CHAPTER 13

Few Opportunities for Smallholders for Upgrading in Agricultural Value Chains

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Introduction

Agriculture is a sector which still employs almost one-third of all workers worldwide. The allocation of agricultural work is globally uneven. Lower middle income countries host almost half of the people employed in the agricultural sector. In low-income countries, agriculture's share of total

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employment is even higher, on average it is 67.9% (ILO, 2019). Therefore, the sector is of great economic and social importance for the Global South.

The decent work[1] deficit in the Global South is comparatively more pronounced in agriculture. Farm workers and the so-called smallholders[2] generally suffer from insufficiencies in earnings, social protection, political participation, and health and safety precautions (Radon & Scherrer, 2019; Scherrer & Verma, 2018). A commonly proposed solution to the plight of smallholders is their integration into global agricultural value chains (VCs). For example, the Food and Agriculture Organization of the United Nations recently stated: "by participating in global value chains, smallholder farmers can boost their food production and income" (FAO, 2020). Participating in such chains is supposed to provide access to better-paying end markets and lead to the adoption of more efficient farming techniques (Lutz & Olthaar, 2017; World Bank, 2007). The coalition calling for the integration of smallholders to the world market includes not only international organizations such as the FAO and the World Bank, but also powerful corporations both upstream (such as agricultural input industry) and downstream (such as retailers) of the VC (Felsted, 2010; The World Bank, 2018).

Research, however, highlights specific risks for smallholders joining global supply chains such as: high initial investments in order to fulfill phytosanitary and other quality requirements; rejection of produce not complying with these requirements; higher levels of indebtedness because of commercially acquired inputs; and volatility of world market prices. Even in cases of successful participation in global supply chains, the value capture of the smallholders remains at best rather limited, i.e., they receive only a small fraction of the price the final consumer pays (Evers et al., 2014; Willoughby & Gore, 2018). Based on 114 articles on contract

[1] Decent work is a term coined by the International Labor Organization. The ILO's Decent Work Agenda includes almost 200 international labour standards under the following four headings: (1) full employment (including business start-ups); (2) respect for fundamental rights of workers; (3) social protection; (4) social dialogue.

[2] The size of small farms varies a lot among the countries in our case studies: from up to 1 hectare (ha) among rice growers in Bangladesh and India to 20 ha among the Brazilian coffee growers.

farming,[3] Bellemare and Bloem (2018, p. 268) identify the highly heterogeneous and context-dependent effects of contract farming, and conclude that not enough evidence exists for drawing "any broad policy relevant conclusions."

With a team of international researchers, we have set out to probe the social upgrading possibilities for owners and tenants of small farms as well as their workers. The concept of social upgrading is employed as a means of assessing the improvement of the conditions of farm workers and smallholders. For us, social upgrading means reducing decent work deficits, i.e., increased and more stable earnings, some form of social protection, access to political decision-making bodies (or some form of social dialogue), and better health and safety precautions (ILO, 2019).

Our research takes a crop-and-country comparative perspective, which is methodologically based on Ragin (2014, p. 52) and Bryman (2012, p.75). One of the premises of our research is that the characteristics of the crop, the end markets, and governance of the supply chains (including product and process related standards), as well as the national political, economic, and cultural contexts influence the contours of the respective VCs and, concomitantly, the social and economic conditions of smallholders and agricultural workers. Accordingly, we chose crops which are predominantly produced by smallholders in the Global South but are distinguished along the axes of domestic versus international end markets and short versus long shelf lives. For a cash crop mainly destined for exports we chose *coffee*, and for mainly domestically consumed crops we selected the staple food *rice*. While in their processed form coffee and rice can be stored for quite some time, fresh fruits are quickly perishable. Since this is especially true for *mangoes*, we chose them for a product with a short shelf life. The case studies are shown in Table 13.1.

The selection of countries (see Table 13.1) was less driven by conventional criteria; it depended more on the established network of scholars. However, the chosen countries are major producers of one or more of our selected agricultural products; and, in addition, are sufficiently diverse to provide the interesting insights into the influence of a country's economic, political, and social characteristics on the possibilities for social and economic upgrading.

[3] Among the different types of inclusion of smallholders in the global agricultural VC, contract farming is the most integrated. It is an agreement between a grower and a processor regarding the production of an agricultural commodity.

Table 13.1 The matrix of case studies

Products	*Countries*			
Coffee/stimulant	Brazil	India	Colombia	Vietnam
Mango/perishable	Brazil	Pakistan	Ghana	
Rice/staple	Brazil	India Punjab + Bihar	Bangladesh	

Economic upgrading denotes the processes by which coffee, rice, and mango producers move to relatively high-value activities and thus obtain more of the value generated across the VC (Barrientos et al., 2011). Following the global VC and network analysis literature, four distinctive, albeit interrelated, types of economic upgrading can be found: chain, functional, process, and product upgrading.

