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2 Executive summary

This SRA investigated and documented how Robusta coffee and black pepper value chains operate globally and in the context of Vietnam and of Central Highlands (CH). This served to derive research and development intervention needs from this analysis to feed into the design of the V-SCOPE ('towards the Sustainability of COffee and Pepper in Vietnam') project¹. It documents the significant growth in both Robusta coffee² and pepper³ production and production area in the last 10 years in Vietnam and the rising sustainability concerns attached to it; and they confirm the large dominance of the global downstream players in both sectors with similar organizations: lead firms are positioned in the final processing and branding stages in close connections with the end-users, and operate through a range of local and global suppliers, positioned in the trade segment with different levels of integration in terms of processing and primary production. Our findings confirm the relevance to target interventions and innovations with potential to:

- a) increase resource-use efficiency, prevent further environmental decline, support adaptation to climate change and improve food safety:
- b) leverage opportunities in value chains, ensure inclusiveness, and support processes of rural transformations.

In line with the core ambition formulated by ACIAR to harness the potential to work with the private sector in driving changes and achieving impacts at scale, **we recommend to and have actually endeavoured to build partnerships with lead coffee and pepper companies based on their sustainability strategy and programs as a critical multi-tiered entry point for the V-SCOPE project.** Indeed, internationally, concerns and demands for sustainability increase consistently; and global buyers are investing in new approaches to sustainability besides standards. They develop new instruments to support farmers and manage sourcing areas with a view to securing coffee and pepper supply globally and align with -or help shape- increasing demands for sustainability; and they strive to create new inroads into public-private policy dialogue to improve the policy environment. Concurrently, in Vietnam, margins of action towards upgrading, outside sustainability approaches, are very thin. The market demand for Robusta coffee, which accounts for about 95% of the total Vietnamese cultivated area, is on "volume of cheap coffee", preferentially residue-free, and not on quality, with low prospects for changes in the near to medium term future. With an underdeveloped processing industry, the Vietnamese pepper sector is also positioned on basic export and competing on prices in the low-end segment. Besides, lead firms are proposing to address Vietnam strong concerns with regard to food safety (in line with the unmanaged coffee and pepper expansion over the last decade and with increasing requirements worldwide), as part of their more systematic investment into sustainability. And this food safety challenge is all the more considered as a major one in the context of new-generation free trade agreements⁴.

As part of the SRA, we explored avenues to strengthen -and build on- lead firms' increasing expertise in supporting farmers, innovative approaches and increased interest in tackling pressing sustainability issues. We therefore developed innovative collaboration

¹ Described in the ACIAR full project proposal 'Enhancing smallholder livelihoods in the Central Highlands of Viet Nam through improving the sustainability of coffee and black pepper farming systems and value chains'

² With a 65.5% increase in 2017/18 compared to 2009/10, i.e. 6,5% per year, twice as high as the 3% annual growth known by coffee production globally between 2010 and 2019.

³ With a growth rate of 11.2%/year over the period 2011-2019, above the world growth rate of 8.3%/year.

⁴ Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), EU Vietnam Free Trade Agreement (EVFTA)

with lead coffee and spice companies. As a result, **private partners⁵ will directly participate in project interventions through co-investment and co-design, piloting and assessment of the innovations and knowledge generated; and they will be involved in the project governance.** Furthermore, **synergies will be pooled with other multi-stakeholder initiatives** to integrate knowledge towards establishing locally adapted sustainable farming system models and effective public private arrangements supporting their implementation and scaling up: these include notably the Global Coffee Platform led Collective Action Initiative (GCP CAI) and the Cirad led ECOFFEE project, **in which the main global coffee companies active in Vietnam, namely JDE, Nestlé and Tchibo, play a major role** and which strive to find alternatives to ensure responsible use of agro-inputs and reduce agrochemical contamination.

1. The need for locally adapted sustainable farming systems and potential for co-generation of knowledge as an industry collective undertaking provide a key anchor in partnering with lead firms.

Limited experiments to design sustainable farming systems have been conducted for coffee and pepper in CH; and they show potential for cost reduction and income growth. Hence, the V-SCOPE project includes co-design with lead firms of improved practices experiments on reduced fertilizer inputs, reduced irrigation, soil remediation techniques and bio-inoculants in different farming contexts, supported by company programs and farmer monitoring databases and systems.

2. The V-SCOPE project will also build on and feed into the farmer support programs that lead firms develop in mainstreaming their sustainability strategy to pilot nearby farmer value chain innovations towards improving smallholder livelihoods. The V-SCOPE project intends to work on both farming and value chain pilots with private company networks to ensure that not only proper technical solutions are available but also that farmers can take advantage of them and value them in more efficient market arrangements. This aligns with companies increasingly experimenting with new schemes to integrate input and service provision into their business activities and work closely with producers, but also with local collectors and input suppliers. Using participatory action research, the V-SCOPE project will design and experiment with these stakeholders (farmers, collectors, input suppliers, lead firms, etc.) new pilots to provide tailor-made services to smallholder farmers and/or help enforce sustainability standards. Derived lessons will be widely shared drawing on and strengthening the developing public private dialogues at local and national levels.

3. In moving beyond local experimentations and exploring paths towards up scaling, the V-SCOPE project will also take advantage of the emerging trend from lead companies to invest into landscape-level sustainability approaches as a complement to product-based standards.

Vietnam is well positioned in landscape approaches to sustainability, with both strong private and public⁶ drives. Emerging intents are made to tackle unmanaged expansion of coffee and pepper at landscape level in multi-stakeholder arenas. Strengthening these approaches could support the country in modifying its poor-quality image and move out of the vicious circle attached to it. Knowledge generation at community and landscape levels, and spatial integration of technical, social and economic factors to properly account for the different opportunities and barriers to sustainable transformations under heterogenous agroecological and socioeconomic conditions, are in strong need to support

⁵ Including McCormick (MGIL) together with Pearl Corporation and Jacobs Douwe Egberts (JDE) together with Acom, Simexco and Louis Dreyfus Corporation (LDC).

⁶ Government priority both at central (MARD) and local levels.

interventions and approaches at landscape levels. This will entail addressing gender and ethnicity though these did not come out strongly in our investigation at SRA level.

As part of the V-SCOPE project, operating at landscape level in the context of multi-stakeholder arrangements also provides means to broaden the project outreach beyond private partners' networks and co-learning processes. Indeed, working in lead firm networks is a sound strategy to help identifying key issues, and design and disseminate innovative solutions. However, there are risks of leaving aside poorer, less connected smallholders (particularly women, youth and ethnic groups). Hence, the project will endeavour to understand the whole range of situations and drivers at landscape level in the three districts of intervention; and to propose pathways for scaling up tailored to the needs of different farmers and farming communities, and taking advantage of a variety of forms of organizations, beyond private network, with potential to support dissemination. It will notably inform and be informed by dialogue with district and provincial authorities and extension agents.

