to develop new sustainability-related capabilities and implement the proactive strategies investigated in Study 1. SMEs lack both connectivity to the financial system and investments and support from their GVC buyers, in addition to weak infrastructure and gaps in their production and managerial know-how. On the other hand, impact investors have little or no experience targeting agro-industrial SMEs in EM, and usually lack an understanding of the SMEs' needs. However, we do not understand how impact investors and SMEs overcome these challenges to align the demand and supply of impact investing and generate the financing for the SMEs' strategy implementation. How does impact investing connect to the resource demand of SMEs?

I developed this study as an embedded, multiple-inductive case study of six Financial Fairs. The Financial Fairs represent an excellent unit of analysis for such a research goal. Each Financial Fair consisted of a process lasting between 8 and 12 months to connect the supply of impact investments to the demand for funding by SMEs operating as suppliers in GVCs. A network of impact investors partnered with a Canadian NGO to facilitate the organization of nine Financial Fairs in Latin America between 2010 and 2014. The Fairs saw the participation of 135 SMEs and 23 impact investors and the involvement of multiple support institutions (government agencies, research centers, private sector, NGOs, and independent consultants) based at the location where the Fairs took place. In addition, multiple international actors involved in the sustainability of agro-industrial GVCs (NGOs, standard setters, private sector) were involved. The Financial Fairs' explicit purpose was to help impact investors connecting to SMEs participating in GVCs, generating new financial capital funding the SMEs' sustainability transition.

Importantly, both the impact investors and the SMEs participating in the Fairs find it challenging to mutually connect and establish transactions. The SMEs are trying to implement proactive sustainability strategies to develop sustainable coffee and forestry products but lack the resources to do so. They do not receive the needed financial and capacity-building support from their buyers in the GVCs, and they are excluded from traditional financing circuits, which is a traditional issue for SMEs in Latin America (Navas-Aleman et al., 2014). In addition, their profiles and strategies are not necessarily an attractive investment for impact investors beginning to approach the agro-industrial sector. A similar situation also affects the impact investors, as their processes and products are not immediately attractive, feasible, and easy to access for the SMEs, whose needs are far from being understood. The SMEs and impact investors thus need to mutually refine, adapt, and draw near their mutual needs and expectations. The Financial Fairs offer a unique opportunity to do so. They are a story about the interactive efforts by the impact

investors and the SMEs, also involving a series of local and global support institutions, to develop mutual attractiveness and coordinate the supply of financial capital and demand for financial resources to build sustainability-related capabilities and upgrade.

The selection of the cases followed a theoretical sampling process that enables the observation of the unit of analysis and enhances replication and contrast across multiple dimensions (Yin 2009; Pettigrew 1990). Out of the nine Financial Fairs that took place, I selected three Financial Fairs that focused on SMEs participating in the forestry GVCs, which were implemented in Peru (two fairs) and Bolivia (one Fair), and three Financial Fairs that focused on SMEs participating in the coffee GVCs, which were implemented in Nicaragua (two fairs) and Honduras (see Table 3.3 for a summary). A total of 35 SMEs participated in the forestry Financial Fairs as well as in the coffee Financial Fairs. This sampling unlocks multiple dimensions to compare the findings emerging from the observation of the unit of analysis.

Table 3	8.3 – Samj	oling Case	Study 2
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FO	RESTRY: 3 FIN	IANCIAL FAIR	S	COFFEE: 3 FINANCIAL FAIRS			
Financial Fair Location	N# of SMEs	N# of Impact Investors	N# of Support Institutions	Financial Fair Location	N# of SMEs	N# of Impact Investors	N# of Support Institutions
Peru	14	7	14	Nicaragua	14	6	7
Bolivia	12	5	11	Nicaragua	8	8	9
Peru	9	6	15	Honduras	13	6	11
Tot.	35			Tot.	35		

First, each Financial Fair represents an independent unit of analysis, which can be compared to the other five Fairs to observe common patterns and contrast differing elements. Second, the three coffee Fairs can be compared with the three forestry Fairs to observe how participation in different GVCs conditions product innovation and the creation of the resources required to feed it. As described in the research setting, coffee and forestry GVCs differ in their production systems and underlying innovation and financing needs to move to sustainability. They also differ in the maturity of the suppliers' and lead firms' engagement with sustainability, the governance of the chain, and the attractiveness of the product and the chain vis-à-vis impact investors. Third, the forestry and the coffee Fairs took place in different Latin American subregions, which strengthens the explanatory power of potential common patterns emerging from the data. The location plays a vital role in the SMEs' attempt through new interactions to build financial and knowledge-based resources to feed product innovation. If the nature and implications of such interactions on resource creation were to be the same across two different contexts, such as Central American and the Andean region, my findings would provide a solid ground for theorizing.

The case study is also embedded because it has multiple levels of analysis (Yin, 2009). The first level of analysis is the firm level. For both SMEs and impact investors, the data summarized in Table 3.4 allow for the appreciation of the critical barriers to connecting the supply and demand of impact investing. The impact investors engaged at the Fairs are pioneering financial innovations in agro-industrial GVCs, which posit the need for a better understanding of the system of production and the needs of the SMEs. The second level of analysis is the location. The SMEs must develop new capabilities to access and manage the impact investment products instead. Each Fair took place in a specific city in one country and saw the interaction not just of SMEs and investors but the facilitating NGO and multiple local organizations from the private, public, and plural sectors as well. The location is thus very important to appreciate the process by which the impact investors try to connect to the demand side. Finally, the GVCs in which the SMEs participate offer an additional level of analysis, which will enable the extraction of

important lessons for how the creation of resources to feed SMEs' sustainability innovation

interacts with global agro-industrial production.

T - I- I -	24	D-+-	C		C	
l able	3.4 –	Data	Summary	/ Case	Study	/ 2

Data Source	Content
NGO	Detailed documentation reporting the impact investors' goals, challenges, and outcomes of implementing the financial fairs projects (550 pages)
	Semi-structured interviews with four members of the NGO organization (13 hours)
Support institutions (i.e., Public agencies, government, research centers, local NGOs, etc.)	Presentations, guides, briefs, memos, and reports produced in connection to the financial fairs and related activities (720 pages)
Impact investors (13 organizations)	Inquiries, reports, and documentation about participation at the fairs, with a focus on the interactions with the SMEs (90 pages)
SMEs (70 organizations)	Loan applications, business plans, financial statements, commercial history, and documentation concerning participation at the fairs (1450 pages)
Sustainable GVCs and Impact Investing experts (41 experts)	Semi-structured interviews with international experts in sustainable markets and impact investing

As for the first Study, I analyze the qualitative data concerning the six Financial through three stages-coding (Charmaz, 2006), which I conduct with the support of the software ATLAS.ti. The by incident coding focuses on the resource constraints (financial and knowledgebased) that both the SMEs and the Impact Investors confront when trying to connect to each other and transact. The focused coding consolidates the initial incidents through a categorization that is shaped by the existing constructs of social interactions (and encounters) (Callon, 2017 & 2022) and collective learning (Perez-Aleman, 2011) to observe how new knowledge relevant to support supply-demand connectivity is created. Finally, the third stage coding specifies the relationships between the categories identified at the focused stage and the new ones developed to move the analytical story in a theoretical direction, identifying a new process for knowledge generation vital to support impact investing supply-demand transactions. Next, I present the findings of the two empirical studies in Chapters 4 and 5.

CHAPTER 4

IMPACT INVESTING AND SMEs' SUSTAINABILITY STRATEGIES

In this Chapter, I present the core empirical findings of the first study to understand how impact investing influences the proactive sustainability strategies of SMEs in GVCs. The study focuses on 63 SMEs based in Nicaragua, Honduras, Costa Rica, and Peru participating in coffee GVCs. I examine how the SMEs' proactive sustainability strategies integrate the need to access financial resources and how the new interaction with impact investors offering such resources influences their upgrading in GVCs. The SMEs' proactive sustainability strategies are the unit of analysis of this case study, with an emphasis on their interplay with the effort to access impact investments. I define proactive sustainability strategies as the upgrading strategies SMEs pursue to improve their economic, environmental, and social performance voluntarily or independently of the demands of current buyers or what is legally required by private or public regulation, including compliance with sustainability strategies.

The analysis is structured as follows. First, I identify the SMEs' proactive sustainability strategies and characterize them depending on their emphasis on specific combinations of upgrading projects. In particular, SMEs' prioritization of certain upgrading goals depends upon the sustainability barriers that the SMEs confront and intertwines with funding needs that intra-GVC financial flows struggle to address (Section 4.1). Next, I examine how the SMEs' interaction with impact investors and access to their financial innovation influence the feasibility and implementation of proactive sustainability strategies. The analysis shows that the SMEs'

efforts to access impact investments and the availability of the new financial flows to support upgrading originate dynamics of financial upgrading, which are new to the literature (Section 4.2). Finally, I discuss the implications of financial upgrading for our understanding of upgrading and sustainability in GVCs. I focus on how the different types of financial upgrading captured in my analysis (process, product, and channel) interact with the economic, social, and environmental upgrading constructs that have shaped the study of GVCs so far and how they boost the contribution of SMEs as suppliers to the sustainability of global production (Section 4.3).

4.1. SMEs' Proactive Sustainability Strategies

I identify three types of proactive sustainability strategies: *breakout*, *breakthrough*, and *breakaway*, which the 63 coffee SMEs in this study pursue (Figure 4.1). The three strategy types emerge based on how the SMEs organize to overcome a set of sustainability barriers hindering the creation of new capabilities and upgrading. The SMEs face four sets of barriers. First, they confront barriers inherent to the economically disadvantageous nature of their relationships with buyers and service providers. Second, they face barriers based on the low-value function they perform in the chain. Third, they struggle to cope with buyers' and standard setters' quality and environmental requirements. Finally, they encounter significant issues in financing their business operations and strategies. These issues manifest with different intensity and features for each SMEs, which pursue different sustainability strategies as a result. I group the SMEs according to the predominant upgrading focus of their strategies and refer to them as breakout SMEs, breakthrough SMEs, and breakaway SMEs. Remarkably, all strategy types strongly focus on proactive environmental upgrading alongside economic upgrading goals (Table 4.1).

Figure 4.1 – SMEs Proactive Sustainability Strategies: Key Sustainability Barriers and Related Upgrading Goals in GVCs



Source: Own elaboration from original dataset

Table 4.1 – SMEs' Proactive Sustainability Strategies and Related Funding Needs

Source: Own elaboration from original dataset

Strategy Type	Strategic focus	Key activities: Production & commercialization	Key activities: Environmental sustainability	Average Loan Requested (USD)	Average Repayment Term
Breakout	Functional upgrading	Improvement or internalization of on- farm processing Internalization of industrial processing	Adopt green processing practices and infrastructure (i.e. water usage, waste management, clean 746K energy)		CC months
SMEs	to move to advanced value functions	Development of value-added product and own brand Creation of a local retail market	Seeking environmental-specific technical assistance to support the adoption of greener practices.	Over 56 months	56 months
Breakthrough	Product & process upgrading	Renovating and/or expanding coffee plantations Improving quality control processes	Adoption of greener agricultural practices at farm level (i.e. agroforestry systems, fertilizers selection and use)	589K	
SMEs	to consolidate the rewards of certified production	Securing supply of inputs Improving knowledge about buyers' requirements	Reforestating the production areas	e production months	
Breakaway	Channel	Identifying/establishing relationships with new foreign buyers Obtaining additional (single or multiple) certification(s)	Obtaining 'green' certifications (i.e. organic, biodynamic)	775K	
SMEs	abandon buyer- led GVCs	Improving/delivering on-farm technical support to members Accessing tools and devices to improve	Increasing biodiversity for production & marketing purposes	Over 40 months	40 months
		pricing and market intelligence			

Breakout SMEs share the goal of breaking out from low-value functions that they perform in the chain. Their priority is to build the capabilities to pursue functional upgrading and shift to more technologically advanced stages of coffee production. Functional upgrading entails performing productive functions they currently externalize to service providers or that buyers are performing. Breakthrough SMEs aim to consolidate the benefits of certified coffee production and maximize the margins they obtain through the sales of certified products within multiple GVCs. To do so, they focus on investing in the build-up of capabilities for product and process upgrading. Product and process upgrading focus on innovating to improve product quality and consistency and reduce costs, respectively. SMEs in the breakaway group are the more advanced in the sustainability of their business operations as they tend to operate under a regime of multiple product certifications and sell to a diversified portfolio of international buyers. However, they want to build on that and break away from MNCs-led GVCs in favor of a highly diversified portfolio of niche small and medium size buyers in North America and Europe through a focus on channel upgrading.

4.1.1. Breakout Strategies: SMEs Pursuing Functional Upgrading.

Breakout strategies characterize twenty-one SMEs whose primary goal is breaking out of the low-value functions they currently perform in the coffee GVCs. SMEs in this group just began engaging with sustainable production. They recently shifted to certified products or are in the process of obtaining their first product certification. Breakout SMEs' integration in GVCs is limited. They are often connected indirectly and informally to international buyers, as their commercial counterparts are a reduced number of traders that operate as intermediaries to reach the MNCs' buying channels (Table 4.2). Intermediary traders usually impose low prices and rely on informal contractual arrangements. Breakout SMEs operate in low-value functions. They lack on-farm or industrial processing capabilities and bear high costs to externalize these activities to local processors. This negatively impacts profitability, which is also limited by the fact that conventional coffee is still the dominant product they commercialize (Table 4.2). Conventional coffee obtains lower prices than certified coffee produced in compliance with a sustainability standard, generating little resources to reinvest in proactive sustainability initiatives. Finally, SMEs in this group fund their harvesting and commercialization activities mainly through financing that local traders and processors provide at disadvantageous rates, often through informal lending. They lack the financing to pursue functional upgrading, capture more value from participation in GVCs, and increase the sustainability of their operations independently from certifying their products.

For example, the lack of capabilities to process their raw coffee and sell directly in the coffee GVCs affects Honduran Fairtrade certified SMEs 2F1 and 11F1, limiting the economic rewards of sustainability standard compliance. The two SMEs do not have the capabilities for infarm coffee processing, which they externalize to a local processor that imposes high costs for its services. In addition, they both reach the export market for certified coffee through one local intermediary, a trader that traditionally sets low prices (compared to market prices) for their coffee and lacks commercial interest in investing in their upgrading. The SMEs' proactive strategies focus on developing new processing capabilities to upgrade their function and increase their margins. In addition, they expect functional upgrading to enlarge the buyers' portfolio and reduce their dependency on single intermediaries. However, functional upgrading requires investments to build their capabilities, which the SMEs cannot acquire or access through their traditional intra-GVCs credit channels.

Table 4.2 - SME	commercial	l channels by	/ proactive	strategy type
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	Average N	Commercial participation in GVCs			Conventional vs Certified GVCs		
	of Buyers per SME	Indirect channels (Local intermediaries; % of total sales)	Direct channels (MNCs' buyers; % of total sales))	Conventional sales (% of tot pruduction)	Certified sales (% of tot production)		
Breakout SMEs	4.05	69%	31%	56%	44%		
Breakthrough SMEs	4.74	43%	57%	33%	67%		
Breakaway SMEs	8.47	20%	80%	24%	76%		

Source: Own elaboration from original dataset

4.1.2. Breakthrough Strategies: SMEs Pursuing Sustainable Product and Process Innovation.

The breakthrough strategies characterize twenty-seven SMEs whose primary goals are product and process upgrading to consolidate and break through the economic benefits or participation in coffee GVCs through commercializing certified sustainable coffee. The SMEs in this group are certified, selling most of their production directly to a limited number of MNCs' buyers, on an average of 4.74 per SME (Table 4.2). Certified production is prevalent, but conventional coffee is still key to securing revenues (Table 4.2). Compared to breakout SMEs, they rely on stronger integration in GVCs through direct linkages to the MNCs' local buyers. However, they still face a limited diversification of their commercial channels, which presents demand shock risks. Also, fierce competition from local peers often drives prices downward. The SMEs in the breakthrough group have good on-farm processing capability and perform highervalue functions than breakout SMEs. Yet, they face obstacles to product consistency and experience declining productivity and product quality, which expose them to the risk of failing to comply with contractual obligations and losing value-added commercial channels. The relatively high costs of maintaining and expanding sustainable production exacerbate the low quality and productive challenge.

Breakthrough SMEs' participation in coffee GVCs is not yet sustainable from their perspective. They struggle to cover production and operation costs operating on little profit, sometimes absent. For example, they struggle to secure enough revenues to reinvest in livelihood improvement, infrastructure, and product innovation. They face significant barriers, especially a lack of funding, to maintain the quality and consistency demanded by European and North American MNCs while covering the cost of certification and further expanding certified production. Consequently, SMEs focus strategically on investing in product and process upgrading. Specifically, they want to develop new capabilities to adapt their production processes to changing climate conditions, primarily increased temperatures and humidity, and improve product quality (Table 4.2). The SMEs expect to consolidate the benefits of product certification and make a breakthrough in their participation in coffee GVCs by consolidating and developing new sustainable products. Their existing funding comes from MNC buyers, who finance upfront yearly operational costs in exchange for committing in advance to the future harvest sale. Therefore, breakthrough SMEs lack the financial resources to make additional investments to fund their upgrading goals.

4.1.3. Breakaway Strategies: SMEs Pursuing Channel Upgrading.

The breakaway strategies characterize fifteen SMEs that have the most advanced economic, social, and environmental sustainability practices in the sample. SMEs in this group prioritize shifting entirely to commercial channels led by niche buyers for sustainable products. Compared to the breakout and breakthrough SMEs, the breakaway SMEs have the highest level of integration in coffee GVCs and capture the most value from it. They sell directly to a highly diversified portfolio of MNC buyers (Table 4.2). Their production is mainly certified (76%, see Table 4.2). They have good on-farm and sometimes industrial processing capabilities, which sustain quality consistency. They suffer, however, from declining productivity due to old plantations.

Breakaway SMEs seek other products and market development in the 'green' and specialty segments. The goal is to build capabilities to upgrade further the commercial channels by replacing MNC-led GVCs in favor of shorter GVCs in which they sell directly to smaller, niche buyers in North America and Europe. The creation of niche products builds on certified production, often under regimes of multiple certifications, which entails high compliance costs. In addition, niche products also have other sustainability features that the SMEs agree directly with their buyers and do not fall within the requirements of mainstream certification schemes (Respondents R17, R23, & R34). For example, SMEs could be asked to develop regenerative agriculture systems or participate in gender empowerment programs facilitated by the buyers' partners on the ground. These capabilities and infrastructural improvements to counteract declining productivity also require investments, which are usually missing. Breakaway SMEs thus confront a cost issue to enable their upgrading strategies.

For example, 11 out of 15 SMEs pursuing breakaway strategies target a third or fourth sustainability certification, but financial barriers limit their ability to cover the costs of the existing ones (Table 4.1 and Figure 4.1). They need additional resources to build capabilities for other certifications while maintaining long-term productivity. They face the high cost of the credit that MNC buyers provide to fund production, lack of financing for upgrading in commercial areas that do not align with the current buyers' requirements, and lowering coffee prices in international markets. Their existing MNC buyers will fund operational production

costs. Opening new financial channels to obtain investments to improve green capabilities and infrastructure is central to overcoming these challenges. Like the breakout and breakthrough SMEs, breakaway SMEs' ability to address their sustainability barriers do not end with product certification. Certifying their product as green is just a first move in their sustainability journey that requires investments to enable certification, maintain it, and expand their sustainable products and markets.

4.1.4. The financing Barrier to SMEs' Proactive Sustainability Strategies.

Breakout, breakthrough, and breakaway SMEs share financial barriers to enacting their proactive sustainability strategies. For those in low-value functions, the informal sources of financing available only offer costly credit, subject them to price-taking vulnerability, and limit the opportunities for functional upgrading, greener processing practices, and achieving or maintaining sustainability certification. For the breakthrough SMEs, financing from MNCs is limited to advanced working capital for operational costs, which excludes funding for investing in new sustainable practices. The margins are low, which means these SMEs survive and cover costs but do not have profits for new investments in product and process upgrading, for example, expanding certified production and consolidating quality consistency. Finally, the breakaway SMEs face a similar barrier as they obtain enough working capital for their operations within the GVCs in which they participate but not for new initiatives that can further expand and strengthen their sustainability beyond sustainability standards and regulatory compliance. Financing is a crucial barrier for all SMEs despite the variation in the barriers they face and the subsequent upgrading focus of their strategies. Unlocking new financing sources to allow the pursuit of their proactive sustainability strategies propels the SMEs to seek access to the new impact investing product.

4.2. SMEs' Interaction with Impact Investors: Financial Upgrading Dynamics

Through their goal of generating measurable sustainability outcomes in addition to financial profits, the thirteen impact investors in this study seek to offer sustainable financing products allowing SMEs to build the capabilities required for upgrading according to their proactive breakout, breakthrough, and breakaway strategies (Tables 4.1 & 4.3). Our data analysis shows that the SMEs' efforts to access impact investments represent a form of supplier's upgrading in its own right, which takes place in the financial domain, and I, therefore, name financial upgrading. I find different types of financial upgrading related to the SMEs' proactive strategies. First, SMEs must upgrade their internal financial and managerial processes to meet the impact investors' requirements. This requires the creation of new capabilities, which SMEs are not always able to build, therefore seeing their loan requests rejected (Table 4.4). The learning necessary to access impact investing pushes SMEs to undergo a *financial process* upgrading, which I describe in section 5.2.1. Second, impact investments represent an improved credit product compared to the financing the SMEs traditionally receive from buyers and traders within GVCs (Table 4.3). If financial process upgrading is successful, the SMEs thus enter a dynamic of *financial product upgrading*, which I describe in section 5.2.2. Compared to conventional GVC financing, impact investing offers better repayment terms, lower interest rates, alternative and more sustainable collateral requirements, and willingness to fund strategic investments that buyers and commercial banks would not support (Tables 4.3 & 4.4). Finally, by accessing impact investments, SMEs also establish new financing ties, which change the nature of their interfirm linkages in the chain, originating *financial channel upgrading*, which I describe in section 5.2.3.

 Table 4.3 – Traditional Intra-GVCs Financing vs. Impact Investments
 Source: Own elaboration from original dataset

	Average term of repayment	Average interest rate (yearly)	Average Loan Size (USD)	Purpose of financing	Collateral
GVC Financing	Seasonal (6 to 12 months)	32%	Min 25,000 Max 600,000	Working capital	Future sales at pre-set price Household's fixed assets SME's fixed assets
Impact investments	Up to 36 months for working capital Up to 72 months for others	12%	Min 280,000 Max 3,000,000	Working capital Machinery & equipment Infrastructure Capacity Building	Formal sales history SME's fixed assets Formal interfirm linkage with MNCs

Table 4.4 – Outcome of the SMEs' Loan Applications to Impact Investors

	Loan Application Outcome		
	Accepted	Rejected	Note: Total loan applications submitted = 231 (SMEs applicant: 63; Impact Investors: 13).
Breakout SMEs	38%	62%	
Breakthrough SMEs	41%	59%	Source: Own elaboration from original dataset
Breakaway SMEs	60%	40%	

4.2.1. Financial Process Upgrading: Creating Organizational Capabilities to Access Impact Investments.

To meet the impact investors' requirements, the SMEs must first upgrade their internal processes by developing new capabilities in four critical organizational areas: financial practices, auditing, business planning, and commercial linkages (Table 4.5). The impact investors' requirements differ significantly from those the SMEs have encountered operating as suppliers in GVCs. To become investable, the SMEs must create capabilities that their supplying relationships and sustainability standard compliance do not require. This represents a learning challenge for the SMEs, which often fail to meet the investors' requirements, as shown by the

high rejection rates for their loan applications across the entire sample, especially among SMEs pursuing breakout and breakthrough strategies (Table 4.4).