Chain upgrading happens when smallholders move into new yet related products or when they start to pursue product differentiation. For example, smallholders may have upgraded their VCs by diversifying away from monoculture to polyculture, i.e., the simultaneous cultivation of several crops. Functional upgrading happens when producers take over more lucrative tasks in the VC, e.g., directly marketing their premium quality mangoes to high-end retail stores. Process upgrading refers to increasing the efficiency of crop production by adopting new techniques, increasing inputs, using more machinery, investing in land amelioration, and/or skill training. Product upgrading generally refers to moving to value-added crops, f.i., by moving from non-basmati rice to basmati rice, which is richer in terms of nutrient content and aroma.

Our key findings pertain to the importance of collective action by key stakeholders, including smallholders and a supportive state, for economic and social upgrading. On their own, smallholders face obstacles entering global agricultural VCs and, if they are included, their value capture is marginal. Strong actors (e.g., big retailers) in the chain act collectively. Through their associations and their offshoots or their well-established connection with universities and local, national, or international public bodies, they can successfully pursue their own collective interests.

Growth or mere survival for smallholders under the pressure of strong actors in the VC requires concerted efforts in agricultural research, large-scale investment in infrastructure (irrigation, cooling houses, roads, etc.), and targeted marketing. While strong associations like the Colombian

National Coffee Growers' Federation (FNC) can partly stem these efforts, state support remains crucial by bringing together the various stakeholders, the financing component of the required infrastructure, and providing subsidized inputs. Successful collective action can open access to more profitable export markets and, in principle, to more employment opportunities.

However, as the Brazilian case has shown, effective process upgrading substitutes capital for labor and thus diminishes the demand, especially, for low-skilled workers. Certification of farms comes only with minor benefits for workers, such as better hygiene in the workplace and living quarters, as well as fewer occupational health risks.

Support of the state is especially necessary for the so-called weak interests, i.e., those social groups that are poorly represented in the civil and political society. Where the state does not support these groups, usually because of their political meekness, no social upgrading takes place. This is especially true for smallholders with no or little literacy and, of course, for landless agricultural workers. They generally face more structural constraints than large producers or other powerful actors in pursuing their interest at the state level.

For agricultural workers, social upgrading was noticed only in the case of Brazil, where, during the reign of the Workers' Party (PT), the country's labor laws were more strictly enforced than those of previous governments. The impeachment of Dilma Rousseff of the Labor Party in 2016 and the subsequent conservative government have not only led to less enforcement, but also to a dilution of the legal protection of agricultural workers.

We start our chapter by highlighting some of the problems one faces in trying to measure the impact of VC participation on smallholders. Following this is our theoretical understanding of the link between economic upgrading and social upgrading. We conclude that product and labor markets are not directly related and, therefore, economic upgrading is not enough to secure social upgrading. The justification of our case studies selection follows. It includes hypotheses about selected factors' impacts on smallholders and agricultural workers. The following presentation of the case studies is ordered according to these factors. Special attention is given to the role of the state in promoting social upgrading. The conclusion highlights the importance of collective action for social upgrading.

Problems of Measurement

A key reason for the lack of unambiguous evidence for smallholders' benefits of joining global agricultural VCs, as mentioned by the meta-study of Bellemare and Bloem (2018), is the difficulties in measuring the effects of joining a contractual arrangement compared to not joining. It starts with the observation that participation in such an arrangement is not a random affair, neither for the firm nor for the farm. Firms' selection criteria for smallholders comprise such factors as the macro-ecological suitability of the smallholders' region, transaction costs (transportation costs, contract compliance), and the availability of warehouses and security. The same criteria, for example, accessibility of the farm, may be judged differently by two firms. While one firm might prefer the most accessible areas, the other firm might expect lower procurement prices because remote farms have fewer alternatives to sell their products. On their side of the relationship, smallholders might not accept an offer for a contract because they might be risk-averse (concerns about price volatility, exposure to chemicals, debt-related land foreclosure), might distrust outsiders, or succumb to peer group pressure. The motivations and capabilities of smallholders are especially difficult to observe. In order to attract buyers or certification schemes, farmers might invest also before they join the chain. It is quite likely that the positive contracting experience of one smallholder may not be replicated by another smallholder. Measuring the welfare effect is also challenging. The common indicator, profits, eludes straightforward identification for a few reasons. One cannot rely on market prices for smallholders' inputs and outputs, because they are not operating in perfect markets (Barrett et al., 2012, p. 720). Labor time, a key input factor, is particularly difficult to observe from the outside. Surveys might help, but their validity depends not only on how forthcoming smallholders are with revealing their cost structure and their sales successes but also on their ability to account for the input costs. Furthermore, what might look profitable in the short term might be costly in the longer term, for instance, soil and water depletion through overuse (Swain, 2016).