This is all the more important that SRA findings suggest possible disconnects between the current sustainability sections of some global firms and their commercial arms. Farmers benefiting from private sustainability program supports do not necessarily have specific market linkages with these companies. This happens in an overall context in which 1) markets provide very poor rewards to farmers for changing practices and market linkages remain weak; and 2) farmers are not organised in a way that they have the ability to negotiate a better position in coffee and pepper chains on their own. This questions the possibilities to sustain and upscale via mainstream commercial rewards for practice changes, the upgrading patterns achieved through sustainability programs. Addressing these disconnects and, more broadly, the various needs and opportunities to empower different categories of farmers and local stakeholders through chain wide reengineering in the coffee and pepper chains goes well beyond the capacity and purpose of the V-SCOPE project. However, the acknowledgement of these issues will help orientate project activities, notably the in-depth local value chain diagnosis⁷ (to be conducted in the project intervention areas) that will serve to frame the design of the participatory value chain experiments (prioritization of issues and proposed changes, stakeholder representation, etc.).

⁷ This will include understanding better the actual access to inputs, services, markets and other resources, for different categories of farmers, and the roles of different actors supporting or constraining this access.

3 Introduction

As part of this SRA, we have firstly investigated the major trends in the Robusta coffee and black pepper markets and in the lead firm strategies, with a view to characterize the Vietnamese Robusta coffee and black pepper positioning on world markets and start assessing the range of possible value chain upgrading strategies from a global perspective. Results are reflected in the next 2 sections (sections 4 and 5).

We then moved into understanding further how the Robusta coffee and black pepper value chain operate in the context of Vietnam and more specifically, of Central Highlands (CH) as reflected in section 6. As part of this analysis, preliminary data sets on farming systems from private companies and research partners have been collected and analysed jointly with the SRA SLAM/2018/209 team, and some gaps identified.

To complement the insights gained from the above value chain analysis on the material bottlenecks and leverages in the different types of value chains, we initiated the work of analysing and assessing the specific business models of lead companies with which we are to partner in the large project. However, in the current Covid related context, we could not proceed with the participatory approach of the Link methodology as initially planned (see SRA AGB 2018/208 annual report). First insights into this, which results from the analysis of 3 key company business models, are presented in section 7.

Concurrently, we have developed innovative collaborative arrangements with lead coffee and spice companies to work together to improve the sustainability of Robusta coffee and black pepper in Central Highlands, building upon our understanding (together with SRA on farm) of the key bottlenecks and possible leverages. Private partners will directly participate to project interventions through co-investment and co-design, piloting and assessment of the innovations; and they will be involved in the project governance. Agreements for partnership and co-funding have been achieved and the contracting process to formalize these commitments is almost completed with:

- 1) McCormick (MGIL); and
- 2) Jacobs Douwe Egberts (JDE) together with Acom, Simexco and Louis Dreyfus Corporation (LDC),

A first agreement has also been formalized with Tchibo regarding specifically co-funding of experimental plots to be operated by CIRAD/ ICRAF, WASI and University of Southern Queensland with a view to provide improved recommendations into water saving techniques; and further discussions are underway to broaden the nature of this partnership to the social and landscape dimensions.

Regarding the agreement with MGIL, this company will provide in cash funding, and our research consortium will be working on the ground at least with one of their key supplier, Pearl Corporation, and possibly also with Simexco. These suppliers will provide access to their network of farmers, including relevant data sets that they have already developed as part of their sustainability programs in collaboration with MGIL, and our project will work closely with their technical staff. As part of this contracting process, a non-disclosure agreement has already been signed between ICRAF and MGIL. The funding provided by MGIL includes two PhD allowances that have allowed leveraging funding from 2 Australian Universities through tuition fee waivers: 1) one University already partner of the large project, Deakin U, for a PhD on soil born pest and disease in pepper plantations, and 2) another University, University of New England, for a PhD on the socioeconomic conditions affecting farmers' adoption of sustainable practices.

The same type of arrangements is organized with JDE: this company will provide in cash co-funding and we will be working with Acom, Simexco and LDC, with ACOM and LDC having also committed small amount of in cash contributions in addition to in kind resources through mutualisation of human resources to monitor current farmers' practices and conduct and monitor experiments in selected farms.

Nestlé also demonstrated a strong interest in our project and cooperation will also take place on the ground through access to Nestlé's network of farmers, including relevant data sets that Nestlé already developed as part of their Nescafé plan program, and collaboration with Nescafé plan program technical staff. This will however not include in cash contribution to the project as Nestlé's strategic priorities for funding are pesticide reduction and carbon neutrality, which are not at the core of our project following ACIAR recommendations.

The V-SCOPE ('towards the Sustainability of COffee and Pepper in Vietnam') project, described in the ACIAR full project proposal '*Enhancing smallholder livelihoods in the Central Highlands of Viet Nam through improving the sustainability of coffee and black pepper farming systems and value chains*', includes a core funding from ACIAR complemented by private companies' and Universities' partners funding.

In addition to the co-funding partnerships, we have been active during the SRA phase in engaging with and ensuring synergies with key players, platforms and initiatives, which have important roles in multi-stakeholder initiatives and in coordinating private sector initiatives towards sustainability:

- 1) the Vietnamese Coffee Coordinating Board (VCCB), which our research partner IPSARD, and colleagues within IPSARD, are managing;
- 2) the Global Coffee Platform (GCP), which is active in coordinating collective industry initiatives such as the collective action initiative (CAI) for Vietnam on pesticides;
- 3) IDH, also very active in supporting private led coffee and pepper initiatives, with which we have extensively interacted, especially with regard to their work on Service Delivery Models (SDM) and on Landscape initiatives in which they are leader in Vietnam;
- 4) the Vietnamese Pepper Association (VPA).

The project team integrated an informal task force composed by Nestlé, JDE, Tchibo, IDH and GCP to ensure synergies and knowledge sharing between projects, including this proposal, and this is meant to help building collaboration with the private sector and supporting public private arrangements, including supporting VCCB underpinnings.

4 Vietnamese coffee and pepper market trends

This section summarizes the main insights from the concise analysis of the Vietnamese coffee and pepper market trends. This analysis details the leading position of Vietnam on the international market, as the largest producer of Robusta⁸ coffee (2nd largest producer of coffee after Brazil) and of black pepper (about 54% of world production and 63% of the global market shares in 2019), and provides key macroeconomic data on the importance of these two crops for Vietnam: the share of coffee output in Vietnam GDP in 2017 was 2,16%; and it support the livelihoods of almost 700.000 households, mainly concentrated in Central Highlands (around 90% both in number of households and of area). This report confirms the significant growth in Robusta coffee⁹ and pepper¹⁰ production in the last 10 years in Vietnam. This is in line with average growth rate of coffee cultivation area at about 2.5%/year, mainly due to the increase in Robusta area.

Though Robusta coffee represents globally a lower share than Arabica (about 40%) this share has been on the rise for the last decades (from about 20 to 40% in 36 years) and it is foreseen that, given the higher vulnerability of Arabica coffee to climate change, Robusta coffee could become dominant in the near future. The report provides further details about the major there are concerns about the capacity of Vietnamese pepper to meet the needs of increasingly demanding markets, especially in terms of food safety¹¹, such as the EU and the USA. This challenge is considered as a major one in the context of Vietnam's participation in new-generation free trade agreements (CPTPP¹², EVFTA¹³), which is seen as creating many opportunities for Vietnam. Robusta coffee producing countries: Vietnam, Brazil, Indonesia, India and Uganda, which overall account for nearly 90% of global Robusta coffee production. Despite slight peaks in 2017 (2.29 USD/kg) or 2011 (2.17 USD/kg), overall international Robusta coffee prices have tended to decline in the last decade, and though prospects are for a slight recovery, the forecast price by 2030 is still below USD 2/ kg.

