Agriculture Value Chain Finance in Viet Nam

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Executive Summary

Smallholder farmers in developing countries face substantial constraints that limit their ability to reach their production potential. Two constraints—risk exposure and limited access to liquidity—pose particular challenges. Smallholders face a wide variety of risks that constrain both the choices they can make and their willingness to make investments. Limited availability of affordable credit, borrowing and saving products poorly aligned with the needs of the agriculture sector, and prohibitive borrowing eligibility requirements all impede farmers' access to the liquidity necessary for investing in new, more profitable crops and technologies (International Finance Corporation, 2014). Observers have noted that a large share of long-term credit needs is not being met in Southeast Asia (Shakhovskoy & Wendle, 2013), despite its location near some of the world's largest consumer markets. While existing financial services may be suitable for some farmers, access to finance is particularly inadequate among women, low-income groups, and ethnic minorities, and risk excluding the most vulnerable groups from these emerging economic opportunities.

The Inclusive Agricultural Value Chain Finance project is working to understand potential models for improving access to agricultural value chain finance among disadvantaged groups in three countries in Southeast Asia: Indonesia, Myanmar, and Viet Nam. "Agricultural Value Chain Financing" refers to formal financing that affects at least three value chain participants: a financial institution, an end borrower, and at least one other facilitator or beneficiary. The third party is also a value chain participant and can either be directly or indirectly involved in providing finance to the end borrower. Direct involvement could involve taking on formal loans to provide informal trade credit financing upstream or downstream in the value chain, or purchasing a wholesale insurance product, while indirect involvement could include providing information, a guarantee, facilitation of loan collection, in-kind distribution of inputs, or some other support that reduces the risk of lending to specific end borrowers.

This report describes the present state of agricultural value chain finance in Viet Nam and suggests policies that could help expand its availability. We first consider the features of a policy environment needed for agricultural value chain finance to flourish. Key points related to the policy environment include the following:

- Allow interest rates for formal loans to be priced by the market rather than through regulation;
- Support secure, inclusive payment systems and transaction frameworks;
- Develop a legal framework that supports both the use of movable collateral in loans and a warehouse receipts system;
- Develop a legal and/or regulatory framework that supports contract farming among smallholders;
- And allow for a more open, technology-driven financial architecture that facilitates market entry among nontraditional financial service providers.

These broad policy goals can help increase credit supply while reducing barriers for potential entrants, creating an environment for more accessible agricultural value chain finance. Where new types of providers can enter credit markets, current providers begin to face competition and, in general, services around credit should improve. To ensure that relatively marginalized farmers are not excluded from agricultural value chain finance, it is important to ensure that systems must allow for assets other than land to be used as collateral, and policymakers should not neglect savings and insurance. The first section of the report considers how agricultural value chain finance products can be designed for growth and

inclusion in general, before turning to Viet Nam in the remainder. Throughout, we provide examples and lessons from different value chains that could lend insights for other value chains.

Viet Nam Country Situation

Over the past few decades, Viet Nam has experienced remarkable social and economic progress. Viet Nam has become a middle-income country and economic growth remains high. The service and industry sectors have experienced particularly rapid growth, reducing the relative importance of the agriculture sector. However, agriculture still accounted for approximately 15 percent of GDP in 2017 and employs 40 percent of the labor force. Promoting the further development of the agriculture sector is thus a key component for continued poverty reduction in Viet Nam.

Viet Nam's growth has already transformed the agriculture sector. Between 1995 and 2016, rice production quadrupled in terms of value, while pork production grew by an order of magnitude, and coffee became one of the leading five commodities produced. Even as the agriculture sector has declined in relative importance, it has grown in both total and export value, providing substantial investment opportunities.

Despite rapid change in the agriculture sector, it has been and remains constrained in its growth prospects by a lack of suitable and comprehensive finance opportunities for smallholder farmers. Financial services in rural areas, particularly for these smallholder farmers, are of first-order importance to further poverty reduction efforts. However, supply of formal credit is low in these areas, in part because official policy holds interest rates below the market levels required by banks. Growth in credit availability is limited by other regulations as well, such as collateral requirements, loan and repayment schedules that may not match farmers' needs, and burdensome procedures that inhibit access by less wealthy and less educated farmers. Given the insufficient supply of formal credit, smallholder farmers either do without finance or use informal sources. Informal credit sources are estimated to account for approximately one-third of loans but come at the cost of high interest rates and a short-term focus. Notably, cooperatives have emerged as a decentralized set of informal credit providers that are able to lend to farmers with less stringent collateral requirements, while also providing other services, improving opportunities for smallholders in the value chain.

The development of inclusive value chains that provide the opportunities that allow poor farmers to move out of poverty requires creating a financial system that can more flexibly meet their needs. This includes adjusting regulations so that formal financial services can expand into rural areas and also supporting the continued growth of informal credit institutions. Moreover, education within the financial sector regarding the unique needs of customers requesting loans for agriculture can help improve the supply of funds from financial institutions.

Viet Nam's Policy toward Agricultural Value Chains

Since 1986, Viet Nam has been liberalizing its once fully state-planned economy and opening to trade with the rest of the world. Viet Nam has enjoyed one of the world's fastest economic growth rates, which implies substantial development of the financial system, including finance for agriculture. In the agriculture sector, export value chains for crops such as rice and coffee have flourished during the reform period.

That said, agricultural growth has lagged overall growth. Furthermore, most of Viet Nam's banking sector remains state owned. Only the Vietnam Bank for Agriculture and Rural Development (VBARD) has branches in every province, so farmers in remote areas generally lack access to financial institutions. Viet

Nam's smallholders in remote provinces continue to struggle to participate in agricultural value chains. Nonetheless, from the perspective of agricultural value-chain financing, important policy changes have been made, including the following:

- Collateral is a major challenge for smallholders who want to participate in agricultural value chains. Loan collateral requirements have been liberalized over time, which is a step in the right direction to helping farmers participate.
- The recent Decree 57, implemented in 2018, aims to support the development of agricultural entrepreneurs by promoting private investment and business activity in agriculture (Ancev, et al., 2019). Decree 57 offers targeted investment subsidies for entrepreneurs, as well as reduced rents and subsidized interest rates.
- Decree 116, also issued in 2018, increased the maximum loan size that credit institutions can provide without collateral to individuals and households involved in agricultural production or businesses. Decree 116 also promotes high-tech agriculture by stipulating that loans for high-tech agriculture projects can cover up to 70 percent of the project value.
- Viet Nam's 1993 Land Law instituted the system of "red books" (Land Use Rights Certificates) that gave farmers title to their land for a 20-year period for annual crops and a 50-year period for perennials. The 2013 Land Law extended the titles to 50 years for annual crops. The land laws have enabled farmers to use red books as collateral, but disputes over land are common (OECD, 2015).

Through VBARD, the government remains heavily involved in providing subsidized financing to the agriculture sector. However, it is not clear that such financing reaches many smallholders, as administrative requirements to receive government support are burdensome and upfront costs for obtaining subsidies are high (Ancev, et al., 2019). State intervention could be better focused on addressing the gaps that markets do not currently fill by extending financial services in areas with high potential that are only marginally commercially viable today. Further, the government could invest in public goods such as information systems, commercially viable farmer organizations, and stronger market institutions. Doing so could help nontraditional financial institutions begin to operate competitively in agricultural value chain finance, allowing more smallholders access to value chain finance.

Opportunities for Agricultural Value Chain Finance in Viet Nam

Three broad recent trends are having a significant effect on agricultural development in emerging economies: value addition in agriculture, the emergence of new retail outlets and supermarkets, and increased demand for semi-skilled labor to satisfy growing demand for processed and pre-packaged foods (Zander, 2015). These trends are present throughout the region but have been particularly notable in Viet Nam, and have created significant export opportunities. Viet Nam is well-placed to further increase exports of high-value commodities including animal-source products, fruits, and vegetables to other markets in the region such as Japan, China, Taiwan, and South Korea.

To take advantage of the trends influencing Viet Nam's agriculture sector and agricultural exports while reducing poverty, policy must focus on helping smallholder farmers overcome constraints related to financing and risk. Presently, agricultural finance in Viet Nam is dominated by VBARD and the Vietnam Bank for Social Policy, which are both state-run; cooperatives and microfinance institutions play a much smaller role. To foster competition, the government should encourage further development of the financial sector, including expansion of nontraditional lenders.

This report's main findings related to agricultural value chain financing needs in Viet Nam are as follows:

1. Potential for continued development of specific agricultural value chains in Viet Nam is substantial and promising, from both the supply and demand perspective.
2. The types of finance currently provided by financial institutions are insufficient to meet the needs of all actors along agricultural value chains, particularly smallholders.
3. The government focuses on the development of specific value chains at the national and provincial level. Of those, fruits and vegetables have the most promise for smallholder development through finance, followed by forestry, rice, and livestock.
4. Opportunities for finance in the agriculture sector are constrained by the limited participation of formal financial institutions. While the needs of actors along different value chains are varied, these needs can generally be met by traditional financial institutions if the products are structured and underwritten appropriately. Developing these products in collaboration with other chain actors can create opportunities to support smallholder farmers and enhance their livelihoods.
5. The digitization of both agriculture and finance data has potential to play a greater role in facilitating agricultural value chain growth. Digitization of red book certificates and of financial records can help to ensure that state banks operate more efficiently while facilitating the flow of information and finance between actors within a value chain.

Key Policy Recommendations for Viet Nam

For agricultural value chain finance to progress, we find two types of policy changes could be helpful. First, we consider finance generally, and then ways to improve agricultural value chain finance specifically. Our recommendations are as follows:

- From the perspective of general finance, consider allowing banks further freedom in agricultural lending, both in terms of interest rates and credit amounts. Fixed interest rates—particularly when subsidized—lead to credit rationing, which reduces the amount of credit available to lower-income farmers. When ceilings bind on loan amounts, they also hinder the amount of investment that can take place.
- Digitize information about plots including but not limited to land use rights (red book) certificates. The goal from a value chain finance perspective is to ensure that the process of using the red book certificates as collateral can be streamlined. Smallholders and banks find the transaction costs to smallholder lending high; ensuring that more farmers can use an already acceptable form of collateral can facilitate financial flows from both traditional and nontraditional lenders. Ideally this information can be made publicly available.
- Digitization of plot information would help develop collateral for Vietnamese smallholders to help foster lending to them. Alternative forms of collateral, such as warehouse receipts, should also be made legally acceptable. While Decree 57 alludes to a need for warehouses for crops, there is no provision for a warehouse receipt system. We suggest finding ways to develop laws to legalize such alternative forms of collateral.
- Foster the development of business skills among farmer groups, particularly in high potential areas. A relatively cost effective method of doing so could be to develop "rules of thumb" related to business practices in value chains to facilitate widespread promotion. Increasing the business skills of farmers or groups of farmers can facilitate value chain development. This recommendation also emerged from an analysis of Decree 57 (Ancev, et al., 2019).

Chapter 1

Inclusive Financing for Agricultural Value Chains

This chapter was written by Tom Moyes (Independent Consultant), Russell Toth (University of Sydney and Myanmar Economic Association), and Alan de Brauw (International Food Policy Research Institute).

Smallholder farmers in developing countries face substantial constraints that limit their ability to reach their production potential. Two constraints—risk exposure and limited access to liquidity—pose particular challenges. A wide variety of risks limit both the choices smallholders can make and their willingness to make investments. Limited availability of affordable credit, borrowing and saving products poorly aligned with the needs of the agriculture sector, and prohibitive borrowing eligibility requirements all impede farmers' access to the liquidity necessary for investing in new, more profitable crops and technologies (e.g., IFC, 2014). Observers have noted that a large share of long-term credit needs is not being met in Southeast Asia (e.g., Shakhovskoy and Wendle, 2013; Bronkhorst et al., 2017), despite its location near some of the world's largest consumer markets. While existing financial services may be suitable for some farmers, access to finance is particularly inadequate for women, low-income groups, and ethnic minorities, which risks excluding the most vulnerable groups from these emerging economic opportunities.

Smallholders have trouble overcoming risk and liquidity constraints for several reasons. First, transaction costs for potential lenders or insurers are high relative to working with larger farmers. Second, monitoring costs in agriculture in general are high, due to its spatially disperse nature, relative to urban industries. Understanding whether farmers are actually exposed to specific weather events can also be more difficult, which has led to the development of products such as index insurance that address verifiability issues but face significant challenges in practice (e.g., Carter et al., 2017). Third, collateral requirements for loans can be difficult to satisfy for both farmers and other value chain actors, particularly when property rights over land are ambiguous or incomplete (e.g. Besley, 1995). Finally, and perhaps most subtly, financial institutions may lack knowledge about agriculture and its specific needs, which can exacerbate the lack of financial services for agricultural or agricultural value chain lending. Government policies related to the agricultural or financial sector may interact with any of these constraints, potentially reducing them but also potentially tightening constraints.

The Inclusive Agricultural Value Chain Finance (IFS4Ag) project is working to understand potential models for improving access to agricultural value chain finance, particularly among disadvantaged groups in three countries in Southeast Asia: Indonesia, Myanmar, and Viet Nam. Agricultural value chain financing refers to formal financing that affects at least three value chain participants: a financial institution, an end borrower, and at least one additional facilitator or beneficiary. This third party is also a value chain participant, and can be either directly or indirectly involved in providing finance to the end borrower. Examples of direct involvement include taking on formal loans to provide informal trade credit financing upstream or downstream in the value chain, or purchasing a wholesale insurance product. Examples of indirect involvement include providing information, a guarantee, facilitation of loan collection, in-kind distribution of inputs, or some other support that reduces the risk of lending to specific end borrowers.

New technologies and institutional innovations suggest new opportunities are emerging to overcome long-standing challenges to expanding agricultural finance. In all three countries, increasing access to information and communications technology (ICT) through expanding mobile telephone networks and smartphone technology create potential for new distribution channels for lower-cost financial products that address the unique needs of agriculture (Nakasone et al., 2014). Such products create data and communication channels that can help reduce monitoring costs and lower downside risk among financial providers. However, these technologies cannot fully eliminate barriers to increased production nor improved resilience against shocks, lack of market access, or information constraints for financial providers to assess potential clients, supervise loans, and address risks. As such, incorporating digital technologies into existing models of whole-of-value chain agricultural finance is an attractive approach to increasing smallholder production, but must be part of a larger package. By working throughout the value chain, information, relationships, institutions, and market connections can be leveraged to maximize the efficiency and impact of financial services, while potentially minimizing risks to individual smallholders and small and medium-sized enterprises (SMEs). This approach dovetails with renewed government commitments to implementing regulatory frameworks and creating incentives to expand access to financial services in order to promote financial inclusion and reduce poverty.

In this report, we describe the current context of agricultural value chain finance in Viet Nam, particularly as it relates to smallholders. Before discussing Viet Nam in detail, we discuss what can be considered "good" agricultural value chain practices. The second chapter then places agriculture and crops for which value chains exist within the context of Viet Nam's economy and describes the current state of agricultural financing. The third chapter describes historical and current policy in Viet Nam as it relates to agricultural value chain finance. The fourth chapter highlights promising opportunities for expansion of agricultural value chain finance in Viet Nam.

Before this report was completed, the COVID-19 pandemic began, and Viet Nam is among the few countries in the world that has responded effectively, limiting both the spread of COVID-19 and deaths. Nonetheless, there are clear ramifications for both Viet Nam's economy in 2020, agricultural production, and policy related to agricultural finance moving forward. The pandemic will almost certainly have a negative effect on export markets for agricultural products, since the world will almost certainly face a recession in 2020 (IMF, 2020). Domestic value chains, however, will likely be minimally affected. Throughout the report, we discuss potential implications for AVCF in Viet Nam; regardless, as we show that agriculture is undercapitalized relative to other sectors, there is an important potential role for AVCF. The final chapter, then, provides policy recommendations, highlighting potential "quick wins"—policies that could be changed in the short to medium term and which evidence suggests would lead to more value chain finance availability. These "wins" can take a back seat to ensuring that Viet Nam's poverty rate does not increase this year, but can play an important role in accelerating production once the pandemic is over.

Good Practices in Agricultural Value Chain Finance

For agricultural value chain finance (AVCF) to be effective, it needs a stable policy environment underpinning the agricultural and financial sectors, and it requires finance practitioners knowledgeable about agriculture and the specific needs of agricultural value chain participants. In this chapter, we describe core policies that can help foster AVCF, and then discuss practices, that can help financial service providers conduct AVCF; in the latter section, we include examples of potential AVCF models. But before we turn to policy, it is worthwhile placing AVCF within the context of both rural finance and agricultural finance more generally.