Another issue is the fallacy of composition. Scaling up the benefits of joining an agricultural VC may face the obstacle of insufficient growth of demand to accommodate all those who have been encouraged by the success of some of their peers to join the chain. The buyers may also entice participation by providing attractive contract conditions to the first movers in the region. Once they have signed up enough participants,

they might offer less attractive terms to latecomers or in the next round (Barrett et al., 2012, pp. 725–726).

These challenges to measuring the impact of shareholders' participation in VCs suggest the limits of universal claims. We have, therefore, chosen a comparative approach that attempts to be sensitive to many potential factors and specific contexts. We expected to discover a few common themes across the cases, without providing definite answers for the question regarding opportunities for social upgrading in agriculture.

Why Economic Upgrading Does Not Automatically Translate into Social Upgrading for Workers

Much of the economic literature proposes that benefits of economic upgrading will trickle down to the workers employed in the economic units that successfully upgraded (e.g., Kapsos & Bourmpoula, 2013; Taglioni & Winkler, 2016). This proposition is based on two assumptions: first, that upgrading leads to more value capture of the value created in the global supply chain; second, that the product and the labor markets are tightly connected. The extent to which economic upgrading leads to more value capture depends not only on the specific mode and degree of upgrading, but also on the responses of competitors and the power resources of the buyers. If many competitors follow the upgrading trajectory of the supplier firm, the key buyers remain in a powerful situation vis-à-vis all the upgraded suppliers. Unless the suppliers gain access to the final consumers or develop unique technological capabilities, they will remain dependent on the buyers. The buyers' control of access to the end markets will provide them with monopsony power to dictate the purchasing prices, and thus capture the main part of the value generated in the chain.

Even less realistic is the assumption of a close connection between product and labor markets. While more value capture potentially allows for higher wages and better working conditions, it is not at all guaranteed that the additional value capture will be equally shared amongst owners, managers, and workers. The reason is that at the level of a firm, success in the product market has little impact on the demand conditions in the labor market. Only at a more aggregate level, i.e., when many firms engage successfully in economic upgrading, might their collective success lead to a substantial increase in the demand for labor and thus to higher wages. Of course, a firm whose upgrading leads to a rapid increase in labor

Table 13.2 Similarities and differences—case studies

	Coffee	*Mango*	*Rice*
Perishability	Low on shelf, fairly high at farm	High	Very low on shelf, low at farm
Mechanization	Dependent on terrain and variety (robusta vs. arabica)	Low	Great variety depending on the terrain and the size of the farm
Nutritional importance	Low	Medium	High
Foreign exchange earnings	High	Low	Low to medium depending on the variety (e.g., basmati vs. non-basmati varieties)
Market destination	Mostly international	Mostly domestic	Mostly domestic

demand might clear the local labor market. Furthermore, upgrading does not necessarily imply a greater demand for labor. Productivity increases may outpace demand. In addition, the labor market may not be at equilibrium, i.e., unemployment may exist. It is, therefore, pertinent to carry out a close examination of the dynamics of the labor market (see, Scherrer on power in this volume).

The Selection of the Case Studies

Our case studies cover smallholders' participation in the coffee, mango, and rice VCs (Table 13.2). We consider the following product differences to be important factors for the likelihood of social and economic upgrading: the length of a product's shelf life; the degree to which its production can be mechanized at the current level of technology; a product's nutritional importance, i.e., its contribution to food security; its significance for a country's foreign exchange earnings; and its market destinations (see Table 13.2).[4] In the following, we hypothesize the role of these factors for smallholders' position in the supply chain.

[4] Insofar as our research covers several countries with different consumption habits, crops, supply and storage characteristics, measuring and comparing price and income elasticities may explain rather little.

The production of an agricultural product with *long-term storage possibilities* is less exposed to the vicissitudes of seasonality, less dependent on storage and cooling technologies, and can be marketed more easily in distant markets. For the governance of the supply chain, the implication is a lower level of integration (Johnson & Berdegue, 2004), because less speed and precision is necessary to connect farm to fork. Theoretically, differences in storage possibilities should impact the power relations among the actors of the supply chain. In the case of a perishable product, the seller cannot wait for better market prices after the harvest. The vulnerability of the smallholder selling perishable products may be heightened in the case of employing wage labor. By threatening to withhold their labor power at harvesting time, workers can potentially enhance their bargaining power. Therefore, we assume that the global supply chain of the perishable mango is more integrated, more difficult for smallholders to enter, and, if smallholders do ultimately become part of the supply chain, they will be in a weak bargaining position. Farm laborers may potentially be in a stronger position, if no other factors prevent them from exercising their labor withholding power. While the shelf life of coffee and rice is long, coffee beans must leave the farm for further processing fairly quickly, because once they lose their freshness, their quality and price are greatly reduced. For this reason, smallholders' position in the coffee supply chain might not be so different from mango-producing smallholders. In contrast, paddy rice ("unmilled rice"), i.e., the sun-dried farmer's rice after it is harvested, can be stored for years. Therefore, rice-producing smallholders, as sellers, are potentially in a stronger bargaining position if they are not dependent on immediate payment and have enough proper storage capacity.