Coffee consumption worldwide has been increasing in the last decade driven by new consumption and coffee shops trends in emerging markets such as China, India and Indonesia; and globally Robusta is expected to be the fastest growing market. In these countries, a shift from drinking cheaper tea to consuming coffee is observed in line with rising income and changing tastes of young people, and consumption trends are driven by the increase in coffee shops. Though being export countries, India and Indonesia - given their very large population and currently very low coffee consumptions - could together with China supplement Vietnam's traditional export markets which are Germany, the US, Italy, Japan and Spain. Other emerging markets are Turkey, South Korea and Russia. Vietnam also forms part of this emerging market with a per capita coffee consumption of less than 2 kg/person/year but significant growth in recent years 9.4%/year between 2014 and 2018. Currently, domestic consumption accounts for about 10% of total production. While demands from Vietnam's traditional markets had decreased significantly in recent years, Japan demand very recently strongly recovered as a result of Covid changes in consumption patterns (demand for instant coffee at home). In line with the above, the share of instant coffee, which is widely consumed across Asia, significantly increased in

⁸ Robusta representing 95% of the total coffee cultivated area in Vietnam compared to Arabica

⁹ With a 65.5% increase in 2017/18 compared to 2009/10, i.e. 6,5% per year, twice as high as the 3% annual growth known by coffee production globally between 2010 and 2019.

¹⁰ With a with a growth rate of 11.2%/year over the period 2011-2019, above the world growth rate of 8.3%/year.

¹¹ Notably problem of Metalaxyl residues on pepper when importing into the EU market.

¹² Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

¹³ EU Vietnam Free Trade Agreement.

Vietnam, from 0.5% export share in 2001 to 17% in 2019, the rest being mainly green beans with only 2% of roasted and ground coffee in 2019.

The report notes the increasing demand for traceability and sustainability, notably in European markets; and details the current situation in Vietnam and in the different provinces in Central Highlands, confirming the significant area of certified coffee under the main sustainable standards (4C (The Common Code for the Coffee Community), UTZ Certified, RFA (Rain Forest Alliance) and FLO (Fair Trade)). It also points to the recent industry move towards specialty Robusta coffee, especially from European coffee shops and roasters, with the creation of the Q Fine Robusta Standards and Protocols in 2019.

Whole pepper represents over 90% of the pepper volume traded internationally, with only India (4th world producing country) currently trading significant proportion of ground pepper. The US market is the first most important one followed by Germany and Netherlands, with the latter playing an important role in processing and re-exporting to other countries. However, recently, Vietnam has lost market shares in traditional markets such as Germany and Netherlands which have found cheaper products with higher quality from Brazil¹⁴, India and Indonesia¹⁵; and the second market for Vietnam is now India, which is at the same time a significant producing and consuming country. While prices followed an upward trend between 2007 and 2015, they have since then known a sharp decline in line with the significant increase in production worldwide. Forecasts are for a continuation of the increase in production and of the increase in demand but at a lower level than production, therefore likely to result in prices remaining quite volatile and low.

Pepper is mainly grown in Central Highlands (62% of the total pepper area¹⁶) and the Southeast. As for coffee, Vietnam yields are much higher (2,2 times the world average in 2017). However, national average yields dropped from 27 quintals/ ha in 2017 to 24 in 2019 reflecting the disinvestment in production from a number of farmers in a context of very low prices not even covering production costs for some farmers. With an underdeveloped processing industry, Vietnam is also mainly positioned on basic export and competing on prices in the low-end segment. As worldwide, whole pepper represents about 90% of total export. The dominant export product is black pepper with Fair Average Quality standard, though a 10% increase in more processed products (steam sterilization, American Spice Trade Association standards, processed pepper powder, etc.) has been observed since 2010. Despite this, Domestic consumption, though knowing an upward trend, only accounts for 3-5% of the total production.

For further information, the reader is referred to the SRA coffee market trends report: Tran Thi Thanh N. (2021) and to the SRA coffee market trends report: Tran Thi Thanh N. (2020).

¹⁴ Over 80% of Brazil's total pepper meet the organic standard.

¹⁵ Despite the general low price positioning of Vietnam on international markets.

¹⁶ Especially in Dak Lak and Dak Nong (about 25% of total pepper area each) but with Gia Lai knowing the highest yield (about 40 quintals/ ha compared to a national average of 27 quintals/ ha in 2017).

5 Drivers and strategies of lead firms: the rise of sustainability

This section summarizes the main findings and the approach of the work undertaken on the coffee and pepper lead firm strategies. It provides a macro level analysis of the drivers and strategies of global lead firms, and how these shape opportunities and constraints for the producing countries, notably Vietnam. It highlights some potential and constraints for Robusta coffee and black pepper in Central Highlands, which are then further discussed in the SRA Vietnamese value chains report in the section 6 that follows. For further information, the reader is referred to the SRA global value chain report: Neilson et al. (2021).

Our results confirm the large dominance of the global downstream players in both sectors with similar organizations: lead firms are positioned in the final processing and branding stages in close connections with the end-users, and operate through a range of local and global suppliers, positioned in the trade segment with different levels of integration in terms of processing and primary production. This is notably the case of JDE and McCormick, which are two strategic partners for our large project. Only one of the largest global player, Nestlé, still represents an exception in this regard: in addition to its dominant position as a roaster, it fully integrates the trading segment for some products and markets.

Our analysis also characterizes the demand for and trends towards strengthening sustainability strategies from the lead firms as a major global trend in the two sectors. It shows how recent manifestations have resulted in broadening the range of instruments and arrangements towards ensuring sustainability. International trends in the coffee sector, which is far more advanced than the pepper industry in terms of segmentation -be it on organoleptic quality or on sustainability grounds-, show a shift from a now 'classic' third party certified sustainability standard - or a transformation - into more encompassing sustainability approaches, which are intended to operate across commodities and engage much more significantly the different actors. These include multi-stakeholder initiatives and landscape level sustainability assurance approaches¹⁷ as responses to the critics made to and/ or as a complement to product-based sustainability standards. Lead firms are increasingly investing into supporting changes in farming practices and improved rural livelihoods, and they are experimenting with new schemes to provide services and inputs to farmers. This goes along with an increasing attention drawn to different sustainability concerns, including pesticide contamination and food safety as well as climate change and carbon neutrality. While the coffee sector is much more mature than the pepper one with regard to quality segmentation and sustainability, they follow similar trends, notably with regard to sustainability developments.

Through deepening the understanding of recent trends in the lead and global firm strategies, this report shows that coffee and pepper upgrading strategies can provide viable option for suppliers and small scale farmers from developing countries to enhance their position in the chain and improve their livelihoods, notably in line with improving sustainability. This requires small producers and exporters to invest in farm production and adopt sustainable practices to avoid being excluded from international markets. However, recent developments as part of the lead firms' sustainability programs intend to better support farmers' capacity to adapt to these requirements and benefit from them. Nonetheless, these are still to be mainstreamed and adapted to the specific constraints faced in different contexts and to be widened in scope to effectively improve the situation of smallholder farmers on a significant scale.