Agricultural Finance and Agricultural Value Chain Finance: Useful Concepts and Definitions

For the purposes of this report, we define rural and agricultural finance as follows:

- ***Rural finance***: Rural finance is the provision of financial services outside of urban areas. It includes payment products, savings and deposit products, credit (loans), insurance, etc. Rural financial services are offered by both formal and informal providers. Most important, not all rural financial services are directly related to, or support, agriculture or agricultural production.

- ***Agricultural finance***: In contrast to rural finance—which relates to *where* the finance is provided—agricultural finance refers generally to the provision of loans or credit to farming and/or agribusiness enterprises, where the risk of the loan is agricultural risk, and the purpose of the loan is to support agriculture or agriculture-related activity.

- ***Agricultural value chain finance (AVCF)***: We define AVCF in the introduction as formal financing that affects at least three value chain participants: a financial institution, an end borrower, and at least one other facilitator or beneficiary. This third party is also a value chain participant, and can be either directly or indirectly involved in providing finance to the end borrower. Therefore, it is a specific type of agricultural finance.

With these definitions in mind, we turn to explore good practices both in policy and among practitioners of AVCF in more detail below.

Getting the Policy Environment Right for Agricultural Finance

In thinking comprehensively about agricultural financing techniques and approaches, it is first important to consider the policy, legal and regulatory environment that would be most supportive of commercial agricultural finance. Agricultural financing systems are largely a

national phenomenon. In most instances, they are the product of national policymaking in support of public policy goals pertaining to the agricultural sector. In other instances, national agricultural financing systems have developed without any consistent guiding policy and regulation. Some countries have no discernable "system" for financing agriculture—yet continue to have sizeable and thriving agricultural sectors.

A few studies published in the past decade examine the policy environment for agricultural finance; most notable studies have been undertaken by the International Finance Corporation (IFC). 1 This work provides useful general policy advice on topics such as the importance of taking a value chain approach and avoiding wasteful directed credit programs for smallholders. However, there do not appear to have been any recent, comprehensive multi-country analyses of agricultural financing systems.

That said, underlying conditions have been changing rapidly, as a result of changes in food systems, accelerating evolution in technology, rising demand for healthier, certified and traceable food, and climate-related considerations for agricultural production. Therefore, a comprehensive examination and analysis of national agricultural financing systems would be both timely and welcome, but is beyond the scope of this report. However, we do offer a higher-level overview on the appropriate policy environment that is supportive of commercial agriculture, while considering the needs of smallholders—an important stakeholder group that this project is keen to support.

The Key Players in an Agricultural Financing System

Commercial agriculture and agribusiness are driven by market forces and for the most part run by private enterprises. The financing for agriculture and agribusiness comes from financial services providers who are primarily—but not always—guided by commercial considerations. That is, they engage in finance to earn a profit, and price the financing service appropriately after calculating their risks and operational costs.

National financial sectors are dominated by commercial banks, and central banks serve as the key regulator, implementing and enforcing national financial sector rules. Policies and regulations that emanate from the central banks have a big impact on agricultural financing systems—as well as the financing of all other activities.

When it comes to agricultural financing, ministries related to agriculture are often directly involved through channels such as an agricultural development bank that receives government funding, or other similar means. Many governments go beyond their essential role in setting and enforcing rules and become active market participants promoting agricultural finance via subsidized interest rates and other preferential programs.

[1] A short list of valuable recent sources on agricultural financing policy would include Teima et al. (2011), Varangis et al. (2012), and Miller (2015).

As the IFS4Ag project focuses on developing efficient AVCF, as well as promoting those AVCF arrangements that assist excluded smallholders, our agricultural finance policy analyses will highlight issues most relevant to the development of national agricultural financial systems that are pro-AVCF, and pro-smallholder. The following list overviews important financial-sector-related policies that support commercial agricultural finance and financial inclusion for smallholders:

Allowance for Pricing of Risk within a Liberalized Interest Rate Environment

In many countries, complaints about high interest rates for farmers and others to finance their businesses are common. Because these grievances are not subject to a proper troubleshooting mechanism or any systematic investigation, policymakers may feel the need to protect farmers and businessmen from what they consider to be unfair borrowing expenses. Such an approach can be politically popular, but can caricaturize financial service providers as rapacious moneylenders focused only on profit. Instead, it is important to recognize that benefits to smallholder welfare can be beneficial to lenders in the long term.

Keeping interest rates low to benefit one specific group or sector, such as smallholders or the agricultural sector in general, has been tried time and again around the world. There is no evidence that this policy approach results in better performance by the agricultural sector or farmers, and often the larger farmers and agribusinesses benefit most from the inevitable credit rationing that results, ironically crowding out smallholders. Good practice is to let financial service providers themselves determine interest rates for loans to agribusiness and farmers based on their own client analysis and their internal models for risk pricing. Government intervention in the setting of interest rates can push financial service providers out of the business of financing agricultural producers and agribusinesses. Therefore, agriculture gets financed, either by the formal financial sector or by informal providers of finance, often within supplier/ value chains. From a sustainability perspective, it is better to let financial service providers decide whether to serve the agricultural sector based upon commercial criteria or not, without clouding that decision-making process with government-imposed interest rate pricing distortions.

Strong and Flexible Secured Transaction Frameworks

It is important that creditors, particularly commercial banks as public depositary institutions, have an enforceable claim over collateral that is provided by borrowers. Such an enforceable security interest is applicable for all kinds of lending and to all sectors, including agricultural lending and agribusinesses. Collateral eligible to be serve as security for loans should include both movable property (e.g., inventory, receivables, equipment) and immovable property (e.g., housing, land). Movable collateral registries are a defining feature of strong, secured

transactions frameworks that help facilitate and encourage secured equipment financing.[2] As the agricultural sector is chronically underinvested in developing economies, it is essential that the policy environment bolster such long-term capital investment (FAO, 2017).

Land Titling

Strong land rights—the right to own land free and clear and the right to sell ownership in immovable property—are a key element in an enabling environment that supports commercial agricultural finance, particularly for longer-term investments. For example, if an agribusiness wants to build and operate an agricultural processing plant, the investment makes greater sense if the business owns the property underneath that plant. By dint of land ownership, that agribusiness can borrow against its real property to finance the plant on a long-term basis, an economically efficient financial arrangement. For farmers, having a secure land title is also economically advantageous.[3] From a financial perspective, however, having a secure land title provides more financial options, including the option to borrow against that land, particularly for long-term land improvements. The financing of primary production of agricultural commodities—the most common form of AVCF—does not generally depend upon or require pledging real property. Short-term production financing, for example, of annual crops, can potentially be financed through short-term loans secured by movable collateral, or else supported by a contract and/or guarantee where such mechanisms are legally available.

Framework to Support Hire-Purchase and Leasing

[2] The legal framework should provide for the use of personal guarantees as an intangible form of collateral particularly for smaller loans. Although this concept would seem to be unenforceable, if a lack of repayment implied the borrower could no longer borrow, their reputation as a borrower would serve as the security interest. This type of legal framework can support situations such as agricultural off-takers guaranteeing loans from agribusiness or primary producer suppliers.

[3] In fact, the study of land titling impacts on investment in developing countries is well known in the agricultural economics literature. In an early paper in this literature, Besley (1995) found that more secure rights led to investment in Ghana, and similarly Jacoby, Li, and Rozelle (2002) associate better land use rights with additional fertilizer investments on plots in northeast China. In Viet Nam, Do and Iyer (2008) find improved rights with the 1993 Land Law lead to higher investments in long-term crops, but the effect is small in magnitude. Rather than summarizing each paper thereafter, we note that Lawry et al. (2016) conducted a systematic review of the impact of what they call land tenure recognition on farmer productivity, income, and investment; they find positive impacts on productivity and income and believe these gains come through improved tenure directly rather than improved access to credit.

A modernizing agricultural sector requires investments in equipment; thus, policies and regulations should ensure the financing of such investments is possible through hire-purchase and/or leasing arrangements. The equipment financing business calls for specialized skills, particularly in the case of financing larger, high-priced machinery such as combines, milling equipment, and sorters. Financial sector policies and regulations that allow for special-purpose equipment financing companies and/or leasing companies to be licensed are a boon to agricultural finance; these necessitate up-to-date leasing laws and implementing regulations.

Warehouse Receipts System

A warehouse receipts (WHR) system allows agribusinesses to safely store crops and borrow against the crops in storage. Such a system is legally separate from movable collateral registries; it is normally based on specific laws with their own implementing regulations ensuring the legal validity of WHR as financial instruments. A robust WHR system is advantageous for agricultural finance to support AVCF, though such a system is less directly relevant for smallholders. Note, however, that developing a WHR system involves a multi-year process comprising and requiring the passage of new law(s), and substantial investment in both hard assets (warehouses) and skills (testing laboratories, capacity to value agricultural crop inventories) required to make such a system convenient and attractive to use.

Low-Cost, Inclusive Payment Systems

Although not usually linked to the discussion of inclusive agricultural financing systems, efficient, low-cost, digital payment systems are increasingly recognized as drivers of inclusive finance. Smallholders and low-income communities in rural areas benefit significantly with the ability to send and receive money promptly and efficiently via digital means with low transaction costs. Furthermore, financial service providers and financial technology companies (fintechs) are discovering the "data value" of the digital transaction records generated by formerly unbanked people. These transaction records create a digital footprint to support credit scoring and ultimately help smallholders qualify for small loans. Developing convenient, low-cost, inclusive payment systems creates a gateway to financial inclusion for smallholders, low-income households and other rural residents. Having such structures in place sustains efficient transactions between value chain actors, further facilitating AVCF arrangements.

Standards and Guidelines for Contract Farming

As agricultural value chains reorganize for greater efficiency and productivity in response to consumer demand for safer and more sustainably produced food, contract farming is

emerging as a critical tool for developing value chain cohesion. Value chains that include smallholders as important actors need to adopt additional formal methods of contracting—based on guidelines and standards that are fair and flexible. Policymakers are well-advised to pay attention to the development of contract farming to ensure that the instruments and techniques used do not discriminate against smallholders. For example, any regulatory bodies or enforcement mechanisms should not exclude smallholder bodies, and they should work to reduce the probability of elite capture.

Promotion of Innovation Ecosystems, Including for Financial Services

A policy environment that promotes innovation is essential for the agricultural sector, for example, improved seed varieties and new technology solutions (agtech) that promote increasingly efficient and sustainable agricultural production. For financial innovation, new fintech business models show substantial promise in improving financial services for the agricultural sector and smallholders, as well as for other sectors of the economy. Fintech innovation, along with agtech innovation and other forms of technology-driven entrepreneurship, requires investors willing to support early-stage startups and small, growing businesses. Governments have a growing role to play in building an enabling policy environment to facilitate startups and investment in new businesses—including agribusinesses and fintechs that can serve agricultural clients—beginning with promotion of innovation ecosystems (incubators, accelerators, angel investment networks, private equity). To create innovation ecosystems, both a policy response and a mind-set change on the part of policymakers is required, who must work in closer partnership with the private sector.

Open Financial Architecture

Until recently, financial sectors were comprised of structured sets of financial providers with familiar, well-defined products and services that fit somewhat neatly into standard regulatory frameworks, and discussion about AVCF and smallholder financing was confined to the standard set of regulated financial institutions (FIs). Today, the familiar boundaries around FIs are becoming less restrictive as technology emboldens new market entrants (telecommunication companies, transportation companies, fintechs) to provide financial products outside traditional legal and regulatory authority. Using the term "financial services provider" ("FSP"), which encompasses FIs *and* the broader set of firms that offer financial services (usually digitally) alongside non-financial services, reflects this opening of the sector. From a policy perspective, it is important to allow for an increasingly open financial system architecture to encourage innovation and be more "customer-centric and technology-driven" than the traditional "regulatory-driven, product-focused" approach.

A Robust Institutional Framework for Agricultural Insurance

The first step toward expanding agricultural insurance is to have a strong legal and regulatory framework to govern the sector, which sets constraints such as who can underwrite insurance contracts and market insurance. Regulators must have sufficient knowledge of the sector to be able to supervise how insurance contracts are developed and insurance products marketed, and to ensure that safeguards are in place to allow consumers to make informed choices about purchasing insurance products. The sector should have enough information infrastructure and credibility to allow local insurance companies to take advantage of international reinsurance opportunities. In practice, the commercial market for agriculture-related insurance products is likely to be focused on large commercial entities and agribusinesses, such a wholesalers, exporters, and processors, so initial regulatory efforts should focus on these large-scale commercial applications, where issues such as innovation in product design may take relatively higher priority than consumer protection.

Box 1: Microinsurance Is Social Protection, But There are Other Commercial Paths to Reach Smallholders with Risk Protection

Among farmers, smallholders are perhaps the most vulnerable to shocks from weather, disease, and market availability, and hence would benefit most from insurance. Indemnity-based insurance--which makes directly verified payments to policy holders when losses can be directly verified—is typically prohibitively expensive for smallholders. To address the high costs of direct verification, either by agents or third parties, innovative "microinsurance" models have been developed in the last 20 years that condition payouts on an aggregated index constructed from more easily collected information such as weather or remote sensing, rather than direct verification. However, a large literature has shown that it is very difficult to sell these products to smallholders at market prices (see Carter et al, 2017). Because marketing insurance to smallholders carries significant unit costs for distribution, education, etc., commercial microinsurance prices must be well above the actuarially fair price (meaning the price that equals the expected value of losses). In practice, smallholder demand for microinsurance is reasonably price sensitive, so demand for microinsurance can be quite small even at the actuarially fair price. Hence individually marketed microinsurance can only reach scale with significant subsidization. Governments or donors might want to support subsidized insurance approaches to address systemic risks to agricultural production; however, doing so carries fiscal and social protection policy implications well beyond pure commercial financial sector policy.

Good AVCF Practices for Financial Service Providers

In the present environment, digitalization of many agricultural value chain processes is increasingly common in some countries. Current best business practices may soon be considered inadequate, as business models become obsolete with changing technology. New technological applications are as important for agricultural lending and AVCF as they are for other kinds of financing. We have not carried out any systematic analysis of emerging agri-fintech models, as doing so is beyond the scope of this report, but we should not discount the potential for disruption of agricultural lending by fintech firms, agtech firms, or other, hitherto unforeseen market players. At present, agri-fintechs show significant promise, but have not yet been taken to scale. Furthermore, it is likely that incumbent FIs may be able to collaborate with the more promising emerging fintechs—or else replicate their business models. For the foreseeable future, incumbent FIs will remain the predominant set of FSPs serving agriculture.

For the purposes of this discussion, therefore, we will adopt the point of view of traditional formal, licensed FIs (e.g., finance companies, microfinance institutions, commercial banks). The incumbent FI point of view is still relevant and helps to highlight an essential theme, namely, commercial viability. More simply, it is important to focus on efficiency and profitability in the provision of agricultural finance and AVCF.

With that brief introduction, here are the most important good practices in AVCF, listed roughly in order of importance:

Build a strong team with capacity to analyze agricultural markets and value chains

Agriculture is a broad term, encompassing annual and perennial crop production, livestock rearing, and even fish rearing. When successful agricultural lenders speak of lending to agriculture, they often refer to a limited set of crops and other agricultural commodities that are produced commercially, with cash flows that can support commercial financing. Lending to agriculture is like lending to any other industry where a unique set of characteristics needs to be considered when developing financial products and services—particularly credit products—appropriate for that industry.[4] Agriculture has unique risks, most notably natural risks like pervasive climate hazards and pest infestation or disease, but also more standard business-related risks like price and production risks, all of which can pose a threat to the crops or other agricultural commodities, such as livestock, that are being financed.

Smallholders present unique challenges for financial service providers. First, their financial needs tend to be small relative to larger operations, increasing the share of transaction costs for any specific loan or insurance contract made to a farmer. Second, smallholders are spatially disperse, so such services also become more costly to monitor (e.g., Binswanger and

[4] Lending is not the only type of AVCF; insurance can play a role as well. For simplicity, we primarily focus on lending in the chapter.

Rosenzweig, 1986). Along with standard agricultural risks, these factors combine to make the provision of services to smallholders challenging even under normal market conditions.

Moreover, agricultural crop/commodity value chains (VCs) are not often integrated into a single vertical company structure. The agricultural economy has many different layers and economic actors that combine in multiple ways—depending on the crop or commodity—to produce, aggregate, and transport, and in some cases transform and market different kinds of agriculture-based products. Further, the cash flow characteristics of each VC are unique to that VC and may be highly seasonal, with seasonality dependent in many cases on specific geographies and climatic zones. Therefore, good agricultural lenders, when considering whether to finance a particular VC, start by looking at the crop calendar as a basis for determining the cash flow of that VC and the various actors within it.

To understand and manage the risk of lending to agriculture, successful agricultural lenders must have staff highly knowledgeable and experienced in agriculture. Generally, experienced agricultural lenders prefer staff with a deep background in agriculture, such as having worked in agriculture or grown up on a farm. Successful agricultural lenders believe that it is easier to train an agricultural expert in banking than to train a banker in agriculture.