	Breakout SMEs	Breakthrough SMEs	Breakaway SMEs
Financial practices	Basic accounting practices, financial literacy fundamentals, preparing loan application.	Advanced accounting practices and loan management practices.	Financial risk management practices, loan negotiation, renegotation of payment obligations.
Auditing	What is audit and how to link and engage with auditors.	Understanding of audit requirements for financial statements and history.	Auditing practices beyond top- management.
Business planning	Business planning fundamentals (mission statement, realistic goals, commercial vision, methodology for implementation).	Structuring objectives, diversifying short-, medium- and long-term goals, clear identification of responsibilities.	Overall plan's coherence, tracking results, documentation in support of the goals that are set, financial sustainability.
Commercial linkages	Formalization of all inventories and commercial contracts.	Formalization of all inventories and commercial contracts.	-

Table 4.5 – Impact Investors	' Capability Requirements:	Learning Curve for SMEs'	Financial Process Upgrading
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Source: Own elaboration from original dataset

A first learning challenge for SMEs wanting to access impact investing concerns their accounting and financial literacy capabilities. Impact investors require that SMEs demonstrate the skills to manage formal loans. The capability gap is usually more significant for SMEs trapped in captive relationships with their traders, buyers, or local processor, which typically is the case for breakout SMEs. For example, thirteen out of the twenty-one breakout SMEs funded their harvesting operations in the past solely through short-term financing from informal buyers that do not require supporting documentation, only the harvest sale commitment. These SMEs

thus lack experience in bank loan management or loan application procedures. As outlined by a member of one breakout SME:

The maximum we ever did was handwriting on a notebook the amount we received from our traders to purchase in advance our [coffee] beans; sometimes, some of our producers received micro-loans from local lenders, and that's all we could do. (SME 11F1)

To negotiate a loan with an impact investor, SMEs must learn basic accounting and financial literacy practices from scratch. However, this could still be insufficient to obtain impact investments. Most investors will not grant a loan unless the SME also holds a previous formal financial obligation, which financial institutions consider an indicator of financial and accounting capabilities. SMEs in such situations need to engage in an intermediate phase before accessing impact finance, such as accessing a loan from local commercial banks that tend to fund only short-term working capital. This was the case for a third of the breakout SMEs, whose impact investments applications were rejected. As indicated by one impact investor about rejecting the loans of two breakout SMEs:

These SMEs need support to generate a basic level of competencies, and we see it essential that they first enter the formal financing system by applying for loans from local institutions, although we understand the interest rates on those products could be risky for their business model. (ImpInv9, commenting on SMEs 13F1 and 2F1)

The combination of basic financial literacy, accounting skills, and previous loan management experience might not be enough to meet the investors' requirements. For example, most SMEs pursuing breakthrough strategies must build on existing capabilities and experience to further expand their loan management ability, especially from an accounting standpoint. Impact investors and support institutions assessing the breakthrough SMEs' loan applications found basic mistakes in the balance sheets and in calculating the repayment obligations. For example, ImpInv4, ImpInv5, and ImpInv6 mention the need for nine breakthrough SMEs whose applications were rejected to improve their knowledge and operationalization of accounting criteria and financial management. Consistently with these limitations, the rejection rate for breakthrough SMEs' loan applications is very close to that for breakout SMEs (59% vs. 62%, see Table 4.4).

SMEs in the breakaway group are closer to completing their financial process upgrading instead. They already have solid capabilities in the accounting and financial areas. According to the feedback provided by multiple impact investors, SMEs in this group meet their requirements in terms of their financial and accounting capabilities. They could still improve their competencies, especially their risk management practices and the ability to renegotiate payment obligations (Table 4.5). However, those are not major concerns justifying the rejection of their loan requests, which were justified by other capabilities gaps.

A second area where most SMEs must develop new capabilities is auditing, especially the consistency of their financial documentation. Impact investors request that SMEs submit their balance sheet, income statement, and cash flow statement for the previous three years, preferably audited by a recognized institution. The financial documentation justifies the amount of capital the SMEs are requesting and its alignment with their repayment capacity. Impact investors privileged audited documentation to build trust towards SMEs in rural areas, which represent a new type of customer for most of these financial institutions (ImpInv1, 3, and 7). However, many SMEs fail to produce all the requested documentation or to do so, but not in an audited form. For example, SME 63F4 did not obtain a loan from ImpInv7 because it could not produce its income statement for the previous three years. SME 141F11 did not advance in the loan negotiations because its financial documentation was not audited, and the impact investor found its numbers lacked credibility. SME 82F7's was unsuccessful as its financial projections used non-audited financial information to support the loan application repayment plan.

For most SMEs, auditing their financial documentation is a novelty. Usually, breakout and breakthrough SMEs do not keep records of all their activities and expenditures. They obtain a good part of their inputs and provide part of their services informally. According to multiple respondents and the impact investors' reports, it is essential for breakout SMEs to familiarize themselves with the concept of auditing, which constitutes an absolute novelty. The learning gap also extends to identifying and establishing relationships with recognized institutions providing the auditing service. Such institutions could even be absent in remote areas where some SMEs are based. Breakthrough SMEs are at a slightly more advanced stage of capability development, but they still need to improve their understanding of the auditing process's fundamental requirements. Auditing-related capabilities represent a learning challenge for breakaway SMEs, too. Enterprises in this group have previously dealt with auditing but only through their top managers. Investors also require or encourage the SMEs to build the needed skills in mid-level managers to avoid losing the auditing capability if top management were to leave the organization, which is a recurrent issue for SMEs in rural contexts (ImpInv 10; R8 and R16).

Another essential requirement concerns the SMEs' business planning capability. Investors require that SMEs submit a business plan to support their credit application. The business plan is central to the financial institutions' assessment of the validity and viability of an investment request, as highlighted by all the impact investors in the sample. It proves the SME's capacity to implement production and commercialization strategies that sustain the investment's repayment obligations. SMEs seeking impact loans must thus present business plans outlining their commercialization strategies and the organization's complete productive and managerial aspects (ImpInv3, ImpInv4, ImpInv6).

Most SMEs have never prepared a business plan (Respondents R1, R2, R3, R5, R9, R14, and R16). The SMEs perform their operations on a seasonal basis, often with a single or few managers organizing the production activities and sales. Typically, their GVC buyers never require a business plan. Most breakout SMEs lack entirely such a capability, and four of them failed to submit a business plan, which led to the rejection of their loan applications. Writing a compelling business plan is a new challenge for them. It involves defining an overarching goal (or mission statement), setting realistic commercial and investment goals, and applying long-term thinking beyond a seasonal basis (Table 4.5). Weak or incomplete business plans were the most frequent and primary reason for loan rejection among breakout SMEs.

Breakthrough SMEs have slightly better business planning capabilities than breakout SMEs. Some of them are comfortable with the fundamentals of business planning but need to improve their know-how. They know how to provide a basic definition of a few sales objectives and infrastructural needs paired with approximate cost forecasting. They are asked to shift to a more complex and fine-grained approach. Investors asked breakthrough SMEs to consolidate and expand the identification of their strategic goals, improve the level of detail by which they define and distinguish between short-, medium-, and long-term goals, and above all, clearly and extensively define and assign the responsibilities for implementing the business plan (Table 4.5). The learning gap is thus still wide for SMEs in this group and was the primary reason for rejecting 55% of their loan applications.

Breakaway SMEs have, instead, a relatively consolidated experience in developing business plans. Some of them received support in the past from international NGOs and intergovernmental agencies to create business planning capabilities while participating as beneficiaries in sustainability programs. For example, four SMEs learned how to draft a business

plan for their investment applications thanks to training from the development agency of an E.U. country (7F1, 58F4, 61F4, and 26F2). Still, there is a margin for improvement. Their goals can be more coherent; they should improve the way they track results against the original plan; they must strengthen their ability to produce and organize documentation (commercial, financial) in support of their goals and repayment plans. This last aspect is critical. Another SME saw two of its loan applications rejected due to its plan's weak and incoherent documental support (SME 82F5).

Finally, an essential investor's requirement concerns the formalization of the SMEs' inter-firm commercial linkages. SMEs must demonstrate ongoing formal commercial relationships with well-established buyers to signal their ability to secure constant revenues sustaining loan repayment. Impact investors request that SMEs present a history of their sales contracts. A long series of formal contracts with the same business entities demonstrate commercial and managerial capabilities and allow financial institutions to assess the business volumes that support the loan request. Breakaway SMEs operate almost entirely on certified product channels and thus easily satisfy this requirement. In fact, one of the key advancements brought by sustainability standards regards the transparency of GVCs operations, with standard setters imposing formal contractual relationships across the entire GVC.

The learning path is more challenging for breakout and breakthrough SMEs, whose participation in the chain is still largely informal, with conventional production flowing through linkages regulated by relational contracting still dominant. In addition, the levels of indebtedness and lack of liquidity are relatively high among these SMEs. To react to that, even SMEs whose production is in part certified often sell their certified product informally to local buyers of conventional coffee to secure immediate cash (R25, R31, R39). The outcome of such a landscape

is the SMEs' struggle to quantify and signal the commercial viability of their products and channels. For example, multiple impact investors refused loans to breakout SMEs 105F7 and 103F7 because they lacked a continuous formal export relationship during the previous three to five years, although these SMEs declared that their production volumes and sales have been growing steadily. Moreover, impact investors privilege SMEs that clearly demonstrate direct commercial relationships with MNCs' buyers of certified coffee. They assess that as a risk mitigation factor compared to conventional coffee sales (ImpInv 1, 2, 7, 10, & 11). Certified coffee sales entail SMEs' access to a price premium, which improves their ability to react to price crises and enables positive impact through reinvestment in communitarian activities and more resilient production (ImpInv 1, 4, & 12). The formalization of all commercial channels is essential for SMEs to complete financial process upgrading and access impact investments. *4.2.2. Financial Product Upgrading: Unlocking Funding for SMEs' Proactive Strategies*.

Traditionally, SMEs receive financing from MNCs' buyers, traders, input suppliers, and commercial banks. This intra-GVC financing consists of seasonal loans and pre-harvest credit through formal or informal agreements. Intra-GVC financing only covers harvesting operations. It does not allow infrastructural and long-term investment for sustainability strategies. Intra-GVCs financing comes as credit in cash or in kind to secure the following season's yield in exchange for repayment at an agreed moment, usually during or after the harvest (Table 4.3). An additional disadvantage of intra-GVC financing concerns the interest rates for repayment, which are very high. SMEs in the sample had to repay their buyers' or traders' credit at an average annual rate of 32% within 6 to 12 months (Table 4.3). Such a financing system generates spirals of indebtedness that deeply affect numerous SMEs in the sample and preclude their ability to

upgrade and stay competitive. The costly and narrow scope of intra-GVC financing products constrains the SMEs' efforts to implement their proactive sustainability strategies.

In contrast, impact investments offer an alternative financial product that better supports sustainability improvement efforts, serving the SMEs' proactive goals. Impact investors provide both short-term working capital to fund harvesting and long-term investments in tree and plantation renovation, machinery, equipment, infrastructure, and capacity building (Table 4.3). Repayment rates are much lower than intra-GVC financing, 12% on average, and the repayment term is up to 72 months (Table 4.3). Impact finance also provides larger loan amounts than GVC financing (Table 4.3). As a result, access to impact investments represents an upgrading of the financial products through which the SMEs finance the answers to their sustainability barriers.

For breakout SMEs, impact investing is essential to fund the shift to value-added functions in the coffee GVCs. These SMEs' primary -sometimes unique- financing channels are local traders that connect them to MNCs' buyers in the conventional and, to a limited extent, certified product markets. Breakout SMEs aim to internalize on-farm and industrial coffee processing, develop value-added products, and create a local retail market for independently branded products (Table 4.1). Functional upgrading goals intertwine with the SMEs' push for environmental sustainability. Breakout SMEs aim to complement their production and commercial priorities with greener practices adoption, such as waste management and clean energy that involve new infrastructure and contracting dedicated technical assistance (Table 4.1).

For example, in Nicaragua, SMEs 3F1, 11F1, 20F2, 57F4, and 104F7 commercialize both conventional coffee through local traders and Fairtrade-certified coffee through well-established exporters. Both commercial counterparts grant seasonal loans under varying conditions (mostly informal, in the case of conventional coffee). The SMEs use that credit to purchase inputs and

organize the harvesting. Without other financing sources, the SMEs are trapped in a system where they externalize coffee drying and milling to local processors. Their revenues are insufficient for investing in new infrastructure, machinery, and capacity-building. They thus seek access to impact investors to establish their drying and milling facilities. SMEs 57F4 and 104F7 obtained impact loans, which they deployed to implement such projects. SMEs 11F1 and 57F4 aim to introduce a traceability system and adopt greener processing practices through training the milling plant operators, especially in waste management. SME 20F2 pursues a stronger relationship with its members in its functional upgrading effort. It seeks increased involvement of the organizational members in decision-making and shared ownership of a new plant for dry processing and packaging.

In Nicaragua, SME 56F4 exports conventional and certified coffee through a series of local intermediaries but plans to introduce its brand of roasted ground coffee for local commercialization. The SME intends to generate a new revenue stream by building a local market for roasted coffee. In the organization's vision, this market can secure a continuity of resources to support the further growth of the market for certified products and protect against global price fluctuations. However, the long-term channel diversification strategy hinges upon investing in fixed assets to develop a roasting capability, followed by the build-up of marketing capabilities focused on the branding and positioning of the new product and creating a local network for direct sales. These investments are disconnected from standard certification compliance and CSR programs implemented by the lead firms of the GVCs that currently buy the SME's products. GVC financing is insufficient to cover the entry into these new functions, and therefore the SME applied for impact investment with three investors. Loan requests were

rejected due to a weakly supported business plan and the informal nature of most revenuegenerating inter-firm linkages.

Breakout SMEs aim to combine new processing capabilities with the adoption of environmentally sustainable practices and infrastructure that enhance long-term resilience and create sustainable products. They plan to internalize on-farm and industrial processing by implementing environmentally sustainable practices and infrastructures. The SMEs proactively pursue green processing capabilities that they see as instrumental to adding value and increasing production sustainability in the long term, which their MNC buyers are not requiring. Impact investing financing enables these otherwise unfunded strategies in which environmental upgrading is central to the SMEs' functional upgrading. For example, in Honduras, breakout SMEs 9F1, 153F11, and 7F1 want to expand their wet processing capability to increase the volume of production of conventional coffee and improve their revenues. Their buyers do not require compliance with any sustainability standard or unique product characteristics. Nevertheless, SMEs plan their infrastructural investment to reduce the environmental impact of wet processing operations. SMEs 9F1 and 153F11 intend to upgrade their plant to optimize water usage, while SME 7F1 is allocating part of the investment to use solar energy to power the plant.

Breakthrough SMEs seek financial product upgrading to fund product and process innovation. They already reap some benefits from product certification through direct sales to MNCs and niche buyers. However, they struggle to cover the costs of participating in certified products GVCs. These SMEs have few commercial channels for one certified product, combined with conventional coffee sales. Such a sales structure does not secure enough revenues to reinvest in livelihood improvements and infrastructure. Conventional sales face price volatility and low margins. Certified production requires higher volumes and consistency to reach

profitability. Given the limited revenues, these SMEs struggle to cover certification costs and maintain product quality. The SMEs need investments in product and process upgrading that their existing buyers will not fund.

Impact investing would allow SMEs to pursue process and product upgrading. On average, breakthrough SMEs plan to invest 74% of the impact financing requested in activities that maximize productivity, improve product quality consistency, and secure production's long-term climate-environmental resilience. Their strategic focus includes projects to renovate or expand the coffee plantation, improve quality control processes, consolidate inputs supply, improve the knowledge about the buyers' requirements, adopt greener in-farm agricultural practices, and reforest the production areas (Table 4.1). Like breakout SMEs, environmental upgrading is also central to the strategies of breakthrough SMEs. For example, multiple Nicaraguan, Costa Rican, and Honduran SMEs are Fairtrade-certified organizations seeking sustainability-centered projects as part of their competitive efforts (SMEs 5F1; 15F1, 18F1, 25F2, 102F7, 143F11). Declining productivity due to the plantations' aging and the outbreaks of pests and diseases is a key barrier to achieving sustainability. In response to this, the SMEs seek impact investments to fund three to four years-long programs of crop renovation. Three SMEs also plan to purchase new land to expand the production area (SMEs 25F2, 5F1, and 102F7). However, only three of these six SMEs completed the financial process upgrading and successfully obtained the impact investments to fund the planned upgrading (18F1, 15F1, and 5F1).

Similarly, two certified Nicaraguan SMEs also face declining productivity (SMEs 62F4 and 71F4). Their strategies aim to deliver technical assistance to their members to adopt best agricultural and on-farm processing practices and introduce quality control processes. In Costa Rica, only a few members of SME 17F1 are Fairtrade and CAFÉ Practices certified, and the

SME uses most of its revenues to repay buyers' seasonal credit. As a result, the SME has little financial room to expand product certification and fund social or environmental upgrading. The SME seeks impact financing to diminish its reliance on 'bad' intra-GVC financing and support more producers' sustainable certification. Other SMEs in Honduras and Nicaragua engage with impact investors to secure the resources for extensive reforestation projects (SMEs 5F1, 14F1, and 61F4). For instance, one of them asked and obtained funding to plant 5,000 trees per year for five years, an initiative that goes beyond the sustainability requirements of buyers and standard compliance (SME 5F1).

Breakaway SMEs pursue financial product upgrading to fund their channel upgrading goals. Breakaway SMEs are the most advanced at leveraging the opportunities of certified coffee products. Their strategic focus aims to continue their progress toward sustainability by minimizing their dependency on MNCs' financing and maximizing access to more profitable niche markets. Breakaway SMEs reinvest 57% of the capital they request to establish relationships with new foreign buyers, obtain additional product certifications with an emphasis on 'green' standards, improve the quality of technical assistance to organizational members, access tools to improve pricing and market intelligence, and increase biodiversity in their farms (Table 4.1). For example, five SMEs in the sample comply with Rainforest, CAFÉ Practices, and UTZ standards, but they sometimes struggle to sell their certified production entirely due to competition from other SMEs (SMEs 4F1, 8F1, 10F1, 64F4, and 36F2). Their strategy is to identify new buyers to reduce their dependency on existing channels, focusing on buyers that pay higher prices for premium quality products in the niche and specialty segments, which go beyond certification. To pursue these goals, the SMEs seek short-to-medium-term investments to support

their producers' organic certification and complement the standard compliance with shade-grown production.

Environmental product and channel upgrading are crucial for breakaway SMEs that pursue strategies of commercial channel diversification. Adopting state-of-the-art environmental production practices and product certification widens the diversification options of value-added niche markets. Breakaway SMEs are already good environmental performers compared to SMEs in the other two groups. Most have agroforestry systems, and some have a certification emphasizing the ecological component of production and the 'green' usage of pesticides and fertilizers. However, further advancements in environmental sustainability are critical to developing niche products. For example, SMEs in this group plan to adopt a first, second, or even third 'green' certification, such as organic, shade-grown, or biodynamic. Besides, many SMEs seek to adopt additional agricultural and processing practices beyond standard compliance to enable other marketable product features. For example, two SMEs are certified in Fairtrade and Biolatina, a regional organic certification (SMEs 37F2 and 142F11). They obtained impact investments to fund the creation of the capabilities required for the USDA Organic certification and to implement projects that enhance biodiversity and reduce the impact of production on their communities' ecosystems, according to features agreed upon with their future niche buyers from Canada and Europe.

4.2.3. Financial Channel Upgrading: New Financing Ties with non-GVC Actors.

The shift from traditional intra-GVCs financing to impact investment sources upgrades the SMEs' financial channels, not only the financial products they access. Access to impact investing allows SMEs to abandon or reduce their reliance on the GVC buyers' credit. Intra-GVC financing channels pair the provision of funding under disadvantageous conditions and the

commercial exchange of the coffee product at an agreed price. Instead, impact investments flow independently from the commercial inter-firm linkages of the coffee GVCs. For SMEs, the GVCs' commercial relationships become relevant collateral to obtain impact financing, while financial investments are the only content that flows in their new linkage with the impact investor. The move to purely financial linkages with extra-GVC actors improves the SMEs' financial relationships. Financial channel upgrading introduces a set of new actors and linkages into the dynamics of the GVCs, changing the relationships between SME suppliers and their buyers.

Establishing ties to impact investors contributes to eliminating or reducing disadvantageous financing forms. For example, breakthrough SMEs usually benefit from direct sales to multiple MNC buyers, securing higher revenues but still using traditional GVC financial organizing, where the buyers fund the SMEs' operations. New linkages to impact investors replace or reduce the relevance of the financing flows between SMEs and MNCs, changing the nature of the supplying relationship. The SMEs reduce their reliance on buyers' credit to fund their coffee products, upgrading the quality and sustainability of their linkage with buyers as they acquire bargaining power and increase the ability to pursue proactive goals autonomously (Figure 4.2).



Figure 4.2 – Financial Channel Upgrading

For example, at least four SMEs succeeded in establishing ties to impact investors and accessed impact investing funds that covered both the cost of their harvesting operations and the long-term investments into functional and channel upgrading (SMEs 59F4, 62F4, 70F4, and 100F7). As a result, these SMEs no longer need financing from their buyers, which only covers operational activities. The supplier-buyer contractual relationships thus lost the credit advancement component, which the SMEs traditionally repaid at product delivery by receiving from the buyer the difference between the principal plus interest and the cost of the coffee delivered. The such cost usually is calculated based on a pre-set price that is often disadvantageous for the SME. The shift to impact investing generates a new context for SMEs' sustainability-centered strategies. The organizations now negotiate and manage their financing relationships with actors not involved in production. They change their relationship with buyers by reducing credit dependency and focusing on the commercial aspect of the tie only. They upgrade to an improved financial relationship, which alters the existing production arrangements.