¹⁷ This includes the concept of Verified Sourcing Areas (VSA), promoted globally by IDH and for which developments in CH, though still at an early stage, are among the most advanced worldwide.

Contributing to guiding the development of innovative practices and value chains driven by the main key coffee and pepper players to address sustainability concerns, is key in supporting changes in farming practices and improved rural livelihoods. As evident from our findings, these include improved service provision models and management of sustainability standards by coffee and pepper traders within their supply chain networks in strong connection with downstream dominant players. It is therefore important to better comprehend the development implications, i.e. the opportunities and constraints for producers as well as for local collectors and firms, of the lead firm strategies highlighted here, on the coffee and pepper sector in the Central Highlands of Vietnam.

The approach followed consisted into a global-scale analysis of lead firms (processors and trading firms) and how their priorities and strategies appear to be shifting. To do so, a global value chain (GVC) approach has been adopted following key academic contributions in this field, notably from Gereffi, (1994; 1995; 1999), Kaplinsky and Morris (2001) and Humphrey and Schmitz (2002). The analysis departed from a mapping and analysis of the global value chains for coffee and black pepper and then explored the different coffee and pepper standards and quality avenues.

6 Robusta coffee and black pepper value chains in Vietnam and Central Highlands

This section summarizes the main findings of the work undertaken on the coffee and pepper value chains as developed in Vietnam and more specifically in Central Highlands. Through mapping the different value chain channels operating for export and domestic markets and detailing the key features of each segment of the value chains, it analyses the potential for upgrading and improving farmer situation and discusses the key constraints at the different stages. For further information, the reader is referred to the SRA Vietnamese value chain report: Tran Thi Minh et al. (2021).

It is worth pointing out from the outset the difficulties in working with secondary data regarding the pepper sector given the quite limited research accessible on the downstream part of pepper value chains *per se*, especially in the context of Vietnam. Studies often encompass more broadly spices.

As evident from this report, though Vietnam is currently largely leading global trade for coffee and black pepper, the situation of both the coffee and black pepper sectors in Central Highlands drastically deteriorated in recent years both agronomically/ environmentally and economically. Not only coffee and pepper plants have been dying off significantly; but also the international prices of these two commodities have known significant decrease¹⁸. This has happened in a context in which Vietnam is particularly dependent on international market prices. Indeed, as confirmed in our findings, **Vietnam sell most of its production as raw material on international markets and is generally positioned in the low value market end**. Exporters and downstream buyers are looking for high quantity of cheap raw material. Indeed, Vietnamese Robusta coffee is mainly exported for producing soluble coffee, explaining why coffee quality is not receiving attention in the market. Furthermore, though there are a few interesting trends evidenced in the growing domestic market, **domestic consumption is still limited for both coffee and pepper, and will unlikely drive significant changes at sectorial levels given the volumes considered**.

Our results confirm that **the Vietnamese processing capacity is low and that there are quite limited prospects in the medium term for private sector investment in developing high- value/ high-quality products**. Under current global market dynamics, local private and public actors lack the ability to invest in production territories and achieve whole-of-chain upgrading. And global buyers/ exporters do not show clear signs of investing into upgrading strategies in Vietnam besides, on the one hand, investment in soluble coffee processing to meet increasing demand in the regional market and on the other hand, the rising development of a variety of sustainability initiatives as already identified at global level. Furthermore, though Robusta specialty coffee is starting emerging in a few countries worldwide (e.g. Uganda) and to a very small extent in Vietnam, currently the extremely low volume of specialty Robusta produced in Vietnam, though showing good promise, does not allow Vietnam to position itself internationally in this emerging trend and serves essentially domestic consumption.

Our findings also confirm that, despite recent national political move towards putting quality in the agenda, at least for coffee, **the dominant approach at production level, including from an innovation system/ enabling environment perspective, remain mainly geared towards highly intensive systems targeting volume at the expense of product quality and safety**. Hence, the very low demand and incentives to farmers for producing quality is reinforced by the lack of grass root level public drive and support to

¹⁸ This seems to have gone as far as not even covering production costs for a significant proportion of pepper farmers in the recent past, with farmers disinvesting in pepper production or shifting to other crops.

produce quality¹⁹. Though Vietnam is making increasing claims to move into a high value addition strategy and has developed general national strategies in this regard²⁰, the pathways to achieve this move are still unclear. As an illustration, improved coffee varieties are still mainly selected for improving yields and being pest resistant, with low to no considerations for organoleptic dimensions. Hence, in this current market and enabling environment context, coffee and pepper farmers are biased towards increasing yields and/or reducing production costs as a priority for achieving higher income, not at increasing quality and differentiating their production to stimulate and achieve more remunerative demands. These mechanisms are unfortunately self-reinforcing and producing vicious circles. High volumes of low quality Vietnamese coffee and pepper have been flooding international markets in recent years and drastically contributing to drive prices down; and the general image of poor quality Vietnamese Robusta coffee and pepper further severely undermines the prices that both commodities fetch on international markets and make Vietnamese producers particularly vulnerable to international price fluctuations.

From an agronomic/ environmental perspective, after 30 years of this type of development, Vietnam's coffee, and to a lesser extent pepper, industries are increasingly facing severe sustainability challenges of their current production models:

- ageing coffee trees, and increasing levels of plant mortality for both coffee and pepper in line with pest infestation and soil degradation;
- limited room for yield improvement in a context of unmanaged expansion of coffee and pepper and farmers establishing production areas in unsuitable land: coffee and pepper farmers have already among the highest levels of productivity in the world and significantly exploited productive resources such as suitable land and water;
- inefficient agricultural management and use of resources involving the misuse and overuse of mineral fertilizers, irrigation water and synthetic pesticides reinforcing the above;
- increasing exposure and vulnerability to climate change: farmers are increasingly subject to increasing temperatures and erratic rains in a context in which the region suffers serious water shortages due to the effects of El Nino. This exacerbates the spread of pests and diseases;
- competition of other crops, notably as part of poorly managed intercropping systems: not only coffee and black pepper had recently been increasingly grown on the same farm and plots, but also grown together with fruits in particular (avocado, durian, macadamia, etc.).

Hence, many farmers have been facing increasing production costs together with falling coffee and pepper prices and have therefore faced strong economic difficulties (Nguyen et al. 2015; Vu et al. 2015).

For coffee and pepper value chain actors as well as for public authorities in Vietnam, there is therefore a strong rationale and demand for investing into coffee and pepper sustainability. From an international trade perspective, this rationale is reinforced by the increased demand to address the rising food safety concerns. Chemical and fertilizer residue levels together with changes in consumer and end user requirements for coffee and pepper products are increasingly putting at risk the perceived quality and food safety of coffee and pepper products grown and sold by Vietnamese producers; and food safety management is a strong driver into mainstreaming and improving sustainability

¹⁹ Knowledge about coffee tasting is only emerging in Vietnam and is not in practice at farm level.