The differences in *mechanization* have ramifications on the capital and labor intensity of agricultural production. While harvesting coffee beans and rice can be done with machines, harvesting by hand is still prevalent and, so far, is the only means for mango production. However, harvesting is not the only area of possible mechanization. For instance, management of weeds or construction of work paths can also be done with machines. Therefore, a comparison of the extent of mechanization must consider the whole range of tasks traditionally done by smallholders and farm laborers. If the use of machinery leads to a substantially higher level of capital intensity and thereby to higher economies of scale, smallholders might be squeezed out of the market.

As a staple good, rice is consumed by half of the world's population every day and consequently, is of great *nutritional* importance. Out of food security concerns, governments are much more likely to intervene in rice markets than in coffee and, even more so, mango markets. Not only production but also the international trade of rice has been largely shaped by government policies. In an electoral democracy, smallholders might obtain more government support because of their own voting power and consumers' preference for stable and sufficient supply of food stuff.

Coffee is a traditional export good and one of the most internationally traded commodities (Gonzalez-Perez & Gutierrez-Viana, 2012). For some countries, coffee was, and for some still is, a major source of *foreign-exchange* revenue. Accordingly, it receives government attention. In contrast to coffee, as a staple crop, the rice produced is mostly consumed at home. According to OECD-FAO estimations, the ratio of total rice export to the world rice output was less than 9% in 2016 (OECD-FAO, 2017). Mango was almost solely consumed at home before the invention of modern cooling techniques and the decreasing costs of airfreight.

If an agricultural product is destined for export, producers may have to adhere to international quality and phytosanitary *standards*, either set by international governmental bodies, non-governmental certification associations, private parties of wholesalers, or retailers.

The countries, selected for case studies of *coffee*, are its key producers. Brazil is by far the world's largest coffee producer and exporter. It produces mostly commoditized coffee and is most advanced in mechanization. Vietnam has become the second-largest producer in a few decades. Much less mechanized than Brazil, Vietnam also supplies mostly commoditized coffee. Colombia is the third largest and a traditional high-quality coffee producer with a large smallholder base. India is ranked seventh; especially in comparison to Brazil and Colombia, coffee plays a much lesser role in Indian agriculture.

For *mango*, we have chosen Brazil and Pakistan. In terms of production, Brazil ranks only seventh, yet it holds the second-largest share of the export market after Mexico. Pakistan ranks fifth, but its share of the export market is much smaller and, concomitantly, its domestic market is much more important. Its export markets also differ from Brazil. While Brazil sells mangoes mainly to continental European retailers, the UK and Middle Eastern countries have traditionally been the biggest consumers for mango produced in Pakistan. These different destinations may have

an impact on the standards prevalent in the mango VC. We have also included Ghana for exploring the challenges that marginal producers face in entering the world markets.

In the case of *rice*, we have chosen India, given that it ranks second to the People's Republic of China in terms of production, and is the top rice-exporting country. Considering the possible influence of the market destination—domestic versus international market—on the features of the rice supply chain, Bangladesh is included in the project. In the case of Bangladesh, the produced rice is consumed domestically, and the net export of rice for Bangladesh is negative for the covered period.

Key Findings from the Case Studies

The case studies have been extensively documented in the volume edited by Karatepe and Scherrer (2021): coffee (Chi et al., 2021), mango (Mehdi et al., 2021), and rice (Hossain et al., 2021). In the following, we will first present their findings concerning working and livelihood conditions, as well as social and economic upgrading. We will then present their findings according to the abovementioned factors that ostensibly influence the possibilities of social upgrading for smallholders and farm laborers.

Working and Livelihood Conditions

The smallholders and farm workers in the *rice* VC of Bangladesh and India suffer from severe decent-work deficits. The farm workers are deprived of basic rights and decent wages. Women receive even lower wages for the same tasks. They also face severe health-related problems from spraying pesticides and spreading fertilizers without safety measures. This is especially true for the informally employed workers, who face higher occupational health risks because of a lack of training and insufficient provision of protective equipment.