4.3. Discussion: Introducing the Concept of SME Supplier's Financial Upgrading in GVCs

This Chapter's empirical findings cast light on the emergent interaction between impact investments and EM SMEs participating in GVCs, which I conceptualize through the new construct of financial upgrading. Financial upgrading refers to firms participating as suppliers in GVCs accessing more advantageous and financially sustainable financing flows that enable the firm's social, environmental, and economic upgrading goals. Financial upgrading represents a new dimension of upgrading in GVCs, a notion that captures how firms integrated into global trade and production achieve more competitiveness based on knowledge (Gereffi et al., 2005; Humphrey & Schmitz, 2002; McDermott & Pietrobelli, 2017). Financial upgrading captures how suppliers' strategies in the financial domain intertwine with their social, environmental, and

economic upgrading goals, becoming a core component of their proactive sustainability strategies (Figure 4.3). In fact, the impact investments observed in this Chapter introduce an unprecedented opportunity for the SMEs to learn and develop new capabilities, fund complex upgrading projects that GVC counterparts would not support, and introduce a new set of interfirm linkages that change the structure and relationships in the chain. I identify three interdependent types of financial upgrading: process, product, and channel (Figure 4.3), whose features and implications I discuss next.



Figure 4.3 - Theoretical model: The Interaction of Financial Upgrading and SMEs' Proactive Sustainability Strategies.

4.3.1. Financial Process Upgrading: New Directionality of Learning for SME Suppliers in EM

The concept of financial process upgrading traces the efforts by which EM SMEs try to overcome the financial barrier hindering their economic, social, and environmental upgrading. Lack of financial resources represents an entrenched barrier to suppliers' learning and upgrading
(Ayaggari et al., 2011; Anand et al., 2021; Epede & Wang, 2022; Navas-Aleman et al., 2014; McDermott & Pietrobelli, 2017). However, I find that the lack of sustainable financing also constitutes a stimulus for creating new capabilities to gain access to new, more sustainable sources of financing. Access to impact investing is not automatic. Rather, many SMEs in the sample I examined failed to obtain a loan as they could not meet the impact investors' requirements and due to a lack of the needed technical know-how. EM SMEs need specific knowledge and capabilities to access innovative impact investments. As the literature uses the concept of economic process upgrading to describe changes in production processes to make them more efficient (Humphrey & Schmitz, 2002), I talk about financial process upgrading to refer to the process by which SMEs build capabilities to make their internal and external organizational processes more efficient to comply with the impact investors' requirements.

The SMEs undertake a learning process that improves the firm's financial efficiency and attractiveness vis-à-vis more demanding financial providers than those with whom they previously dealt in the context of their participation in GVCs, enabling competitiveness in the financial domain, too, not just in production. In particular, SMEs must create capabilities in managerial areas of the organization that vertical GVC linkages and horizontal collaborations at the location traditionally do not prioritize. For example, SMEs must develop business planning, auditing, and financial literacy capabilities. Financial process upgrading thus represents a previously ignored learning driver for EM SMEs in GVCs. The existing literature of organizational learning and capabilities in EM contexts primarily connects SMEs' learning to increased production efficiency, diversification, and value addition and adoption of more advanced technologies as the result of the exposition of the buyers' more advanced knowledge in GVCs (Humphrey & Schmitz, 2002; Gereffi et al., 2005; Kano, 2018; McDermott & Pietrobelli,

2017; Morrison, Pietrobelli & Rabellotti, 2008; Ponte & Sturgeon, 2014). Studies of upgrading also highlight factors beyond mere interaction with buyers in GVCs that trigger suppliers' learning, emphasizing the importance of operating at the intersection between participation in GVCs and local clusters and national innovation systems (Corredoira & McDermott 2014; De Marchi & Alford 2021; De Marchi, Giuliani, & Rabellotti, 2018; Epede & Wang 2022; Jandhyala & Phene, 2015; Perez Aleman, 2011 & 2013; Pietrobelli & Rabellotti, 2011; Pipkin & Fuentes, 2017). These analyses focus on creating production-specific capabilities. Instead, financial process upgrading underlines what and how suppliers learn to satisfy the ancillary need for financial resources propelling their strategic goals (Navas-Aleman et al., 2014). When successful, financial process upgrading unlocks the opportunity to access improved financial products and channels, i.e., financial product and channel upgrading.

4.3.2. Financial Product Upgrading: Catalyzing SMEs Proactive Strategies

Financial product upgrading conceptualizes the existence of a quality ladder for the financing that SMEs can access depending on the extent to which such financing funds the firms' needs. The idea of product upgrading captures introducing more advanced products as a means of competing in value-added markets (Humphrey & Schmitz, 2002). With financial product upgrading, I refer to the SMEs accessing a more advanced financial product in the financial markets than the credit they usually receive from buyers or commercial banks while participating in GVCs. The impact investment product is more advanced because it better addresses the SMEs' sustainability needs. The SMEs leverage the improved financing conditions granted by impact investing in feeding upgrading strategies that would otherwise remain unfunded by relying only on credit flowing through existing inter-firm linkages. Impact investments purposefully target the creation of sustainability-related outcomes in addition to financial returns.

Intra-GVC financing focuses on productivity and ensuring suppliers can meet the product quality and quantity required by the lead firm's commercial interest.

Financial product upgrading helps unleash the SMEs' proactive sustainability strategies (Golgeci et al., 2021; Sako & Zylberberg, 2019b): Strategies emphasizing the firm's economic, social, and environmental upgrading voluntarily and independently of the demands of current buyers and what is legally required by private or public regulation. Increasing evidence has indicated that suppliers in EM, especially SMEs, seek social and environmental upgrading beyond the requirements of their buyers (Golgeci et al., 2021; Nadvi & Raj-Reichert, 2015; Sako & Zylberberg, 2019b). SMEs also can play a substantial role in shaping the definition and improvement of sustainability standards and governance in GVCs, as they are better placed to understand the challenges of learning and developing sustainability-related capabilities (McDermott & Pietrobelli, 2017; Sinkovics et al., 2021; Sinkovics et al., 2016). Financial product upgrading intertwines with the SMEs' proactive sustainability strategies by catalyzing their social and environmental upgrading goals.

Social and environmental upgrading requires investments into organizational improvements, infrastructure, and capabilities creation that increase one firm's ability to strengthen its social and environmental performance and increasingly compete on such a base (De Marchi et al., 2019; Barrientos et al., 2011). Existing analyses emphasize the role of lead firms in generating such investments targeting SME suppliers, either through their commitment to the SDGs and CSR initiatives or because of an alignment of sustainable product development to their commercial interest (Montiel et al., 2021; Van Tulder et al., 2021; Ponte, 2019). However, despite the commitment of lead firms and multi-stakeholder programs, this study highlights that financial barriers persist in GVCs that hinder the suppliers' pursuit of proactive

sustainability strategies. Financial product upgrading contributes to overcoming such barriers by introducing a new financial product that corrects the inefficiencies and disadvantages of intra-GVC financing and addresses the SMEs' investment needs. The new financial products allow SMEs to implement complex social and environmental projects as they see fit to secure resilience, value addition, and long-term competitive advantage in GVCs.

Financial product upgrading thus highlights that accessing new funding under improved and more sustainable conditions is a core dimension of the SMEs' proactive strategies. Studying the enablers of the suppliers' contribution to a more sustainable organization of production must include how they access improved financing channels that better address their needs and goals. Economic, social, and environmental upgrading is also a matter of financing a portfolio of capability-building and infrastructure-creation projects in sustainable conditions. I elaborate more on the implications of financial upgrading on the overall conceptualization of EM SMEs' upgrading in Chapter 6.

4.3.3. Financial Channel Upgrading: Reconfiguring Inter-Firm Linkages in GVCs

Financial channel upgrading describes the implications of the SMEs' access to impact investing on the nature of the inter-firm linkages in the production GVCs where they operate. The literature defines channel upgrading as moving to more technologically advanced markets (Humphrey and Schmitz 2002). With financial channel upgrading, I describe the suppliers' shift to a credit relationship with more specialized and holistic financial actors, the impact investors. Establishing a new set of relationships with these new financial providers entails the progressive move from intra-GVCs sources of unsustainable (for the SME) credit to a new, more technologically advanced financial market, which provides funding under improved sustainable conditions. A key outcome is the SMEs diversifying their access to credit into multiple financial relationships of different natures and reducing their reliance on credit flowing through GVC inter-firm linkages. This alters the existing structures of GVCs and, more specifically, supplier-buyer relationships, which I discuss in depth in Chapter 6.

Chapter 4 shows that SMEs in EM independently pursue the improvement of their financial processes, products, and channels to access new financial resources for creating new sustainability-related capabilities and infrastructure. Financial upgrading is not confined to the financial domain. For SMEs operating as suppliers in GVCs, financial upgrading is an integral component of the firms' overall strategies. It has implications on and interactions with the upgrading dynamics unfolding in the production domain. Yet, financial product upgrading highlights the struggle of SMEs to form the capabilities to link with impact investors and meet their requirements. Connecting the emergent supply of impact investments to EM SMEs in GVCs is an unexplored challenge that can preclude the opportunities for SMEs' financial upgrading. I examine how impact investors connect their financial products to the funding needs of SMEs next, in Chapter 5.

CHAPTER 5

CONNECTING IMPACT INVESTORS TO SMEs

In this Chapter, I present the core empirical findings of the second study that examines how impact investing connects to the financial resource demand of SMEs in GVCs. The study focuses on a network of impact investors, to which I often refer as "supply-side," trying to link to forestry and coffee SMEs, to which I often refer as "demand-side," through the organization of Financial Fairs in multiple Latin American countries (see Chapter 3, Section 3.3.3). The Financial Fairs are eight to twelve months long processes during which the impact investors seek to overcome existing challenges to transform their financial allocation into an innovative financial product that addresses the SMEs' funding needs. The impact investors' financial innovation is potentially critical for SMEs. It enables the implementation of their proactive sustainability strategies uncovered in Chapter 4. Financing that flows within the GVCs does not support such strategies.

In my analysis, I first identify and provide a granular overview of the barriers causing a breach between supply and demand of impact investing at the Financial Fairs (Section 5.1). I also emphasize how such barriers constitute a crucial obstacle to the SMEs' upgrading goals and sustainability strategies. Next, I analyze the Financial Fairs process, capturing how impact investors coordinate the local and global retrieval of knowledge to generate capabilities and understanding crucial to connecting the supply and demand of impact investing (Section 5.2.). Finally, I discuss the value of these findings in the context of the literature of organizational learning and innovation (Section 5.3.). I focus on how impact investors nurture and leverage

local and global interactions in spaces of knowing. Spaces of knowing are "organized spaces of varying length, shape, and duration, in which knowing, depending on circumstances, can involve all manner of spatial mobilizations, including placements of task teams in neutral spaces, faceto-face encounters, global networks held together by travel and virtual communications, flows of ideas and information through the supply chain, and transcorporate thought experiments and symbolic rituals" (Amin & Cohendet, 2004). By coordinating knowledge flows in the spaces of knowing, the impact investors boost collective group learning on the demand (the SMEs) and supply side (impact investors) of impact investing. I refer to such learning as *collaborative learning*, which I define as a dynamic of inter-organizational knowledge flows. Groups are shaped by the supply-demand structure of the impact investing market, and learning pinpoints the creation of new capabilities critical for the establishment of the basic conditions for a transaction.

5.1. Knowledge Barriers to Connecting Supply and Demand of Impact Investing Products

5.1.1. Supply Side Knowledge Gaps

Impact investors find a series of challenges in defining the content of their new products targeting forestry and coffee SMEs (Table 5.1). They struggle to identify potential investees, define the terms under which the loans will be granted and must be repaid, quantify the various types of risk attached to the investment, and build capabilities in the SMEs to increase the investments' chances of success. The relevance of those challenges varies between the forestry and the coffee sector but are all consequences of the investors lacking critical knowledge.

For example, for both coffee and forestry GVCs, most investors signal major issues for identifying potential investees. The investors do not know how to reach out to potential investees

in rural areas despite the increasing availability of financial capital allocated for agriculture and

emerging markets. As outlined by impact investors IMP1 and IMP4, which are targeting

investments in coffee GVCs, and IMP7 and IMP8 that are seeking investees in forestry:

We currently have \$30.000.000 allocated for deploying loans and technical assistance to coffee organizations, but we have only been able to deploy three hundred thousand so far. It is crucial to find ways to bring coffee-producing organizations closer to us and other financial institutions and to find structured ways of maintaining channels open to link with them and educate them about the potential of our products. (IMP1)

We are ready to engage with more SMEs to deploy sustainable finance and foster access to sustainable markets, but we really struggle to identify the right investees. Where are the SMEs, the cooperatives we can fund, and how can we establish a relationship with them? (IMP4)

This is the first time we are presented with the opportunity to invest in the forestry value chain, and at this early stage, we are confronting the problem of finding the firms to target, putting their names and coordinates into our system. (IMP7)

We operated in this country [Peru] in the past but never in forestry, and we must find ways of identifying who our potential beneficiaries would be. (IMP8)

Therefore, addressing the knowledge gap concerning their potential investees' identity is a priority for the impact investor, which must be able to answer questions such as: Who are the typical SMEs seeking to develop more sustainable coffee and forestry products? Where are they located? How to reach out to them and identify specific investees? To address the gap, the impact investors must build new relationships with the demand side and with organizations owning the know-how of the local coffee and forestry industry.

Impact investors, particularly those targeting forestry GVCs, also show a limited understanding of their target sectors, which poorly reflects on their ability to adjust the product content to the needs of the SMEs. For example, due to minimal knowledge of the production cycle for timber, the underlying agricultural and manufacturing processes, and the conditions under which the product is commercialized, the impact investors find major issues in setting up the repayment terms of the new impact investing product. Most impact investors have never invested in sustainable forestry. They struggle with the complexity of the related market; and the type of activities SMEs must perform to increase productivity, revenues, and environmental sustainability of timber production. IMP12 and IMP10 highlight that:

If we want to invest in these SMEs, there is a lot we need to first understand about their product, how they produce it, to who they sell it and to who they could sell it for a better price and under what conditions, and much more. For example, if we invest an amount X now, I do not know when that will generate increased returns. What is the short and long term for the forestry product? (IMP12 R8)

We subordinate the possibility of financing forestry SMEs in Peru to the development of a better understating of their operations, in particular, the timeline of their production cycle and related revenue generating streams. This information is crucial to configuring the loan terms. (IMP12 Doc23).

Concerns about the supply side's lack of knowledge about the demand side's production

processes are widely spread among the impact investors targeting forestry SMEs. After the third

financial fair in the forestry sector took place in Lima, Peru, the NGO facilitating the

organization of the fairs for the network of investors reported a fine-grained analysis of the

problem. It emerged that the supply side's lack of knowledge of the demand side negatively

affects a priori the investors' ability to connect the terms of their impact investing product to the

SMEs' resource needs:

A critical bottleneck for deploying impact investments in forestry is the financial institutions' lack of understanding of the sustainable forestry industry at large, which entails the investors need time and work to fill the gap and, when possible, try to adjust the conditions under which they provide a loan to the specificities of the industry. (NGO Doc31)

In forestry, SMEs require larger loans, longer loan terms, and more time to recover the loans compared to other agricultural commodities due to the time it takes for a tree to become 'productive,' even when we choose the right and best variety of trees. And these are all things the financial institutions do not know, which usually makes them more reluctant to enter a sector. (NGO R3)

Supply Side Barriers to Product Innovation	Knowledge Gap	Relevance in Forestry	Relevance in Coffee
Inability to identify potential investees	Linkages to SMEs on the demand side	•••	•••
Cannot figure out repayment periods adjusted to the targeted sector	Knowledge about agro-industrial production cycle	•••	•00
Unsure about rates for repayments that can work for the targeted sector	Knowledge about SMEs' financial management skills and liquidity	••0	••0
Unsure what investees' activities, assets, and goals to target	Knowledge about SMEs production processes and funding needs	•••	•00
Limited ability to assess the investees' repayment ability and potential growth	Knowledge of commercial opportunities for sustainable products	•••	•00
Inability to gauge the investees' production, price, and trade risk	Knowledge of sustainable and conventional agro-industrial markets	••0	•00
Lack of understanding of political and regulatory risk in the targeted sector	Knowledge of sector-specific national regulations	•••	000
Risk perception for agro-industrial products is irrational and potentially misleading	Previous sector-specific lending experience	••0	
Inability to support investees pre-investment to increase chances of deploying the capital	Physical local presence and capacity- building know-how	•••	•••
Inability to support investees post-investment to increase chances of repayment and growth	Physical local presence and capacity- building know-how	•••	•••
Relevance is calculated according to the incidence of impact investors reporting the specific barrier:	Source: Author's	qualitative analysis o	of original data

Table 5.1 – Supply Side Knowledge Barriers to Financial Product Innovation and Underlying Knowledge Gap

● ● ● Major Relevance: >75% of impact investors

● ● ○ Significant Relevance: >50% of impact investors

● ○ ○ Moderate Relevance: >25% of impact investors

OOO Marginal Relevance: <25% of impact investors

The issues concerning the definition of the product's financial term are less pronounced in coffee, where some impact investors have a certain degree of experience in funding sustainable production. For example, two impact investors (IMP2 and IMP5) are social lenders trying to

scale up their products, shifting from micro-loans (less than \$2,000) targeting the household of coffee producers to larger loans (above \$100,000) targeting coffee SMEs. Another investor (IMP3) is among the first impact funds to specialize in agriculture and has already had few experiences funding coffee organizations. Still, some dynamics concerning the coffee GVCs remain a grey area for these investors. For example, all investors find it challenging to set the interest rates and timeline for repayment, as well as choose which SMEs' assets or strategic goals to prioritize through their funding:

We know any interest rate we would propose to the SMEs will be better than what they get from current credit providers, but that is still not enough to verify if the SME can repay the loan or if the capital is patient enough for them to fund the activities they planned. (IMP3 R17)

All the impact investors in coffee know about Fairtrade and sustainability standards, but coffee organizations need more than just short-term working capital to keep certified production up. They have other needs, and most financial institutions in the network don't really get that yet. (NGO R4)

Impact investors in coffee and even more in forestry must access or create knowledge to understand the functioning of the targeted agro-industrial production activities and the related market and SMEs' needs. The investors cannot develop a financing product and connect it to the demand side without knowledge and information about the coffee and forestry GVCs at the SME level and market level. Such knowledge is critical to enable the identification of repayment terms that adjust to the SMEs' sustainable production goals. In particular, impact investors must understand the specific combinations of short-term working capital to fund immediate production activities and longer-term financing that SMEs in coffee and forestry are requesting. Long-term financing is particularly challenging because it covers a heterogenous set of assets. It helps SMEs pursue infrastructural improvements, acquire machinery, build capabilities to adopt more sustainable farming and processing practices, and develop new plant/tree varieties better suited to counteract climate change and meet market demands (Table 5.2). Each of these goals posits different timelines and prospects for different financial and impact rewards, requiring extensive and varied know-how development.

Another set of supply-side barriers to connecting to the demand side concerns the impact investors' ability to gauge the different types of risks connected to funding sustainable agroindustrial production in EM. The investors' limited understanding of the targeted GVCs and the markets in which the potential investees operate make it challenging for the financial institution to quantify the risk of the SMEs defaulting on the loans. The investors lack knowledge about the price, product, and trade risks attached to coffee and forestry products. The impact investors need more knowledge about the functioning of sustainable and conventional markets for coffee and timber to correctly assess the risk of investing in SMEs in the coffee and forestry business.

For example, price shocks on the future derivative markets for coffee could halve the SMEs' revenues despite the high quality and volumes produced, as noticed by multiple SMEs on the demand side when discussing with the network of investors about potential issues hindering repayment capacity. Similarly, increased temperatures and humidity conditions in the region can destroy the seasonal yield and nullify the premium price of coffee produced in compliance with Fairtrade, Rainforest, and voluntary organic standards. Impact investors need to learn more about such aspects, which are critical for their financial product design. For example, in one of its corporate reporting documents, IMP6 signals that:

Investing in more than just working capital for coffee production entails longer-term loans, which must account for additional risks that can occur in the context of rural production. That represents a factor that we do not fully appreciate yet. In particular, the negative impact of climate change and the interrelated spread of pests and diseases is difficult to quantify in terms of frequency, likelihood, and exact consequences on coffeeproducing organizations' ability to maintain their cashflows intact. (IMP6 Doc34)

Table 5.2 – Demand Side Innovation Goals and Related Financial Resource Needs

Source: Author's qualitative analysis of original data

			FINANCIAL RESOURCE NEEDS							
	Demand Side Innovation Goals Relevance	Relevance	Seedlings	Farming Inputs	Labour	Creating Know- How	Machiner y	Infrastruc ture	R&D	Admin. Cost
	First Sustainability certification	000		х	х	x				x
Coffee SMEs (n=35)	Additional sustainability certification	••0		х	х					x
	Greener water, waste, and energy management processing practices	•00			х	x	x	x	x	
	R&D and introduction of climate-smart new coffee plant varieties	••0	х	х	х	x		x	x	
	Reforestation of production areas/rejuvenation of coffee trees	•••	x	x	х	x			x	
	Established agroforestry system	$\bullet \bullet \circ$	х	x	х					
	Restored biodiversity	• 0 0		х	х	x		х		
	First Sustainability certification	•••		х	х	х				х
	Additional sustainability certification	000		x	х	x				x
Forestry SMEs (n=35)	Connecting to buyers of sustainable wood products	••0				x				
	Sourcing compliance with national regulations	••0			х	x		x		x
	Identification and use of more sustainable wood varieties	•••	x		x	x	x	x	x	
	Greening water, waste, and energy management processing practices	••0			x	x	x	x	x	
	Strengthened linkages to local indigenous communities	•00			x	x				x

Relevance is calculated according to the incidence of SMEs reporting the specific product innovation goals and related funding needs:



● ● ○ Significant Relevance: >50% of SMEs

● ○ ○ Moderate Relevance: >25% of SMEs

○ ○ ○ Marginal Relevance: <25% of SMEs

Risk-related challenges also persist in impact investors with previous GVC-specific experience. For example, an impact investor has worked for over a decade in the coffee sector, providing micro-loans to individual producers (IMP2). It is now attempting to scale up its products to target SMEs, not individuals, with more significant investments:

Our experience with funding SME-level activities such as the renovation of coffee plantations have been so far negative from a portfolio management standpoint. It is important that we improve our understanding of risk in the sector for such a type of intervention and only deploy loans in organizations that meet certain criteria and can demonstrate specific capacities. (IMP2, Doc5)

In the forestry sector, this issue runs deeper as the investors have limited knowledge of the economics of forestry production and markets. In addition, economic activities in the forestry sector must comply with stringent national and international regulations, a dimension that is not as relevant in the coffee sector. For example, both Peru and Bolivia have highly specific regulations concerning the regime for forestry exploitation. However, impact investors *"have no knowledge of the regulatory regime that disciplines SMEs' economic activities in the sector"* (NGO Doc12). The investors must access knowledge to fill these gaps and assess the regulatory and political risks inherent in their financing products for forestry and coffee investees.