²⁰ Vietnam's policy of coffee production has shifted to a new era with two objectives: firstly, to maintain its position as the world's second largest producer and exporter of coffee green beans; secondly, to double the added value in coffee production by increasing productivity, quality and value addition.

approaches. As already indicated globally and confirmed for the case of Vietnam, the pepper sector, which is much less mature than coffee in terms of addressing sustainability, is showing clear recent moves in this regard; and interestingly, the coffee industry has recently launched a number of collective initiatives in collaboration with NGOs and research organizations, both globally and nationally, to find ways to drastically reduce agrochemical uses (ECOFFEE, GCP Collective Action Initiative). More generally, companies are increasingly partnering among themselves and with other key stakeholders to broaden and strengthen their sustainability approaches. Our findings in this regard at Vietnamese and Central highlands levels confirm that **the recent developments related to private company sustainability initiatives, though still presenting weaknesses as also further argued below, have the highest potential as entry points for engaging with the private sector in our project** and ensuring that they are a critical engine of change.

Importantly, increasing claims are made worldwide, as already mentioned in the global value chain study, that market based instruments such as **sustainability standards, which have characterized the first worldwide wave of industry engagement into addressing sustainability in sectors such as coffee, have not been delivering up to their promise**. As confirmed in our report, this is notably the case in Vietnam in which the coffee sector has been very active in enforcing sustainability standards (such as 4C, RA or UTZ certified): sustainable certification schemes are increasingly put into question for not delivering the expected environmental, social, and economic benefits to rural communities. Distrusts have developed into actual standard enforcement on farm and throughout the chains; and large buyers are not prepared to pay decent premiums for certified coffee under the current standards and certification schemes. Hence, in the last 2 years, global buyers have even drastically reduced their demand for certified coffee. Overall, certified coffee trade has dropped from about 40% to about 20%.

As already emphasized in the previous section, these acknowledged limitations of the standard-based approach together with increasing and more diverse concerns for sustainability actually result in global buyers investing in new approaches to sustainability besides standards, and developing new instruments to support farmers with a view to secure their coffee and pepper supply globally and align with -or help shape- increasing demands for sustainability. In this regard, our report shows that **Vietnam is home to a wealth of experimentations by private companies and their partners to address sustainability. Interestingly, besides coffee and pepper industries, the input industry is also increasingly developing its own sustainability programs and partnering with coffee and pepper actors** as also evidenced in our report and so far much less considered in the academic literature. As a result of all this, some large coffee and pepper actors are innovating through integrating input and service provision into their business activities and working closely with producers, but also gradually with local collectors and input suppliers (especially when partnering and receiving support from IDH which has been pioneer in identifying these latter actors as critical actors of change).

Our results confirm the opportunities brought about by these dynamics to improve farming practices and farmer livelihoods. **However, so far, in Vietnam, these sustainability-based initiatives are not necessarily integrated into the core business strategies of the lead firms**, and even when they may be, their capacity, their span and scale still need to be significantly increased and secured. This contributes to the fact that **currently many farmers do not access and benefit from any of the facilities**, be they training, improved input provision, etc., developed so far. These farmers rely on traditional sources of inputs and services, i.e. local shops, collectors and public extension services. Our current investigation into how these operators work, though still limited, confirms, on the one hand, how critical these actors are for farmers - including for providing credit to those not accessing formal sources of credit -, but also the different possible biases: market price manipulations, fake products, etc.

Current limitations in our study includes in depth understanding of how middlemen and local shops operate concretely in our areas of intervention. Understanding better the actual access to inputs and services for different categories of farmers, and the roles of different actors in this, will be an important initial area of investigation for the large project. Though we do not intend to intervene directly in the credit and insurance areas, it will be important that we better scrutinize what is in place for farmers²¹. The role and potential of the sustainability programs not only from the coffee and pepper industries but also from both global and national input suppliers, will also need further considerations in identifying leverages in working with the private sector. The project will draw from this to identify the key areas of change (constraints and opportunities) in the local enabling environment to be tackled together with our private partners as part of improving their sustainability programs. This will help determine our target groups for co-designing innovations in the value chains. In the span of the project phase to come, these will be mostly related to our partner local networks. However, we will also build on this knowledge to further identify pathways/ scenarios for broader categories of farmers.

A number of social dimensions also need further exploration such as the significant ageing of the coffee and pepper farmer population, which has implication in terms of investment capacity/willingness, labour availability as well as attractiveness for younger generations of farmers. In general, there is a need to get into a proper characterization of farmer and rural community livelihoods strategies to tackle sustainability issues from a long term perspective. In this regard it is worth pointing out that so far gender and ethnicity did not come out strongly in our investigation, be it based on secondary data or key informant interviews and other primary data collection processes. Their inclusion as specific areas of research in the large project can make a difference from a social sustainability perspective. With coffee and pepper being grown in the same areas and with intercropping between these two crops that has taken significance in the recent past, it will also be important to study further the actual roles of these two crops in different types of farmers' livelihoods and to move beyond the farmer level to understand the synergies and competition between the two crops from a landscape/ land use management perspective. In the context of unmanaged expansion of these two crops but also of growing intents to tackle this issue at landscape level in multi-stakeholder arenas as part of improving coffee and pepper industry driven sustainability initiatives, improved suitability mapping appears as a critical tool for the concerned stakeholders to work collectively in informing their strategies. The increasing vulnerability of the concerned coffee and pepper areas to climate change, as also evidenced in our report, further points to the need to integrate climate considerations in our long term approach.

²¹ We could not find the updates of the newest agricultural insurance (Decree 58/2018) which covers coffee and pepper sector and represents one of the Government's priorities. It would be good to know the current situation and obstacles in the implementation process. Besides formal credit, informal sources of credit such as those provided by collectors are to be better understood.

7 First insights into the business models of three coffee and black pepper traders

This section summarizes the main findings, approach and limitations of the work undertaken on the business models description and which contributes to identify material bottlenecks and leverages in the different types of value chains. For further information, the reader is referred to the SRA business model report: Even et al. (2021).

A. As an initial step into the work to be undertaken in the V-SCOPE project, we have conducted a preliminary characterization and analysis of the business models of three private partners for the V-SCOPE project.

Our results show that all the scrutinized export companies rely on a combination of strategies:

- (i) assuming new functions within the chain (functional upgrading – e.g. provision of services, and to a lesser extent inputs);
- (ii) pushing for the adoption of improved farming practices, in order to increase sustainability and profitability of the farming systems (process upgrading – e.g. supporting sustainable certification processes, and compliance); and
- (iii) attempting to improve the quality of coffee and pepper (product upgrading – e.g. technical assistance on input use and application).

All three upgrading strategies have a strong inclination towards sustainability, in line with the trends observed at global level for coffee and black pepper sectors. These strategies are clearly articulated around the delivery of services to smallholder producers. Those services are either delivered directly by in-house staff or indirectly by third-party local agents.

The range of services provided (or facilitated) by the companies varies greatly from one business model to the other. Among those services, technical assistance and trainings are preponderant. They focus on improved farming practices (including specific issues such as soil management, irrigation or rejuvenation) and their cost is usually covered by the companies. Furthermore, substantial work is done regarding provision and application of inputs, most of the time in line with certification and standards requirements. To a lesser extent companies also engage in supporting access to financial services, and strengthening farmers' organizations.