In the case of *coffee*, the livelihood conditions of small farmers, in general, are better than that of the workers. Most Brazilian small farms are profitable, even those less than 10 ha. In India, even the much smaller farms seem to survive. In Colombia, many of the smallholders also must work on other farms because they frequently lack cash before the end of the harvesting season. In Vietnam, the smallholders rely mostly on family

labor. The average farm income divided per person active in the household is higher than the rural poverty line in most cases. Differences in the livelihood conditions of the small coffee growers are mainly the result of whether they belong to the majority or minority population and to a growers' association. The indigenous coffee growers, on average, are less educated and poorer. The same is true for the growers from indigenous populations (Scheduled Tribes), and from low-ranking castes (Scheduled Castes and Other Backwards Classes) in India.

The situation for small-scale *mango* producers and farm labor in Pakistan is comparable to the Indian rice farmers. Like in Pakistan, Brazilian small-scale mango producers use mainly family labor to help in the production process. In contrast to Pakistan, the Brazilian large-scale producers resemble enterprises and mango production is their source of income. They comply with the prohibition of child labor stipulated by law and the requirements for global food certification. On the large-scale farms, the women are concentrated in the packing houses, with field workers being mostly men.

Social and Economic Upgrading

In the case of *coffee*, the ramifications of economic upgrading for social upgrading also differed from country to country. In Brazil, economic upgrading brought about more permanent positions and considerably fewer temporary jobs. In Colombia, social upgrading has been limited to the farmers, and has not been extended to the hired laborers, despite their significant numbers and the fact that quite a few of the hired workers are themselves coffee growers, though marginal producers. In Vietnam, social upgrading took the form of rapid expansion of the industry, which provided more employment and higher returns for smallholders in comparison to their previous crop. The indigenous farming population has been left behind. Meanwhile, no social upgrading is noticeable in India.

Most South Asian *rice* growers own very small plots because of uneven land distribution and rapid population growth. The small-scale production hinders mechanization and access to extension services. Cooperatives and common ownership of equipment are seldom present. In comparison to Bangladesh and India's Bihar, Punjab (India) offers its small farmers better conditions. Besides the favorable ecological conditions for Basmati, rice farmers enjoy more state support (see below). However, it comes at a

cost. The higher yields in rice production translate into higher land rent. The yields rely on more inputs in terms of hybrid seeds, fertilizers, pesticides, and machinery, which require a solid capital base or access to loans at low interest rates. Both land rents and capital requirements squeeze out the marginal farmers.

Some of Pakistan's *mango* growers, mainly medium to large, benefit by equipping themselves with the skills and technologies needed to access export markets. They and their down-the-chain partners captured more value. However, the adoption of best practices is limited among the small growers, since they mainly sell their produce to the commission agents/wholesalers in the local market. In Brazil, economic upgrading for the large-scale farmers has been accompanied with some improvements to workers' conditions; however, improvements in decent work conditions are still limited to the formal workers on large-scale farms and lead to fewer jobs (see below).

Size Matters

The studies confirmed the frequently mentioned hurdles smallholders face in linking up to global VCs. While in all the observed crops and countries, some large-scale farmers succeeded in process and product upgrading, there is limited evidence of process or product upgrading at the level of small-scale producers. Process and product upgrading require a certain level of know-how, capital, and social networks for accessing high-end markets. The desired standards for export markets can be attained only by heavily investing in the mango orchards, coffee plantations, rice fields, and post-harvest management. In the case of mangoes, smallholders are also faced with the high costs of cooling equipment for transport. Furthermore, we see that certifications (and other codes and standards) may exclude smallholders from the international markets because obtaining a certificate requires both capital and knowledge. In the absence of coordination and collective action in the form of cooperatives and state support, the small-scale producers are overwhelmingly dependent on the middlemen.

The limitations for upgrading were especially pronounced for the rice growers in Bihar and Bangladesh because their poor bargaining power leaves no surplus for investments. The Colombian and some Vietnamese small-scale coffee growers were able to overcome some hurdles to economic upgrading via strong associations or cooperatives.

On average, farm workers have not benefited from the gains captured by the large-scale farmers. The exception is Brazil, where some improvements in the working conditions for mango farm workers have been accompanied by economic upgrading. However, the improvements have been limited to the formal workers in large estates. This is because the relevant state authorities can only monitor the large farms; they fail to control medium and small-scale production sites where informal labor relations remain prevalent.

Perishability Worsens the Bargaining Power of Smallholders

As a perishable agricultural product, exporting mango to the high-end markets requires coordination involving a series of tasks in the pre- and post-harvest period. Various interwoven tasks—ranging from the practice of using pesticides to harvesting, marketing, certification, and organizing demand—cannot be organized by small-scale producers, because they lack cooperatives and/or are deprived of the capital and investments necessary to fulfill the requirements of the international markets. In the absence of capital or cooperatives, technical assistance is insufficient, especially regarding training related to the risks of the activity (e.g., irregular use of pesticides, lack of protective equipment).