Agricultural lending, and specifically the practice of AVCF, is a skill requiring focus, training, and specialized know-how. It is not enough to have an expert or two. To do AVCF properly, a financial institution needs a team of expert agricultural finance practitioners with the capacity to identify and analyze the risks of lending to agriculture, and also able to structure AVCF arrangements and monitor and manage the associated risks. This team can be organized in different ways (unit, division, department), but it should be focused on financing agriculture and agribusiness.

Match the value chain entry point with the comfort zone and competence of the FI

FIs are not NGOs or charitable organizations, and they have an obligation to lend money—particularly depositors' money if they are a depositary institution like a bank—in a prudent manner that ensures borrowers' repayment. FIs have different strengths, and often choose to engage in areas of lending in which they have some degree of competence and have arrived at a level of comfort with certain industries and types of borrowers.

FIs that have successfully built an agricultural lending business and/or developed skills in AVCF usually have a clear idea of where in an agricultural value chain they feel comfortable entering—they are good at identifying an appropriate "entry point." It is a good practice when developing an agricultural credit operation—or engaging in AVCF—to focus on the most sensible, lowest risk entry point into a crop/commodity value chain.

In a recent example from Myanmar, Yoma Bank analyzed the corn value chain and identified the larger aggregators and traders as the key entry point into that VC. Many of these traders were already Yoma customers who had not previously been offered loans, though they were among the largest depositors of Yoma branches in the corn-growing region (Shan and Northern Shan

provinces). Yoma chose to loan to existing deposit customers who were corn traders and who had long-standing track records of maintaining large deposits—from the bank's perspective this was a very low-risk entry point.[5]

The determination of an appropriate entry point is conditioned by the FIs' physical footprint or branch network, the kinds of clients they are used to dealing with, as their standard product set and underwriting criteria, as well as other related factors. Discipline and focus are needed to select the right entry point in a crop/commodity value chain; the more an FI engages in agricultural lending, the easier it is for that institution to identify good VC entry points.

Expand slowly and deliberately up and down the VC, and then on to other VCs

Once an FI has selected an appropriate entry point for a given VC, the FI will often begin its credit operations by focusing on one kind of client for one or two seasons before expanding credit operations further up or down that value chain. For example, a commercial bank looking to enter the maize VC might decide that the most sensible entry point is at the level of the "apex buyers" —large aggregators—with whom that bank may already have an ongoing relationship as depositors. That bank might decide to lend to these agribusinesses for one or two seasons before considering expansion of operations up or down the maize value chain.

For FIs unaccustomed to lending to clients engaged in agriculture, it is good practice to start slowly and take a step-by-step approach, working first with the kinds of clients they already know and have some understanding of, and then moving ahead deliberately to expand credit operations further into the VC, perhaps ultimately culminating in adopting AVCF approaches to banking the VC. It is also advisable for an FI to take a simple approach to products and services as it starts lending to the sector. As most FIs are accustomed to giving short-term working capital type loans to non-farm businesses, it makes sense to start lending to agricultural VC firms in the same way, provided that type of product suits the agricultural borrower.

Design products that solve problems/challenges for the VC

It is important to understand the VC, and all the commercial relationships that exist up and down the VC between various actors. It is almost always the case that an FI will find existing financial relationships and financial transactions and flows occurring between and among different VC actors. The extent of those financial flows and the nature of those relationships need to be understood fully by the FI prior to selecting the entry point into the VC or developing any AVCF arrangement.

[5] One of the authors (Tom Moyes) was part of a team of consultants who advised Yoma Bank in 2016 on how to analyze and strategize about banking the corn value chain, under the Mekong Business Initiative of the Asian Development Bank.

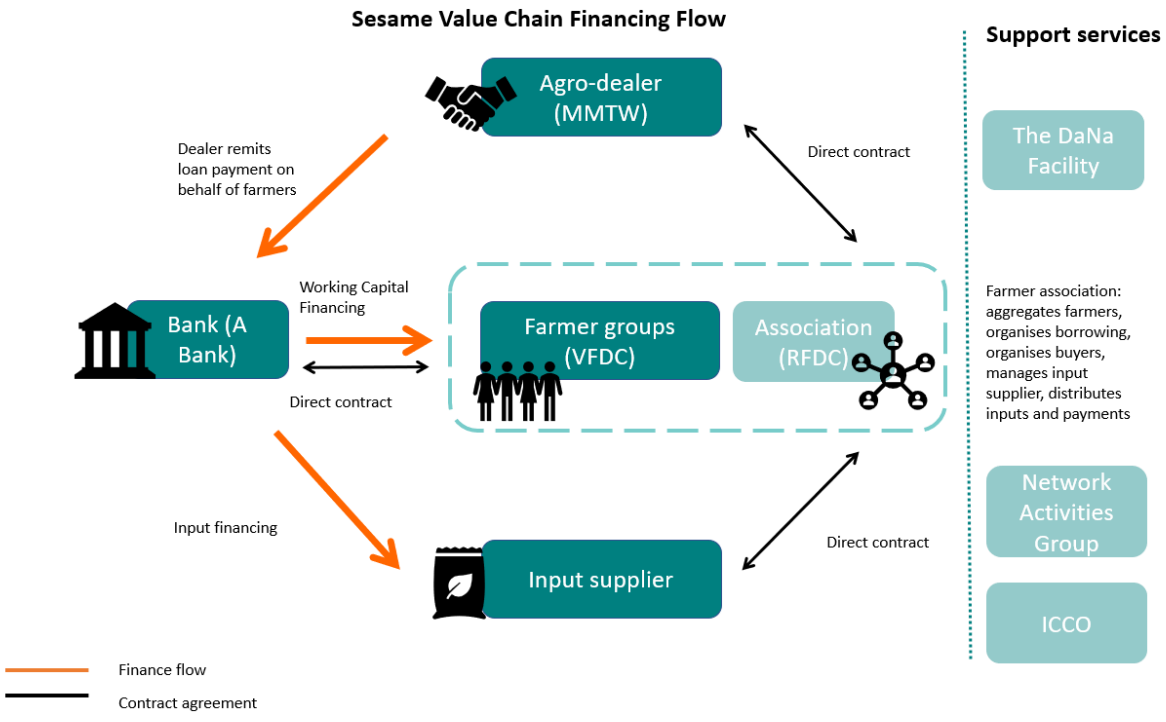
It should not be the primary objective of an FI to organize the VC nor to seek to substitute their own financing for the existing internal VC financing. What the well-prepared FI is likely to find in any given VC, however, are opportunities to efficiently introduce formal financial products and services into that VC that offer a clear value proposition for one or more existing VC actors. For example, a finance company might decide to provide a working capital line of credit to a large aggregator during the harvest season. That credit line would provide the aggregator with ready funds allowing her/him to purchase a commodity, for instance, cotton, when there is an opportunity to sell large quantities onward at attractive prices, and when the aggregator's own resources might otherwise constrain their capacity to purchase the harvested crop at the opportune time.

The FI in this example is injecting liquidity into the cotton VC, with that liquidity directly benefiting the aggregator, but also likely benefiting other actors in the VC, including primary producers who can receive a cash payment from the aggregator. By using commercial financing, the aggregator firm can conserve its own cash and leverage higher financial returns from the purchase and sale of cotton. In this case, the FI helps solve the aggregator's problem (or potential problem) of being short of funding when VC business opportunities appear, or the problem of having recourse only to more expensive forms of financing from non-formal sources of finance, such as other value chain actors or money lenders. We present a real example from Myanmar in Box 2.

Box 2: An inclusive AVCF model in the sesame value chain

The DaNa Facility in Myanmar helped to introduce a financing model that inserted a formal credit provider into the sesame value chain, the Ayeyawaddy Farmers Development Bank (the "A Bank"), a commercial bank. The A Bank is interested in expanding its agri-finance portfolio and agreed to provide credit to 3,405 farmers in 59 Village Farmers Development Committees (VFDCs) at an interest rate of 1.47% per month over 6 months. This is lower than the 2% per month interest rate currently offered to farmers by dealers and is an important step in connecting largely unbanked smallholder farmers to a commercial bank. The value chain financing proceeds through three steps:

1) At the beginning of the sesame planting season in May, the A Bank pays the input supplier (the Myat Taw Win Company, or MMTW) directly; the contract and price for inputs is negotiated by the Regional Farmers Development Committee (RFDC), an apex agency of which the VFDCs are members. Farmers' loan accounts are credited to reflect the value of inputs they receive from the input supplier, with input amounts received based on farmers' acreage and a standard amount per acre (otherwise known as a "parametric" approach).
2) Each VFDC opens a bank account with the A Bank. Halfway through the planting season, the A Bank issues the second tranche of financing to the VFDCs. The VFDCs distribute loan proceeds in cash to individual farmers to allow them to hire laborers to tend and harvest the sesame crop.
3) After the harvest, farmers take their sesame to the agro-dealer's warehouses. The agro-dealer pays the RFDA, minus the cost of the farmers' loans, which is directly paid by the agro dealer to A Bank. The RFDA distributes to the farmers the revenue they have made from the growing season, minus the value of their respective loan repayments.



It is important to note that in many cases large aggregators have access to other sources of cash, including their own, and do not necessarily need to borrow from a bank or finance company. The point is that a judicious application of financial leverage provided by the FI can help to optimize financial returns, which is particularly true for short-term buying and selling. Financing offered by formal FIs is often the lowest cost form of financing, so it is sensible for the FI to look for opportunities in different VCs to offer financial products that solve the problems of VC actors such as access to short-term liquidity.

In any given emerging market country, there are often very few skilled commercial agricultural lenders capable of identifying, analyzing, and solving VC actors' financial problems and challenges. For this reason, many VCs have developed alternative financing mechanisms, including internal VC and supplier financing arrangements, which are sometimes known as "trade credit." There is certainly nothing wrong with this form of VC self-financing, and it is often done out of necessity because few formal FIs see any opportunity in agricultural lending. For an FI, internal VC financing in many cases represents a potential opportunity, with the challenge being to ensure that the FI can offer financial products and services that are clearly more attractive for the VC actor or actors than existing VC financing. The focus of the FI, therefore, must be on adding value and solving problems.

Note that many FIs take a "product approach" to agricultural lending—an approach they often apply to lending to other industries as well. That is, if an FI has grown comfortable with a certain kind of loan product, they are tempted to offer that loan product to all customers, regardless of whether it is the most appropriate product for a particular customer. This is certainly not good practice for either agricultural finance generally or AVCF specifically. Often microfinance institutions (MFIs) are guilty of this unhelpfully rigid product-focused approach to agricultural lending; standard MFI products require interest and principle repayments at frequent (weekly or monthly) intervals, which rarely coincide with the cash flow characteristics of smallholders or aggregators within value chains. Many MFIs have learned, all too predictably, that these short-term lending products designed for small traders do not fit the needs of smallholders.

Bank the existing relationships in the value chain

Lenders often face an asymmetrical information problem when evaluating potential lending opportunities. In the context of AVCF, lenders may have insufficient information about a potential borrower to make a proper evaluation of the borrower's true creditworthiness.

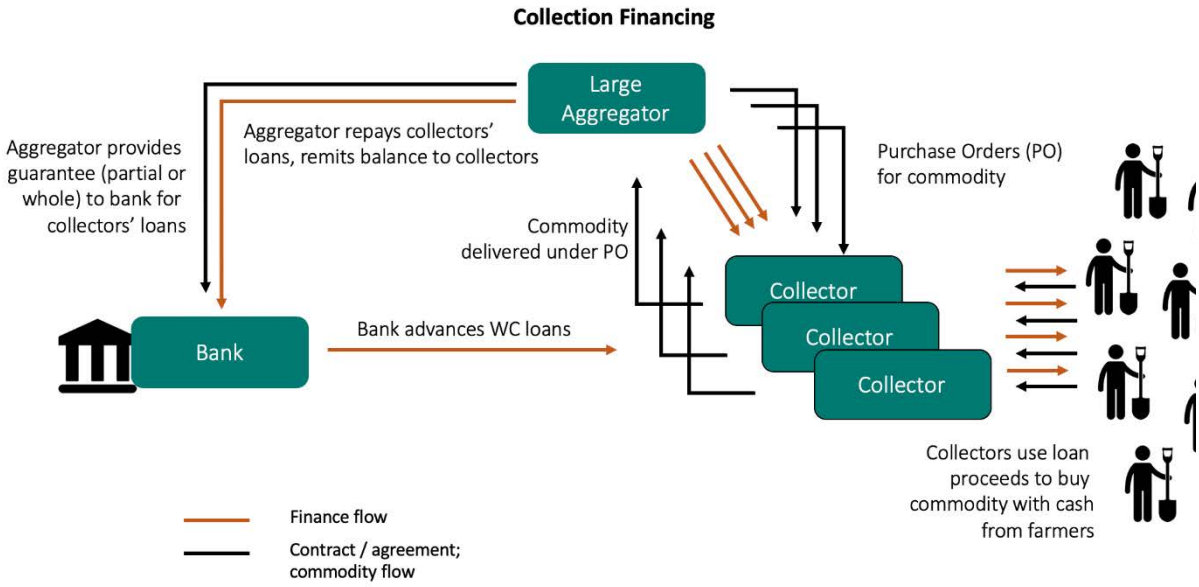
Understanding the scope and nature of the commercial relationships within a VC creates opportunities for FIs to reduce the risk of their lending operations. Good agricultural lenders try to "bank the relationships" that already exist within a given VC, that is, the FI will try to leverage the long-standing relationships of mutual trust built, for example, between producers and buyers or off-takers. A good agricultural lender can overcome asymmetrical information by relying on the interested VC actors to indicate who is creditworthy and who is not.

Good examples of banking the relationships in a VC come from the sugar industry. Imagine a sugar miller who has identified a group of trustworthy primary cane producers, and over the course of many years has come to provide credit to a certain group of growers (but probably not all growers who want credit—only the most trustworthy) to support the annual cost of growing cane. In exchange for the mill-provided credit, these producers faithfully send their cane to the sugar mill. These kinds of supplier-buyer relationships support efficiency in the operation of the VC. The savvy agricultural lender, looking to enter the sugar VC, might go to the miller and offer to provide financing for that same group of trusted growers (perhaps at a rate lower than the miller charges, which benefits the growers). The miller benefits by not having to use their own funds to finance the growers, reducing their own risk and potentially allowing the miller to invest their funds in better opportunities. The agricultural lender usually can get a guarantee from the miller for the amount it lends to the group of trusted growers. As the miller has developed a relationship with all the growers and has been willing to lend only to the most trustworthy individuals, the miller should be happy to provide a partial credit guarantee to the agricultural lender (20 to 50 percent of the outstanding value of the credit provided). The FI, through the agency of the miller, has overcome asymmetrical information by leveraging the trust built up over years between growers and miller, and provided a useful service to both. Often, the FI can further rely on the miller to help manage the repayments of the loans when the cane is delivered to the mill. This is a classic example of an AVCF arrangement that benefits the FI, the miller, and the growers. However, the relationships beyond the farm can be banked as well; we provide an example of collection financing in Box 3.

Box 3: AVCF model for collection financing

The AVCF "collection financing" model, described here in general terms, provides working capital for smaller-scale buyers of a given commodity to enable them to deliver contracted quantities of that commodity to a large aggregator. The aggregator could be an agribusiness that sells large "aggregated" amounts of a given commodity, for example wheat or meat. This model is equally relevant when the aggregator is also a processing agribusiness that must secure a certain supply of raw materials for processing. This AVCF unfolds through five steps:

1) Large Processor enters into a Purchase Contract (or "Purchase Order") with collectors to deliver a certain quantity and quality of a commodity at a certain time for a certain price.
2) Large Processor issues a guarantee (partial, e.g., 50–80%, or whole) to the Bank for the amount the Bank will lend to the Collectors; terms, conditions and exposure levels are pre-agreed in advance of the collection period.
3) Bank makes a loan to the Collectors (usually designated by the Aggregator) based upon a given percentage of the Purchase Contract amount (e.g., 50%).
4) Collectors use the loan to buy the commodity from farmers for cash (helping to boost farmgate prices), then deliver the commodity to the Large Aggregator according to the terms of the contract. Note that this process can be continuous over several weeks/months.
5) Large Processor pays the Bank back for the loan amounts owed by Collectors; Collectors receive the net amount of the proceeds of their contracted sale to the Aggregator, after subtracting their loan balances.