We finally decided to concentrate on the business models for three companies for which sufficient sharing of information could be organized during the SRA phase and which are operating directly on the ground with coffee or pepper farmers including:

- 1) two coffee exporters, namely Atlantic Commodity Vietnam Limited (ACOM) and Daklak September 2nd Import-Export Company Ltd (Simexco Daklak),
- 2) and one pepper exporter, Pearl Trading Services and Import – Export Joint Stock Corporation (Pearl Corporation).

For these three export company, we gathered general information on their overall coffee and pepper trading activities, we identified their upgrading strategies and explained how they are inserted in their overall business model. Our preliminary characterization of the company upgrading strategies builds on the Global Value Chain framework referred to in section 5, and includes a description of the related activities implemented by the companies in order to operationalize their upgrading strategies.

With a view to get a more general overview of the prominent coffee and black pepper lead firms, i.e. main national and global exporters and downstream processors, an initial search for information was undertaken for each of them. The descriptive results of this

search are reported in the annex of the business model report. They have been, at least partly exploited, in the SRA Vietnamese value chain report (see section 6.)

B. Using the LINK methodology's inclusiveness principles (Lundy et al., 2012), we then pre-assessed the level of inclusiveness of the company's business models underlying their sustainability programs.

Given the nature of the activities implemented by the companies as part of their sustainability programs, the business models perform well in terms of chain-wide collaboration and access to services. The companies, in particular, identify "champions" at the production and collection segments of the chain (farmers' organizations and collectors), on which they rely for implementing and spreading activities on the ground. Value chain stakeholders seem to recognize their interdependence and are willing to collaborate. However, market linkages remain relatively weak and inefficient. Producers get very weak short-term economic incentives (e.g. premiums are very low) to change their practices. And the company mainstream sourcing operations are not necessarily consistently connected with the sustainability programs.

First evidence points out that farmers benefiting from company support as part of service delivery models (SDM) do not necessarily sell their coffee and pepper to these companies. This will be further investigated as part of the V-SCOPE program, especially as further discrimination will have to be made between, on the one hand, issues of disconnections between core business activities/ strategies and their sustainability program support and possible issues arising from it, and on the other hand, deliberate strategies, or claimed as such, from the companies not to tie the supported farmers to sell their coffee and pepper to them. The latter is justified as part of allowing farmers to benefit from the competitive market environment at farm gate level, with a view to support their livelihoods and securing -on the long term rather than with a short term view- their continuous investment in coffee production.

The other aspects of inclusiveness, such as governance, innovations, and monitoring systems scored low, but this must not be over interpreted as it critically connects to the lack of information to assess them at this stage. Another strong limitation from our analysis at this stage is that the assessment provided reflect the authors' perspective and not the value chain stakeholders' one as we were not able to conduct our assessment in a participatory way.

For each company, we provided a list of additional information to be collected in order to deepen the analysis and to be able to start the participatory work with local stakeholders. The reader is referred to the corresponding report.

To assess the level of inclusiveness, we made the choice to focus on the relationships between the companies and the smallholder farmers within the frame of the company sustainability initiatives, to provide a first assessment of the actual achievements of these initiatives on this important dimension of sustainability. The choice of not tackling the overall coffee or pepper trading activities of these companies also resulted pragmatically from the lower level of information that could be collected at this stage on these broader activities. Overall, detailed trading information is sensitive while assessments, external partnerships -including with research organizations- and communication form an integral part of the company sustainability initiatives, though to different extents depending on the companies.

8 Conclusions and recommendations

Conclusions and recommendations have already been provided in the previous sections as part of synthesizing key findings from the different studies. Here we reemphasize a number of key messages and lessons learnt to guide future research and interventions, as proposed in the V-SCOPE project.

8.1 Conclusions

As was widely confirmed in the different studies, margins of action towards upgrading, outside sustainability approaches, are very thin as the market demand for Robusta is on "volume of cheap coffee" preferentially residue-free, and not on quality, with very low prospects for changes in the near to medium term future²². This is certainly one of the main reasons why coffee certification did not deliver socially, environmentally and economically in the Vietnamese Robusta coffee sector. Furthermore, farmers in Vietnam are not organised in a way that they have the ability to negotiate a better position in the coffee chain on their own²³. The Vietnamese pepper sector shares many features with the coffee sector: same focus on volume of cheap pepper. At the same time, worldwide, the pepper sector is much less mature in terms of quality segmentation²⁴. While this could be seen as an opportunity for Vietnam, as the world leader, to position itself, Vietnamese pepper is facing strong concerns with regard to food safety in line with the unmanaged expansion in the last decade. And lead firms are proposing to address this concern as part of a more systematic investment into sustainability.

The example of McCormick on pepper in Vietnam, being able to cut down some of the middlemen with their preferred local partners, is definitely interesting but requires a strong business drive. Working with RFA certification is apparently resulting in better pepper food safety which is the major concern of the global pepper sector today; and this is still a pilot scheme considering Vietnamese production scale and McCormick supplier base.

Building on partnerships with private companies based on their sustainability programs as a critical entry point

During the SRA phase, we have managed to establish extensive collaboration with lead companies, both global and Vietnamese, and more precisely with their sustainability heads, as evident from the above. This provides a major stepping stone to harness the potential to work with the private sector in driving changes and achieving impacts at scale. Having assessed the potential associated with private commitments into sustainability programs, the underlying project strategy in collaborating with the private sector is to both strengthen and build on private companies' increasing expertise in supporting farmers and on their increased interest in tackling pressing sustainability issues. The genuine private sector interest in tackling sustainability issues, such as chemical contamination or climate change, in Vietnam manifests itself, at least in the coffee sector, in the increasing collaboration between lead companies to drive together major initiatives (see section 3 above).

²² With Arabica coffee, there is an increasing global consumers' demand for high quality with "coffee lovers" willing to pay a substantial premium for specialty coffee, whereas there is not yet such a specialty market for Robusta.

²³ Just like "isolated farmers" in Central America are not able to do so without being members of a cooperative or even a union of cooperatives.

²⁴ Except for very niche market success stories such as Kampot pepper.

Broadening the sustainability approaches of lead firms and moving into landscape approaches

Tighter collaboration and strengthened linkages between producers and private companies has been shown to increase the adoption of new technologies; and interesting opportunities arise in this regard from the farmer support programs that lead companies increasingly develop as part of mainstreaming their sustainability strategy. It is clear however that many farmers still fall outside Indeed, while working directly in private partner networks is a sound strategy to help identifying key issues, and design and disseminate innovative solutions, it presents major risks of targeting and supporting better-off farmers, leaving aside vulnerable populations (including women and ethnic groups).

Interestingly, Vietnam is pioneer internationally in the coffee sector with regard to landscape approaches to sustainability, with IDH leading the process, and Vietnam could have the potential there to modify its very poor quality image and move out of the vicious circle attached to it. Additionally, this has been set as a high priority by the government, both at central (MARD) and local levels²⁵. Further insights into how our V-SCOPE project proposes to support these dynamics are provided in the next sub-section (see 8.2).

8.2 Recommendations

In line with the diagnosis conducted on the current constraints and opportunities in coffee and pepper production systems and value chains in Vietnam, we recommend to target interventions and innovations with potential to:

- c) increase resource-use efficiency, prevent further environmental decline, support adaptation to climate change and improve food safety: important entry points in this regard are in improving soil health and soil fertility, optimizing intercropping/agroforestry systems, and decreasing use of agrochemicals and irrigation;
- d) leverage opportunities in value chains, ensure inclusiveness, and support processes of rural transformations.