In the case of mango, there is a great asymmetry between smallholders and middlemen, because smallholders can be left with spoiled products if they attempt to bargain hard. Furthermore, they run the risk of not being considered as suppliers for the next harvest. What we observed in the case of Pakistan and Brazil is that smallholders delegate harvest to buyers/middlemen, who eventually squeeze out the revenue from them. Small-scale coffee growers are exposed to perishability-related bargaining losses, as fewer fresh beans mean lower prices. The inverse power argument may not be true. While longer storage possibilities in the case of rice would theoretically allow producers to wait until better prices are available, the small-scale rice growers of India and Bangladesh typically either have depleted all their savings before harvest time or are indebted to their buyers and/or lack storage space.

Yet, perishability can bestow more bargaining power on farm laborers. The higher wages for seasonal workers are not the consequence of collective bargaining, but of labor market bottlenecks during harvest time. For instance, in the case of Brazil, during harvest time, pickers receive up

to USD 18 per day and the informally employed a little bit more. An informal worker can then earn twice the minimum wages per month.

Mechanization Leads to Social Upgrading and Downgrading

For mechanization to result in significant labor productivity increases, scale is of relevance. This strategy is, therefore, largely reserved for farmers with more land or cooperatives. The crop should also allow it. Concerning coffee, the huge Robusta farms on fairly flat terrain allow for a much higher level of mechanization in Brazil than in the hilly terrain dominant in Colombia or the tiny plots in India. The Vietnamese coffee cooperatives have also achieved a higher level of mechanization, while non-member farmers have been unable to afford it.

However, smaller machinery (such as power tillers in India), especially motorization of transport (or the installation of ducts to transport the coffee berries uphill in Colombia), is also increasing the labor productivity of smallholders. Depending on the size of investment in machinery, farmers run the risk of falling into a debt trap, if market prospects do not materialize as anticipated. The risk can be reduced through government action: for example, funding irrigation systems and providing subsidized energy for running these systems, as in the case of Punjab.

Large-scale mechanization leads to a bifurcation of the labor market. Mechanized farms employ fewer permanent workers, who have skills to handle machines. On the coffee farms of Brazil, the mechanization process reduced the demand for temporary workers by about two-thirds and permanent position work increased by about one-third between 2007 and 2016. On the Brazilian coffee plantations, temporary workers are now employed for shorter amounts of time during the year.

Nutritional Importance Does not Always Translate into Sufficient Government Support

As expected, the respective governments are much more involved in rice production than in the VC of mango. The degree of government support for smallholders, however, varies greatly among countries and provinces. The degree of government support depends, inter alia, on two factors: institutional and financial capacity as well as political mobilization. At one pole, we have the Brazilian government during the reign of the Workers'

Party (PT), which provided the cooperative, established by the Landless Rural Workers' Movement in Brazil (MST), Grupo Gestor do Arroz Ecológico, with the land, irrigation, storage capacity, and public procurement needed for its organic rice. The motivation, however, was not related to ensuring food security. It was rather a response to the problems of a large landless agricultural workforce and its mobilization capacity. At the other pole, we find the Bangladeshi government, who guarantees a minimum price for rice through its public procurement system. However, the government procurement centers are not accessible to the small rice growers, but only to the large producers and millers.

Between strong and no support, we find India, though with major differences between the two investigated states: Punjab and Bihar. The state government of Punjab offers more generous support. It provides for the costs of irrigation and an accessible public procurement system for paddy. In Bihar, there is no such governmental support for irrigation, and the public procurement system is rather dysfunctional. The public procurement system even works differently in different regions of Punjab because of its political orientation. In Patiala, Punjab, the state procures all non-Basmati rice varieties from farmers, which is 95% of the total paddy production. Patiala is in the Malwa region of Punjab, where farmers are politically organized, and the origin of most of the leaders of ruling and opposition parties. In order to keep their vote bank intact, public procurement continues to function efficiently in this region.

The limited and inefficient support provided by the governments of Bihar and Bangladesh results in a higher level of poverty among the rice growers of these regions than in Punjab. The more affluent Punjabi farmers face other problems. Their greater market orientation requires higher levels of commercially acquired inputs such as hybrid seeds, fertilizers, pesticides, and machinery. Thus, they run higher risks of over-indebtedness. Furthermore, heavily subsidized irrigation has led to a significant lowering of groundwater levels.