Capture the VC financial flows inside the FI

It is particularly important for an FI—and perhaps here we should refer more specifically to a commercial bank—to try to capture the flow of cash within a VC within the bank. That means in practice requiring borrowers to also use the deposit and payment services of the bank, and otherwise seeking to attract and bank key VC actors as deposit and transactions account customers. This approach has key benefits for the bank. First, it provides visibility to the cash flows moving through the VC, important information to help the FI understand the volume and timing of transactions driving the VC and the businesses within it. The benefit here is that the volume of cash flowing in and out of VC actors' accounts is immediately visible to the bank. Because transactions data (often reflecting revenue of the borrower) are not self-reported by the bank customer, they are not subject to inaccuracy or distortion. The bank will have verifiable, accurate information on the volume of business transactions, data that provide valuable insight into the financial size and strength of a company, as well as the VC. Another key benefit is the opportunity to earn transaction fees on payments and gather deposits from VC actors that can be an important source of lending.

Among different kinds of FIs, banks enjoy the advantage of being able to "bank" the full spectrum of actors in a VC, from large-scale processors to various layers of middlemen down to the primary producers in the VC. This shows that banks have an advantage in being able to structure AVCF arrangements involving multiple VC actors. Further, banks can use AVCF arrangements to help manage the credit risk of lending by requiring cash to flow through the VC participants' accounts within the bank.

MFIs for their part often do not—or in some cases are not permitted to—have relationships with larger agribusiness firms and tend to lend to micro, small, and medium-sized enterprises and smallholders.[6] Wherever possible, MFIs should be urged to seek out larger buyers to explore AVCF options. As MFIs are not always able to offer deposit or transaction accounts, structuring and managing AVCF arrangements is quite challenging for MFIs, as well as for finance companies that do not take deposits or offer payment services. Though they can be important providers of agricultural finance, they are generally niche players in the sector, focused on more basic credit services such as working capital and equipment financing.

Diversify agricultural lending across crops and regions

From an overall portfolio risk management perspective, the successful agricultural lender will maintain a diversified loan portfolio composed of different crop or commodity value chains, wherein the inherent risks in each "banked" VC are, to the maximum extent possible, uncorrelated. Even though an FI follows all the good practices listed above, bad weather or other negative conditions may cause large-scale losses if the credit exposure is not adequately spread

[6] MFIs are unlikely to be able to work directly with larger companies as they often face relatively low size limits on the loans they can issue.

across different crops, commodities, or geographic areas. It is also good practice to look for seasonal diversification, if that is possible within a given country in which the FI operates.

Adopt financial technology

AVCF techniques have been developed to help make the process of lending to VCs more efficient and to reduce risks in lending by FIs. The advent of fintech certainly promises to improve efficiency and may also significantly lower the risk of lending to agriculture. Lower risk may make it possible to bank the unbanked with small accounts and to reduce transaction costs in dealing with a large number of smallholders.

There have been some recent successes in developing agri-fintech approaches to AVCF, as well as to agricultural finance in general, including the use of alternative data for credit scoring. These emerging scoring techniques in some cases rely on behavioral data,[7] while in others they build on access to proliferating sources of data related to digital payment transactions. Some algorithms being tested combine both behavioral and transactional data, and experts are looking at how to apply these models to smallholders and SMEs. In principle, these data are most valuable for customer acquisition—when a financial institution is considering its first loan to a new customer. Once a new client takes up a new financial product then the financial institution will begin to get direct observations of the customer's desirability as a customer, so the marginal value of other data sources decreases. Whether these alternative data sources have medium- or long-term value for lenders remains an open question.

Though the use of increasingly sophisticated credit modeling techniques appears highly promising, these tools and approaches still need to be tested. We are not aware of any extensive, systematic research into the emerging use of fintech applied to agricultural finance, so it is too early to discuss good practices. At this stage we can just highlight emerging lessons: Regulators should recognize that digital loans can drive over-indebtedness in populations with low financial literacy, and that automated credit modeling can run the risk of further advantaging privileged populations and pushing disadvantaged populations further to the

[7] In the context of evaluating a person's behavioral data, a credit scoring algorithm might examine the phone calls a person makes—and the length of those calls—to determine if the person has stable relationships. Likewise, a person's Facebook account can reveal the extent of people's friend networks, supporting similar inferences. Locational data can be gathered from smartphones to determine the degree to which a person stays at or near their home or business. Designers of credit scorecards draw inferences about people's behavior and look for correlations between those "data points" and a person's propensity to repay a loan. This type of model has been successful in South America (Bjorkegren and Grissen, forthcoming). With "data points" expanding exponentially, further field tests of these techniques ongoing, and now machine learning techniques being refined, the field shows great promise. These "alternative data" related techniques allow FIs (and fintechs) to expand the use of credit scoring to lend to people who do not have more "mainstream" data to provide to FIs, like income statements, balance sheets, tax records, bank account histories, etc.

margins. In the agricultural context, consideration should be given to the optimal level of "touch" between borrowers and financial institutions. While in many markets digital loans have short repayment cycles (often 30 days), agricultural loans require longer repayment cycles, e.g., 3 to 4 months. Screening and administering a loan purely digitally may raise repayment issues, particularly for new borrowers used to ongoing social contact with loan officers. Given these potential risks, we urge regulators and practitioners to closely monitor the rollout of innovative digital financial products.

It is reasonable to predict, however, that the increasing use of cell phones and growing use of credit scoring that builds on the base of available digital data will spur some FIs to take a new look at how they might lend to the agricultural sector, perhaps in some fintech-enabled manner. Emerging digital tools and techniques are unlikely to preclude or replace good practices in AVCF. Still, there is reason to be hopeful that fintech can enhance AVCF by increasing information flows about the functioning of VCs and creating tools to leverage that information to support more accurate credit modeling.

Leverage Value Chain and Other Existing Relationships to Promote New Insurance Models, or Consider Other Ways of De-Risking

As discussed earlier in this chapter, while individually marketed index insurance is a promising idea, in practice it has been plagued globally by very low demand. While there is ongoing work attempting to make such products more appealing using new data sources and new technologies, another approach is to move away from individually marketed insurance (which carries high distribution and education costs) and move toward working through institutions that aggregate farmers. One approach works on the demand side. Suppose farmers are committed to selling to a specific aggregator (for example, in the case of contract farming). An insurance product can be marketed which allows farmers opt in, but the aggregator pays for the insurance. If there is no loss event, then the aggregator deducts the cost of insurance before paying farmers for their output. If there is a loss event, then the aggregator deducts the cost of insurance before distributing the remaining funds (payment for output and insurance payout) to the farmers.[8]

Alternatively, relationships from the supply side can be used. Farmers can be reluctant to take on production loans (e.g., to buy inputs), because borrowing multiplies their financial risk—if the crops fail, they lose their investment *and* may default on their loan. Instead, insurance could be marketed to input suppliers who provide informal loans to farmers (e.g., providing fertilizer for the growing season, but not requiring payment, including interest, until after harvest). Marketing insurance to such input suppliers should reduce marketing costs, while allowing input suppliers to recover funds in the case of a major disaster and thus forgive some if not all of their

[8] Casaburi and Willis (2018) show that this approach also shifts the timing of payment for insurance, making it much more desirable for farmers, leading to much higher take-up rates.

input supply loans to farmers. A further set of approaches works through credit relationships, for example by pre-screening and hence pre-approving farmers for a disaster-recovery loan, or focusing on insuring local financial institutions like MFIs, so they can better assist farmers in recovery after a disaster event.[9] Insurance can also be packaged with other financial products—for example, jointly credit and insurance can be jointly marketed—or insurance-like features can be incorporated into credit products—creating, for example, "index-based" credit products that automatically grant borrowers a loan grace period during an externally verified disaster event.

Other approaches to de-risking agriculture should also be considered, beyond insurance and credit products. The development of irrigation systems can significant lower the risks of rainfed agriculture. The development of transport infrastructure can reduce market access constraints, allowing farmers to diversify their market risks. Promoting more resilient seeds and other production inputs can also allow farmers to reduce risks. Finally, promoting savings can allow farmers to "self-insure," allowing them to respond more flexibly in the case of financial hardship.

[9] For a rigorous test of this idea see Lane (2018).

Annex 1: Principles of Agricultural Finance for Smallholders[10]

We suggest a set of general principles related to agricultural finance worth thinking about when considering how best to facilitate financing of agriculture, with particular attention to how best to meet the financing needs of smallholders.

- ***Be agnostic about the source of credit for agriculture or agricultural activities.*** Credit can flow efficiently from both formal and informal sources, and often informal sources, for example suppliers, understand the credit requirements of farmers better than bankers do.

- ***Start from the market—the demand side—for the crop/commodity.*** When looking to assist smallholders, avoid focusing too much on production-related issues. Often the temptation is to promote a crop or commodity without first properly evaluating market demand. When working with smallholders, it is critical to understand the market demand for the crop that the farmer is growing or wants to grow. Ask whether the farmer can grow the kind of crop that the market really wants—including meeting the latest quality standards— and identify the likely buyers of that crop. The more buyers, the better.

- ***Be mindful that lending is risky.*** Banks and other formal financial providers are interested in clients who can repay loans based on the cash flow from their economic activities—not serving the poor per se or supporting agricultural livelihoods. Often observers complain that "banks don't want to lend to small farmers," but it is reasonable (as well as very commonplace) for a formal FI to be hesitant to lend to farmers. Before trying to convince a reluctant financial institution to lend to a farmer, ask yourself, "Would I be willing to finance this activity with my own money?"

- ***Understand that lending to agriculture is a specialization.*** Most banks or FIs will not be interested in agricultural finance, let alone "pro-poor" agricultural finance. In any given emerging-market country, there may only be a handful of banks, MFIs, or other financial providers interested in financing agriculture. Banks prefer lending to industries whose risks they understand, or where there is collateral to support their lending. Furthermore, many FIs do not have the rural "footprint" that encompasses agricultural activity—they are often clustered in urban areas. It is possible to help FIs overcome their lack of skill or experience in agricultural finance, but it is worthwhile identifying which formal financial providers are already comfortable with agriculture-related risk and are already servicing rural areas.

- ***Appreciate that financial services include more than just credit.*** Historically there has been excessive emphasis on farmers' need for credit, and until now not enough emphasis

[10] These principles were prepared for the ACIAR-supported project to revise the Agricultural Value Chain "Toolbook."

on financial inclusion. Credit is a financial obligation of the borrower that must be repaid—so providing credit to a farmer for agricultural production or other purposes increases the financial risk of that farming household. Farmers, even poorer smallholders, are often financially conservative and do not want to borrow if they can avoid it. Having access to multiple financial services—being "financially included"—can help poorer smallholders to better deal with economic risks. Access to savings deposit services means having a safe place to keep their money with access when they need it—potentially reducing their need to borrow, for instance, for crop production inputs. Access to low-cost payments or transaction services means people can receive money more cheaply from relatives living in urban areas or even in another country. Access to insurance—and microinsurance—also helps smallholder households avoid financial shocks that can put them at significant risk of falling further into poverty.

- ***Take a financial inclusion approach.*** Smallholders, as well as all other rural dwellers, benefit from having access to a variety of financial products. While credit may be useful and very important for smallholders, savings, payment facilities, and other products such as insurance (life, health, agricultural) also provide a high degree of utility for consumers. All other things being equal, if a supplier and a formal FI are both offering credit to a smallholder on the same terms, a farmer is better off receiving credit from a bank or other formal financial provider that is also willing and able to provide other financial products to that farmer. If you want to be pro-poor, you should try to follow the financial inclusion approach to agricultural finance.

- ***Be patient while FIs develop competence and confidence.*** It takes a long time—measured in years—to develop a lending business focused on farming and agricultural activity. Generally, financial providers develop expertise in one or two crop or commodity value chains, and then apply what they have learned and adapt their lending approaches to new value chains through a step-by-step process. It can take more than a year to pilot a loan product for a single value chain, with its own unique growing cycle, sets of value chain relationships, and other unique characteristics. Building a sizeable book of lending to agriculture, starting from zero, it can take a bank more than five years to achieve the kind of size and scale that would be considered commercially viable. If working with a bank or other kind of FI to develop agricultural lending, you should be prepared to provide at least two years of support just for the pilot phase.

- ***Don't expect a lot from agricultural insurance.*** There are many interesting insurance products that have been created to help manage the risk of agricultural activity. However, they all tend to be costly and, in absence of significant subsidization, agricultural insurance is rarely marketed to individual farmers, particularly smallholders, to reach scale. While innovations in data and product design are being developed, these contracts are still likely to be too expensive to reach mass-market scale without subsidization. There are still numerous innovations being developed, including a move

from individual to group-based product design that can economize on the unit costs of marketing microinsurance to individual farmers and agri-businesses, but to our knowledge it is too early to say which models will be scalable in the mass market.

Box 4: An Annotated Bibliography of AVCF Cases and Examples

The following references contain a wealth of examples related to agricultural financing, as well as AVCF case studies.

Hoffman, N., and Roscoe, A. (2016). *Investing in Women along Agribusiness Value Chains.* Washington, DC: IFC. Provides four interesting cases focused on investing in women in agriculture.

Miller, C. (2015). *New Trends in Agricultural Finance.* Washington, DC. G20 Global Partnership for Financial Inclusion (GPFI). Contains many examples of new approaches of providing finance, particularly via digital financial services.

Miller, C., and Jones, L. (2010). *Agricultural Value Chain Finance: Tools and Lessons.* Rome. FAO, Practical Action Publishing. This book is a very useful reference, which in addition to provding dozens of AVCF examples, also contains a very comprehensive list and detailed description of agricultural loan products. If there was a single "standard reference" on AVCF, this would be it.

Successful Models for Financing the Rural and Agricultural Sectors. 2017. Incofin, MIF. A recent view of some new, largely digital approaches to engaging value chains, with a focus on the role of payments and payment agents in agricultural finance.

Varangis, P., Teima, G., Khan, A., and van de Velde, P. (2012). *Innovative Agricultural SME Finance Models.* Washington, DC. International Finance Corporation. This document was meant to serve as a source book for case studies on agricultural finance, and certainly delivers on that promise, with more than 30 detailed case studies, and references to an additional 50 more.

Working with Smallholders: A Handbook for Firms Building Sustainable Supply Chains. (2019). Washington, DC. International Finance Corporation. This work does not contain AVCF case studies, but provides a comprehensive set of references in a variety of areas relevant for agricultural finance.

Chapter 2

The Role of Agriculture and Finance in Viet Nam's Economy

This chapter was written by Alan de Brauw, Kate Ambler and Sylvan Herskowitz (International Food Policy Research Institute), Mark Middleton (Independent Consultant), and Nguyen Le Hoa and Trang Thi Thu Truong (Institute for Policy and Strategy for Agriculture and Rural Development).

Introduction

Since the Doi Moi reform process began in 1986, Viet Nam has achieved substantial economic growth and poverty reduction. The rate of poverty incidence has dropped from 80 percent at the beginning of reforms to about 4 percent in 2019 (World Bank, 2020). As Viet Nam has developed into a middle-income country, the economy has shifted from being dominated by firms owned by the state or cooperatives to one in which the private sector and foreign-owned firms account for a relatively high proportion of GDP.

With this growth, the role of agriculture in the economy has been changing. In this chapter, we provide background relevant to the opportunities and constraints for AVCF in the modern Vietnamese landscape. We examine the role of agriculture in Viet Nam's economy, and consider how demand for Viet Nam's agricultural products has been changing, through increases in income, demographic change, and international trade. We also discuss the relationship of the formal financial sector to agriculture and begin to explore the extent and nature of smallholder farmer interaction with the financial sector.