Working with companies to expand and improve their sustainability approaches as a complement to providing technical paths and recommendations for driving sustainable production practices

Our investigations confirm the critical need, from a value chain perspective, to experiment with and assess innovative practices and tools to trigger, support and take advantage of technical changes at farm level.

This is why in the V-SCOPE project the team intends to work on farming and value chain pilots with private company networks to ensure that not only proper technical solutions are available but also farmers can take advantage of them and value them in more efficient market arrangements. So far, lead companies are strongly engaging with our project team on technical questions and are showing interest in working together more broadly on improving their sustainability programs. The idea is to build on this to gradually strengthen relationships and move from technically oriented partnerships to whole of the chain approaches.

²⁵ We got several confirmations of the importance attached by MARD to this (notably in working with international donors).

Based on the different findings above, we therefore recommend to follow a two-way approach in working with the private sector and combining support to technical and to organizational innovations:

- 1) The first one is to work with a number of private partners in their farmers' networks from good farming practices to delivery of services to farmers and to local supply chain upgrading.

The SRA confirmed the increasing trends in lead firms to provide tailor-made services to smallholder farmers as a complement to properly enforcing sustainability standards. Using participatory approaches, the project has a strong potential to support companies in exploring new ways to achieve these²⁶.

- 2) The second one is to work with rural coffee and pepper communities, local authorities and the private sector to support the development of landscape approaches²⁷.

Through collaborating with lead coffee and pepper firms, public authorities and IDH, our project team is in a unique position to make scientific contributions in assessing the effectiveness and viability of these approaches. And this will allow to embed technical and value chain upgrading interventions into innovative business approaches that are developing to address sustainability concerns, and strengthen them, hopefully contributing to their mainstreaming.

Hence, the V-SCOPE project has been designed so as to not only draw findings from the pilots together with our private partners as part of tailored learning processes but also generate and integrate knowledge on the different agroecological and socio-economic current and possible future farming contexts at district level²⁸, and propose adaptation strategies accordingly. In moving from a farm and value chain to a landscape sustainability approach, a long term social perspective will serve to illuminate how agriculture - and within agriculture, coffee and pepper - contributes to supporting livelihoods and how rural communities undergo agricultural and non-agricultural transformations, such as industrialisation and urbanisation. Understanding the social processes behind these broad development transformations is needed to properly address the needs of different populations, including the more marginalized and vulnerable farming communities (particularly women, youth and ethnic groups); and though having important implications for the future of coffee and pepper production, are so far poorly documented.

Through the combined expertise in GIS and modelling of the V-SCOPE research team, accurate - current and forward looking - spatial representations and tools, which are in strong need to support interventions at landscape level, will be developed²⁹. These will integrate different data on agroecological and socioeconomic heterogeneity at landscape level and will account for this heterogeneity in tailoring good farming practices and in facilitating a public-private policy dialogue to ultimately improve the policy and enabling environment.

²⁶ As a clarification, we do not pretend as a research for development group to operate ourselves the "re-engineering of the mid-chain". These have to be driven by business actors themselves (and not research) but we will support and trigger changes through adapting the Link methodology participatory approach.

²⁷ As emphasized by IDH and IPSARD (2015), this is meant to reconcile the commitment of global companies to source sustainable coffee or pepper at the horizon 2025-2030 (as advertised on their websites and Corporate Social Responsibility schemes) with the view that at local level "sustainable development needs have to be firmly rooted in local priorities and driven by local actors". The Vietnamese government, and MARD in particular, are officially promoting this approach.

²⁸ Including farmers which are not yet or not any more growing coffee and pepper.

²⁹ This will include current and forecasted climate data and will help improve existing suitability maps and design adaptability maps.

Indeed, the idea is that this comprehensive knowledge generation at landscape level will inform recommendations for scaling out for our private partners but also for other stakeholders, notably public agencies, and be used in the context of the different multi-stakeholder arrangements that are developed to tackle sustainability. Hence, the project will account for situations and drivers currently out of the scope of our private partners. That way, the project intends to not only design scaling up strategies that fit the needs of the farming communities that currently work with lead companies but also of marginalized and vulnerable farming populations. As part of these approaches, our research strategy will inform and be informed by continuous dialogue with district and provincial authorities. Public representatives and extension agents will be involved in the co-design of innovative solutions in the different project activities. Generated knowledge and tools are to be shared with and used by district and provincial authorities.

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9.2 List of publications produced by project

Even B., Tran Thi Minh N., Nguyen Mai P., Duong Minh T., Biénabe E., 2021. First insights into the business models of three coffee and black pepper traders. ACIAR SRA AGB-2018-208 report. 46 p.

Neilson J., Tran Thi Minh N., Biénabe E., Even B., Nguyen Mai P., 2021, Drivers and strategies of lead firms in the global value chain for coffee and pepper: the rise of sustainability. ACIAR SRA AGB-2018-208 report. 51 p.

Tran Thi Thanh N., 2021. Vietnam's coffee market report. ACIAR SRA AGB-2018-208 report. ACIAR SRA AGB-2018-208 report. 37 p.

Tran Thi Thanh N., 2020. Vietnam's pepper market report. ACIAR SRA AGB-2018-208 report. ACIAR SRA AGB-2018-208 report. 37 p.

Tran Thi Minh N., Even B., Biénabe E., Duong Minh T., Nguyen Mai P., Tran Thi Thanh N., Chau Thi Minh L., 2021. Robusta coffee and black pepper value chains in Vietnam and Central Highlands. ACIAR SRA AGB-2018-208 report. 81 p.

10 Appendixes

10.1 Appendix 1:

From August 15, 2019 to July 2020, the research consortium led by ICRAF in charge of the project titled: Off-Farm SRA - Strategic review and planning for enhancing the livelihoods of coffee and pepper smallholders in the Central Highlands of Vietnam through improving stakeholders' participation in agribusiness led value chains has been carrying out the following activities:

- On farm and off farm consortium workshops: pre-inception workshop on the 21st of June 2019 in Hanoi; launching SRA workshop on 24th and 25th of September 2019;
- Data collection and management of data sets from private companies and research partners jointly with SRA off farm. These datasets have been shared with the whole on farm and off farm research team through a common google drive, and screened;
- Field trips in Central Highlands in Sept. 2019 (ICRAF) and Feb. 2020 (ICRAF, CIRAD and U Sydney) consisting mainly in one on one meetings with key stakeholders from the private sector as well as meetings with national partners;
- Online one on one communication with the lead coffee and black pepper companies in Vietnam complemented by in depth search for secondary information;
- Writing of the macro level reports on coffee and black pepper market trends, and on the drivers and strategies of global lead firms
- Development of the pre full project proposal and full project proposal: extensive phase of co-design between all the project partners and of partnership building with key private sector companies from the coffee and black pepper sectors;
- Consultation with MARD on Vietnamese government's priorities of coffee and pepper sector as well as with other key public and private stakeholders.