Prospects of Foreign-Exchange Earnings Attract Government Involvement

Foreign-exchange revenues are quite a central issue in some countries of the Global South, due to their trade deficits. Coffee, being one of the most traded goods, attracts the attention of governments'

foreign-exchange earnings. Under the leadership of Brazil and the accommodating position of the USA, coffee-producing states were able to stabilize international coffee markets and thus the prices in the period of the 1960s–1980s (International Coffee Agreement; ICA). After the breakdown of the ICA, the states lost their importance in the coffee trade: purchase and the sales of coffee were privatized in Brazil; the state-supported FNC in Colombia gave up its export monopoly and, also in India, the monopoly of the government-appointed Coffee Board was abolished, and the sector was left to its own. In addition to the international roasters, future traders and retailers in the high end of the global retail market (Europe, USA, and Japan, principally), the liberalization of the coffee market has also opened up opportunities to certain other countries. Vietnam's rise in the international coffee market is not only a result of market forces, but it is also an outcome of deliberate support of its government for coffee growers. The state-organized migration of Kinh (the majority group) to the land development centers, accompanied with credit flow to coffee production, facilitated Vietnam's export success.

Brazil's success in exporting mangoes is based on state-financed irrigation projects, most notably the Petrolina-Juazeiro and Açú-Mossoró regions. In Ghana and Pakistan, mango growers have not received major state support. Their considerably lower volume of exports relies primarily on private initiatives. However, a multi-stakeholder initiative including international development agencies, the Australian Centre for International Agricultural Research, and the University of Agriculture in Faisalabad orchestrated improvements in basically all parts of the mango value chain. The improvements allowed not only the export of mangoes to the European market but also translated in much higher margins for the participating Pakistani growers.

The Limited Impact of End Markets and Certification

In the case of rice, our analysis demonstrates that the end market may matter for smallholders. However, if rice is destined for high-end markets, it is generally other actors (namely, export firms, millers, or middlemen, among others) that capture the gains created along the VC. Producing rice for export or for urban areas does not automatically bring about any social and economic improvement for the farmers. For instance, Punjabi farmers cultivating Basmati earn more than non-Basmati farmers. Yet, there is no income difference whether the Basmati rice is sold domestically

or abroad. The farmers sell paddy in the market to unknown procurers through commission agents. The procurers are generally agents of rice mills, who may sell rice in India or abroad.

In the case of mango, due to the internationally required certification, the small-scale producers have noticeably restricted access to the international market. The market-mediated quality attributes and phytosanitary standards of high-end markets create barriers for small-scale producers' participation. Therefore, better sanitary standards are limited to those able to conform to certification requirements.

Certification's impact on coffee growers is, in the main, beneficial. Certification is a requirement to access more profitable markets but does not guarantee a better price if the quality of the product does not meet expectations. The certified farms, usually the bigger farms, achieve higher yields. In DakLak, the biggest coffee-farming province in Vietnam, the coverage of certified coffee farming remains limited to about a fifth of all farms. The certified farms receive a premium of up to 15%, but not all certified coffee can be sold as such, due to the limited demand for certified coffee.

The benefits of certification are less clear for the coffee workers. In general, workers receive more training and better protection against occupational health risks, not the least by improving hygiene conditions. However, certification is not enforcing compliance with labor laws in practice. In Colombia, half of the workers interviewed in one sample could not identify whether the farm they were working on was certified.

Social Upgrading Requires State Support and Collective Action

Among the factors, we analyzed as shaping social upgrading in agricultural VC, perishability turns out to weaken the bargaining power of the producers and mechanization has ambiguous effects. On the one hand, mechanization requires a more valued skillset and therefore comes with better employment conditions, but, on the other hand, it leads to an increase of precariously employed seasonal workers. As key factors for economic and social upgrading, the case studies identified the role of the state which itself is influenced by the collective action capabilities of smallholders and farm workers. We, therefore, conclude our account of the case studies with a discussion of the role of state and collective action especially for social upgrading.

The Key Role of the State

The limited bearing of private agricultural VC governance on social upgrading calls for attention to public governance. Our case study findings indicate that labor and social protection laws as well as their enforcement impact the social conditions of farm workers.

Brazil and India under the Lula and Modi governments, respectively, can be taken as two distinct examples in this regard. In the case of India, the laws have been (and still largely are) labor-friendly, owing to the progressive elites of the newly independent India. The Plantation Act, 1951 is a case in point. However, current labor law enforcement is far from being effective, especially in rural areas. The relevant public authorities are poorly organized and lack the financial means to cover the vast areas of rural India. The close network between political society and landowning elites prevent any reform.

In Brazil, the institutional arrangement protecting rural workers came three decades later. The post-dictatorship Brazilian Federal Constitution of 1988 granted rural workers the same social rights as urban workers. The efficient enforcement of the law, however, began with the Lula presidency. Improvements in the real wages, collective agreements, frequency of labor inspections, access to health services resulted in better economic and social conditions for the farm workers. Landless Rural Workers' Movement (MST) has contributed to these improvements. From the outset, the movement has striven to provide access to land for the poor in rural Brazil, where the distribution of land is extremely uneven. Going beyond the traditional rural movements seeking land reform, the movement calls for gender and income equality as well as for an ecologically sustainable way of life. Adopting a bottom-up approach, MST has organized many land occupations. Over the course of the 1990s, the state and landlords frequently attempted to prevent MST's actions by violent means. However, MST succeeded in developing counter strategies to overcome the coercive means of the state and enjoyed some degree of public sympathy. The movement could initially mobilize allies both in and outside Brazil. Yet, it found even more scope to pursue its goals during the PT governments.