The Vietnamese economy

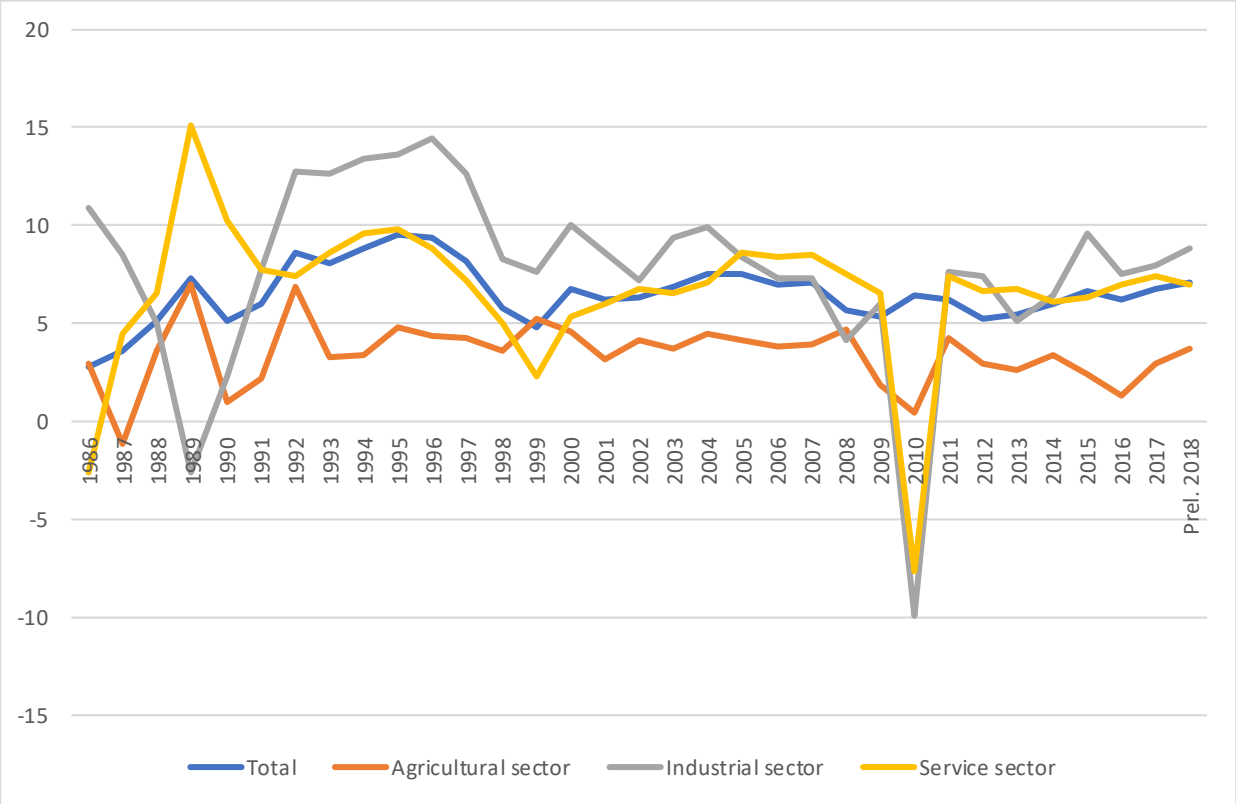
The extensive market reforms paired with a recent commitment to macroeconomic stability have provided an economic environment that has enabled rapid growth averaging 6.6 percent per annum during 2014–18, and reaching a 10-year high of 7.1 percent in 2018 despite rising trade tensions and volatility in emerging economies (IMF, 2019). GDP growth in 2019 was projected to be 6.6 percent. This accelerated economic pace is due to labor shifting from agriculture to manufacturing and services, private investment, a strong tourist sector, higher wages, and accelerating urbanisation. Low wages, a large labor force, natural resources, and resilience to China's economic slowdown have also bolstered Viet Nam's economic potential.

Figure 1 shows how GDP growth has remained strong over time with average total growth rates of 6 percent and up since 1995. However, we also observe significant variation in growth rates by sector, with faster growth in the industrial and service sectors than the agricultural sector. The disparity in growth rates has resulted in a decline in agriculture's share in the economy, as illustrated in Figure 2. The percentage share of agriculture in total GDP has declined from 35.6 percent in 1990 to 15.3 percent in 2017. However, in this time of transition, the structure of the agricultural sector in terms of the trade-off between crops and livestock has changed only modestly. Crop production declined from 79.3 percent of total agricultural production in 1990 to 68.56 percent in 2016/17, and livestock production increased from 17.64 percent in 1990 to 25.48 percent in 2016/17 (Mai and Van, 2019).

The COVID-19 pandemic has negatively affected Viet Nam's economy as suggested in the introduction, though perhaps not as much as other countries. The IMF projects that Viet Nam's GDP growth will slow to 2.7 percent overall in 2020 (IMF, 2020). Agriculture suffered

substantially in the first quarter of 2020, but reports as of May 2020 suggest that most agricultural production is proceeding as normal.[11]

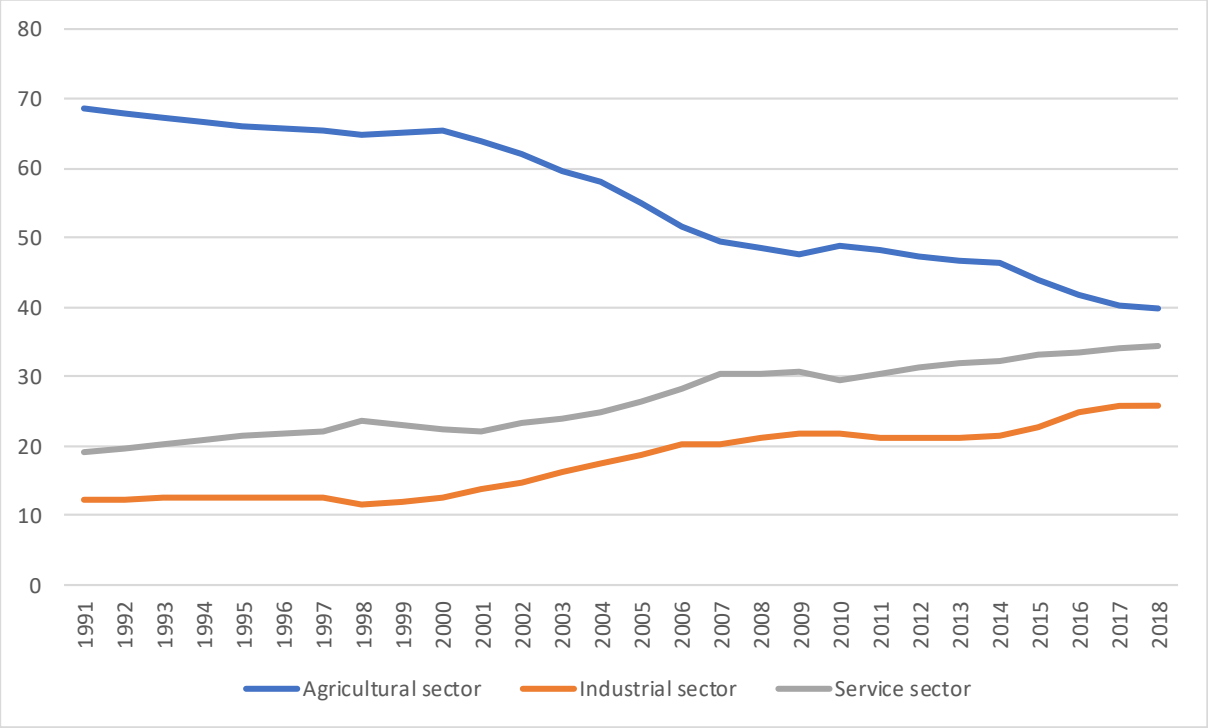
Figure 1: GDP growth rate by sector



Source: World Bank (2020).

[11] Authors' correspondence with the Viet Nam General Statistics Office.

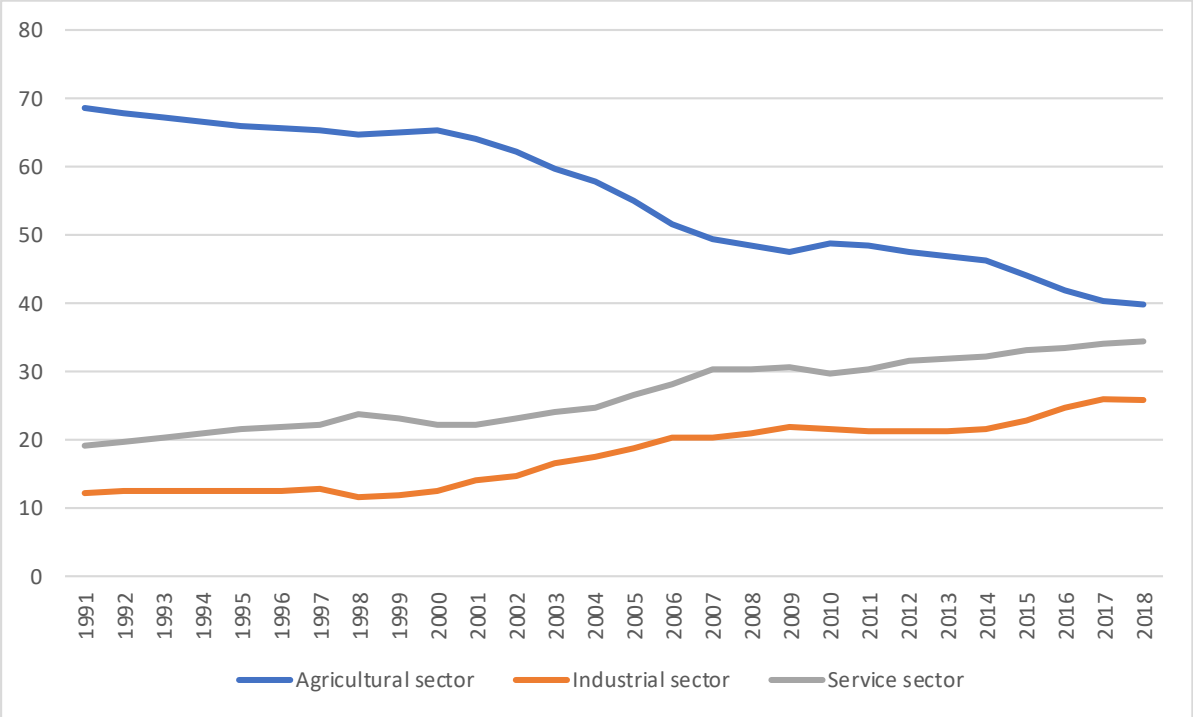
Figure 2: GDP share by sector



Source: World Bank (2020).

As the agricultural sector declined in relative importance, the structure of the labor market also changed. In 1991 over 68 percent of the labor force was employed in agriculture, a figure that had dropped to 40 percent by 2018 (Figure 3). The unemployment rate in Viet Nam is low, 2.2 percent in 2018, confirming structural transformation with employment shifting away from agriculture but not out of the labor market (IMF, 2019). Despite this decline, employment in agriculture is still high relative to its importance in the overall economy.

Figure 3: Employment share by sector



Source: World Bank (2020).

Living standards in Viet Nam have also improved. In 2018, the average monthly income per person was estimated at 3.76 million VND and had grown at a rate of 10.2 percent per year in 2016-2018. The incidence of poverty in 2016 was estimated to be 4 percent, down from 13.5 percent in 2014 (World Bank, 2020).[12] Living standards and poverty have also improved in rural areas as the rural poverty rate decreased from 17.4 percent in 2010 to 11.7 percent in 2016.

Increased agricultural production has played an important role in poverty reduction in Viet Nam (OECD, 2015). Because agriculture continues to employ a large share of the workforce, in numbers disproportionate to the share of agriculture in overall GDP, one way to further reduce poverty is to maintain the development of agriculture as a national priority. Globally, agriculture has demonstrated extraordinary capability to reduce poverty; estimates from the World Bank show that GDP growth originating in agriculture is at least twice as effective at reducing poverty than growth in other sectors (Akram-Lodhi, 2008).

Viet Nam Demographics

Viet Nam's population was approximately 98.7 million in 2020 with a growth rate of 0.84 percent. Population density is high but uneven across the country, with the highest concentrations along the South China Sea and Gulf of Tonkin, in the Mekong Delta (in the south),

[12] In Viet Nam, the poverty line is currently $3.20 per capita per day, at the 2011 PPP exchange rate.

and in the Red River Valley (in the north) (Central Intelligence Agency, 2019). Despite the declining agricultural sector, the majority of Viet Nam's population is located in rural areas; approximately 63 percent in 2020.

The median age in Viet Nam is 31.9. 39 percent of the population is younger than 25 years old with life expectancy of nearly 73 years. The population is rapidly aging and there is an emerging middle class—currently accounting for 13 percent of the population but expected to reach 26 percent by 2026 (World Bank, 2019). The population demographics will have a significant impact on the structure of food demand going forward as needs change.

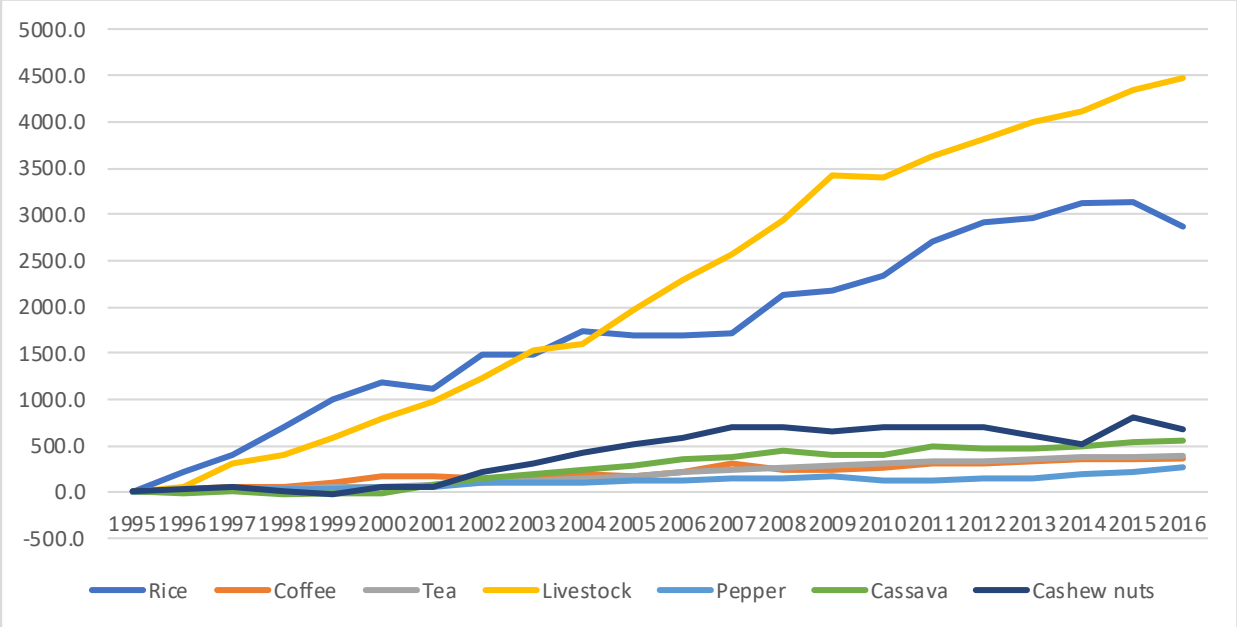
In a pattern known as Bennett's Law, as income rises, the share of the food budget allocated to starchy staples declines relative to more expensive sources of calories. The more people earn the higher their consumption of nutrient rich animal-source food becomes (i.e. milk, meat, and eggs) (Soon and Tee, 2014). For example, a study of rice demand in Viet Nam shows that rice consumption away from home rises with income, while rice consumption in general has been declining as incomes increase (Nguyen, Truong, and Nguyen, 2019). These changes are presumably related to the greater variety of food available and perhaps the higher opportunity cost of time of household members (Gulati, 2005; Gulati et al., 2015).

Although changes in food tastes and preferences in urban areas have been positively associated with greater availability, accessibility, and affordability for most households, research has shown that this does not necessarily guarantee nutritional quality (Soon and Tee 2014). A nutrition transition is taking place whereby traditional diets are being replaced by diets higher in fats, salts, and animal products, with lower intake of fresh fruit and vegetables. The key drivers are varied and include the emergence of supermarkets (accessibility), increases in income and socioeconomic gains, urbanisation, and access to social and mass media (Minot et al., 2003).

The Agricultural Sector

The Vietnamese climate and land are well suited to a wide range of crops including rice, coffee, rubber, tea, pepper, soybeans, cashews, sugar cane, peanut, banana, and others. At the national level, the Vietnamese government has identified 13 strategic commodities encompassing the largest commodities in the country along with those rapidly growing in importance. Rice, pig, and fruits and vegetables are the most important commodities, followed by coffee, chicken, cassava, pepper, and cashew (FAOSTAT, 2019). Growth of a subset of these commodities since 1995 can be seen in Figure 4. New crops, with relatively low initial production volumes, like pepper, coffee, cashews, tea, and cassava are growing quickly, while the largest commodities (rice and livestock) are experiencing relatively slower growth.

Figure 4: Commodity growth from 1995-2016



Source: FAO STAT (2019).

An important component of the agricultural sector is also the government's "one commune-one product" project. In this initiative the government promotes the development of high-value and niche products to be produced in small quantities. By emphasizing one product at the village level, farmers should receive the support they need to successfully produce the chosen commodity. This is not strictly an agricultural program, but two of the six focus areas are agriculture related.

Trade

Because of its strategic geographic position for foreign companies with operations throughout Southeast Asia, Viet Nam is well positioned as an export hub to reach other ASEAN markets. The value of Vietnamese exports was $258bn USD in 2018 (World Bank, 2020). In 2017, Viet Nam was the largest ASEAN supplier to the U.S. with a net export value of US$48.43 billion. Additional statistics indicate that bilateral trade with the U.S. will surge to US$57 billion by 2020, bolstering Viet Nam's position as a valuable hub for foreign investment (Dezan Shira and Associates, 2019).