Due to the Covid 19 situation, traveling and large meetings have been limited since March 2020. Hence, the participatory workshops (using the Link methodology) planned to investigate current material bottlenecks to efficient chain operations and commensurate returns for smallholders and possible leverages together with the whole set of local value chain stakeholders had to be cancelled. They have been replaced by an increased emphasis on bilateral discussions complemented by in depth search for secondary information. This shift is also linked to the much stronger overlap between the SRA stage and the design of the proposal for the large project than initially planned. Indeed, this resulted in considerable amount of time spent in engaging with the private sector under different formats to properly explore the potential for and actually confirm the nature and format of the collaboration. Participatory workshops to get in-depth insights into the main bottlenecks and leverages for more effective through chain communication have been rescheduled for the large project implementation (under WP3 as part of the value chain innovation prototyping, see full proposal).

WASI has liaised with and help built up the connection between the local authorities of the 3 target provinces (Dak Lak, Dak Nong and Gia Lai) in Central Highlands and ICRAF as well the other research institutes involved.

10.2 Appendix 2: List of key informant interviews

No.	Key interviews	Location	Date
1	Swiss Contact Head Office	Zurich, Switzerland	July 2019
2	Swiss Sustainable Cocoa Platform	Zurich, Switzerland	July 2019
3	Barry Callebaut Head Office	Zurich, Switzerland	July 2019
4	Swiss Coffee Traders Association	Zurich, Switzerland	July 2019
5	Ecom Agrotrade	London, England	July 2019
6	Springfield Centre	Durham, England	August 2019
7	ISEAL Foundation	London, England	September 2019
8	The 4C Association	Cologne, Germany	September 2019
9	Rainforest Alliance	Amsterdam, Netherlands	October 2019
10	Jacobs Douwe Edberts	Amsterdam, Netherlands	October 2019
11	Global Coffee Platform	Bonn, Germany	October 2019
12	IDH Sustainable Trade Initiative	Utrecht, Netherlands	November 2019
13	Vietnamese Pepper Association	HCMC, Vietnam	February 2020
14	Ecom - Acom SMS	Dak Lak province, Vietnam	September 2020
15	Olam Vietnam	HCMC, Vietnam Sky meeting	February and August, 2020
16	Rainforest Alliance	Dak Lak province, Vietnam	February 2020
17	Nestle	Dak Lak province, Vietnam	February 2020
18	Simexco JSC	Dak Lak province, Vietnam	February 2020
19	Pear Corporation (Tran Chau)	Dak Nong province, Vietnam Sky meeting	February and August 2020
20	An Phong company	Dak Nong province, Vietnam	February 2020
21	Vinh Hiep company	Gia Lai province, Vietnam	February 2020
22	Nam Yang cooperative	Gia Lai province, Vietnam	February 2020

No	Interviewee's name	Gender	Occupation	Address	Date of interview
Farmers					
1	Puih Wat	Male	Farmer	Blang 3 village, Ia Der commune, Ia Grai, Gia Lai	16/10/2020
2	Nguyen Van Tuan	Male	Farmer	Village 1, Ia Kha, Gia Lai	16/10/2020
3	Puish	Male	Farmer	Blang 3 village, Ia Der commune, Ia Grai, Gia Lai	16/10/2020
4	Nguyen Huy Hanh	Male	Farmer	Village 7, Ia Kha commune, Ia Grai	16/10/2020
5	Tran Tuan Oanh	Male	Farmer	Village 2, Eatar commune, Cu M'gar	18/10/2020
Middlemen					
1	Nguyen Viet Phon	Male	Middlemen	Dak Doa district, Gia Lai	15/10/2020
2	Nguyen Thi Thanh	Female	Middlemen	Ham Rong village, Chu Hrong commune, Gia Lai	15/10/2020
3	Ngo Thi Tung	Female	Middlemen	Village 2, Tan Binh commune, Dak Doa district, Gia Lai	15/10/2020
4	Le Cong Luan	Male	Middlemen	Village 4, Gao commune, Pleiku	19/10/2020 (Call interview)
5	Thai Thi Thuan	Female	Middlemen	Ia Der coomune, Ia Grai, Gia Lai	16/10/2020
6	Luong Minh Duc	Male	Middlemen	17 Nguyen Thi Dinh, Buon Ma Thuot city, Dak Lak	17/10/2020
7	Ho Nu Quynh Anh	Female	Middlemen	Village 2, Cu Bu commune, Dak Lak	17/10/2020
8	Tran Thi Huong	Female	Middlemen	Village 1, Ea Hdin coomune, Cu M'gar	18/10/2020
9	Ha Van Bang	Male	Middlemen	Hoa An village, Ea Nuol commune, Buon Don district	19/10/2020

No	Interviewee's name	Gender	Occupation	Address	Date of interview
10	Tran Anh Duc	Male	Middlemen	Tan Thanh village, Ea Toh, Krong Nang, Dak Lak	19/10/2020
11	Luu Nhu Binh	Male	Middlemen	Village 9, Nam Binh commune, Dak Song, Dak Nong	20/10/2020 (Call interview)
12	Truong Thi Nhi	Female	Middlemen	Village 12, Hoa Chanh commune, Buon Ma Thuot city	20/10/2020
13	Nguyen Thi Vi	Female	Middlemen	Son Thuong, Dak Gan, Dak Mil, Dak Nong	20/10/2020
Experts					
14	Le Trung Hung	Male	Coffee expert	K-Pan company	10/12/2020
15	Nguyen Tan Vinh	Male	Coffee expert	K-Pan company	10/12/2020
16	Manual Diaz	Male	Coffee expert	ONA Consultores	7/1/2021
17	Cao Phuong Nhung	Female	Researcher	NIAPP	8/1/2021
Private company/cooperative					
	<i>Name of company</i>	<i>Main products</i>	<i>Address</i>	<i>Date of Interview/discussion</i>	
1	Nedspice	Pepper, spices	Binh Duong province	18/9/2020	
2	Sam Agritech	Pepper	Dak Song district, Dak Nong province	22/10/2020	
3	Neumann foundation	Coffee	Buon Me Thuot city, Dak Lak province	23/9/2019	
4	Touton	Coffee	Long Thanh district, Dong Nai province	23/9/2019	
5	ECOM (ACOM SMS)	Coffee	Buon Me Thuot city, Dak Lak province	23/9/2019	
6	IDH Vietnam	Coffee, pepper	Buon Me Thuot city, Dak Lak province	26/9/2019	
7	OLAM	Coffee, pepper	Ho Chi Minh city	11/2/2020 and August 2020	

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No	Interviewee's name	Gender	Occupation	Address	Date of interview
8	Vietnam Pepper Association (VPA)	Pepper		Ho Chi Minh city	11/2/2020
9	Rainforest Alliance	Coffee, pepper		Buon Me Thuot city, Dak Lak province	12/2/2020
10	NESTLE	Coffee		Buon Me Thuot city, Dak Lak province	14/2/2020
11	SIMEXCO	Coffee, pepper		Buon Me Thuot city, Dak Lak province	14/2/2020
12	Pear Corporation (Tran Chau)	Pepper		Dak Song district, Dak Nong province	13/2/2020 and August 2020
13	An Phong	Coffee, pepper		Dak Nong province	13/2/2020
14	Vinh Hiep	Coffee, pepper		Pleiku city, Gia Lai province	15/2/2020
15	Nam Yang cooperative	Coffee, pepper		Dak Doa district, Gia Lai province	15/2/2020