For all crops studied, Brazilian farm workers appeared to enjoy better economic conditions than those of other countries investigated. Despite the state's efforts in the PT era, coverage of the enforcement of the labor law is restricted. Our findings in the case of mango VCs suggest that only

large farms' legal compliance could be inspected. The labor conditions in the small and medium-scale farms located in remote areas are generally not inspected due to the lack of staff, vehicles, etc. Informal working relations are prevalent in small and medium-scale orchards. Brazilian family farmers frequently prefer to hire labor informally, because they are at risk of losing their status as a family farm, along with the privileges that come with this status (e.g., subsidized loan rates), if they employ more workers permanently. The workers with the formal contract covered by labor law are entitled to a pension, while the informally employed are excluded from these benefits. This loophole is testimony to the overall weak representation of landless workers in the Brazilian state. Overall, the value distribution within the mango chain changed only slightly; workers' share in the value distribution continues to be small.

In sum, the labor laws, the state's institutional enforcement capacity, and its position in the labor market as an employer are all crucial for social upgrading. To what extent a state is supportive of agricultural smallholders and laborers depends on these groups' political might. As a state is a social relation, i.e., a terrain or a battleground, where different strategies compete, agricultural workers and smallholders face more constraints than other groups with command over more power resources. These constraints can be overcome if workers and smallholders can act collectively in a calculative manner in accordance with their interests and identities. This argument leads us to the final part which highlights the importance of collective action.

The Importance of Collective Action

Regardless of the produce and country, our findings suggest that collective actions shape power relations and concomitantly change the respective bargaining power of actors. The conclusion we draw from the case studies is that without collective mobilization, smallholders and farm workers will not achieve social upgrading. Through collective action, smallholders and farm workers can receive more support from the state since they can challenge stronger actors to pursue their interest at the state level.

The coffee VC, with its few multinational big roasters and hundreds of thousands of smallholders, is a showcase for the importance of collective action. In Colombia, the most developed association with the deepest historical roots among growers is the Coffee Growers Federation (FNC).

It has supported its roughly 570,000 members in weathering the challenges of the liberalization of the coffee markets since the late 1980s by pushing for quality and successful marketing, which ensures that Colombian coffee obtains the premium prices in world markets consistently. This allowed the FNC to resume the policy of guaranteed purchase of all the coffee of its members, based on a floor reference price. Furthermore, it offers free technical assistance on a large scale and advice on how to access state subsidies, it also provides some social and investment infrastructure and has launched a higher end retail chain for its own brand. Among the FNC members, 33 coffee-grower cooperatives exist, which provide complementary services to what is offered by the FNC. The case study has highlighted the *delos Andes* Cooperative, which runs processing plants, has its own coffee shops, developed its own brands, and directly exports its coffee, as well as making heavy investments in the futures' market. The less well-organized farm workers of Columbia have not experienced such social upgrading.

In the case of rice, the MST-led cooperative's ability to enlist the support of the Brazilian state in the era of Lula has been a crucial ingredient of its success. The state furnished storage houses and had become a major buyer of its produce. In Pakistan, the multi-stakeholder pilot project of improving all parts of the mango chain translated to higher margins for the growers.

The collective organizations in the studied countries also play a major role in the certification of their members' coffee farms. They support certification by providing advice and technical assistance for bringing its members' production processes in line with the requirements of the various certificates. However, not all small farmers have the necessary means to comply with certification, especially those outside of associations or cooperatives. The demands of some more ambitious certificates, such as the one from the Rainforest Alliance, are too costly for many small growers.

Our findings suggest that most of the smallholders and farm workers lack cooperatives, unions, etc., through which they could otherwise jointly attempt to improve their social conditions. As a result, they lack political voice, and possess little bargaining power vis-à-vis well-organized powerful actors in the VC, such as large producers, input providers, and retailers. In contrast, the owners of capital or land appear to be conscious of the importance of collective action. Through their associations and their offshoots, or their well-established connections with the

universities and local, national or international public bodies, etc., they can successfully mobilize power resources and pursue their own collective interests.

Without collective action, the agricultural VC offers little for smallholders. Grassroots movements such as La Via Campesina[5] have for long been aware of it. Their call for "food sovereignty," i.e., prioritizing local agricultural production, deserves more intellectual and practical support.

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[5] International farmer organization founded by more than 180 organizations in 81 countries.

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