Exports are expected to continue to perform strongly, especially with increasing participation in international trade agreements (ASEAN, the FTA with the EU, the FTA with South Korea and CPTPP). Electronics, machinery, footwear, and clothing are the main export industries. Given the reorientation of the workforce and the economy, the agricultural share of total exports has been declining over time. However, despite the decline in relative importance, agricultural exports are still significant.

The total value of agriculture exports from Viet Nam in 2017 reached $36.4 billion USD, a 14 fold increase since the beginning of participation in ASEAN, an average export growth rate of 12.9

percent per year in nominal terms. Viet Nam has a healthy $3bn USD coffee industry, primarily exported to United States (17 percent), Germany (16 percent), Italy (8.5 percent), and Spain (8.2 percent), which has developed almost completely in the last 30 years. Coffee production grew by 20-30 percent every year in the 1990s and the industry now employs about 2.6 million people, with beans grown on half a million smallholdings of two to three acres each (Summers, 2014). Viet Nam is now the world's second largest coffee producer (Teixeira, 2019). Other important commodities from an export perspective are rice, fruits and vegetables, rubber, pepper, cashew, and shrimp. Of these fruits and vegetables, pepper, cashew, and shrimp are experiencing rapid growth (FAO STAT, 2019).

In 2017 total Vietnamese imports were valued at $204bn USD, increasing at an annualised rate of 14.4 percent over the previous five years. The majority of imports originate from China, South Korea, and Singapore, together accounting for 54 percent of total imports to Viet Nam. In volumes, the most important trade flows to Viet Nam currently include textiles, office telecom and electrical equipment, and fuel. However, Viet Nam is also a growing market for fish and seafood products and is globally one of the six fastest growing meat consumers (Austrade, 2019).

COVID-19, however, will have important effects on Viet Nam's agricultural trade. China is an important trading partner, both as a source of inputs and as an export market. Since China was particularly affected during the first quarter of 2020, there were clear changes to Viet Nam's agricultural trade balance at the beginning of the year. Specifically, in the first two months of 2020 export turnover of the agricultural sector was down 2.8% relative to 2019, imports were down 6.7%, leading to an 18.4% increase in overall trade surplus.

Agricultural finance in Viet Nam

While 30.5 percent of rural households report an unmet need for credit (own calculations from the 2016 Vietnamese AgroCensus), access to credit in rural areas has been expanding. According to State Bank of Viet Nam (SBV) credit growth for agriculture and rural areas has increased by an average of 20 percent annually since 2008. Loans from the formal sector outstanding to agriculture and rural areas have increased by more than 5 times over the past 10 years. In 2010, the credit balance for agriculture and rural areas was 382 trillion VND and within five years this number more than doubled, reaching 825 trillion VND (SBV, 2018).

Types of finance

The two principal sources of formal credit for smallholders in rural areas are the Viet Nam Bank for Agriculture and Rural Development (VBARD, or Agribank) and the Viet Nam Social Bank for the Poor (VSBP). VBARD was established in 1990 and provides some subsidised credit from the State Bank of Viet Nam (SBV) to the rural poor (Nghiem and Laurenceson, 2005). Meanwhile, the VSBP was established in 1995. It operates as a non-profit with a focus on delivering subsidized credit for poverty alleviation. According to calculations from the 2018 VHLSS, VSBP accounted for 65 percent of loans to poor, rural household in 2018, while VBARD accounted for

15 percent. At the same time, VBARD reports that it accounts for 50 percent of all rural loans in the domestic banking system, a figure that includes loans to larger enterprises (Agribank Annual Report, 2018).

The interest rates on loans given by VBARD and VSBP are set by the government at low levels, with the goal of improving access to finance for the poor. However, given high operating costs, these interest rate restrictions create difficulties for financial institutions. The interest rates are 1 percent per month for VBARD and 0.7 per month for VSBP, significantly lower than the non-state-owned commercial banks. Though access to finance is growing, the low interest rates lead to loan demand exceeding available supply. Banks frequently select the least risky borrowers (such as those with good collateral) and prefer to give larger loans to reduce administrative costs per loan. These practices may unintentionally result in reduced access to finance for the smaller and poorer farmers the policies intend to serve.

A third component of the formal credit sector are the People's Cooperative Funds (PCFs), an institution that grew out of traditional credit cooperatives after a financial collapse in the late 1980s. The Canadian International Development Agency (CIDA) funded the PCF's under the supervision of the SBV, with the goal of restoring public confidence in the formal rural financial system. The PCF system was established as a member-owned organization, aimed at mobilizing savings from members. In 2018, it was estimated that there were 1,183 PCFs with an aggregated capital stock of 113,546 billion VND. In order to establish a PCF, 15 founding members with capital of 50 million VND are required and each member must buy a minimum share of 3.3 million VND which are significant amounts for the poor. The PCF network has been established primarily in areas with greater economic activity and better infrastructure development. Therefore, the PCF system only has a limited role in reducing rural poverty. The benefits of the PCF are that they are located near their customers and have a relatively fast loan approval process.

The semi-formal and informal sectors also play a large role in rural finance. The semi-formal sector is largely composed of microfinance organizations of varying types. Small micro-finance organizations have the benefit of more flexibility, but face regulatory challenges when trying to grow. Informal finance also remains prevalent and includes loans taken out from friends and family members, from rotating savings and credit associations (ROSCAs), and credit provided by input suppliers. Moneylenders that charge high monthly interest rates are also prevalent. Despite the high costs they offer credit with less administrative burden and generally do not require collateral.

Informal forms of credit are important in Viet Nam, especially in rural areas. In many places, especially in mountainous areas, some are the only source of credit for the poor and ethnic minorities (EMs). In comparison with the formal sector, such credit has many characteristics that are suitable for the poor in rural areas, such as being close to farmers, located in hamlets/villages; flexible operation, credit terms to meet specific needs and commensurate with the capabilities of each customer; simple transaction procedures; easy-to-understand rules; and speed, allowing people who need loans quick access to cash. The transactions are mainly based on trust and personal relationships between lenders and borrowers. However, informal credit

through these transactions has many limitations and disadvantages, especially very high interest rates, sometimes up to 5-10 percent per week, or 10-20 percent per month. These interest rates are sometimes combined with conditions such as only being eligible for the purchase of specific raw materials, consumer goods, or selling products or labor. These loans are also small and can be very short-term, inhibiting the medium- and long-term investments of farmers (Marsh et al., 2006). Some forms of semiformal/informal credit operate in the form of credit trusts, including:

i) Internal credit given by cooperatives (operating under the Cooperative Law and the Law on Credit Institutions)[13];
ii) Credits entrusted through socio-political organizations (Women's Union, Farmer's Union, Youth Union, Veterans Association); and
iii) Credit entrusted through international funds and non-governmental organizations (NGOs).

More detail on the policy environment surrounding the different types of finance is discussed in Chapter 3 of this report.

Access to finance

Despite all the potential sources of credit, a relatively large share of households report lacking access to credit. The unmet demand varies substantially by region; it is highest in the Central Highlands (51.1 percent) and lowest in the Red River Delta (15.9 percent). Among households with loans, the Viet Nam Access to Resources Household Survey (VARHS) 2016 (Tarp, 2017) shows that the main sources of credit for a household's primary loan are VBSP and VBARD, at 62 percent of all loans (Table 1). Informal credit accounts for 20 percent and other sources (including semi-formal credit sources) constitute 17.5 percent. Therefore, despite the varied potential sources of loans described above, formal sources are used by the majority of farmers with loans. That said, when households have more than one loan, the additional loans are mostly informal, accounting for 53 percent of all second loans and over 70 percent of all third loans. Due to collateral requirements that are strictly imposed, taking out more than one formal loan is not an option for most people.

[13] There has been an increasing trend towards higher value agricultural production via the establishment of vertically integrated cooperatives. Many of these cooperatives are lending to farmers at discounted rates of 7 percent per annum for short term loans and 10 percent per annum for longer term loans. Cooperatives are additionally in a position to lend without collateral. The presence of agricultural cooperatives has led to an increase in high value agriculture and uptake of technology, which has increased efficiency for small holders. Cooperatives have facilitated an increase in lending to farmers because of their business model and scale. Financial institutions can lend more easily to cooperatives than to individual farmers, benefitting the financial institutions with lower overall transaction costs and benefitting the cooperative members with better reliability of access to needed capital.

Table 1: Source of household loans

	Main Loan	Second Loan	Third Loan
VBSP	26.4	13.7	2.9
VBARD	36.3	14.5	17.7
Informal	20	53.1	70.6
Other sources	17.5	18.6	8.8

Source: VARHS, 2016

Note: Calculations based on individual loan data. Informal includes: Private traders, moneylenders, group schemes and friends and family. Other sources include credit funds, unions, private banks and everything else not included in the three main categories above. For the main loan the total observations are 768 households, for the second loan 144 households and for the third loan 34 households

According to VARHS data, approximately 55 percent of rural households with loans stated they were going to use the loans for farm related activities (Table 2). However, less than half of these households (27 percent) actually used the credit in that way. When asked how loan were used, 20 percent indicated that they used them for consumption purposes.

Table 2: Use of loans by loan source

	Stated Use (%)	Actual Use (%)
Used on farm	54.8	27.8
Non-farm activities	12.4	9.4
Other investment	19.1	22.5
Consumption	12.3	20.1

Source: VARHS 2016

According to data from SBV, the proportion of bank lending to agriculture accounted for only 18-19 percent of capital needed by the sector. By the end of June 2016, the total loans outstanding for agriculture were estimated at VND 886 trillion, accounting for just 18 percent of total outstanding loans of the economy. The capital structure of commercial banks has not traditionally favored the rural and agriculture sector. In fact, commercial banks are mostly joint-stock banks, and the bank's investment decisions depend entirely on the investment decisions of shareholders, who prefer the investment channels which are most profitable. Key constraints in agricultural investment include lack of profit from lending to small holder farmers, the perceived high risk of agricultural lending, and seasonal and market risks such as price fluctuation, natural disaster, diseases, and difficult transportation systems.

To encourage growth in agricultural lending, the required capital reserve for banks was reduced to 70 percent for agricultural loans in 2010, and banks were required to have at least 20 percent of their total annual outstanding balance in agriculture. However, many commercial banks are now lending to agri-related infrastructure projects such as dikes, canals, and roads, seen as less risky and more profitable. Though this is beneficial for the development of agricultural value chains, different solutions are needed to promote the financial inclusion of smallholder famers.

Using the VARHS (Tarp, 2017) we use regression analysis to understand which types of households are more likely to have access to credit, and display the results in Table 3. We first examine predictors of whether or not a household has a loan (column 1). Then, among those households that borrowed, we study whether they are taking out loans for agricultural production (column 2), whether the credit is from VBSP (column 3), whether the credit is from VBARD (column 4), and whether the credit is from informal sources (column 5). We use logistic regression and report average marginal effects. In other words, the table reports the average change in the dependent variable (for example, taking out a loan) for a one-unit change in each independent variable (for example age or education).

Table 3: Correlates of credit access

		Among those who borrowed:			
	Household borrowed money	Borrowed for agricultural production	Borrowed from VBSP	Borrowed from VBARD	Borrowed from informal source
	(1)	(2)	(3)	(4)	(5)
Household head is male	0.005	0.073*	-0.044	0.088**	-0.012
Age of household head	-0.005***	0.000	-0.003**	0.006***	-0.003**
Household head completed lower primary	0.015	0.074	-0.177***	0.165**	0.068
Household head completed lower secondary	0.074***	0.108*	-0.126**	0.168**	0.046
Household head completed upper secondary	0.066**	0.033	-0.165***	0.203***	0.051
Household does not read or write	0.059	0.171	-0.043		0.096
Household head is Kinh	0.059***	-0.013	-0.205***	0.009	0.109***
Household is rural	0.141***	0.045	-0.099	0.151**	0.136**
Log income per capita	0.007	0.088***	-0.110***	0.062***	-0.006
Experienced natural shock	0.060***	0.052	0.065*	-0.044	-0.015
Experienced economic shock	0.162***	0.004	-0.133*	-0.012	0.216***
Experienced health shock	0.131***	-0.189***	-0.040		0.171***
Observations	3,563	1,059	1,059	1,059	1,059
Mean of dependent variable	29.72	40.89	35.22	33.33	23.51

Source: VARHS 2016

Note: Table presents marginal effects from logistic regressions. Columns 2 - 5 include only households that reported taking out a loan. *** p<0.01, ** p<0.05, * p<0.1

We first find that borrowing (column 1) is predicted by being younger, being more educated, being of the majority Kinh ethnicity, and having experienced a shock of any kind. Notably, the

variables indicating exposure to shocks have the largest association with borrowing, suggesting that experiencing a negative shock is often what drives people to take out loans. Among those who took loans out, we next examine what predicts that those loans are for agriculture. In general, there is less that predicts this outcome, however having a male household head, being more educated, and having higher income per capita are predictive of agriculture loans. Those who experience shocks are also less likely to take out agricultural loans. This is indicative of the fact that agricultural loans are most available for those with more resources.

The most interesting information in this table is the comparison between the predictors of access to a loan from VBSP (column 3) and a loan from VBARD (column 4). The coefficients on almost all indicators are of opposite signs for the two loan sources. Borrowers from VSBP are younger, less educated, more likely to be an ethnic minority, and live in households with lower income. The opposite is true for access to VBARD loans. This is consistent with VSBP's mission to provide finance for the poor. There is less consistent evidence regarding predictors of informal loans. However, those who have experienced economic or health shocks are much more likely to have informal loans, verifying that this source of credit is what is most accessible for those facing urgent needs.

Summary

Viet Nam's agricultural sector has undergone substantial change since the reform period began, ushering in sustained, rapid economic growth. Though rice production has grown, there has also been a rapid increase in the production of such commodities as coffee, pepper, tea, and cashews, which are mainly exported. Viet Nam's agricultural sector continues to employ a large share of the adult population and, despite the growth of the sector, almost all the remaining poverty in Viet Nam is among smallholder farmers.

Access to finance in rural areas has grown in rural areas alongside agricultural growth, but access to formal finance remains nonetheless limited for many smallholders. Moreover, among smallholders access to formal finance is largely limited to loans from VBARD or the VSBP. During the COVID-19 crisis, the Vietnamese government has made it clear that ensuring availability and flexibility of financial resources in the agriculture sector is a primary objective of their recovery strategy going forward. Recovery will therefore rely even more heavily on the financial institutions discussed above and finding effective ways to provide financial services to actors throughout the agricultural value chain will be critically important. In the following section, then, we study how policy limits or shapes opportunities for finance to expand.

Chapter 3

Agricultural Value Chain Finance Policy

This chapter was written by Alan de Brauw, Kate Ambler and Sylvan Herskowitz (International Food

Policy Research Institute), and Nguyen Le Hoa and Trang Thi Thu Truong (Institute for Policy and Strategy for Agriculture and Rural Development).

Policy Environment for Agricultural Value Chain Finance in Viet Nam

There are several ways that policy can affect opportunities for and challenges to agricultural finance and AVCF in Viet Nam. Data suggest that lending to rural areas has been increasing at about 10 percent per annum (SBV, 2019). Despite this growth in credit availability, a substantial share of smallholders do not have access to formal credit at market interest rates. Opportunities for agricultural finance generally and AVCF specifically can be shaped by policies related to finance, as well as agricultural policy and trade and industrial policy. In this chapter, we review the finance policies, agricultural policies, and the trade and industrial policies that affect agricultural value chain finance opportunities, focusing on the way they may affect smallholder participation in agricultural value chains.

Viet Nam's Financial Sector

The financial sector in Viet Nam is overseen by the State Bank of Viet Nam (SBV). It has overseen a gradual liberalization in the sector since *Doi Moi*. At present, the sector is mostly dominated by four large state owned banks: The Viet Nam Bank for Agriculture and Rural Development (VBARD or Agribank); the Bank for Investment and Development of Viet Nam (BIDV); the Joint Stock Commercial Bank for Foreign Trade of Viet Nam (Vietcombank); and The Viet Nam Bank for Industry and Trade (Vietinbank). There are additionally over 30 joint-stock commercial banks, which are often partially owned by a state-owned enterprise. Finally, there are foreign-owned banks that are licensed to do business in Viet Nam. However, a large proportion of those are very small. About 50 percent of all outstanding loans in the Vietnamese banking sector are held by the four banks in the state-owned sector (World Bank, 2018).

A key feature of the financial sector in general is that the state-run banks have a large portfolio of non-performing loans (NPLs), the majority of which originated with state-owned enterprises (Dang, Nguyen, and Taghizadeh-Hesary, 2020). Such NPLs are a common feature of a transition economy (e.g. Allen, Qian, and Qian, 2008). In a transition economy, state-owned enterprises are forced to compete with more efficient businesses entering markets, and often require large subsidies to maintain employment. Since these subsidies occur through the financial system, the result has been that the state-owned banks end up with many NPLs on their balance sheets. There have been policy efforts to get NPLs off the balance sheets of the major banks through the establishment of the Viet Nam Asset Management Company (VAMC), but the VAMC has been slow to begin this process (World Bank, 2019).