The barriers described until this point add to an overarching one: the investors' broader risk perception of operating in agro-industrial sectors at large. Because of the limited knowledge and experience in the area, when first engaging in financing sustainable production in agroindustrial GVCs, the impact investors tend to over-emphasize the risks of operating in the sector. Consequently, the impact investors push for safer, more risk-averse financing product designs. Compared to what the SMEs would need and could repay, that translates into higher repayment rates, more stringent financial and collateral requirements the SMEs must comply with, and less likelihood of providing longer-term loans for infrastructural projects. Similar choices reflect poorly on the SMEs' ability to fund the adoption of complex practices and infrastructures for sustainable production, therefore limiting the positive impact that the investors would generate. This challenge originates from a largely irrational perception built upon hearsay and prejudice towards the investability of agro-industrial firms. For example, the organizers of the financial fairs highlight the following about risk perception in forestry and coffee, respectively:

At a preliminary stage, the main issue was a lack of interest [by the impact investors] in these SMEs: financial institutions perceived higher risk in the forestry sector primarily because they never operated in it. They assumed the risk typical of agricultural sectors to be exponentially larger in forestry just because they lacked experience in it, as opposed to coffee, tea, or cacao, where they had invested. (NGO R2)

Some of the impact investors in the network had limited experience or no experience operating in the coffee sector and, more broadly, in agriculture. They approached the sector with plenty of good intentions but also some concerns about the risk they were taking, concerns mostly fed by traditional views about financial investments in agriculture and developing countries. (NGO R4)

The impact investors are thus in need of developing new organizational processes to assess and integrate risk into the product development process based on a deeper and more rational understanding of financial risk in agro-industrial sectors.

Finally, the impact investors realized soon enough after approaching the forestry and coffee sectors that they could not generate technical assistance in the field to support their investees. Especially in developed countries, it is standard practice for impact investors to assist their investees when preparing their investment application and then during the implementation of the plans they are funding. Technical support de-risks the investment and maximizes the chances of success, both in terms of returns on the investment and the generation of sustainability outcomes. Both in coffee and forestry, however, the impact investors had little or no local physical presence and scarce linkages to local institutions able to provide support. The lack of assets, relationships, and capacity-building capabilities at the investee's location represented a critical resource gap raising the risk profile of the potential investments. For

example, while managing the preparation of the financial fairs in the coffee sector, the network of investors generated a report expressing that:

Creating partnerships and specialized fora to provide technical assistance to producers' organizations is critical to better connecting financial institutions and rural SMEs. The absence of capacity-building support represents a limitation to the ability of impact investors to reach their beneficiaries and the beneficiaries to repay the loan they obtained per their contractual obligations. (Doc 43)

It is a priority for the impact investors to establish linkages to local actors and global actors with a local presence that have the know-how to provide pre- and post-investment technical assistance to their investees.

5.1.2. Demand Side Knowledge Gaps

In addition to the supply-side knowledge gap, the impact investors quickly realized that also SMEs on the demand side lack crucial knowledge, which hinders their ability to compete for and access impact investments. The demand side's knowledge gap originates an additional set of barriers to the investors' ability to connect to SMEs. In particular, SMEs suffer from weak knowhow in financial literacy and a lack of loan management experience. Moreover, they do not know the opportunities available in the impact investing market; they cannot develop business plans supporting their loan applications; and have very limited access to technical assistance as they are often situated in remote areas where public, private, and non-governmental organizations are either absent or providing scant support (Table 5.3). These limitations hinder the alignment of supply and demand of impact investing in the coffee and forestry GVCs. They deprive the SMEs of the tools and language to communicate with financial institutions. As summarized by a Nicaraguan coffee SME in its business plan, when examining the firm's access to financial resources and infrastructure: We lack the competencies and specialized personnel to approach banks and other financial programs and obtain the resources we need. We even struggle to locate source of financing that are close to us and when we are approached by some loan officer it is challenging to understand what they offer and what they demand (SME 2F13).

An independent consultant specialized in connecting coffee SMEs to sources of funding and

capability-building across the entire Latin American continent further remarked in an interview:

I hear more and more about new sources of financing for coffee SMEs that would prioritize green infrastructure and projects. But where are these sources? And what do they expect from SMEs? They come to me [the SMEs] bringing articles on newspapers and posts from the internet talking about these opportunities, but then on the ground I and them can't find anything of that, and anytime we talk to some financial intermediary it is hard to get what they do and how we can access their resources. (Industry Expert R14)

It is as if the SMEs had no map, telephone, and dictionary to find and talk with the impact investors and translate in financial terms their resource needs.

The demand-side barriers are particularly severe in the coffee sector. In the sample of 35 enterprises participating in coffee GVCs, 56% of the SMEs had never accessed formal financial loans. In addition, 72% of them had never prepared a business plan. The knowledge gap underlying these barriers represents a crucial challenge for the impact investors, who must address it as a pre-condition to interact with the demand side over the content and characteristic of the impact investing product.

The situation is slightly different in the forestry sector. Some of the forestry SMEs had previous experiences interacting with local commercial banks and accessing formal loans, which provides for a basic set of financial capabilities and relationships. Out of the 35 forestry SMEs I studied, 19 are currently managing one or more formal loans to fund their activities. They are thus integrated into the financial system, although existing debt only serves to generate working capital. Moreover, SMEs largely consider funding from commercial banks very expensive in terms of repayment rates and obligations. In this sense, financing accessed from the financial markets *"is not better than the credit we receive from the buyers"* in the GVCs (SME Doc89).

For example, the impact investors made clear for both their forestry and coffee investees that financial literacy and business planning are essential factors in discussing and negotiating product design and deployment:

product design and deployment:

An essential condition to the deployment of our product is the SMEs' ability to show financial flows, demonstrate where our investment would fit in, and how they would manage the capital we provide from a financial and risk management standpoint. (IMP9, Doc3)

The SMEs must be capable of showing with clarity and coherence what they need the money for. They must outline activities and goals, forecast the related commercial scenarios, and describe how they will go for implementation. They need a sound business plan for us to assess whether they are adapting to our offering. (IMP13, Doc52).

A sound, coherent, and well-supported business plan is a central requirement to receive any type of financing, especially when the capital is requested for more than just working capital. And the business plan alone is still not enough. The SMEs must demonstrate the ability to manage the financing they are requesting. (IMP4, Doc1)

The critical role of creating SMEs' knowledge about business planning and financial

management skills is remarked by the financial fairs' organizers, too, which note:

Financial literacy and business planning are the keys to starting the conversation. Without that, you have no demand side, and the impact investors must go look elsewhere to place their capital. (NGO R3)

This was among the most challenging aspects, the need to address the financial institutions' requirements about the business plans and know-how in the financial area. SMEs didn't have that type of preparation most of the time, leaving the financial institutions with the problem of identifying viable investees on whom to tailor the product, while for the SMEs the investments would remain unreachable. (NGO R2).

In addition, impact investors believe it is essential to increase knowledge on the demand side about impact investing. SMEs might have or gain the capability to develop a business plan and manage a loan. However, they often ignore the existence of the impact investors' financing opportunities and how those relate to the generation of sustainability outcomes. In other words, all SMEs in this study engage with sustainable production and product certification, but most of them ignore that such commitment makes them more attractive investees for impact investors. Addressing this gap increases the ability of supply and demand of impact investing in connecting by signaling to the SMEs the presence of potential resources to enable their sustainable agroindustrial product development. It also contributes to addressing one of the supply-side knowledge gaps, the lack of linkages to demand-side organizations. Increased SMEs' knowledge about resource opportunities would facilitate the impact investors' ability to identify investees:

One of the most critical goals of the financial fairs must be raising awareness among sustainable producer organizations and SMEs in Central America about available financing on the market. Increased awareness will help close the gap between supply and demand, get us closer to deploying our loans, and maximize their positive impact, primarily expanding sustainable markets. (NGO Doc2)

Impact investing is a new phenomenon and most investors in the network are new players in these sectors. For SMEs in rural areas, which rarely interact with formal financial institutions, this is a novelty they need to grasp and understand. They also tend to distrust big promises and newcomers, so work must be done to create the right conditions for the producers to know and trust the financial institutions and understand the opportunities that are being offered. (NGO R1).

Finally, it is essential to remark that SMEs in GVCs also lack know-how about sustainable production. While their goal is to develop sustainable products to trade in value-added GVCs, many forestry and coffee SMEs struggle to correctly identify the know-how required to move in such a direction and innovate the way they organize production accordingly. For example, 74% of the SMEs in the forestry sample are confronting significant challenges in building the capabilities to comply with the FSC certification. Meanwhile, 37% of coffee SMEs struggle to integrate the practices needed to develop organic coffee. While this knowledge gap is not immediately relevant to the impact investors' ability to connect to production, it represents a potentially important limitation. The impact investors aim at deploying a product that generates the resources for SMEs to shift to sustainable production. If SMEs cannot correctly assess their

internal needs to develop sustainable forestry and coffee products, the impact investors' goal is endangered. Building know-how in this area is ultimately as important as creating the preconditions to connect the impact investing product to the targeted investees and make it viable and profitable for both sides of the market.

Demand Side Barriers to Connecting to the Supply Side	Knowledge Gap	Relevance in Forestry	Relevance in Coffee
No financial literacy	Know-how of accessing financing, reporting organization's financial status	••0	•••
Lack of loan management capacity	Know-how of formal loan management	•00	•••
Lack of knowledge about impact investing products	Knowledge of financing opportunities linked to sustainable production	•••	•••
Inability to develop a business plan	Know-how of business planning	$\bullet \bullet \circ$	$\bullet \bullet \bullet$
Limited access to support institutions and technical assistance	Linkages to local public and private organizations, local and int. NGOs	•••	$\bullet \bullet \circ$
Limited capacity to develop new practices for sustainable production	Lack of know-how about the requirements for creating sustainable products	$\bullet \bullet \circ$	•00

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Table 5.5 –Demand Side Knowledg	e barners to connecting	to the supply slue	and Underlying	s Khowleuge Gap

Relevance is calculated according to the incidence of SMEs reporting the specific product innovation goals and related funding needs:

● ● ● Major Relevance: >75% of SMEs

● ● ○ Significant Relevance: >50% of SMEs

● ○ ○ Moderate Relevance: >25% of SMEs

○ ○ ○ Marginal Relevance: <25% of SMEs

5.2. Linking Impact Investing Products to SMEs' Needs through Knowledge Creation

Impact investors must address the knowledge gaps on the supply and demand side to define and deploy their impact investment products and successfully connect to coffee and forestry SMEs. The qualitative data analysis of the Financial Fair processes captures three key steps the investors implement to achieve their goal: *knowledge discovery, knowledge activation, and knowledge matching*.

5.2.1. Knowledge Discovery

Confronted with critical knowledge gaps on the supply and the demand side hindering the definition and deployment of their products, the impact investors must create new knowledge in a context where they have a scarce or absent physical presence and a reduced network of interorganizational ties. For example, some impact investors have local offices in Nicaragua, Honduras, and Peru. However, such offices are located in the capital city, far away from coffee and forestry-producing areas. In addition, they count on a reduced number of loan officers and managers that can travel to visit the SMEs and develop a first-hand account of the challenges they face and the network of support that is available to them. The impact investors' first step then is discovering existing sources of knowledge relevant to generating new know-how that addresses the current gaps. Remarkably, the impact investors identified sources of knowledge both at the location and internationally by leveraging existing linkages and retrieving new information by expanding their network. Table 5.4 (for forestry) and Table 5.5 (for coffee) enclose a summary of the different sources of knowledge, their content, and how they were discovered.

Knowledge discovery in the forestry and coffee sectors share three critical aspects. First, knowledge diversity: The network of impact investors discovered local and global sources of knowledge embedded in different organizations and individuals. Second, knowledge accessibility: The sources of knowledge were largely untapped by the actors that need them the most: financial institutions and SMEs. However, the knowledge sources were immediately relevant to address the existing gaps and relatively easy to access once identified. Third, supplydemand knowledge reciprocity: The impact investors and the SMEs represented critical sources of knowledge mutually relevant to addressing the existing gaps.

Knowledge Diversity. Impact investors discovered relevant knowledge in local and global settings, individuals, and organizations in forestry and coffee. The co-existence of local and global sources of know-how and information reflects the multi-dimensionality of sustainable production, which spans from the farming and processing activities of SMEs in rural locations to the sales and compliance regimes on international markets. For example, the investors quickly realized the importance of the regulatory regime underlying the exploitation of forestry resources in Peru. However, they did not know such a regime, which conditions the SMEs' production practices while constituting a potential risk factor when designing the impact investing product. SMEs' non-compliance with regulations can undermine the investee's ability to repay and expose the investors' to reputational and legal issues. Consequently, the network of investors began mapping local stakeholders owning the knowledge required to address the gap, identifying the Forestry Chamber of Peru, housed at the Ministry of Agriculture, as an essential source of know-how. The Chamber understands the regulatory regime, underlying issues, and needs of SMEs operating under it. Moreover, it disposes of codified knowledge that synthesizes and reports the critical aspects of the regulatory regime. The documentation, in the form of briefs, brochures, and executive reports, had never circulated among the SMEs or the financial institutions, remaining unused in the offices of the institution. This resource is essential to address a critical knowledge gap on the supply side.

Sources of knowledge discovered at the location were also essential to address demandside gaps, not only supply-side. For example, aware of the SMEs' lack of financial literacy and business planning capabilities, the impact investors leveraged their contacts to reach out to the local office of an international NGO specialized in access to finance programs. The NGO had a demonstrated record of know-how to build financial literacy in rural SMEs in the region.

Table 5.4 - Knowledge Discovery in the Forestry Sector

Source: Author's qualitative analysis of original data

Knowledge Type	Knowledge Contents	Relevant for	Knowledge Sources	Examples	Discovery Mode	
	Production cycle in forestry	Supply Side	Forestry experts from	The Ministry of Environment,	"Officials in the Ministry and in the Forest authority were introduced to us by members	
Demand Side's Capabilities	Investment risks and opportunities in forestry GVCs	Supply Side	local private sector; Mid-level policymakers	Biodiversity, Climate Change, and Forest Management of Bolivia and the Bolivian Forest and Land Authority own specific knowledge about forestry regime and	of an NGO with whom we partnered in the past for a different program []. They had no	
	Critical SMEs' investment needs and related loan terms	Supply Side	Forestry experts from		direct relationship with the SMEs we were targeting or with the financial institutions in the network, but had the full picture and	
	National regulatory framework for forestry production	Supply & Demand Side	organizations.	concessions in Bolivia.	understanding of the legal regime to exploit forestry resources". (NGO R4)	
	Critical SMEs' investment needs to shift to sustainable production	Supply Side	Local forestry SMEs:	Representative of a Mexican forestry SME that received funding from impact investors to develop FSC certified products and has	"We reached out to the general manager of this Mexican enterprise, following up on the suggestions of IMP7, whose Mexican branch had been started to deploy some funding to forestry, corcia, and coffee firms in that area	
	Financial skills, experience, and status of forestry SMEs	Supply & Demand Side	Foreign forestry SMEs who received impact			
	SMEs' Capabilities and infrastructural gaps	Supply Side	financing in the past.	and opportunities of impact investing in forestry.	and told us it was a successful experience". (NGO R3)	
	Criteria, indicators, and implications of sustainable forestry production	Supply & Demand Side		Forestry Stewardship Council (FSC) and The Amazon Alternative (TAA) have direct knowledge about the FSC certification process, the key challenges for SMEs trying to build compliance, and the commercial opportunities that ESC product	"FSC was our partner [the NGO coordinating the network of impact investors] in other programs and really wanted to work in Peru	
Sustainable Forestry	Type and features of sustainable forestry products	Supply & Demand Side	Local NGOs; Global NGOs;		and Bolivia, as a part of their larger project focusing on the Amazonian forest. They wanted to build an economy in the region that supports the preservation of the forest, and [] build an ecosystem promoting certified	
Know How	Trends and potential of sustainable forestry markets	Supply & Demand Side	Standard Setters.			
	Standards' role in defining the market and related requirements	Supply & Demand Side	_	certification generates.	wood. They also linked us with their partner, TAA". (NGO R1)	
	Financial institutions' requirements to grant loans	Demand Side		Local financial consultants collaborating with international NGOs and inter-governmental bodies on sustainable development programs. The consultants had know-how of capacity building in the financial literacy area, with a	"Local consultant were identified through local channels, by getting in touch with the local offices of NGOs who did canacity building	
Financial	Characteristics of the financial products available to SMEs	Demand Side	- Impact investors network;			
Financial Product	Financial literacy fundamentals for SMEs	Demand Side	Local financial experts; Global financial		work with rural SMEs. We are talking here about international, well known and	
nequi emento	Business planning training capacity	Demand Side	consultants with forestry expertise.		established NGOs that we could trust for their reputation in sustainable development projects in the region" (NGO R2)	
-	Growth opportunities through access to impact investments	Supply & Demand Side		tocus on SMEs in rural areas.		

Table 5.5 - Knowledge Discovery in the Coffee Sector

Source: Author's qualitative analysis of original data

Knowledge Type	Knowledge Content	Relevant for	Knowledge Sources	Examples	Discovery Mode	
	Investment risks and opportunities in coffee GVCs	Supply Side	National industry	FUNICA (NGO) and La Red de Café (Industry Association) in Nicaragua	"After mapping the local actors and	
Demand Side's Needs	Identity of potential investees and existing capacity building infrastructure on the ground	Supply Side	authorities; Local government and	own critical knowledge of the coffee SMEs' landscape and technical competences to build business	reaching out to local networks, it emerged that La Red and FUNICA were key organizations to structure any support to coffee SMEs and fill the existing breach	
	Critical SMEs' investment needs and related loan terms	Supply Side	Developmental agencies of foreign	capacity, especially related to export. Similar considerations stand for FIDE	between them and the investors. We reached out to them and began establishing	
and	Business planning training capacity	Demand Side	governments.	ICAA's offices in Honduras.	a relationship" (NGO R2)	
Capabilities .	Critical SMEs' investment needs to shift to sustainable production	Supply Side	_		"Local government and export authorities as	
	Financial skills, experience, and status of forestry SMEs	Supply & Demand Side	Coffee SMEs.	Representatives of the coffee SMEs in Nicaragua and Honduras	well industry association were crucial to identify SMEs on the ground that could represent an interesting profile for the	
	SMEs' Capabilities and infrastructural gaps	Supply Side			financial institutions" (Doc4).	
-	Criteria, indicators, implications of sustainable coffee production	Supply & Demand Side		UTZ has essential knowledge about the coffee certification process and the related commercial opportunities. SECO (Swiss agency for cooperation and economic development) own specialized knowledge concerning the development of sustainable	"We had partnered already with UTZ in	
Sustainable	Type and features of sustainable coffee products	Supply & Demand Side	Global NGOs and		"With business planning and financial literacy being a central requirement by impact investors, SMEs that had been	
Coffee Markets'	Trends and potential of sustainable coffee markets	Supply & Demand Side	Developmental			
Know How	Production cycle and investment risk in coffee GVCs	Supply Side	governments.		involved or were involved at the time in SECO's programs had the benefit of receiving specific capacity building and	
	Standards' role in defining the market and related requirements	Supply & Demand Side		coffee markets.	training on that topic" (R2)	
	Financial institutions' requirements to grant loans	Demand Side			"Mo loarn about SEEAS' compotencies and	
Financial	Characteristics of the financial products available to SMEs	Demand Side	Impact investors network;	SEFAS, a Costa-Rica based program	local presence after starting a discussion with local industry associations, which	
Product Requirements	Financial literacy fundamentals for SMEs	Demand Side	Local financial experts; International financial	by global NGO HIVOS, has critical know-how of financial literacy for	mentioned past SEFAS programs for access to finance. We engaged with them and understood quickly they could be a here	
Capabilities	Business planning training capacity	Demand Side	consultants with coffee expertise	rural SMEs.	partner for addressing the weaknesses of SMEs associated to their financial	
	Growth opportunities through access to impact investments	Supply & Demand Side			management practices." (R3)	

Tapping on its knowledge was critical for the supply side to create new capabilities to access the impact investing product on the demand side, namely financial literacy and loan management skills.

International knowledge sources were identified equally to address the supply and demand knowledge gaps. For example, the impact investors' network coordinators had participated in a conference held in Washington, DC, two years before the Financial Fairs took place. The conference's topic was the opportunities for deploying sustainable finance in the agricultural commodities trade. On that occasion, they met representatives of a global network committed to sustainable forestry trade associated with a major environmental NGO, who discussed the importance of access to finance in the forestry sector. Once the impact investors network decided to engage with SMEs in the forestry sector, they went back to the contacts they established at the conference in DC and identified that network as an important source of knowledge. The network had access to a global network of consultants with solid expertise in sustainable forestry and the competencies and reach to identify investees' profiles among forestry SMEs. Actors involved in the network would reveal crucial to creating supply-side knowledge about the sustainable forestry market and selecting investees.

Knowledge Accessibility. The discovery process's second exciting aspect is the ease of access to the knowledge sources identified. The sources of knowledge include pure know-how embedded in the organizational members' capabilities as well as knowledge codified in written documents. The know-how of consultants and NGOs at the location is largely consisting of tacit knowledge. For example, the members of a Nicaraguan NGO had strong capabilities in supporting coffee SMEs in the development of export capacity and sustainable agricultural practices, which they developed experientially during years of fieldwork. Instead, standard setters such as FSC,

Fairtrade, and Rainforest own codified knowledge about sustainable agro-industrial practices and the mechanisms of sustainable markets. For instance, the standard setters can produce written documentation enclosing the criteria SMEs must meet to obtain product certification and the market mechanisms linked to the price premium. No matter the tacit or codified nature of the knowledge discovered, the impact investors had no trouble immediately recognizing its relevance to addressing the existing gaps and linking it to specific supply-side and demand-side needs.

What it strikes is that knowledge of such relevance to address the breach between impact investors and SMEs was hidden in plain sight. The various knowledge sources identified at this stage in the financial fairs were untapped and never accessed and exploited by either the impact investors or the SMEs, often despite of evident proximity. For example, the Peruvian Chamber of Forestry:

"[has] a team of very committed people with a deep understanding of the legal requirements, although nobody from the private sector has ever reached out to them. They had incredible resources sitting there, but no SMEs or banks have ever seen that" (R5).

Similar considerations stand for the equivalent Bolivian public body. Equally untapped is the

standard setters', local NGOs', and other public organizations' knowledge:

"These forestry SMEs were aiming at FSC certification, but had struggled a lot in getting in touch with somebody from FSC and access the right resources to understand what they were required to do." (NGO R2)

"The two NGOs have long-standing experience in providing technical assistance to Nicaraguan SMEs trying to access financing. One of them also developed a manual. However, they had only focused on specific projects and the content never became available to other SMEs lacking financial literacy capacity" (NGO Doc 24)

"The land authority, as well as the Ministry of Trade and some local consultancies, had a great understanding of the forestry production cycle and the bottlenecks to investing in the sector, yet they had scarce interactions with the private sector and the financial institutions prior to the financial fairs." (NGO Doc 62)

In this sense, the EM context under analysis lacks *actual resources* but does not necessarily lack *potential resources* in the form of the dispersed knowledge embedded locally and internationally and relevant to address critical gaps in developing a supply of financial investments targeting sustainable production.