The excess of NPLs in the portfolios of the state-owned banks has two likely implications. First, since banks are either implicitly or explicitly encouraged to make loans to state-owned enterprises, they are particularly risk averse in making loans to the remainder of the economy. Second, banks are structured to make large loans, and so their transaction cost structure may

not foster lending to smaller farmers. These features are important as we consider specific policies related to the financial sector.

Policies Related to Credit

Credit provision in Viet Nam is governed by the 2010 Law on Credit Institutions (or the Viet Nam Credit Law), which replaced the 1997 Law on Credit Institutions. The law covers commercial banks, non-banking credit institutions, and foreign bank branches, all of which must be licensed by the State Bank of Viet Nam (SBV). Non-banking credit institutions include finance companies, finance leasing companies, cooperatives, people's credit funds, and microfinance organizations (Nguyen and Nguyen, 2010).

In addition to the Law on Credit Institutions, there are several government decrees and decisions that regulate the provision of credit in Viet Nam as described below.

Collateral Regulations

Banks and other credit institutions in Viet Nam are not required by law to obtain collateral or other securities for loans. Any non-collateralized loans that are given are limited to smaller loans (Hainz, Dinh, and Kleimeier 2011). Moreover, they appear to be given quite infrequently. If a state credit institution does give an uncollateralized loan, the regulation states that the financial institution takes responsibility for the decision. Therefore, because they lack robust means to otherwise determine the credit-worthiness of borrowers (Le and Nguyen 2019), state-owned banks and other credit institutions are hesitant to give uncollateralized loans.

Unlike agricultural loans, unsecured personal loans (loans not backed by collateral, also known as "cash loans") used for consumer purposes are becoming more common in Viet Nam. However, a 2019 proposal suggested that the government would impose restrictions to stipulate that finance companies can only provide these loans to borrowers with good credit history and that these loans could only constitute 30 percent of the finance company's portfolio (Viet Nam News, 2019). Financial technology (fintech) companies, which are rising in popularity in Viet Nam, also do not require collateral (Tan, n.d.).

Given the importance of collateral and other securities in lending, the Vietnamese government has issued a series of laws and decrees to establish and clarify their regulation.[14] With respect to the role of collateral for formal agricultural loans, VBARD and the VSBP have different internal policies. VBARD requires collateral for its loans, while the VSBP does not, in line with its goal of serving poor households. Because access to credit is greatly enhanced by the

[14] These regulations include the 2005 Civil Code (Civil Code No. 33/2005/QH11), Articles 318 thru 373, which established the law on secured transactions, including collateral, mortgages, etc. (GoV 2005, Giang 2012); Decree No. 163/2006/ND-CP and later Decree No. 11/2012/ND-CP amended the law by simplifying and clarifying various procedures for using assets for secured transactions (Cheng 2012); and Law No. 91/2015/QH13 which is the updated Civil Code, and includes detailed provisions on secured transactions and collateral (Gov 2015). Finally, Circular No. 39/2016/TT-NHNN clarifies some aspects of the new civil code (Ha, Tang, and Huyen 2019).

availability of collateral, and because Vietnamese households do not own the land they farm, land tenure rights and the legality of other potential forms of collateral are important to understand in this context.

Land Tenure

Land is a common form of agricultural collateral. Since land is not owned by farmers in Viet Nam, its use in Viet Nam as collateral is made possible through land use certificates. In 1993, the Land Law instituted the system of "red books" (Land Use Rights Certificates) that gave farmers title to their land for a 20-year period for annual crops and a 50-year period for perennials. The 2013 Land Law extended the titles to 50 years for annual crops. The land laws have enabled farmers to use land use rights certificates as collateral, but disputes over land remain common (OECD, 2015). Not all households have land use rights certificates; in 2016 about 72 percent of plots had an associated certificate (Bellemare et al., 2020). Women's landholdings are much smaller than men's, affecting their ability to access credit (Newman 2017; Tran et al., 2018).

In many cases borrowing households do not have other assets that are valuable and reliable enough to be collateral and land use rights certificates are their only viable option. If a formal lender requires it, they must submit the land use right certificates to credit institutions. The certificates must be certified to have no disputes by commune-level People's Committees.

Warehouse Receipts System

As discussed in Chapter 1, a warehouse receipts system can be useful as an alternative form of collateral. Farmers and traders store goods in warehouses in exchange for a receipt that certifies the existence of the goods. This receipt can then be used as collateral for bank loans. While Viet Nam has a warehouse receipts system, it is not regulated or governed by a warehouse receipts law. As a result, the system faces issues such as the lack of an accurate national registry of receipts that can help in the use of receipts for collateral, and a lack of clear procedures in the case of warehouse bankruptcy. For these and other reasons, banks tend to prefer physical collateral for loans (IFC, 2013, and World Bank, 2016a).

Maximum Loan Size

Whereas collateral is not a strict requirement for loans, the Government of Viet Nam does regulate the maximum size of loans going to households without collateral as a means to protect the banking system from the risks of further NPLs. However, it has taken steps in recent years to increase maximum loan sizes to help ensure that poor households, including those engaged in agriculture, are able to access sufficient credit.

Decree No.116/2018/ND-CP (Decree 116) amended and supplemented several aspects of Decree No.55/2015/ND-CP regarding credit policies for agricultural and rural development. Decree 116 increased the maximum loan size that credit institutions can provide to individuals and households that are involved in agricultural production or businesses without collateral.

Specifically, regarding non-guaranteed loans, the decree states: "For individuals and households not living in rural areas but involved in agricultural production and business, the credit line increases from VND 50 million to VND 100 million. For individuals and households living in rural areas and involved in agricultural production and business, the credit line increases from VND 100 million to VND 200 million" (SBV, 2018).

Decision No.12/2019/QD-HDQT, which only applies to the VBSP, increased the maximum loan amount for poor households without collateral (in this case the target is households not necessarily involved in agriculture) from VND 50 million/household to VND 100 million/household, and extended the credit term from 60 months to 120 months. The Decision specifies that the new lending limit also applies to near-poor households, households that have just gotten out of poverty, and those in ethnic minority areas (SBV, 2019).

Interest Rate Regulations and Subsidies

The Government of Viet Nam has used caps on interest rates in its efforts to improve access to credit for the poor and for farmers. Viet Nam's Civil Code of 2015 imposed a cap on interest rates of 20 per cent per year on all civil transactions except in cases where loans were governed by other laws. Following the passage of Civil Code 2015, there was a lack of clarity as to which types of loans were subject to the 20 percent interest rate cap. Circular No. 39/2016/TT-NHNN confirmed that there was no cap on the interest rate for bank loans except for those going to certain sectors that the government wished to promote, including developing agriculture and rural areas, exporting, and supporting small and medium-sized companies, industries and high-tech businesses. These incentivized industries were still subject to a 20 percent interest rate cap, or a cap as determined by the SBV (Ha, Tang, and Huyen, 2019). While a cap on interest rates can benefit agricultural borrowers in the sense that credit is less expensive, it can also have negative repercussions if banks cannot charge a high enough interest rate to reflect the risks in these types of loans and therefore choose to instead limit the supply of credit.

Other Policies Related to the Financial Sector

As discussed in Chapter 2, The government subsidizes credit for some segments of the population through various institutions.

There are several ways that banks attempt to further simplify borrowing procedures for rural customers while adhering to regulations. Such simplifications include: reviewing and completing credit profiles while minimizing administrative procedures and documents; offering credit products which are suitable to farmers' production activities such as inter-lending, lending through credit books, providing loans locally, collecting payments in local areas (instead of borrowers going to bank offices), and applying for loans through transaction record books for loans under 50 million VND. However, the only farmers who would have transaction record books would be those with formal bank accounts, since the record books are linked to bank accounts. According to the World Bank (2018), only 25 percent of adults living in rural areas of Viet Nam have a formal banking account.

Finance Regulations Specific to Agriculture

Several types of policy loans specific to agriculture exist in Viet Nam, all of which are targeting expansion of lending to farmers. Each credit program has specific policies, calculated with a certain amount of capital, interest rates, loan terms, and borrower types (including products of agricultural production and beneficiaries). Targeted credit policies and programs for rural agriculture and aquaculture include:

- A credit policy for livestock and aquaculture (Document No. 1149/TTg-KTN dated August 8, 2012 by the Prime Minister);
- Loan program to support post-harvest loss reduction (Decision 68/2013/QD-CP and Circular No. 13 dated April 18, 2014 of the SBV);
- A loan program for rice exports (Decree 109/2010/ND-CP and Circular No. 08/2011/ TT-NHNN);
- Loan program for replanting coffee trees (Guideline No. 3227/NHNN);
- The support policy for fishermen in accordance with Decree No. 89/2015/ND-CP, amended by Decree No. 67/2014/ND-CP, dated July 7, 2014

A number of specific policies related to agricultural finance are worth further discussion as they have attempted to, either directly or indirectly, develop AVCF. First, there was a pilot policy on value chain financing developed through Decision No. 1050/QD-NHNN dated May 28, 2014. It regulates a pilot loan program for linkage models in agricultural production and consumption chains focused on high-tech and export-oriented agriculture. Later, Decree No.116/2018/ND-CP stipulated that loans for high-tech agriculture projects can be for up to 70 percent of the project value (SBV 2018). A further decision stipulated that borrowers who meet the criteria of high-tech agriculture and green agriculture shall receive interest rates below the normal lending interest rates from commercial banks (Decision 813/QD-NHNN dated 24 April 2017). The incentive is to provide an interest rate between 0.5 and 1.5 percent below the normal commercial lending rate. Further incentives apply to lending to reduce losses in agriculture whereby agricultural enterprises, cooperatives and cooperative groups are supported by the state budget with an interest rate subsidy of 100 percent in the first two years and 50 percent in the third year for machinery and equipment purchases. Companies therefore can benefit from the state's investment credit interest rate to implement investment projects on machine lines and equipment to reduce agricultural losses in agriculture, including factories and projects that manufacture agricultural machines and equipment.

Finally, Decree No. 57/2018/ND-CP, which replaced Decree 210/2013/ND-CP, provides incentives for enterprises investing in agriculture and rural areas, including investment subsidies whereby the government pays the difference between the commercial bank lending rate and the government's concessional rate. Decree 57 also includes reduced land and water surface rents, preferential interest rates, market development and training support (ACIAR, 2018). These policies suggest that there is sufficient policy support available to foster growth of AVCF models. However, it remains unclear whether this policy support has been successful in inducing more lending in these areas.

Agricultural Cooperatives

Prior to the *Doi Moi* reforms, the formation of agricultural cooperatives and farmers' participation and membership in them were largely mandated by the government. After the reforms, agricultural cooperatives in Viet Nam were obligated by Viet Nam's 1996 Cooperative Law to either transform into a new type of cooperative that followed the rules of the International Co-operative Alliance (ICA) including voluntary membership or to dissolve. In Viet Nam, there are now "transformed" cooperatives that evolved from pre-Doi Moi cooperatives and new cooperatives formed after 1996. There are several differences between transformed and new cooperatives. For example, transformed cooperatives tend to have assets such as irrigation canals that were carried over from pre-Doi Moi times. New cooperatives tend to be more focused on single products/commodities produced by their members (Takanashi, 2015).

The Cooperative Laws of 2003 and 2012 were intended to clarify and simplify cooperative law. The Cooperative Law of 2012 streamlined the administrative procedures for cooperatives including registering cooperatives, setting up branches, and closing cooperatives. The time it takes to register a cooperative was reduced from 15 days to 5 days (Vo and Le, 2014).

The government has taken several steps to increase and regulate credit for cooperatives. In 2006, Viet Nam established the National Cooperative Assistance Fund for the sake of providing credit to cooperatives and helping them expand their business activities. Regulation of cooperatives' internal credit activities are included in the 2012 Cooperative Law; Circular No. 15/VBHN-NHNN, dated May 21, 2014; and Circular No. 83/2015/TT-BTC dated May 28, 2015 (IPSARD). However, cooperatives are still undercapitalized and are often unable to access credit/loans (Luan and Kingsbury, 2019; DBAV, 2018).

Many agricultural cooperatives have actively organized internal credit services among cooperative members. According to a Ministry of Agriculture and Rural Development report, about 11 percent of all cooperatives in Viet Nam implement internal credit services (about 1,200 cooperatives). To do so, cooperatives mobilize idle money among cooperative members to create capital for other members to borrow. Loans are carried out with simple procedures, but still ensure the return of capital to its owners. This service enables members who have idle money to lend to members who otherwise lack access to credit, with some security guaranteed by the intermediary role of the cooperatives

Social and Political Organizations and Lending

Although they are mainly funded by the government, social and political organizations play an important role in community development, and thus contribute greatly to the development of microfinance. With a network at all four administrative levels (central, provincial/city, district, and ward/commune), socio-political organizations are key actors in bringing credit to people at the local level. Some of the social and political organizations actively involved in savings and credit activities are the Women's Union, Farmer's Union, Youth Union, and the Veterans Association. The Women's Union is considered the most successful of these in meeting at least part of the demand for financial services from its members. These organizations support the government lending through state programs, such as the National Targeted Program for

Poverty Reduction and the Employment Program. These organizations play a role as intermediaries between VBARD and VBSP and borrowers. They also assist the Commune People's Committee in setting up groups that are jointly responsible for guaranteeing loans at the commune level. In return, social and political organizations are entitled to receive commissions from Agribank and VBSP.

Agricultural Insurance Policies

In order to limit risks in the agricultural sector, Decree 55 provides more specific principles and procedures for dealing with loans that are at risk due to natural disasters, widespread epidemics, or due to objective reasons which are force majeure for borrowers (Article 12). Specifically, borrowers are encouraged to buy agricultural insurance: If insurance is purchased credit institutions reduce lending interest rates by a minimum of 0.2 percent per year compared to the interest rates of loans of the same type and have a corresponding term (Article 16).

Prior to 2011, the Government of Viet Nam did not provide financial support for agricultural insurance. While there were some commercial programs in place, take-up was very limited. In 2011, the government introduced an agricultural insurance pilot program (Decision No. 315/QD-TTg). The program included insurance products for rice, livestock, and aquaculture producers. The government's financial support covered 100 percent of the insurance premium for poor households; 90 percent for near poor households; 60 percent for other households; and 20 percent for agriculture production organizations (Bui, 2018).

Based in part on lessons learned from the pilot program, the government introduced an agricultural insurance policy in 2018 (Decree No.58/2018/ND-CP). According to Decree No. 58, the government will pay up to 90 percent of insurance fees for poor or near-poor households and up to 20 percent of fees for other households. The decree covers producers of a variety of crops, livestock, and aquaculture products (Bui, 2018). However, take-up of insurance products is still quite limited.

Digital Finance Regulations

Due in part to its high level of smart phone users along with the relatively low level of bank account holders, Viet Nam has a growing fintech industry, including digital payments, personal/retail finance, and peer-to-peer lending technologies. However, fintech is still largely unregulated in Viet Nam (Viet Nam Investment Review, 2019).

Decree No. 57/2018/ND-CP provides for the subsidised development of an electronic marketplace for agricultural products (eNAM portal). The decree states the subsidies will be disbursed when there are at least 500 enterprises that list their products on the portal (ACIAR, 2018).

Agriculture policies

A central policy regarding agriculture and rural development in Viet Nam is Resolution 26, issued in 2008, on "Agriculture, Farmers and Rural Areas" (also known as Tam Nong).

Resolution 26 establishes that the development of agriculture and rural areas as well as improvement of living conditions for farmers will be based on the market economy with a socialist orientation. The resolution lists objectives in these areas to be attained by 2020 (Rudengren, Huong, and von Wachenfelt, 2012).

Moreover, in 2008, Viet Nam issued Decree No. 379/2008/QD-BNN-KHCN, which established the Vietnamese Good Agricultural Practices (VietGAP)—voluntary standards that guide producers to improve quality and ensure food safety. A key tenant of the VietGAP standards is reducing heavy metal and pesticide residues in foods (Khoa et al., 2018; Anh, Truong, and Nghiep, 2019).

In 2013, the government introduced the Agricultural Restructuring Program (ARP, Decision No. 899/2013/QD-TTg) towards sustainability and increased value-added in agriculture, which has three broad objectives: (i) sustain growth, improve efficiency and competitiveness through increased productivity, quality and added value; (ii) increase income and improve living standards for rural residents, ensure food security and contribute to poverty alleviation; (iii) strengthen the management of natural resources, mitigate greenhouse gas emissions and other negative environmental impacts, improve risk management and proactively prevent natural disasters (Thang and Linh, 2015). The restructuring is meant to shift the focus away from simply achieving high quantities of food production and instead focus on higher quality and higher value crops produced in a sustainable manner (Thang and Hoa, 2015).