Supply-demand knowledge reciprocity. Finally, critical knowledge to address the existing gaps is enclosed in the supply and demand side. Only a mutual, direct knowledge exchange between impact investors and the SMEs could contribute to generating the know-how required to develop the impact investing product and connect it to the SMEs' resource needs. The impact investors and SMEs realized the importance of this dimension:

"As we understand that these organizations lack an understanding of the financing opportunities available for sustainable coffee, it is important that we convey the nature and general conditions under which such opportunities can become a reality" (IMP1, Doc3)

"We did not know much about the financial institutions and their financing terms, but they also need to understand more about our needs, the issues we have with our debt and current credit, and what we can do through their funding" (CSME23, Doc5)

"Preliminary contact with the producing organizations is essential to fill the gaps in our understanding of the forestry cycle. Firsthand knowledge of the needs and revenues is invaluable, although it must be documented" (IMP8, Doc 33).

Analytical Summary. The discovery step led to identifying local and global sources of knowledge embedding codified and tacit but largely untapped know-how relevant to addressing existing knowledge gaps hindering the connection of impact investments to the SMEs' needs. The knowledge confronted in the process is dispersed geographically and highly diverse in the sources and forms through which it manifests. It is also disjointed by the needs of supply and demand actors, as it was never accessed for the purpose of developing new financing solutions for SMEs' sustainable production.

5.2.2. Knowledge Activation

Once identified at the discovery stage, the challenge is to transform a varied pool of untapped knowledge spread across different places, spaces, organizations, and individuals into actual knowledge that enables the supply-demand connection. I refer to this transformative process as one of knowledge activation. Activation primarily relies on creating opportunities for interactive learning among impact investors, SMEs, and the new local and global sources of knowledge. Such opportunities materialized in the creation of *spaces of knowing*, which are "organized spaces of varying length, shape, and duration, in which knowing, depending on circumstances, can involve all manner of spatial mobilizations, including placements of task teams in neutral spaces, face-to-face encounters, global networks held together by travel and virtual communications, flows of ideas and information through the supply chain, and transcorporate thought experiments and symbolic rituals" (Amin & Cohendet, 2004). The impact investors nurtured inter-organizational and inter-personal knowledge flows via inter-organizational collaborations for content development and knowledge codification, capability-building workshops, expert panel events, info sessions, and face-to-face meetings (for a summary, see Tables 5.6 & 5.7).

For example, confronted with the lack of supply-side knowledge about the forestry GVCs, the network of impact investors engaged in Peru with mid-level officers from the Forestry Chamber of Peru, the Ministry of Agriculture, and the Ministry of Trade, as well as representatives of the Peruvian forestry industry and local consultants with experience in supporting enterprise development and export capacity in forestry GVCs. The impact investors were able to build collaboration among these entities. During face-to-face meetings, the representatives of the different organizations shared essential knowledge concerning the local forestry regulations and the financing opportunities linked to sustainable forestry production. In particular, they focused on the typical projects, assets, and infrastructures that SMEs in the sector seek to implement as part of their strategies and for which they need funding (see Table 5.2 summarizing the SMEs' innovation goals).

This collaboration took place at the location through the spontaneous participation of the actors and generated the outcome of an *Investing in Forestry guide* for impact investors. The Guide summarized and structured the knowledge shared and built by the different actors so as to convey with clarity and purpose the essential information the investors need to configure the new financing products. In particular, the Guide was designed to address the supply-side knowledge gaps challenging the investors' ability to configure a timeline for repayment, the possible combination of assets and goals they would target, and the economic stream and sustainability outcomes they could forecast as a result of the funding generated with the impact investment product. It also provided the tools for the impact investors to assess the SMEs' funding requests and select the right investees' profiles.

Following the completion of the Guide, the space of knowing opened up further through a training workshop for impact investors. The training was a one-day-long activity where representatives of the different organizations contributing to the development of the Guide presented vital aspects of the document. Importantly, the impact investors had the opportunity to interact with the presenters and elaborate on the knowledge being shared. Some of the impact investors that participated in the training remark:

This was an essential activity to learn about the assets to target and the production and processing cycles in the sector. It really helped to get ready for the SMEs and their needs. [Imp6, Doc5]

Table 5.6 - Knowledge Activation in the Forestry Sector

Source: Author's qualitative analysis of original data

Spaces of Knowing	New Interaction Developed	Knowledge shared	Actual Knowledge Output	Supply-Demand Knowledge-Based Coordination
Expert panels for SMEs	SMEs <-> Local Public Sector SMEs <-> Local Private Sector consult. SMEs <-> Representatives ImpInv SMEs <-> Local NGOs	Local forestry regulations; financing opportunities linked to sustainable production; capability building options in sustainable production and business planning; financial requirements for accessing impact loans.	Access to finance manual for SMEs codifying critical know-how to apply and manage impact loans funding sustainable production strategies. Increased SMEs awareness of supply side offering and opportunities and capacity building providers.	Demand Side gains the basic tools to connect to and understand the supply side of impact investing, especially knowledgeability of impact investing products, their link to forestry products, and what it takes to obtain them.
Information sessions for impact investors	ImpInv <-> Global forestry ind. ImpInv <-> Local consult. and NGOs	Opportunities and margins of investing in sustainable forestry; forestry production cycle; typical SMEs' financing needs in forestry; markets for certified forestry.	Increased ImpInv's understanding of sustainable forestry markets and production cycle. ImpInv's capability to assess risk in the forestry sector.	Supply Side actors have the knowledge to structure the risk profile of investing in sustainable forestry and forecasting future trends (positive and negative). Advancement of the product innovation process.
Information sessions for SMEs	SMEs <-> Global forestry ind. SMEs <-> Local consult. and NGOs SMEs <-> Foreign forestry SMEs	SMEs' commercial opportunities in sustainable forestry markets; Product requirements and process for product certification (FSC)	SMEs' know-how of product certification process. Understanding the advantages of sustainable production in forestry GVCs and production risk in sustainable GVCs.	Demand Side actors improve know-how of shifting to more sustainable production practices and competing in sustainable markets, which is essential to raise their investee profile for impact investors.
Training workshops for SMEs	SMEs <-> Financial literacy consult. SMEs <-> Local NGOs	Fundamentals of accounting, loan management, financial reporting, business planning, loan applications.	SMEs' business planning and financial literacy capabilities.	Demand Side actors have the technical know- how to start and complete transactions with Supply Side actors.
Training workshops for impact investors	ImpInv <-> Local Public Sector ImpInv <-> Local Industry Ass.	Local regulations and investments opportunities, especially financial needs of SMEs	Investing in Forestry guide for ImpInv codifying critical know-how of SMEs' investment's needs. Increased ImpInv awareness of SMEs' needs. Capability to assess and select investees and profitable forestry projects.	Supply Side actors can better adapt their product to the SMEs' needs, especially terms of repayment (long/short term, repayment rates). Supply side can identify, evaluate the feasibility, and pick the profiles of the investees and their projects.
Preparatory meetings for SMEs	SMEs <-> Representatives ImpInv SMEs <-> Financial literacy consult.	Facilitated fundamentals for SMEs to approach and interact with Impact Investors; New negotiation skills.	Increased SMEs' financial negotiation capabilities.	Demand Side actors are better equipped to complete a transaction with the Supply Side.
Impact investors' presentation to the SMEs	SME <-> impact investor	Allowed SMEs to revise loan applications and clarify expectations prior to the FF event; Created knowledge about specific negotiations requirements.	SMEs' improved understanding of ImpInv's requirements and processes. Increased SMEs' financial negotiation capabilities. ImpInv increased knowledge of SMEs' needs and level of competencies and preparation.	Supply and Demand Side expectations and needs are further realigned to increase likelihood to complete transactions.

Table 5.7 - Knowledge Activation in the Coffee Sector

Source: Author's qualitative analysis of original data

Spaces of Knowing	New Interaction Developed	New Actual Knowledge	Subsequent Knowledge Output	Supply-Demand Coordination Outcome
Expert panels for SMEs	SMEs <-> Local Export Agencies SMEs <-> Financial institutions (international impact investors and local microfinance, rural financing)	Financing opportunities linked to sustainable production; capability building options in sustainable production and business planning; financial requirements for accessing impact loans.	Access to finance manual for SMEs codifying critical know-how to apply and manage impact loans funding sustainable production strategies. Increased SMEs awareness of supply side offering and opportunities and capacity building providers.	Demand Side gains the basic tools to connect to and understand the supply side of impact investing, especially knowledgeability of impact investing products, their link coffee products, and what it takes to obtain them.
Information sessions for impact investors	ImpInv <-> Global coffee industry (Standards, Exporters, Global NGOs) ImpInv <-> Coffee industry experts (local and global)	Opportunities and margins of investing in sustainable coffee; typical SMEs' profile and how to interact with them.	Increased ImpInv's understanding of sustainable coffee markets. ImpInv's capability to identify and interact with SMEs.	Supply Side actors increase the knowledge to structure the risk profile of investing in sustainable coffee and increase capability to link to SMEs and the local coffee industry.
Information sessions for SMEs	SMEs <-> Global coffee industry SMEs <-> Coffee industry experts SMEs <-> Foreign coffee SMEs	SMEs' commercial opportunities in sustainable coffee and how they facilitate access to impact investing. Options to expand certified production and build resilience upon that.	SMEs' know-how of how to maximize markets benefits of participation in GVCs for certified coffee. Increased capability to structure commercial goals to also satisfy financial institutions' requirements.	Demand Side actors improve know-how of shifting to more sustainable production practices and competing in sustainable markets, which is essential to raise their investee profile for impact investors.
Training workshops for SMEs	SMEs <-> Financial literacy consult. SMEs <-> Local NGOs	Fundamentals of accounting, loan management, financial reporting, business planning, loan applications.	SMEs' business planning and financial literacy capabilities.	Demand Side actors have the technical know- how to start and complete transactions with Supply Side actors.
Training workshops for impact investors	ImpInv <-> Local Public Sector ImpInv <-> Local NGOs ImpInv <-> Local Private Sector (industry ass., exporters)	Financial needs of SMEs seeking more sustainable practices and opening new channels for diversification.	ImpInv' know-how of critical SMEs-level assets and projects to target and related risk assessment and repayment capacity.	Supply Side actors can better adapt their product to the SMEs' needs, especially terms of repayment (long/short term, repayment rates). Supply side can identify, evaluate the feasibility, and pick the profiles of the investees and their projects.
Preparatory meetings for SMEs	SMEs <-> Representatives ImpInv SMEs <-> Financial literacy consult.	Facilitated fundamentals for SMEs to approach and interact with Impact Investors; New negotiation skills.	Increased SMEs' financial negotiation capabilities.	Demand Side actors are better equipped to complete a transaction with the Supply Side.
Impact investors' presentation to the SMEs	SME <-> impact investor	Allowed SMEs to revise loan applications and clarify expectations prior to the FF event; Created knowledge about specific negotiations requirements.	SMEs' improved understanding of ImpInv's requirements and processes. Increased SMEs' financial negotiation capabilities. ImpInv increased knowledge of SMEs' needs and level of competencies and preparation.	Supply and Demand Side expectations and needs are further realigned to increase likelihood to complete transactions.

We welcomed such an initiative that gave us the tools we were missing to better understand what to expect from investing in forestry and how our product could make a difference. [Imp4, Doc42].

Another interesting example concerns the coffee sector and how the impact investors facilitated a space of knowing to build supply-side capabilities in the area of financial literacy. The coffee SMEs lack the essential financial management and business planning skills and know-how, which impact investors require as a condition to generate financing for the SMEs. For example, submitting a business plan is critical for the investors to assess the SMEs' profile and decide whether to deploy the loan. To address the gap, the network of investors collaborated in Nicaragua and Honduras with local NGOs and consultants with expertise in building financial literacy in rural organizations. This space of knowing was the longest in terms of duration in the Financial Fairs. First, the impact investors' network and the specialized organizations collaborated to develop the content for the training. This was one of the very first steps in the preparatory work for the Fairs. The investors coordinated the knowledge sharing, creation, and codification process to secure a focus on those capabilities most relevant to allow the demand side to interact with the investors. The core knowledge produced concerns the fundamentals of accounting, loan management, financial reporting, business planning, and loan application.

Next, the space of knowing expanded to share the new knowledge with the SMEs and create the related capabilities on the demand side. This involved series of face-to-face meetings between members of the NGOs, local consultants, and SMEs' personnel to present and discuss the contents and verify the learning. Finally, a few months later, a series of training workshops involving multiple SMEs simultaneously were facilitated to complete the learning process. Most SMEs reported enthusiastically about this process, which allowed them to gain know-how they were lacking before: Very happy of the training workshop. Great learning and now feel ready to manage a loan. [SME13 Doc18]

We thank the network for this process and all the teaching and discussing. We feel very positive about our capacity to apply for loans and access new funding. [SME27 Doc 18]

While we need to wait and negotiate a real loan to know the real extent of what we learnt, we sure increased our competencies in accounting and also meet organizations and people that could help us in the future. [SME34 Doc21]

The financial capabilities built during 6 to 7 months periods were essential to address the gaps initially identified on the demand side of the impact investing market.

Another example of space of knowing taking the form of face-to-face meetings is the info session. Info sessions were designed primarily to bring together the SMEs and the impact investors. While the previous examples concern spaces of knowing that lasted for various months, this one consisted of a meeting of a few hours, preceded by a few days of preparatory work by the network of impact investors. This event took place just one or two days before the Financial Fairs final events, both in coffee and forestry, and aimed at a final triangulation of the knowledge gaps still present at such a final stage in the process. For example, in the coffee fairs, this meeting was critical to have the SMEs share their final doubts about their loan applications, the in-person negotiation of a loan, and the investors' requirements. For the impact investors, the info session was a last opportunity to have a direct glance at the SMEs' preparation, discuss directly with them some key features of the conditions for financing, and realize if any final corrections were needed before entering loan negotiations.

Analytical Summary. The way impact investors drove the establishment and work of the spaces of knowing indicates that knowledge interactivity is coordinated to enable learning in the directions of the relevant knowledge gaps. Coordination enables impact investors and SMEs to maximize the benefit of new local and global interactivity, given the goal of overcoming the

knowledge-based barriers to transform financial allocations into actionable financing for SMEs. The activation process pushes the emerging impact investment product as close as possible to the needs of the SMEs by providing a critical understanding of the SMEs' economics, capabilities, and goals. It also brings the SMEs closer to the impact investors by providing the knowledge and space for creating new capabilities that put the firms in the conditions to adopt the impact financing product. Such bridging of supply and demand thus is an outcome of highly coordinated learning spanning multiple spaces of knowing and taking the form at the aggregated level of SMEs' collective learning to fill demand-side knowledge gaps and impact investors' collective learning to fill supply-side knowledge gaps. Both supply-side and demand-side collective learning interactivity. Moreover, the SMEs and the impact investors share the goal of achieving new financing for sustainable production. In this sense, and under the impact investors' orchestration, supply-side and demand-side organizations willingly engage in *collaborative learning*, shaped by the structure of the market.

I define collaborative learning as a dynamic of inter-organizational learning taking place at the aggregated inter-group level by drawing upon mutual and univocal, local and global, intraand extra-GVC knowledge flows involving a multiplicity of actors. Groups are shaped by the supply-demand structure of the impact investing market, with SMEs configuring the demand side and impact investors configuring the supply side. Learning pinpoints the creation of new capabilities critical for the establishment of the basic conditions for a transaction satisfying the SMEs' financing needs and the impact investors' sustainability mission.

The collaborative learning at the activation stage is not yet enough to connect the supply and demand of impact investing. The final impact investment products developed on the supply

side must be concretely connected to the capabilities of the individual SMEs. This happens in the final stage of the Financial Fairs process, which I label *knowledge matching*. Knowledge matching occurs at the Financial Fair events, the activity taking place on the last two days of the process to facilitate the in-person loan negotiation between impact investors and SMEs.

5.2.3. Knowledge Matching

Thanks to the learning that unfolded at the activation stage, the impact investors have created better conditions to match the emergent impact investment products with the SMEs' financing needs. At the Financial Fairs event, the impact investors and the SMEs sit together on an individual basis and face-to-face to negotiate the loan. Each SME sat with multiple impact investors, presenting documentation it had submitted in advance to the investors and discussing how to access and use the impact investing product. The loan negotiation meetings at the final event thus consist of a test of the match between the impact investing product and the SMEs' capabilities to adopt it. They verify whether the knowledge barriers initially detected have been overcome through the process' knowledge discovery and activation stages.

The matching results at the Financial Fairs events show that numerous gaps are still present, and more knowledge must be built to improve the ability of supply and demand to connect. To document the results, I tracked each individual meeting between impact investors and SMEs participating in the Financial Fairs. I refer to such meetings as 'matching attempts'. In Table 5.8, I document the results of the matching attempts Fair by Fair and by sector. Both in coffee and forestry, most matching attempts failed, seeing no deployment of the impact investing products (Table 5.8). Few matching were successful. A few more were partially successful, with the SMEs accessing the impact investing product but for a lesser amount than the one initially requested (Table 5.8). It is interesting to find that despite the differences between the coffee and

forestry sectors and the diversity of knowledge gaps, matching results were practically equal in the financial fairs for the two sectors and at the individual fair's level (Table 5.8). Fully and partially achieved matching accounts for close to 9% of the total matching attempts in forestry and coffee. The remaining supply-demand encounters (91,2%, see Table 5.8) failed to connect the impact investing product to the SMEs' capabilities to adopt it.

	Financial Fairs	Matching Attempts	Matching Fully Achieved	Matching Partially Achieved	Matching Failed
	Peru (14 SMEs - 7 ImpInv)	29	2	1	26
Forestru	Bolivia (12 SMEs - 5 ImpInv)	31	1	2	28
Forestry	Peru (9 SMEs - 6 ImpInv)	27	1	1	25
	Forestry total:	87	4 (4,6%)	4 (4,6%)	79 (90,8%)
Coffee	Nicaragua (14 SMEs - 6 ImpInv)	51	0	4	47
	Nicaragua (8 SMEs - 8 ImpInv)	42	2	2	38
	Honduras (13 SMEs - 6 ImpInv)	47	3	1	43
	Coffee total:	140	5 (3,6%)	7 (5,0%)	128 (91,4%)
	TOTAL	227	9 (4,0%)	11 (4,8%)	207 (91,2%)

Table 5.8 – Matching Results at the Financial Fairs

The most striking finding from the analysis of the matching results is that the supply of impact investing is present but cannot be connected yet to the demand side, which struggles to adopt the impact investing product. The reasons behind this disconnection become clear from an analysis of the reasons behind matching failures, as emergent from the Impact Investors' and SMEs' punctual reporting of each single matching attempt. The data indicate that the discovery and activation process did not generate enough learning and capabilities on the demand and the supply side to address the pre-existing knowledge gaps, some of which still require more work to build new capabilities on both supply and demand sides (Tables 5.9 & 5.10).

For example, among the fundamental causes of the mismatch between supply and demand, there are SMEs' business planning and financial literacy capabilities that are still too weak,
accounting for a total of 37.6% of the mismatches originating on the demand side (Table 5.9). The collaborative learning at the activation stage was not sufficient to address the pre-existing knowledge gaps. Multiple impact investors also reported 11.1% of the matching attempts failing due to the SMEs proposing upgrading projects that were not feasible, which would demonstrate the SMEs' poor understanding of the impact investors' funding options (Table 5.9). For example, numerous coffee SMEs requested funding to develop new products for local markets, which does not respond to the impact investors' emphasis on funding sustainable products' export to niche international markets. From a supply-side perspective, this reflects a lack of SMEs' capabilities to adapt upgrading projects to the financing offer. At the same time, it shows the impact investors' poor flexibility and capability to adapt their products to alternative views of sustainable production and trade, dictated by the SMEs' needs.

On the other side of the coin, multiple SMEs reported mismatches being caused by the impact investors' scarce understanding of the business model for coffee and forestry production and trade (16.5%) and the overall lack of trust in investing in agriculture (14.1%), suggesting that impact investors still must develop a deeper understanding of the sustainability and upgrading challenges and opportunities of agro-industrial SMEs in the two targeted sectors (Table 5.10). Similarly, multiple SMEs reported that the impact investors did not convey clearly enough their product requirements prior to the fairs, causing mismatching during the in-person meeting negotiations. 26.4% of the matching attempts failed because of such type of supply-side-related knowledge gap (Table 5.10).

Interestingly, it also emerges that numerous matching attempts failed due to knowledge gaps that were not considered and targeted by collaborative learning at the activation stage. For example, the impact investors did not work towards building more managerial capacity in the SMEs (demand-side cause of 6.8% of the mismatches) or improving their market intelligence (demand-side cause of 10.6% of the mismatches), which then were reported as demand-side related causes of negotiation breakdown and failure in impact investing product adoption for a total of 17.4% of the matching attempts (Table 5.9). In addition, the impact investors rejected numerous loans due to the SMEs not being yet compliant with any certification scheme (8.2%, Table 5.9). Yet, the investors did not work towards building more capabilities in the SMEs to pursue compliance. Various SMEs had requested the funding specifically to enable standard compliance, generating a vicious circle for which the firm cannot access the funding it needs to become certified because it is not certified (Table 5.10).

It must be highlighted that in many of these instances of mismatching, the impact investors also reported that the situation could be re-assessed in one year / eighteen months' time, to verify if, in that time span, the SMEs had addressed their knowledge barriers. More broadly, most impact investors and multiple SMEs signaled that the creation of mutual linkages, even in the case of a mismatch, was a welcomed positive outcome as it created the preliminary conditions to begin connecting the supply and demand of impact investments. The process described in this study allowed supply and demand to start a relationship with the potential to evolve. As impact investors and SMEs build more knowledge to overcome the critical barrier, they also adjust the product and the capacity to adopt it, opening opportunities for the future. Integrative, collaborative learning can support further progress toward filling the knowledge gaps and enabling future knowledge matching and financing deployment for coffee and forestry SMEs.

Knowledge Based Causes	Occurrence	Examples from Coffee	Examples from Forestry
Weak Business Planning Capability	41 (19.8%)	"The SME's business plan is not well defined. They could not show us the activities they want to fund, and how such activities would set forth a growth in revenues and/or a costs reduction to enable repayment. They must improve their ability to prepare this documentation" (Imp3 on SME19)	"The firm's representatives failed to present a sound business plan. In particular, the documentation in support seemed incomplete and lacked coherence with the financing goals and infrastructural improvements presented" (Imp7 on SME72)
Weak Financial Literacy Capability	37 (17.8%)	"Some of the most critical weaknesses we found were: i) lack of consistent financial information; ii) terms and amounts requested were not realistically aligned to the firm's commercial capacity; and iii) the firm overestimated its capacity to get into debt. These are all issues that can be solve with the right training at support, but at this point we cannot grant the investment" (Imp2 on SME11).	"The SME never managed loans of this size and prepared a weak financial plan and documentation. They struggle with accounting and understanding of repayment obligations, and have no financial history." (Imp10 on SME61) "The firm did not demonstrate the capacity to manage a loan amount of the size they are requesting" (Imp12 on SME49).
Proposed activities and assets non- feasible	23 (11.1%)	"The funding is requested for a series of projects that our loans cannot realistically fund. In particular, the plan to develop an own brand of roasted coffee for the local market exposes to a series of risks we cannot quantify at this stage" (Imp1 on SME 27).	"We need to better understand the ability of the firm to link to new buyers to sustain in the long term the increased production volumes they intend to achieve with our funding. We proposed to re-evaluate in one year time". (Imp9 on SME54)
Absent / limited market intelligence and export capacity	22 (10.6%)	"They lack linkages to buyers and a full understanding of the sustainable trade dynamics, especially the chain of custody for the product and how to move to value added niches" (Imp8 on SME 35)	"They need to develop more knowledge of the international forestry markets, they did not show how they would reach out to sustainable buyers for their product" (Imp10 on SME64)
Lack of sustainability standard compliance	17 (8.2%)	"The SME is not even certified, which constitutes the main obstacle to make this investment work" (Imp2 on SME16) "The funding requested is mainly working capital, but we don't know if the SMEs can develop standard compliance anytime soon, which made us stop negotiation with their representatives" (Imp6 on SME35)	"Lack of standard compliance and therefore guarantees of a sustainable timber product is the main reason why we will not fund this firm. We would assess again in one year time, if the SME has become compliant with FSC" (Imp13 on SME72)
SMEs is unstable / not well organized	14 (6.8%)	"This firm is unorganized and possibly unstable. Lack of experience, this is not an adequate investment" (Imp5 on SME28) "High risk organization, not solid at all, and missing a strategic plan and the effectiveness to pursue complex projects" (Imp2 on SME5).	"The business plan would have potential but the managerial team is not effective and lack competences to manage the firm and its goals" (Imp7 on SME58).

Table 5.9 – Causes of Supply-Demand Mismatches Originating on the Demand Side (Source: Elaboration of Impact Investors' reporting)

Non-Knowledge Based Causes	Occurrence	Examples from Coffee	Example from Forestry
Excessive debt ratio / lack of collateral	40 (19.3%)	"The Debt to Equity ratio is too high, this is not a feasible candidate" (Imp1 on SME19) "The debt ratio is well above a desirable value, this firm is not suited to get additional financing piling on its existing debt" (Imp4 on SME22) "We cannot advance with this SMEs until the show the exact and reliable value of the collateral they have proposed" (Imp3 on SME8)	"The organization is solid and their representatives prepared but they are highly indebted, which makes them a bad profile for providing fincancing" (Imp10 on SME41) "The financing demand is not supported by the required collateral. We only provide working capital backed by sales contracts covering 120 to 140% of the amount requested" (Imp8 on SME71)
Amount requested is too low	8 (3,8%)	"Firm with an interesting project and big margin for growth but they request only 30,000 USD while our minimum investment is above 100,000 USD" (Imp3 on SME13)	
Inability to follow up on the investment in remote location	5 (2.4%)	"This loan requested was rejected because the organization is located in an area outside of the reach of our local officers" (Imp1 on SME12)	"The firm is located in a very remote area where there is no chance of meeting for finalizing the deployment of the loan and follow up on its repayment" (Imp11 on SME70)
tot	207		

Table 5.9 – Causes of Supply-Demand Mismatches Originating on the Demand Side (Continuation)

Table 5.10 – Causes of Supply-Demand Mismatches Originating on the Supply Side

(Source: Elaboration of SMEs' reporting) (Note: Not all SMEs provided feedback for their matching attempts. Therefore, the total observations for this table are 163 and not 207).

Knowledge Based Causes	Occurrence	Examples from Coffee	Examples from Forestry
Lack of understanding of the investors' requirements	43 (26.4%)	"We got confused about what they really expected, we came with a business plan but the conditions they offer did not fit at all what we had prepared" (SME9 on Imp2)	"What they asked us in terms of financial management and other conditions we had to meet was new to us despite the preparatory work" (SME64 on Imp8)
Investors' limited understanding of the business model	27 (16.5%)	"We think they did not get the importance of our project to increase revenues, it was not just working capital" (SME26 on Imp5)	"They did not get what our funding is for, we cannot get certain buyers without first moving the steps for which we need the financing" (SME43 on Imp13)
Lack of trust to accept risk of long-term activities	23 (14.1%)	"The investors were happy with some of other projects but others they say they were too risky when it is just that they need time" (SME33 on Imp4)	"There are interventions that can only become profitable after 5 to 7 years, but this results to be a risk they do not take" (SME 49 on Imp12)
Non-Knowledge Based Causes	Occurrence	Examples from Coffee	Examples from Forestry
Own debt ratio is excessive	38 (23.3%)	"We simply have too much debt to receive any financing from this bank" (SME3 on Imp1)	"We had a good conversation and receive some encouraging feedback but in the end the issue was debt" (SME15 on Imp10)
Interest rate for repayment is too high	32 (19.6%)	"We had discussed at the pre-fair events the need to lower the repayment interest to allow our comprehensive intervention, but at these conditions the financing is unsustainable for us, we can only access working capital" (SME20 on Imp7)	"The interest is too much, while we need the machines to improve our product and enter new markets we cannot repay at these conditions" (SME55 on Imp10)
tot	163		

Table 5.11 – Overview of the Causes of Supply-Demand Mismatches

	Knowledge Based	Non-Knowledge Based
Demand Side Causes of Mismatches	74.4%	25.6%
Supply Side Causes of Mismatches	57.1%	42.9%

However, the analysis also indicates a series of non-knowledge-based issues that were among the critical and most recurrent reasons for mismatches (Tables 5.9 & 5.10). 25.6% of the causes of mismatches originated on the demand side, and 42.9% of the causes originating on the supply side were non-knowledge-based factors (Table 5.11). These factors do not depend on specific organizational capabilities that can be created through learning processes but still affect the capacity of supply and demand to connect, sometimes frustrating know-how and know-why that were successfully built at the activation stage. These factors ultimately depend on a set of very specific impact investors' product requirements, which block *ex-ante* the possibility for the SME to adopt the product.

For example, multiple SMEs' financing requests were rejected because of the SMEs' high levels of indebtedness, as measured through the debt-to-equity ratio (23.3% of supply-side requirements caused mismatches). Even despite the sound and well-conceived business plans, access to sustainable markets, and feasible innovation goals, SMEs whose debt ratio went beyond the investors' thresholds were dismissed (Table 5.10). Similarly, the lack of collateral to be provided in amounts sometimes unreasonable for the SMEs was a critical cause of mismatch, often indicated by the impact investors in combination with excessive indebtedness (Table 5.9). Also, 32 mismatches originated from the inability of the impact investors to adjust their repayment rates to the capacity and projects of the SMEs (Table 5.10). Finally, a few more residual factors such as the SMEs' remoteness or the amount requested being below the minimum capital threshold provided by the impact investors were among the causes of a total 6.2% of mismatches (Table 5.9). These are all material factors mostly depending on the impact investors' rigid approach to financial risk.

5.3. Discussion: Supply-Demand Collaborative Learning to Unlock Financial Innovations

The analytical model in Figure 5.1 summarizes the findings of this study, as emerged from the qualitative data analysis synthesized in Table 5.12. I find that the impact investors fostered an emergent process of knowledge creation to connect their financial allocations to the demand side of impact investing composed of SMEs participating in coffee and forestry GVCs. Knowledge building on the demand and the supply side to sustain impact investment products deployment and adoption happen through a process of knowledge discovery, activation, and matching.



Figure 5.1– Analytical Model – Knowledge Discovery, Activation, and Matching

At the discovery stage, the impact investors identified the diverse local and global sources of knowledge relevant to address the barriers to connecting the supply and demand of impact investing. At the activation stage, the investors work to overcome the dispersed, untapped, and weakly connected nature of the knowledge that has been identified. They achieve that by establishing new spaces of knowing that nurture new interactivity across multiple, previously disjointed actors. The investors coordinated the knowledge creation activities unfolding in the spaces of knowing to purposefully generate information and capabilities supporting their understanding of the demand side's needs and opportunities and the demand side's ability to adopt and deploy their emergent financing products.

Knowledge creation coordination across the multiple spaces of knowing enabled impact investors' collective learning on the supply side and SMEs' collective learning on the demand side. Crucial for those group learning dynamics was the commitment of the two sides of the market to overcome the existing gaps to generate the new financing for the sustainability transition and the diversity of knowledge flows they established. In this sense, shaped by the impact investing market's underlying knowledge gaps, impact investors, SMEs, and the organizations and individuals involved in the spaces of knowing engaged in what I call collaborative learning. Collaborative learning showcases a new aggregated dynamic of interorganizational learning that brings together local and global, intra- and extra-GVC actors to set forth new capabilities creation, in turn enabling the development of a financial innovation and the establishment of the basic conditions for a transaction.

The idea of collaborative learning contributes to the literature of learning and innovation in EM and GVCs, which has focused on new production capabilities creation through essential vertical linkages with GVC players, such as standards and MNCs, and the complementary role of actors at the location such as public research centers and industry associations (Ambos et al., 2021; Anand et al., 2021; McDermott et al., 2009; McDermott & Pietrobelli, 2017; Perez-Aleman, 2011 & 2013). Collaborative learning casts light on more complex learning dynamics driven not by commercial requirements but funding needs, involving a much more diverse set of local and global linkages, and orchestrated by extra-GVCs actors such as the impact investors,

not by the MNCs or the suppliers as a group of peers. Moreover, learning concerns capabilities that underlie non-production activities, although it can generate essential changes in production by unlocking crucial financing for the SMEs' proactive sustainability strategies.

This chapter's analysis of the processes underlying collaborative learning and the finegrain examination of the knowledge flows involved also contribute to advancing the use of the knowledge-based view of the firm (KBV) in international strategy and international business. There is still a lot of ignorance in the field about the nature of the multi-level processes of learning that foster cross-border knowledge creation, especially due to a weak use and integration of a social-constructivist approach to knowledge and a predominant focus on the MNC (Grant & Phene, 2022). By leveraging the construct of spaces of knowing (Amin & Cohendet, 2004) to examine how individuals and organizations interact at the location and globally, within and beyond the GVCs, bringing together different types of knowledge (codified as well as tacit know-how), I precisely adopt the view that knowledge is created in practice to explore knowledge creation in the context of GVCs. My data capture the *'generative dance'* of knowledge (codified and established) and knowing (tacit and embedded in individuals' and organizations' practices) (Cook & Brown, 1999), enabling the creation of collective capabilities for SMEs and impact investors.

The matching stage of the Financial Fairs further improves the understanding of how supply and demand of impact investing can connect in the context of EM and GVCs. The findings indicate that transforming the financial allocations of the impact investors into actionable resources for SMEs requires a progressive process of learning and knowledge generation to adjust the supply side requirements and the demand side's needs. This is consistent with Callon's view that market creation relies upon countless encounters to adjust a new product to the demand's specific expectations (Callon, 2021). In fact, the Financial Fairs' results show that more progress through more 'encounters' and learning is required. On the other hand, it also indicates that not all causes of a supply-demand disconnection can be reconducted to knowledge exchange. Structural and physical factors also intervene to create a breach between supply and demand of impact investing, some of which connect to the impact investors' internal processes that are too rigid to address the SMEs' pre-existing conditions, such as indebtedness and remoteness. More theoretical and practical implications of these findings are discussed in Chapters 6 and 7. Table 5.12 – Summary of Qualitative Data Analysis

1st Order Data (Representative Quotes from interviews and documents)	2nd Order	3rd Order
"Officials in the Ministry and in the Forest authority were introduced to us by members of an NGO with whom we partnered in the past for a different program []. They had no direct relationship with the SMEs we were targeting or with the financial institutions in the network, but had the full picture and understanding of the legal regime to exploit forestry"	Identification of local knowledge	Discovery of Dispersed
"After mapping the local actors and reaching out to local networks, it emerged that La Red and FUNICA were key organizations to structure any support to coffee SMEs and fill the existing breach between them and the investors. We reached out to them and began establishing a relationship. It was surprising to find out how much they could help with their knowledge of the sector and its actors"	relevant to address knowledge gaps	Knowledge
"Local government and export authorities as well industry association were crucial to identify SMEs on the ground that could represent an interesting profile for the financial institutions. That was possible especially through their local branches in the rural areas, which know the field and the local players"	on the demand and supply side	
"FSC was our partner [the NGO coordinating the network of impact investors] in other programs and really wanted to work in Peru and Bolivia, as a part of their larger project focusing on the Amazonian Forest. They wanted to build an economy in the region that supports the preservation of the forest, and [] build an ecosystem promoting certified wood. They also linked us with their partner, TAA"	Identification of global knowledge	
"Then, we remembered about people from the Global Forest & Trade Network (GFTD) of WWF, who we had met two years before in DC at a conference about sustainable trade and development in agri commodities. At the time they were focusing don access to finance in the forestry sector so that it made sense to talk to them and began exploring their potential for supporting our program in Peru and Bolivia"	relevant to address knowledge gaps	
"We reached out to the general manager of this Mexican enterprise, following up on the suggestions of IMP7, whose Mexican branch had been started to deploy some funding to forestry, cocoa, and coffee firms in that area and told us it was a successful experience"	on the demand and supply side	
"Once their confirm their contribution, we facilitated a series of meetings with people from the Forestry Chamber, the Ministry of Agriculture, people of the Peruvian forestry industry and local consultants involved with development projects in the sector. The work was to put together a guide to then present and share with all the SMEs, to increase their awareness of the new opportunities for financing".	Creation of spaces of	
"The training workshop for the impact investors brought together representatives from the institutions that contributed to create the training materials, including public sector and industry associations, and the impact investors. The first goal was sharing information and create a connection between these actors".	knowing involving local pad global	Knowledge Activation
"The impact investors' panel and presentation to the SMEs typically took place one or two days before the financial fair event, as a way of breaking the ice between the parties and address last minute doubts, share concerns and see if any new information or procedure needed to be shared and discussed"	knowledge	through Collaborative
"Most of the financial institutions from the network were lacking a good understanding of the production cycle in forestry and had specific doubts about the assets they could target. So, when we went to structure the info session for the investors, we had preparatory meetings with the various speakers from the ministries and industry to make sure their content was going to focus on those same aspects, for example the production risks for certain trees and products" "The Access to Finance and the various trainings or workshops address a set of weaknesses and lack of financial literacy that affect the SMEs. The desired output of these activities is addressing those obstacles and reduce the distance between	Collective learning coordination in	
supply and demand of impact investing" "All the work behind linking the SMEs to standard setters and players with expertise on sustainable markets was to help the SMEs catching the opportunities of certified markets and developing the competencies to connect to buyers for value- added product. This was vital then to the investors' loans, as they preferred strongly working with certified firms and enabling their growth"	the spaces of knowing	
"While we need to wait and negotiate a real loan to know the real extent of what we learnt, we sure increased our competencies in accounting and also meet organizations and people that could help us in the future. We have a clearer understanding of how to prepare a loan application and for discussing with the investors".	Creation of collaborative	
"The training and the guide were very helpful. We had a better understanding now than we had before about the needs of these SMEs and the types of loan they are looking for."	knowledge on the demand	
"We are very happy of this entire process. We are positive about our possibilities to obtain a loan from one of the investors. Even if that won't happen, we still have learnt a lot in terms of how to access new financing and how it links to our commercial strategy".	and the supply side	
"The interest is too much, while we need the machines to improve our product and enter new markets we cannot repay at these conditions"	Supply side	•
intervention, but at these conditions the financing is unsustainable for us, we can only access working capital"	product requirements	Matching
contracts covering 120 to 140% of the amount requested" "Most of the firms we met did not present a good business plan, it is something they need to improve and work upon to		Supply and
access the financing" "They lack linkages to buyers and a full understanding of the sustainable trade dynamics, especially the chain of custody for the another and have to make the understanding of the sustainable trade dynamics.	Demand side's	Knowledge
"Some of the most critical weaknesses we found were: i) lack of consistent financial information; ii) terms and amounts requested not realistically aligned to the firm's commercial capacity; iii) the firm overestimated its capacity to get into debt. These are issues that can be solved with the right training at support, but at this point we cannot grant the loan"	adoption	

CHAPTER 6

THEORY DEVELOPMENT: ADVANCING THE STUDY OF GVCs, INTERNATIONAL STRATEGY, AND INNOVATION THROUGH FINANCIAL UPGRADING AND COLLABORATIVE LEARNING

This research generates multiple theoretical contributions to the literature of GVCs, IB, strategy, and innovation, which I summarize in Table 6.1. First, I develop novel theoretical insights with the new construct of financial upgrading (see Chapter 4). Financial upgrading refers to firms moving to more advanced and sustainable forms of financing to fund their production activities, including those aimed at the economic, social, and environmental upgrading that are the traditional focus of analysis. Financial upgrading advances the literature in three directions. It expands the understanding of organizational learning in the context of EM firms participating in GVCs by capturing a new form of creating SMEs' organizational capabilities. Second, financial upgrading's interaction with suppliers' economic, social, and environmental upgrading contributes to improving the holistic understanding of suppliers' upgrading, taking an EM SME perspective to capability creation and sustainability. Third, its enabling effect on the SMEs' proactive sustainability strategies provides new insights about the role of SMEs in advancing the SDGs agenda in IB vis-a-vis the role of MNCs.

Next, I discuss the theoretical implications of the new concept of collaborative learning (see Chapter 5). Collaborative learning captures the dynamic of inter-organizational knowledge creation that takes place at an aggregated inter-group level. Groups of SMEs and international impact investors learn in pre-configured spaces of knowing by drawing upon mutual and univocal, local and global, intra- and extra-GVC knowledge flows involving a multiplicity of

actors. These insights contribute to three theoretical debates. First, collaborative learning depicts new interactive mechanisms by which EM SMEs achieve sustainability-related innovation, advancing the literature that studies innovation in IB and GVCs. Second, it contributes to the study of multi-level and cross-border knowledge creation by identifying a new aggregated dimension of interactive learning that involves non-traditional actors and has important implications for generating financial and knowledge-based resources for sustainability. Finally, it expands the understanding of how interactive learning dynamics enable product and market innovation.

Research Area	Current Understanding in the Literature	Constructs Theorized in this Thesis	How the New Constructs Advances the Literature
EM SMEs Learning in GVCs	EM SMEs leverage participation in GVCs to access more advanced knowledge inherent to the production processes from buyers and standards, which they re- elaborate with the support of horizontal linkages at the location (Corredoira & McDermott, 2014; Perez- Aleman, 2011; Pietrobelli & Rabellotti, 2011; Pietrobelli & McDermott, 2017). Finance not explored as a dimension of learning and upgrading (Coe et al., 2014; Kano et al., 2020; Navas-Aleman et al., 2014).		Financial upgrading is a new form of creating organizational capabilities in managerial areas of the SMEs, which linkages explored in the existing literature do not stimulate. The new capabilities, while not immediately related to production, influence positively SMEs' capacity to shift to more sustainable forms of production.
EM SMEs Upgrading	Upgrading analyzed as separate economic, social, or environmental processes with a limited focus on outcomes (Barrientos et al. 2011; Gereffi et al., 2005; Humphrey & Schmitz, 2002; Ivarsson & Alvstam, 2010). Recent work began highlighting interdependence of economic-social and economic- environmental upgrading and increased the focus on EM SMEs' and suppliers' perspective to upgrading (Khan et al., 2020; Krishnan et al., 2022; Lund- Thomsen & Lindgreen, 2018; Nadvi & Raj-Reichert, 2015; Ponte, 2019).	Financial Upgrading (Process, Product, Channel)	EM SMEs' upgrading is a holistic process building upon the interdependence of financial, economic, social, and environmental upgrading. Financial upgrading is instrumental for SMEs to pursue upgrading projects that combine social, environmental, and economic goals responding to the SMEs' definition of sustainability, not their buyers'. In addition, a focus on SMEs' financial upgrading allows a privileged angle to examine the SMEs' perspective to upgrading and sustainability.
SMEs Contribution to Sustainability	SMEs are either the passive takers of lead firms' sustainability initiatives, or collaborators of MNCs in contributing to the SDGs (Buckley et al., 2017; Kolk, 2016; Montiel et al., 2021; Prashantham & Birkinshaw, 2019; Van Tulder et al., 2021). Recent emerging arguments that SMEs can play a more proactive role to generate sustainability outcomes and influence the structure of GVCs (Golgeci et al., 2021; Sako & Zylberberg, 2019a; Sinkovics et al., 2021; Soundararajan et al., 2018).		Financial upgrading influences the structure of GVCs by reducing suppliers' dependency on their buyers' financing and support. This enables SMEs' proactive sustainability strategies contributing to GVC sustainability voluntarily and independently of the demands of current buyers and what is legally required by private or public regulation.

Table 6.1 – Summary of Theoretical Contributions

Research Area	Current Understanding in the Literature	Constructs Theorized in this Thesis	How the New Constructs Advances the Literature
EM Firms Innovation in IB & GVCs	SMEs innovation driven by vertical linkages with MNCs owning more advanced technology with the facilitating role of local institutions. Innovation moves in the direction of developing products meeting MNCs' demands (Ambos et al., 2021; Brandt & Thun, 2016; Jandhyala & Phene, 2015; McDermott & Pietrobelli, 2017). Local-global knowledge flows and multiple actors at different locations, including SMEs, are increasingly relevant to the innovation process, which, however, is directed by the MNC (Bathelt & Cohendet, 2014; Cano-Kollmann et al., 2016; Kano, 2018; Perri et al., 2017; Petricevic & Teece, 2019).	Collaborative	Highly coordinated relationships with non- GVCs actors and without the direct involvement of MNCs are essential to determine EM firms' learning and innovation in the context of GVCs. SMEs' financing needs converging with impact investors' product innovation goals drive SMEs' learning. Impact investors from outside GVCs essential to orchestrate the innovation process by facilitating spaces of knowing. MNCs only operate on the backdrop of the process.
Cross- Border and Multi-Level Knowledge Transfers	Group-level learning in EM contexts unfolds through collective learning: Process of cumulative know-how creation in a spatial dimension thanks to the coordination of multiple actors to achieve a shared solution to a common problem (Capello, 1999; Dosi et al., 2000; Nelson & Winter, 1982; Perez-Aleman, 2011). Multi-level processes that foster cross-border knowledge creation focus on MNCs-driven processes of knowledge search and creation, neglecting EM perspectives, role of other actors, and interactive nature of knowledge creation (Alcacer et al., 2016; Amin & Cohendet, 2004; Grant & Phene, 2022).	Learning	New aggregated-level dynamics of cross-border knowledge creation and transfer contributing to GVC sustainability through coordinated collective learning in and between groups of international impact investors not participating in GVCs and groups of SMEs integrated into global production. Spatial collocation of participating actors is blurred and barriers to knowledge sharing and building bypassed through participation in spaces of knowing. Privately coordinated inter-group learning is driven by converging sustainability goals and leverages multiple extra-GVCs local and global linkages in the absence of MNCs' orchestration, providing an alternative model of innovating for sustainability in GVCs.
Impact Investing and Market Innovation	Impact investors' collective learning crucial to establish impact investing markets in developed countries, although little is known about how their financial products connect to organizations operating in production, such as EM SMEs (Agrawal & Hockerts, 2021; Casasnovas & Ferraro, 2022; Hockerts et al., 2022). Countless supply-demand market encounters and interactions with external actors owning technical knowledge are required to refine a product innovation until meeting the buyers' needs (Callon, 2017 & 2021).	Process of Knowledge Discovery, Activation, and Matching	Creating a market for a new financial innovation addressing the needs of EM SMEs requires connecting and coordinating supply- side innovation to demand-side learning. Incremental learning is essential to overcome barriers to connect supply and demand by matching the new product to the demand side's capabilities. By uncovering the related knowledge-based processes, I provide a granular view of the inter-organizational learning and knowledge creating dynamics that sustain and direct market encounters to achieve product innovation

Figure 6.1 – Summary of Theoretical Contributions (Continuation)

6.1. SMEs Sustainability Strategies in GVCs and Financial Upgrading

6.1.1. Financial Upgrading: A New Form of Building Capabilities in GVCs

Financial upgrading uncovers a new dimension of how EM SMEs build organizational capabilities essential for their sustainability. Confronted with sustainability challenges they cannot overcome due to the lack of financial resources within GVCs, SMEs must develop new capabilities to gain access to impact investments targeting their upgrading, a dynamic to which I refer as financial process upgrading. Their interactions with buyers in the GVCs, local support institutions, standard setters, and public policies seldom required, incentivized or stimulated learning instrumental in accessing sources of financing. The SMEs' financial needs push a new learning path to meet the impact investors' demands, moving the enterprises to new directions of knowledge creation.

Combined with traditional vertical and horizontal learning channels, financial upgrading supports the creation of capabilities that do not immediately map to production. To access impact investing, SMEs must develop organizational capabilities in the managerial area of the organization, such as business planning, auditing, and financial literacy. Such capabilities differ from the strictly production-oriented ones on which previous studies of upgrading have focused, such as industrial or in-farm processing capabilities or best agricultural practices (Corredoira & McDermott, 2014; Ivarsson & Alvstam, 2010; Perez-Aleman, 2011; Pietrobelli & Rabellotti, 2011). The literature's long-standing focus on inter-GVCs linkages associated with the creation and commercialization of products reduced the scope of SMEs' learning to know-how and know-why immediately related to the firm's ability to meet standards and buyers' requirements, add value through new products' features, and perform more technologically advanced segments of the production process. Instead, I show that SMEs also learn and pursue new capabilities in

areas instrumental to production, such as its financing, whose study requires exploring suppliers' interactions with extra-GVCs actors.

Financial actors such as impact investors play a crucial role in providing EM SMEs with knowledge for recombination and motivating organizational learning. Impact investors present a set of requirements to access their credit that SMEs do not experience when funding their production activities through credit flowing upstream from the MNCs. Developing the capabilities to meet such requirements is as important as acquiring the know-how to comply with buyers' requirements and access new markets. Such new capabilities contribute to unlocking financial resources to boost the development of production know-how and pursue other goals that buyers in GVCs will not support. The learning dimension of the SMEs' interaction with impact investors uncoils the importance of production financing modes in GVCs, a dimension of GVC organizing that was largely unexplored until now (Coe et al., 2014; Coe & Yeung, 2015; Kano et al., 2020). SME suppliers' financial upgrading through access to impact investments provides not only mere access to new financial resources to fund the firms' strategies. It also represents a form of building capabilities in EM new to the study of GVCs.

SMEs' learning unfolding through financial upgrading also has important implications on their ability to shift to sustainable production. While not immediately linked to production, the capabilities developed through financial upgrading ultimately reveal critical to it. Business planning capability, an essential impact investor's requirement, generates new know-how for the suppliers to conceive their production activities and commercial goals, with a critical move to longer-term planning previously absent for most SMEs. This influences the suppliers' future ability to pursue sustainability strategies and maximize value capture in GVCs. For example, sixteen SMEs studied in Chapter 4 that upgraded their financial processes and prepared sound

business plans in support of their loan applications also reported an increased capacity to assess the strengths and weaknesses of their commercial profile and an improved ability to plan, fund, and implement long terms projects of environmental upgrading. Similarly, auditing and financial literacy capabilities enable lifting SMEs from the 'missing middle' and including them in financial markets, which opens new opportunities for funding the adoption of more sustainable agricultural techniques and connecting value addition to social and environmental upgrading projects. In addition, the new capabilities help SMEs gauge the financial risk of their operations and manage their funding more efficiently. As a result, the SMEs see a reduction in the risk of indebtedness to which they are traditionally exposed in agro-industrial GVCs, and increased resources to reinvest in social and environmental upgrading. Such aspects increase our understanding of how the financing of production, especially when originating from extra-GVCs sources, influences suppliers' upgrading, addressing a significant gap in the study of GVCs and their sustainability (Coe et al., 2014; Kano et al., 200; Navas-Aleman et al., 2014).

6.1.2. Enabling a Holistic EM SME's Perspective to Supplier Upgrading

The construct of financial upgrading draws attention to how the different upgrading types (economic, social, environmental, and financial) are interwoven in one firm's attempt to build new capabilities and achieve positive commercial and sustainability outcomes. EM SMEs seek access to impact investing in enabling strategies that crosscut the rather rigid economic, social, and environmental boundaries of learning and value capture set in the scholarship. SMEs request loans to build up a portfolio of capabilities and infrastructures aiming at market competitiveness and productive resilience. Such goals combine environmental, social, economic, and financial dimensions. For example, various coffee SMEs studied in Chapter 4 seek product upgrading by simultaneously relying on the adoption of more environmentally friendly production practices in

compliance with niche buyers' requirements (i.e., organic or biodynamic production integrating environmental upgrading processes), quality improvements through more efficient processing technologies (i.e., more advanced drying and milling machinery, qualifiable as economic upgrading), and branding of the coffee product's social features originating from communitarian program (i.e., a gender inclusion programs or a new educational project targeting rural youth). In addition, the SMEs seek long-term plans such as reforestation of the cultivated areas to ensure productivity against climate change and design more participatory decision-making processes within the firm or cooperative. Such additional goals, also identifiable as environmental and social upgrading processes, do not address buyers' or standards' requirements. Yet, they are as important in the SMEs' upgrading plan. Moreover, financial upgrading is core to the SMEs' upgrading effort, as it enhances the feasibility of other upgrading attempts. Financial upgrading represents the lowest common denominator of the SMEs' strategies by unlocking the resources to pursue complex combinations of interconnected economic, social, and environmental upgrading.

From an EM SME perspective, upgrading types intertwine into complex projects that engage holistically with economic, social, environmental, and financial processes and outcomes. SMEs' economic, social, environmental, and financial upgrading are not mutually exclusive and independent goals. They reinforce each other toward achieving more sustainability. Such interdependence represents an element of novelty in the literature. The study of GVCs has focused on the nature of separate processes of suppliers' economic, social, and environmental upgrading to describe how firms' participation in GVCs activates their shifts to higher value activities, improved working conditions, and reduced ecological footprint, generating economic and sustainable development outcomes as a result (Barrientos et al., 2011; De Marchi et al., 2019; Humphrey & Schmitz, 2002; Gereffi et al., 2005; McDermott & Pietrobelli, 2017; Lee & Gereffi, 2016; Pietrobelli & Rabellotti, 2011). Recent work began to highlight the intertwining of specific upgrading forms, such as in the case of suppliers' economic and social upgrading (Lund-Thomsen & Lindgreen, 2018) and economic and environmental upgrading (Khan, Ponte, & Lund-Thomsen, 2020). The desired social or environmental outcomes driven by buyers' requirements often entail the supplier's adoption of production processes that are not financially viable and set forth economic downgrading dynamics (Khan et al., 2020; Ponte, 2019). Equally important, seminal contributions are bringing for the first time to the fore of the debate the importance of the perspective from which we look at upgrading, emphasizing the need to address better the viewpoint of suppliers in EM (Nadvi & Raj-Reichert, 2015). This stream of work signals that the creation of supplier-level capabilities leading to compliance with process and product standards can generate positive upgrading outcomes from a buyer's perspective but simultaneously determine downgrading outcomes from a supplier's perspective. Despite adopting practices meeting buyers' requirements, suppliers often fail to capture more value and suffer from decreased social and environmental performances (Khan et al., 2020; Krishnan et al., 2022). The concept of financial upgrading further advances such a line of research. It uncovers the instrumentality of financing to the interdependence of economic, social, and environmental upgrading, expanding the scope of research on firms' upgrading.

Financial upgrading also allows a better appreciation of the EM SMEs' perspective on upgrading and sustainability in GVCs. Despite the commitment of lead firms and multistakeholder programs, financial barriers persist in GVCs that hinder the suppliers' pursuit of sustainability beyond what they are requested from their buyers. SMEs primarily fund their production and upgrading through credit from their buyers. However, buyers tend only to finance

activities addressing their commercial needs and external pressures to operate more sustainably (Meyer & Gereffi, 2008; Ponte, 2019). Scholarly analyses of upgrading focus just on those processes initiated within GVCs that SMEs afford through the intra-GVCs financing of production. Such an analytical approach impedes looking at the complexity of the SMEs' goals, as numerous projects they pursue remain unfunded. By shifting the attention to the SMEs' search for alternative extra-GVCs sources of financing, such as impact investing, it becomes possible to observe how EM SMEs conceive upgrading beyond what they afford to implement by relying on their buyers' support only. Examining the financial dimension of SMEs' upgrading, i.e., what activities SMEs wish to fund and how they pursue the needed financing, provides an advantage point from which to interpret the challenges and enablers of SMEs' upgrading.

6.1.3. Financing Suppliers' Proactive Sustainability Strategies: Re-Thinking SME-MNC Relations

Financial upgrading constitutes a new factor reconfiguring the structure of GVCs by altering the balance of power between SMEs and MNCs. The SMEs' shift to new, exclusively financial ties to impact investors introduces a new financial flow from outside the GVC into the set of inter-firm relationships that structure trade and production. The primary effect of the new ties between SMEs and impact investors is the reduced dependency of the SMEs on credit flowing within the supplier-buyer linkage to funding their production operations. SMEs increase their bargaining power vis-à-vis their buyers in GVCs, as credit is no longer part (or it still is but in a reduced amount) of the negotiation concerning the purchase of the underlying good. This reconfigures the buyer-supplier relationships in favor of the suppliers, improving the fairness of the relationship between SMEs and buyers. It also allows SMEs to change the nature of their function in the chain. From being recipients of trade finance / seasonal credit from inside the

chain in exchange for their seasonal production, the SMEs move to a more independent supplying function, where the subject of the negotiation with the commercial counterparts is about the specification of the product, not the financing required to produce it.

The reconfiguring effect of SMEs' financial upgrading improves the understanding of the factors influencing the structure and sustainability of GVCs. Recent literature has highlighted that suppliers' purchasing and diversification strategies concerning products and markets can alter the governance of GVCs (Kano, 2018; Kano et al., 2020; Sako & Zylberberg, 2019a). EM SMEs also can play a substantial role in shaping the definition and improvement of sustainability standards in GVCs, as they are better placed to understand the challenges of learning and developing sustainability-related capabilities (McDermott & Pietrobelli, 2017; Sinkovics et al., 2021; Sinkovics et al., 2016; Soundararajan et al., 2018). My Thesis shows that SMEs' interaction with emergent impact investors empowers them to pursue their proactive sustainability strategies more efficiently, creating a room within GVCs for SMEs to produce contributions to sustainability that are not driven by MNCs' priorities and depend upon the SMEs' interpretation of what it takes to become more sustainable.

SMEs' proactive sustainability strategies are strategies emphasizing the firm's economic, social, and environmental upgrading voluntarily and independently of the demands of current buyers and what is legally required by private or public regulation (Golgeci et al., 2021; Sako & Zylberberg, 2019b). Their realization is usually challenged by the lack of financial resources and support from their buyers. With financial upgrading reducing or eliminating their dependency upon buyers' financing, SMEs can pursue their goals by proactively contributing to the sustainability of production. In this sense, impact investing broadens the spectrum of actors able

to generate positive social and environmental outcomes in GVCs by creating the material and structural conditions for EM SMEs to contribute toward the SDGs.

The argument that alternative SME-tailored forms of financing production unleash EM SMEs' contribution to GVC sustainability adds a new dimension to the scholarly conversation about achieving the SDGs in International Business. The leadership of the sustainability transition in GVCs is almost unanimously entrusted to MNCs, which would be the bestpositioned actors to re-shape the organization of production to achieve the SDG (Buckley et al., 2017; Giuliani, 2018; Kolk, 2016; Montiel et al., 2021; Scherer & Palazzo, 2011; Van Tulder et al., 2021), despite their commitment and capacity to lead showing weaknesses, delays, and a lack of efficiency (Van Tulder et al., 2021). Instead, the concept of financial upgrading reinforces the emergent idea that EM SMEs and suppliers, when accessing the required financial resources, can fulfill their potential as innovators and sustainable leaders in GVCs (Anand et al., 2021; Sinkovics et al., 2021; Soundarajan et al., 2018). Going forward, research on the SDGs in GVCs and IB must consider how MNCs are not the only actors able to develop solutions to the sustainability challenges in global trade and production. Moreover, MNCs' efforts to advance the SDGs agenda cannot be fully appreciated and assessed without examining how MNCs' financing of their GVC activities influences their suppliers' sustainability-related capabilities and upgrading outcomes.

6.2. Connecting Supply & Demand of Impact Investing through Collaborative Learning

6.2.1. Innovation Dynamics at the Intersection of GVCs and Location

The new construct of collaborative learning shows that highly coordinated relationships with non-GVCs actors and without the direct involvement of MNCs are essential to determine EM firms' learning and innovation in the context of GVCs. Funding and product innovation needs drive SMEs and impact investors' learning (see Chapter 5), emerging as an alternative driver of SMEs' knowledge creation. They integrate the vertical commercial requirements from MNCs and voluntary sustainability standards examined in the existing literature, which operate in combination with the complementary facilitating role of local actors to boost firms' learning (Ambos et al., 2021; Anand et al., 2021; McDermott et al., 2009; McDermott & Pietrobelli, 2017; Perez-Aleman, 2011 & 2013; Jandhyala & Phene, 2015). Collaborative learning thus represents a novel dynamic of inter-organizational knowledge creation taking place at the aggregated inter-group level in pre-configured spaces of knowing by drawing upon mutual and univocal, local and global, intra- and extra-GVC knowledge flows involving a multiplicity of actors. The impact investors nurture interactivity by establishing the spaces of knowing and orchestrating the collective learning taking place on the supply side of impact investors and the demand side of SMEs. Knowledge exchange is coordinated to create the capabilities addressing the needs of the impact investors and the SMEs, creating the conditions for the members of the two groups to refine and deploy a financial innovation (impact investors) and to adopt it, unlocking funding for upgrading as a result (SMEs).

The supply-demand structure featuring the SMEs' financing needs vis-à-vis the impact investors' financial products drives EM SMEs' learning goals and inter-organizational knowledge sharing and building. It steers innovation towards sustaining a new financial innovation to enable SMEs' shift to sustainable production in GVCs. SMEs seek access to sustainable funding sources to finance their strategies. Impact investors must develop their impact investing products to satisfy the SMEs' needs without jeopardizing their financial bottom line. The underlying learning processes involve a highly diverse set of local and global actors, including public organizations, industry associations, government officials, NGOs, and

consultants at the location, and standard setters, consultants, international NGOs, and intergovernmental programs at the global level. MNCs are not involved in the process of knowledge creation, nor are direct national policies.

Such dynamics constitute an innovation mode alternative to those examined so far in the literature. Existing contributions focus on the buyers' orchestration of knowledge flows to foster innovation in GVCs, with special attention to how MNCs tap vertically into geographically dispersed knowledge and integrate the inputs of individuals, firms, and communities to develop new products and services (Alcacer, Cantwell, & Piscitello, 2016; Bathelt & Cohendet, 2014; Cano-Kollmann et al., 2016; Kano, 2018; Petricevic & Teece, 2019; Van Assche, 2017). Instead, in the context studied in this Thesis, MNCs only operate on the backdrop of the SMEs' interactions with impact investors and extra-GVC local and international actors. MNCs are relevant just as buyers of the SMEs' products, which have them passively providing collateral for the SMEs' repayment obligations to the impact investors.

Important work has also emphasized the role of policies in stimulating firms' learning at the location beyond or in combination with their interactions with GVC buyers (De Marchi & Alford, 2022; Kano et al., 2020; Jandhyala & Phene, 2015; Pipkin & Fuentes, 2017; Pietrobelli & Rabellotti, 2011). In the empirical context I examined, policies do not appear important. Local government does provide support to learning and innovation through the technical competencies of mid-level officers that participate in know-how sharing in the spaces of knowing. However, that happens outside of any specific policy initiative and as an autonomous choice to contribute by the individual officials that consider the activities as part of their natural tasks. Rather, it is extra-GVCs impact investors that play the essential role of orchestrating new linkages and

coordinating knowledge exchange in the spaces of knowing, playing a pivotal role in engineering innovation.

Impact investors emerge as crucial actors in facilitating the innovation process and fostering capability building in SMEs, despite them not being involved in GVCs activities nor in public policy making. Their role is consistent with the recognition that new actors and locations increasingly contribute to the development of new technologies due to the progressive dispersion of the innovation processes (Ambos et al., 2021; Andersson et al., 2016; Cano-Kollmann et al., 2016; Perri et al., 2017; Scalera et al., 2018). However, while studies of the geography of innovation focus on the innovation goals that MNCs seek in the global arena, my analysis indicates that SMEs' and impact investors' converging goals are those shaping the structure of local-global knowledge interactions. SMEs and impact investors navigate knowledge dispersion and use it to overcome the traditional lack of material and financial resources for innovating and moving to sustainability. The pre-condition to their success is the coordination of multiple actors to access and create knowledge. Extra-GVCs actors and diversity of knowledge content and sources matter for creating new know-how and generating new resources for upgrading in GVCs without the involvement of MNCs.

6.2.2. Aggregated-Level Processes of Cross-Border Sustainability Knowledge Creation

Collaborative learning highlights new aggregated-level dynamics of cross-border knowledge creation and transfers contributing to GVC sustainability through the involvement of non-traditional actors. Knowledge creation unfolds through learning in and between groups of international impact investors not participating in GVCs and groups of SMEs integrated into global production. Essential to such learning is the establishment and nurturing of linkages to actors at the local and global levels. The interactivity that originates and the subsequent knowledge flows are coordinated by the need to address the SMEs' funding needs and the impact investors' financial innovation goals. These inter-groups and multi-level dimensions of knowledge creation are new to the literature. Seminal contributions studied group-level learning in EM contexts by leveraging the concept of collective learning, which describes the process of creation of cumulative know-how in a spatial dimension through the coordination of multiple actors to achieve a shared solution to a common problem (Capello, 1999; Dosi et al., 2000; Nelson & Winter, 1982). For example, SMEs in Nicaragua's dairy sector confronted the common challenge of making sense of knowledge enclosed in international standards, which boosts their interactivity to build actionable know-how out of codified foreign knowledge (Perez-Aleman, 2011). Instead, I find collective learning happening not independently in one group at the location but coordinated across two separate groups of actors whose spatial collocation is blurred and whose common knowledge barriers differ.

The coordination of SMEs and impact investors' collective learning relies upon their mutual knowledge sharing and the involvement of other local and global actors in pre-configured spaces of knowing (Amin & Cohendet, 2004), which the impact investors facilitate to overcome spatial and connectivity barriers to local-global interactivity. The SMEs group comprises firms located in different rural regions within the multiple countries targeted by the impact investors. The SMEs lack the capabilities to access and manage loans and face weak or absent knowledgebased resources. They suffer from a lack of connection to support institutions and material infrastructure. The second group is composed of international impact investors, which are global actors not sharing a common location and suffering a lack of understanding of the target investees and their markets, as well as weak connectivity to national support institutions at the SMEs' location. The spaces of knowing bypass the traditional spatial element that characterizes

collective learning by providing physical and virtual fora to connect the two groups and other relevant sources of knowledge, overcoming the existing barriers to knowledge sharing and cocreation. In particular, they operate as a leeway bridging multiple groups of actors to overcome a lack of material resources, physical distance, and weak inter-organizational. Such interactivity unfolding in and around the spaces of knowing describe how individuals, communities, and organizations interact at the location and globally, within and beyond the GVCs, seeking mutual or univocal knowledge sharing and creation through the '*generative dance*' of knowledge and knowing (Cook & Brown, 1999). Remarkably, these mechanisms underlying the notion of collaborative learning improve the understanding of the multi-level processes that foster cross-border knowledge creation, promoting the integration of a social-constructivist approach to knowledge in the literature of International Business (Grant & Phene, 2022).

Collaborative learning unleashes a collaborative approach to overcome weaknesses in how production is organized in GVCs by addressing a crucial factor of sustainable production, i.e., the financing of production activities. The coordination of multiple groups' collective learning reinforcing each other through mutual knowledge exchange and overstepping the spatial boundaries of the location builds upon the alignment of the groups' sustainability goals. The push for more sustainability in agro-industrial GVCs is the leading force motivating and enabling the SMEs' and impact investors' collaborative stance. The convergence of the two groups' goals structures the direction of collective learning toward capabilities needed to enable market transactions, i.e., the deployment of impact loans essential to grow new firm-level sustainabilityrelated capabilities and expand participation in sustainable markets and GVCs. In this sense, collaborative learning is an aggregated and piloted dimension of collective learning, which builds upon different actors' shared goals and commitment to sustainability (deploying/receiving

impact investments) to foster the required interactivity across multiple spaces of knowing. This pinpoints a new aggregated level of cross-border sustainability-related knowledge creation essential to advance the SDGs agenda in international business and strategy. Privately coordinated inter-group learning leveraging multiple extra-GVCs local and global linkages in the absence of MNCs' orchestration is an alternative model of innovating for sustainability in GVCs.

6.2.3. A Knowledge-Based Process to Match Financial Innovation to Sustainability Needs

Inter-group and multi-level dynamics of organizational learning are essential to matching supply and demand in a nascent market. They support the efforts to generate resources for the sustainability transition in EM and expand sustainable markets. The SMEs and impact investors I studied confront the challenge of connecting a new impact investment product to the EM SMEs' financing needs and capabilities to adopt and manage such innovation. I find that an incremental and progressive process of collective learning on the demand and the supply side is essential to connecting the supply and demand of an innovation. Collaborative learning consisting of intense within-group and inter-group interactivity and the coordination of the emerging knowledge flows is required to refine the impact investors' financial products and the SMEs' capabilities to adopt it. In particular, impact investors and SMEs need constant mutual interactions as well as interactions with external actors at the location and globally to access specialized knowledge that helps them overcome barriers to the deployment and adoption of the new product. Coordinated interactivity must hold and continue until the matching is complete, i.e., the new financial product connects to the market by making new financial resources available for SMEs seeking more sustainability. Creating a market for a new financial innovation addressing the needs of EM SMEs relies upon supply-side and demand-side coordinated innovation achieved through highly diverse local-global knowledge interactions and incremental learning.

These dynamics integrate recent contributions pinpointing the importance of learning and interactivity to create, support, and expand market transactions. For example, financial organizations' collective learning was critical to fostering the emergence of the impact investing market in the UK by enabling supply-side actors to *"understand what works, and for whom,"* shaping their actions in the new market (Casasnovas & Ferraro, 2022; p.830). My findings show that coordination with demand-side learning is as essential as impact investors' collective learning to connect sustainability-related financial innovations to their beneficiaries, an aspect that the study of impact investing has overlooked (Agrawal & Hockerts, 2021; Casasnovas & Jones, 2022; Hockerts et al., 2022). While impact investors present a rather heterogeneous set of capabilities and goals shared within the domain of financial markets, the demand side comprising firms operating in the production domain features a very different baseline of capabilities and challenges to adopting new impact investing products. I account for how supply-side and demand-side learning converge to enable the deployment of impact investing that funds SMEs' creation of sustainability-related capabilities and products.

In addition, I offer a granular view of the knowledge interactions and inter-organizational arrangements that sustain the progressive tailoring of a new product to its buyers' needs. More specifically, I highlight how demand-side and supply-side organizations achieve a collaborative approach to overcome barriers to knowledge interactivity, connect to external sources of knowledge situated on different levels (local, regional, global), and coordinate the subsequent interactions to engineer a shared solution to a sustainability challenge. These insights integrate Callon's concept of market encounters. Callon theorizes that product innovation is the ultimate driver of market activities and structures by pushing repeated interactions between supply and demand to generate individual products satisfying the buyers' needs (Callon, 2017). Therefore,

countless market encounters between supply and demand and between them and external actors owning technical knowledge are critical to achieving product innovation and sustaining the sale of the new product (Callon, 2021). My work supports the relevance of the market encounter's idea and illustrates the knowledge-based nature and inter-firm arrangements that underly it. However, knowledge creation and the underlying interactivity that I capture with the construct of collaborative learning do not account entirely for the success or failure of the market encounters (see Chapter 5). Structural factors such as pre-existing SMEs' indebtedness, remoteness, and lack of collateral were also essential to determine the failure of matching efforts. This aspect suggests that the action of private actors also requires policy solutions to address issues that incremental innovation through market encounters alone cannot solve, as I discuss more extensively in Chapter 7.

Private actors, i.e., impact investors, drive the coordinating action that is essential to organize and direct the market encounters toward the desired outcome of matching investors' products to SMEs' capabilities. Impact investors orchestrate the discovery of untapped knowledge sources and nurture local-global, and supply-demand interactivity activating cognitive resources essential for knowledge creation. This is consistent with insights that uncover the essential entrepreneurial role of private actors in initiating innovation strategies in resource-constrained geographical regions (Foray, 2014 & 2018). Private sector coordinated knowledge discovery, activation, and matching to the demand side's needs help overcome the lack of resources typical of EM contexts. It unlocks new financing and know-how for reorganizing production to contribute to economic and sustainable development (Amin & Cohendet, 1999 & 2004; Amsden, 1992; Bathelt & Cohendet, 2014; Cohendet & Llerena, 1997; Foray, 2014; Saxenian, 2007).

CHAPTER 7

FUTURE RESEARCH AND PRACTICAL IMPLICATIONS

This thesis' goal was to answer the question: *How does impact investing influence the* sustainability of SMEs in GVCs? My answer rests on the new notions of SMEs' financial upgrading and impact investors' and SMEs' collaborative learning. I suggest that EM SMEs' new linkages to impact investors generate alternative financing channels that unleash the SMEs' contribution to sustainability beyond (and sometimes, despite) the demands and governance of MNCs. Impact investing can address the entrenched lack of financing for social, environmental, and economic upgrading, enabling SMEs' holistic approach to building capabilities to achieve more sustainability. Complex learning dynamics at the SME level and inter-group level involving local-global and intra- and extra-GVC cross-border knowledge flows are critical to sustaining the new relationships between SMEs and impact investors. Building on such insights, I argue that impact investors have the potential to become essential players in the sustainability transition in GVCs by unlocking critical financial and knowledge-based resources that EM SMEs struggle to access in their vertical GVC linkages. The emergent potential of the SMEs-impact investors relationships also helps rebalance the focus of analysis in the study of sustainability and innovation in GVCs, signaling that MNCs and their governance of production are only one part of the story. EM SMEs and financial organizations such as impact investors proposing an alternative way of financing production are as important to advance the SDGs agenda independently from or in collaboration with MNCs. I am convinced that these arguments open new research avenues that could further improve our understanding of sustainability and innovation in GVCs. I discuss more in detail in section 7.1. the future research topics that I

consider most promising and relevant. Moreover, my findings have multiple practical implications for policymakers and development professionals, MNCs, and impact investors, which I illustrate in sections 7.2., 7.3., and 7.4.

7.1. Future Research: Exploring the Finance-Production-Sustainability Nexus in GVCs

This Thesis focuses on how financial impact investments connect to the domain of production and develops a new theoretical toolkit that advances the understanding of the nexus between finance and sustainability in GVCs by building on the existing notions of learning and upgrading. The way finance shapes GVCs and sustainability have been long neglected in the study of global production and innovation (Coe et al., 2014; Kano et al., 2020; Navas-Aleman et al., 2014). Similarly, the more recent study of impact investing has focused on dynamics taking place within financial markets, losing track of how finance set forth dynamics of sustainable development by feeding substantial change in how we organize production (Agrawal & Hockerts, 2021; Casasnovas & Jones, 2022; Hockerts et al., 2022). My contributions began to address those gaps by providing a theoretical explanation of how impact investing influences SMEs' sustainability and upgrading in agro-industrial GVCs and how impact investors and SMEs reduce the breach separating supply and demand of financial innovation. Yet, there are many dimensions of the finance-production-sustainability nexus that remain unanswered.

First, more research is needed on the limitations of impact investment models whose requirements marginalize SMEs featuring a low capability baseline and pre-existing structural issues such as severe indebtedness. My Thesis focuses on financial upgrading from an EM SMEs perspective, examining what it takes for SMEs to access impact investing and the implications on their strategies and inter-firm linkages that the relation with the impact investors produces. However, SMEs that most need financing to overcome their sustainability barriers are also those that often fail to access the investments due to the rigid profitability criteria applied by the impact investors. In fact, supply-side specific constraints to connect impact investing to SMEs are a critical factor perpetuating the financial exclusion of thousands of rural SMEs (see Chapter 5). Therefore, we must improve our understanding of the processes and challenges impact investors go through to adjust their procurement policies, product features, and inter-organizational relationships to expand the spectrum of their beneficiaries. What internal processes do impact investors improve to serve SMEs in agro-industrial GVCs better? What capabilities must they develop, and what factors do enable or hinder their learning? The internal processes of impact investors' targeting EM SMEs constitute an ideal unit of analysis to appreciate financial upgrading from the investors' viewpoint.

Second, future work could develop macro-level evidence of how financial channel upgrading influences the structure and relational arrangements of GVCs by modifying the distribution of power among lead firms and suppliers. The notion of power in GVCs has drawn lot of attention in recent years to analyze the structural dynamics originating and perpetuating socio-economic inequality in GVCs (Dallas et al., 2017; Ponte, 2019). The emergent phenomenon of impact investing adds a new layer to the conversation about power and governance configurations. Impact investing shows the potential to alter the nature of supplierbuyer relationships by improving the suppliers' bargaining power and enhancing their agency and ability to condition the structure of the chain. The reconfiguring effects of financial upgrading on GVCs' interfirm linkages should be studied more in depth and tested empirically in its outcomes at the industry level. For example, suppliers' reduced dependency on buyers' financing through access to impact investing, which I argue indicates the reconfiguration of

buyer-supplier relations, should be measured against the suppliers' ability to capture less or more value as a consequence of their participation in GVCs.

Third, more research should look at governments' and MNCs' policies to foster more sustainable forms of financing production in GVCs, either by partnering with impact investors or following their model. My thesis studies SME-impact investor relationships amidst the weaknesses of the dominant forms of financing production in MNC-dominated agro-industrial GVCs and insufficient public support to overcome existing sustainability barriers. Governments and MNCs, however, are increasingly looking at extra-GVCs private financing as a solution to suppliers' struggles to upgrade. EM governments explore blended-finance solutions and try to develop policies enabling the mobilization of green finance, while MNCs began to partner with peers and financial institutions to establish impact investment funds (FAO, 2018b; ITC, 2021; SAFIN, 2019). It would be essential to understand the trade-offs that MNCs confront when moving to alternative, more sustainable ways of financing their value chains and how these new models differ (or not) in terms of supplier-level outcomes from traditional intra-GVC financing. Equally important, it should be explored how national governments and intergovernmental organizations enable SMEs-impact investors connectivity and how the underlying policies interact with GVCs policies (Pietrobelli et al., 2021).

Fourth, the interwoven nature of EM SMEs' financial, economic, environmental, and social upgrading should be analyzed in the context of GVCs featuring different types of governance to verify how suppliers' proactive sustainability strategies adapt to hierarchy, captive, relational, modular, market, and multipolar governance modes (Gereffi et al., 2005). Central to the argument I make about financial upgrading is its ability to reconfigure the governance of agro-industrial GVCs in favor of suppliers and enable SMEs' independent

contributions to sustainability by producing interdependent economic, social, and environmental outcomes. These dynamics emerging in sectors such as coffee and forestry could be hindered or enhanced in the automotive, pharmaceutical, or apparel industries. In particular, GVCs other than agro-industrial could feature profoundly different modes of financing production. Would financial upgrading be as instrumental in enabling suppliers' holistic upgrading projects?

Finally, more research is needed on how EM SMEs pursue sustainability-related innovation without MNCs' support. GVCs research on EM innovation has a dominant focus on vertically induced innovation, whereby SMEs benefit from the more advanced knowledge of MNCs to create new products and services (Ambos et al., 2021). SMEs would require proximity to MNCs' technological knowledge to overcome the lack of resources and infrastructure characterizing EM contexts (Pietrobelli & McDermott, 2017). However, the notion of collaborative learning and the underlying process of knowledge discovery, activation, and matching that I elaborated reverse the view that EM are knowledge, infrastructure, and resourceconstrained contexts. Rather, EM often are contexts where knowledge, resources, and infrastructures are present but uncoordinated and disconnected. Discovering and activating them is a complex but relatively doable process driven by sustainability needs and with the potential to unlock untapped technical know-how and linking it to the creation of new capabilities, even without the involvement of the MNC. In an age where knowledge flows trespass the traditional boundaries and limitations of the firm and the geographical location, EM firms can form and nurture local and global linkages where once was not possible. Future research should expand the study of how SMEs establish and manage local-global interactions involving multiple types of actors at different locations to generate sustainability-related innovation, overcoming the scholarship's MNC-centric focus.

7.2. Implications for Sustainable Development and Policy Makers

The new constructs of financial upgrading and collaborative learning highlight critical aspects of EM SMEs' sustainability, which national governments, intergovernmental bodies, and NGOs should consider when designing policies and interventions promoting economic growth and sustainability. Financial upgrading shows the potential of impact investing and other forms of sustainability-driven financing to enable SMEs' upgrading, as well as the barriers to accessing impact financing. In particular, it casts light on the need to support capabilities creation in areas other than just production. In addition, collaborative learning suggests the importance of improving EM SMEs' connectivity to local and global knowledge flows and coordinating their learning to build the capabilities for accessing impact investing. The challenges of matching the supply and demand of impact investing in the context of agro-industrial GVCs further indicate that learning might not be enough, pushing for broader solutions involving multiple actors. I discuss these aspects, focusing on how policymakers and development practitioners can contribute toward maximizing the potential of impact investing targeting rural SMEs in EM.

First, policymakers, development agencies, and NGOs should formulate targeted programs to create capabilities for accessing impact investing at the SME level. While this seems obvious, traditional development and sustainability programs focus on building capabilities in production and creating access to essential infrastructures, such as health and education. Although such areas of intervention remain pivotal, scant attention has been paid to the knowhow required to access SME-level investments, including the creation of financial literacy, accounting, and business planning capabilities that I identify as critical to financial process upgrading. Except for programs to enable access to microfinance, policymakers and
developmental agencies struggle to connect their work to the financial dimension of production, i.e., how production and trade are funded (Navas-Aleman et al., 2014).

Creating such programs and policies also involves linking to new actors, such as the impact investors, to determine critical areas of intervention for capability building and help adjust impact investing supply to the SMEs' needs. For example, national policymakers and UN agencies could develop participatory fora, including SMEs representatives, impact investors, and industry, as well as civil society and public players owning the competencies to build the needed capabilities. The fora would offer an opportunity to clarify the impact investors' requirements and the SMEs' challenges and build roadmaps that structure inclusive capability building at the SME level. Impact investors' commitment to the initiative is a necessary pre-condition that nobody guarantees. However, my data indicate that impact investors struggle to connect to agro-industrial GVCs. Therefore, they could find a win-win situation in a partnership with their beneficiaries, the public sector in the targeted countries, and other relevant stakeholders. I elaborate further on this in Section 7.3.

The previous point introduced the essential learning challenge that hinders the connection of supply and demand of impact investing. Collaborative learning shows that giving SMEs access to local and global knowledge flows and coordinating the interactivity that originates is essential to build the capabilities for financial process upgrading and to build the conditions on both the demand side and the supply side of impact investing in deploying new financing. Intergovernmental organizations, such as UN agencies and international NGOs are in a great position to address such a need for interactivity. In my study, the impact investors leveraged the process of the Financial Fairs to create new linkages, tapping into previously unexploited pools of knowledge. UN agencies and international NGOs traditionally operate locally and internationally, accessing and interacting with multiple specialized organizations owning technical knowledge. For example, universities, public research centers, and industry associations are traditional partners of the UN for program design and implementation in EM. Global NGOs, foundations, non-profit consulting firms are traditional global partners instead. Intergovernmental bodies and international NGOs could design programs to connect their local and global networks to SMEs participating in GVCs, as a key component of any intervention trying to bridge impact investors and SMEs.

Yet, enabling and coordinating learning and capabilities creation could not be sufficient to unlock impact investing in GVCs. The analysis in Chapter 5 shows that pre-existing factors that have little to do with knowledge jeopardize the matching of impact investors and SMEs. For example, excessive SME indebtedness or remoteness makes SMEs uninvestable. In addition, impact investors still apply processes and criteria of investee selection that prioritize financial return over risk-taking justified by impact creation. National governments, regional bodies, and inter-governmental organizations such as IFAD could contribute to addressing these issues by partnering more with impact investors. For example, blended finance solutions, i.e., investments where the public sector matches the capital made available by a private impact investor, have shown to be helpful in reducing the burden of risk on the impact investor. This stimulated more impact-oriented approaches that are more likely to fully address the SMEs' needs (FAO, 2018b; SAFIN, 2019). Public-private partnerships to develop new blended solutions can contribute to connecting the 'missing middle' to the financial resources for the sustainability transition.

Inter-governmental agencies working for more inclusive and sustainable GVCs should also integrate the concept of financial channel upgrading into the design of their intervention. Financial channel upgrading argues that SMEs' direct access to impact investments rebalances agro-industrial GVCs by reconfiguring the SMEs' relationships with their buyers. SMEs' dependency on buyers and lead firms has a lot to do with SMEs not being able to fund their production without the credit provided by the buyer (Bird & Soundararajan, 2020; World Bank, 2015; FAO, 2018b; ITC, 2021). As SMEs shift to more sustainable and less costly sources of financing, they gain bargaining power in the vertical relationship with the GVC counterpart. This can translate into more economic gains from participation in GVCs, which SMEs can reinvest in upgrading. Exploring alternative sources of financing from outside the GVCs and which are more advantageous for SMEs operating as suppliers should be a priority for UN officials in organizations such as ITC, UNIDO, and UNCTAD, which for decades have worked towards maximizing the economic and social benefits of globalization for firms and communities in EM.

Impact investors represent a new pawn in the chessboard of sustainable GVCs. By introducing financing that pursues the creation of positive social and environmental outcomes, they generate changes to how GVCs are organized. They can unleash the contribution of SMEs to the SDGs, reconfigure inter-firm vertical linkages more fairly, and drive learning and knowledge creation where resources to do so have been lacking. At the same time, many barriers hinder the fulfillment of such potential. Connecting impact investors and SMEs posit learning, coordination, and infrastructural challenges. Impact investors' approaches are still conservative regarding risk-taking and the ability to fully address the SMEs' needs. Future policies and developmental approaches must factor in the opportunities and dark sides of impact investing.

7.3. Implications for MNCs

MNCs confronting the social and environmental issues of their GVCs should rethink how they finance suppliers' operations and upgrading. In agro-industrial GVCs, most MNCs channel financing flows upstream the chain to fund production activities by SMEs and producers'

organizations. In its most common configuration, the nature of buyers' financing exacerbates the fragilities of SMEs. In particular, the repayment obligations it generates and the type of activities it funds can represent a barrier to the SMEs' ability to create new sustainability-related activities and upgrade. Repayment rates can be very high despite food price volatility and natural disasters affecting production. Working capital to secure the following year's yield is the most common type of funding provided, but it does not address many of the SMEs' sustainability issues. Because of GVC financing generated by the MNC, many SMEs enter spirals of indebtedness or cannot fund long-term projects whose commercial and productivity benefits will take years to appreciate, as in the case of the reforestation of production areas and developing new plant varieties in the coffee sector. Impact investing provided under more sustainable conditions can unleash the SMEs' sustainability strategies and foster their contributions to the SDGs.

Managers in agribusiness MNCs should consider the advantages of providing GVC financing, satisfying the needs of SME suppliers, or partnering with impact investors *and* SMEs to seek alternative ways of financing production activities at the location in EM. MNCs struggle to comply with their commitment to the SDGs agenda (Van Tulder et al., 2021). Their CSR initiatives have generated mixed results and are far from reaching the scalability required to fully transition GVCs to sustainability (Montiel et al., 2021). In particular, MNCs in agricultural commodities GVCs focused on adopting production capabilities enabling the development of 'sustainable' products responding to civil society pressures and market demand for more sustainability (Ponte, 2019). They tend to neglect SMEs' broader and alternative vision of how to achieve more sustainability, despite SMEs' positioning at arm's length from production activities and the livelihoods of local communities (Sinkovics et al., 2016; Sinkovics et al., 2021;

Soundarajan et al., 2018). Shifting to more sustainable forms of financing suppliers' production could empower SMEs' role as sustainability innovators and generate more holistic upgrading results than those traditionally envisaged in commercially driven CSR initiatives.

Two avenues seem possible for MNCs leading agro-industrial GVCs to move in such a new direction. One is to initially accept higher costs of GVC orchestration by both increasing the volume and decreasing the cost of financing for suppliers upstream of the chain. This would entail arranging for a monitoring system to ensure that credit flows and reaches lower-tier suppliers at the desired conditions. The more expensive financing and enabling infrastructure could be offset in the medium and long term by the increased resilience of suppliers, who have upgraded their capabilities and developed new practices and products that best adapt to climate change. The second alternative is for the MNCs to partner with impact investors and suppliers to foster dynamics of financial upgrading. In this case, the MNCs' role would be providing collateral in the form of guaranteed commercial contracts at premium prices and facilitating capability building in the SMEs, de-risking the impact investors' venture. However, such a triangular scheme would involve the coordination cost of aligning SMEs, impact investors, and MNCs' production and financing agenda. Moreover, it would entail the impact investors' ability to prioritize impact creation over mere financial profit. Finally, MNCs-impact investors partnerships could be seen as doomed to greenwashing in the absence of a transparent, accountable, and participatory system of monitoring and assessment of the impact being created and the conditions under which financing is ultimately deployed at the SME level.

7.4. Implications for Impact Investors

My Thesis shows that impact investors can play a critical role in advancing the SDGs Agenda in the context of agro-industrial GVCs, but a series of challenges hinder the fulfillment

of such a promise. Despite their sustainability-oriented mission, impact investors remain financial organizations. As such, risk reduction and profit generation represent critical drivers of their internal processes and market interactions. Traditionally, agro-industrial sectors are an underdeveloped investment market, but also a less rewarding and more risky one (GIIN, 2019; World Bank, 2015; FAO, 2018b). Agricultural production is highly exposed to price volatility, natural disasters, trade disruptions, and civil and political unrest. Consequently, impact investors tend to reduce the risk involved in investing in EM's agroindustrial sectors by targeting already established SMEs, with a minimum set of managerial and production capabilities and access to value-added export markets. The findings in Chapter 5 show that SMEs' excessive indebtedness, lack of collateral, and lack of sustainable production and export capabilities were reasons for mismatching between impact investors and SMEs, and the impact investors' risk aversion. A similar approach greatly reduces the potential of impact investing, as it concentrates the supply of sustainable financing away from the SMEs that would need it the most.

Impact investors could de-risk their strategies in agro-industrial GVCs through an increased emphasis on collaborative learning and establishing partnerships with the public and private sector. My findings indicate that the impact investors' weak understanding of their investees' profiles represents a crucial challenge to their ability to adjust their products to the SMEs' needs. Lack of knowledge and information is an essential determinant of perceived and real risk. Many impact investors often lack the knowledge of the commercial mechanisms linked to sustainable production that economically reward SMEs' ability to move into those new niches. They have a weak understanding of the production cycle for agricultural commodities and a poor understanding of the causes behind the SMEs' indebtedness. Impact investors should commit to addressing those knowledge gaps by structuring interactions and partnerships with the SMEs

configuring the demand side of their products and other organizations owning technical knowhow concerning the functioning of sustainable markets and the sustainability challenges of SMEs in GVCs. The Financial Fairs model I study in this Thesis constitutes an example of how to structure and nurture interactivity to help impact investors' advancing their understanding of the SMEs' financing needs and growth opportunities, reducing the investors' aversion to risk in the sector.

Moreover, impact investors should look into developing structured partnerships with actors along the entire GVC they target with their investment, as well as with the public sector. As mentioned in Section 7.1., blended solutions and partnerships with organizations specialized in capability building are essential vehicles of de-riskification. They reduce the risk and cost burden on the impact investor while multiplying the financial and knowledge resources allocated to boost SMEs' upgrading and overall economic and infrastructural growth. Entering such partnerships and collaborations would require impact investors to accept a transparent and accountable oversight of their processes and products. The financial benefits of reducing investment risk should entail a formal commitment to generating public good. However, derisking impact investments would allow impact investors to connect to SMEs in the 'missing middle': Firms that are either too small to generate scalable profit or too big to access microloans, and that operate in resource-constrained areas where knowledge, infrastructure, and policy support are scarce.

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