Viet Nam's 2016 – 2020 Socio-Economic Development Plan (SEDP) includes agriculture in its key objectives: restructure agriculture, ensuring improved efficiency and stronger linkages between production and markets. Its specific objectives for agriculture include the following:

(i) accelerating agricultural restructuring, improving the efficiency of agricultural production, and fostering new rural development linked with farmers' livelihoods;

(ii) improving competitiveness of agricultural products and commodities; strengthening policies on land consolidation in support of large-scale production; and, continuously re-organizing production and improving value chains from primary production to processing to marketing;

(iii) reviewing and improving locally-specific mechanisms, policies and criteria for new rural development;

(iv) promoting household- and farm-level economy through supporting new-style cooperatives and attracting enterprises to invest in agriculture, industries and services in rural areas; and,

(v) providing vocational trainings in diverse and suitable forms to boost economic growth, job creation, income generation, economic restructuring and shifting rural labor to the economic sectors with higher added value in 2016 and 2017 (FAO, 2017).

In 2017, the government approved a further Agricultural Restructuring Plan for 2017 – 2020. The multi-faceted plan aims to increase the number of operating agricultural cooperatives and unions of cooperatives; shift to crops that are adapted to climate change; increase access to

hygienic water in rural areas; encourage development of clean and organic agriculture; develop agricultural value chains and branding; increase science and technology applications in agriculture; and grow the livestock and seafood sectors, among other objectives (MARD, 2017).

With Decision No 490/2018/QD-TTg, the government instituted the One Commune, One Product (OCOP) program. The program emphasizes the development of specialty agricultural, non-agricultural, and service-based products in each locality, with a focus on high-value products that are produced in small quantities and marketed to niche domestic and international markets (from the Viet Nam agriculture and food sector). An early assessment of the OCOP program in a specific village suggests that it could increase employment (Thanh et al., 2018).

Trade Policies

Since Viet Nam's economic reform (Doi Moi) in 1986, the country has aggressively pursued trade liberalization by entering into several bilateral, plurilateral and multilateral free trade agreements (see Table 1). Viet Nam is a party to some of these agreements by virtue of its membership in the Association of Southeast Asian Nations (ASEAN), while it has entered into other agreements independently. In 2007, Viet Nam joined the World Trade Organization. Viet Nam also has a bilateral trade agreement with the United States, which has been in effect since 2001 (Nguyen, 2016).[15]

Throughout this period of liberalization, Viet Nam's agricultural imports and exports have increased substantially. Viet Nam's agri-food exports increased from a value of USD 3.9 billion in 2000 to USD 23.1 billion in 2012 and USD 41.1 billion in 2019, while its agri-food imports increased from USD 1.0 billion in 2000 to 11.2 billion in 2012 and USD 30.9 billion in 2019 (World Bank, 2016b, and General Customs Office, 2020).

[15] The bilateral free trade agreement between Vietnam and the United States does not constitute a free trade agreement *per se*.

Table 4: Viet Nam's Bilateral and Plurilateral Free Trade Agreements and Status

#	Free Trade Agreement	Status
1	ASEAN Economic Community (AEC)	Signed and in Effect
2	ASEAN- India Free Trade Agreement (AIFTA)	Signed and in Effect
3	Regional comprehensive Economic Partnership (RCEP) – ASEAN + 6 (Australia, China, India, South Korea and New Zealand)	Proposed and Under negotiation
4	ASEAN - Korea Free Trade Agreement (AKFTA)	Signed and in Effect
5	Asean – Hong Kong Free Trade Agreement (China) (AHKFTA)	Signed and in Effect with Hong Kong, Laos, Myanmar, Singapore, Viet Nam and Thailand
6	ASEAN – Japan Free Trade Agreement (AJFTA)	Signed and in Effect
7	ASEAN – China Free Trade Agreement (ACFTA)	Signed and in Effect
8	ASEAN – Australia and New Zealand free trade Agreement (AANZFTA)	Signed and in Effect
9	Comprehensive and Progressive Agreement for Trans-Pacific Partnership – CPTPP	Signed and in Effect with Australia, Canada, Japan, Mexico, Singapore, New Zealand and Viet Nam
10	Viet Nam – Chile Free Trade Agreement (ACFTA)	Signed and in Effect
11	Viet Nam – European Union Free Trade Agreement (EVFTA)	Signed and but not yet in Effect
12	Viet Nam – Korea Free Trade Agreement (VKFTA)	Signed and in Effect
13	Eurasian Economic Union-Viet Nam Free Trade Agreement (EAEU)	Signed and in Effect
14	Viet Nam – Japan Free Trade Agreement (VJFTA)	Signed and in Effect
15	Viet Nam – European Free Trade Association – EFTA (Switzerland, Norway, Iceland, Liechtenstein)	Proposed and Under negotiation
16	Viet Nam-Israel Free Trade Agreement	Negotiations launched

Source: Asia Regional Integration Center.

Viet Nam also has policies meant to support international agricultural trade. For example, the SBV issued a document[16] to continue promote lending for rice production and consumption, in which the SBV asked commercial banks to implement solutions to meet the capital needs of rice production and consumption and continue to promote the implementation of credit policy under existing policies, focusing on lending models of linked value chains.[17]

Summary

Viet Nam's financial sector remains dominated by four state-owned banks, which make risk-averse lending decisions due to a large share of NPLs within their loan portfolios. They are particularly risk averse in lending to smaller borrowers, including smallholders. Within the agricultural sector, there are a large number of policies directed at encouraging lending to specific types of producers. However, there are also substantial challenges in catalyzing such lending. One challenge is a general lack of collateral, as many farmers lack land use rights certificates, and other forms of collateral are not well developed. Loan size is further limited by policy without collateral, and one of the major lenders does not lend without it (Agribank). Further, interest rates are often regulated below market rates, which causes lenders to ration credit.

Viet Nam has further policies related to agriculture and trade beyond finance that will shape the opportunities faced by farmers in coming years, as the economy and export opportunities both continue to grow. In particular, some of its agricultural policies (e.g. one commune, one product) will be more successful if farmers are able to access the finance required to make changes to their production. A stronger linkage between such agricultural policies and agricultural finance policies would therefore be helpful in making future policy goals such as further poverty reduction among farmers and rising rural incomes come to fruition.

Policy Response to the COVID-19 Pandemic

There are several ways that Viet Nam's government is either responding or considering response to the COVID-19 pandemic, some of which will either directly or indirectly affect agricultural production. The two main policy areas that are likely to affect agriculture are a set of direct transfers that are being considered, and increases in credit availability that were mandated by Directive No. 11/CC-TTg, dated March 4, 2020.

[16] 1289/NHNN-TD dated 4th March 2019 of Vietnam's SBV.

[17] These policies include Decree 55/2015 / ND-CP dated June 9, 2015, Decree 116/2018 / ND-CP dated September 7, 2018 of the Government, Circular No. 10/2015 / TT-NHNN dated July 22, 2015, Circular No. 25/2018 / TT-NHNN dated October 24, 2018 and Document No. 7378 / NHNN-TD dated October 1, 2018 of the State Bank on lending for rice export trading.

First, the government is considering authorization of $2.6 billion in a financial support package to poor people, businesses, and others, funded by Vietnam Bank and VBSP and to be dispensed between April and June. The relief effort will place an emphasis on reaching vulnerable populations and on supporting fragile businesses to continue paying employees wages even while business activities are shut down, reduced, or otherwise disrupted. From an agricultural perspective, if payments are made to the poor and near poor, it could help stimulate production in 2020, as most poverty is concentrated in rural areas.

Additionally, the government has stated a desire to lower barriers to credit access through the State Bank of Vietnam, hoping to improve access by reducing inefficiencies in the application and dispensation process, allowing for debt relief when needed, and fee reductions. To facilitate access to international support, Vietnamese banks are removing international transaction charges and lowering interest rates. And they have delayed tax deadlines to help people and businesses who are facing short term liquidity crises. These policy changes may make credit flow more freely towards the agricultural sector.

Chapter 4

Agricultural Value Chain Finance Opportunities in Viet Nam

This chapter was written by Alan de Brauw, Kate Ambler and Sylvan Herskowitz (International Food Policy Research Institute), and Nguyen Le Hoa and Trang Thi ThuTruong (Institute for Policy and Strategy for Agriculture and Rural Development).

Chapter 1 discussed why provision of financial services in the agricultural sector poses a unique set of challenges. Among them, seasonality and unpredictability of agricultural yields lead to high levels of variance in production along with correlated risks across insured individuals, export products can be vulnerable to correlated shocks linked to world prices, and diffuse producers impose high monitoring, transportation, and coordination costs. In addition, Chapter 1 introduced the promise of AVCF as an approach: leveraging linkages between multiple actors within a value chain may have the potential to solve many of these challenges. Chapter 2 provided a broader context for agricultural employment and financial services within the Vietnamese context and economy, while Chapter 3 gave further insights into existing Vietnamese policies impacting them. This chapter focuses on examining specific agricultural value chains within Viet Nam in order to assess their potential for creating sustainable and inclusive growth as well as assessing the state of agricultural finance and opportunities for AVCF.

There are several trends in Viet Nam and Southeast Asia in general that are leading to changes in both domestic food and agricultural export demand. These trends include urbanization and concurrent wage growth, changes in the way that people purchase food (to supermarkets), and rapid changes in overall food demand both in Viet Nam and in Southeast Asia more generally. Globally, the increased demand has motivated increased attention from the public sector in agricultural production and in turn agricultural investment (Birthal et al., 2019). Investment decisions require placing a greater deal of emphasis on assessing the future trends and market potential. In addition, in an era of global markets, local supply and demand has less effect on prices as products more readily flow across borders, thus changing the nature of price risk within those markets.

This chapter attempts to meet two related goals. First, given our discussion of both the landscape for agricultural value chains and AVCF in Viet Nam in Chapter 2 and the policies that affect AVCF in Chapter 3, this chapter first uses a rapid assessment tool to study which value chains are most appropriate for investments. Second, we describe some examples of AVCF investments or projects that are currently ongoing in Viet Nam, within some of the value chains described in the first component.

Assessing Agricultural Value Chain Financing Opportunities

Viet Nam's government has selected thirteen agricultural value chains as particularly important in its national agricultural strategy. In this chapter, we first apply a rapid assessment tool that was developed specifically for the IFS4Ag project to seven of these value chains: Rice, Coffee, Tea, Fruits and Vegetables, Livestock, Pepper, and Forestry. The assessment tool is used to guide a qualitative assessment of each value chain along three dimensions: 1) the value chain's potential for widespread impact and poverty alleviation, 2) the value chain's current state of financial needs, and 3) whether the value chain has characteristics amenable to AVCF. The number of questions contributing to each category varies but were motivated to shed light on where investments in AVCF may be most feasible and have the greatest potential for impact.

Each question was assigned a score on a 1-5 scale with "5" assigned to value chains performing significantly better than others on this dimension and "1" indicating that a value chain lags considerably behind others. Questions within each group were weighted equally and contribute to a group score (scaled as the percent of possible points for that value chain in that category, maximum 100). These three indices are then averaged in order to construct an aggregate score of each value chain's suitability and potential for impactful investment in AVCF.

Completion of these evaluations was done following a review of existing literature and in consultation with five local experts:

- Dr. Dang Kim Son – Advisor to Minister of MARD and Director of Institute of Agricultural Market and Institution Research
- Dr. Dao The Anh - Vice President - Viet Nam Academy of Agricultural Studies
- Dr. Hoang Xuan Truong - Vice Director - Center for Agricultural System Research and Rural Development
- Ms. Le Thi Ha Lien - Former Vice Director - Center for Agriculture Policy
- Dr. Tran Cong Thang - Director of IPSARD

The full scoring of these criteria is presented in Table 5, showing the completed results of the review and analysis. The questions used to probe expert opinions for each of the individual criteria are included in the discussion below.

Index 1. Impact of Value Chain:

This category was designed to assess which value chains could, in terms of current scale and projected future growth, impact the most people with an added emphasis on opportunities for women and disadvantaged ethnic groups.

Four factors were included in the assessment of a value chain's potential for impact:

1. Scale of transactions: *Is the value chain (VC) substantial enough to support an attractive level of transaction volumes / total credit exposure for a financial institution?*
2. Growth prospects of VC: *Does the VC have stable-to-good growth prospects?*
3. Participation of disadvantaged groups: *Does the VC contain significant numbers of low-income, women, ethnic minorities or other disadvantaged primary producers or VC actors that lack access to affordable financial services?*
4. Potential expansion of employment: *Would an intervention in the value chain create the potential for positive employment and/or income impacts for low-income, women, ethnic minorities or other disadvantaged people?*

Table 5: Agriculture Industry Value Chain Assessment tool

Factors	Value Chain						
	Rice	Coffee	Tea	FandV	Livestock	Pepper	Forestry
Impact of Value Chain							
Scale of total transactions	5	3.5	2	3.5	4	3	3
Growth prospects of VC	3	3.5	3	4	4	3.5	3.5
Participation of disadvantaged populations	3	3	3.5	4	5	2	4
Increased employment potential	1	3	3.5	3.5	3	2	3
Index 1 - Value Chain Impact	**60**	**65**	**60**	**75**	**80**	**53**	**68**
State of Value Chain Finance							
Current state of risk	4	2.5	3.5	3	2	3	3.5
Unmet credit needs among credit worthy	3	3	3	3	3	3	3
Index 2 - Current VC Finance	**70**	**55**	**65**	**60**	**50**	**60**	**65**
Potential for Finance Improvements							
Individual loan scale	2	4	3.5	4	3.5	3	3
Organization of producers	3	3.5	2.5	3	2.5	2	2.5
Presence of apex buyers	5	4	3	3	2.5	3	3
Is VC efficient/well-developed	3.5	4	2.5	3	1.5	3	2
Possibility of new contracts	2	2	2.5	2.5	1.5	2	3
Possibilities for new data/credit scoring	2	2	2.5	1.5	3	2	3
Scope for credit guarantees	1	3	1.5	1.5	1.5	1	2
Additional financing opportunities	1	2	2.5	2.5	2	1	2
Potential for impact on vulnerable groups	2	3	4	4	3.5	2	4
Index 3 - Potential for Improvement	**48**	**61**	**54**	**56**	**48**	**42**	**54**
Total Score	**59**	**60**	**60**	**64**	**59**	**52**	**62**
Rank	**5**	**3**	**4**	**1**	**5**	**7**	**2**

Source: Authors' computations.

Notes: Scores assigned based on desk review and expert interviews. (Appendix 2). FandV=Fruits and Vegetables

While rice is the largest and most important value chain in Viet Nam based on total production value, it has limited potential for future employment given its high level of saturation and negative growth rate in recent years. By contrast, both the livestock and fruits and vegetables value chains are operating at a significant scale, and are continuing to show rapid growth in recent years. These factors are reflected in their high scores of 80 and 75 respectively. Fruits and vegetables were ranked near the top of all four categories.

Experts noted that despite many similarities, fruits and vegetables are also distinct in that vegetables are primarily grown to satisfy the large domestic market, whereas growth in fruit production is largely export oriented. Others felt that while fruits and vegetables did include many marginalized populations, the current level of commercialization was low, simultaneously signifying existing obstacles as well as potential for improved productivity. Meanwhile, livestock scored particularly well due to perceived high levels of participation among disadvantaged populations.

Index 2. State of Value Chain Finance:

The second category in the value chain assessment tool was designed to categorize the state of unmet needs in each value chain along the two main pillars of financial services: insurance and credit.

1. Current state of risk: Are price and production volatility low enough that these risks are acceptable?
2. Unmet liquidity needs: Do VC actors who are potential customers of a financial institution own collateral that can be readily and legally pledged to secure loans?

The first question provides insight as to whether production and price risk are manageable or constitute a major impediment to the sector. Rice is seen as being the least vulnerable to production and price risk. However, price risk was considered a particularly significant source of uncertainty for the coffee and livestock value chains. Livestock were perceived as the riskiest value chain, exposed to both high levels of price volatility as well as possibility of diseases that can threaten livestock stocks. Again, fruits and vegetables were perceived slightly differently. The interviewed experts suggested that, with a predominantly export oriented market, fruits may be exposed to greater price risk than vegetables which focus on the domestic market.

The second question captured whether sufficient credit was available to credit-worthy potential borrowers operating in the different value chains. The volume of unmet credit needs serves as an indicator for where AVCF may be most productive in addressing an unmet need. Responses from the interviewed experts were similar across all value chains. There appear to be pervasive unmet liquidity needs for farmers across all commodities. In general, the need for land use rights certificates for taking bank loans were identified as major challenges impeding access to credit. These challenges of access to collateral and credit were viewed by the experts as particular impediments for women and farmers from marginalized ethnic groups.

Index 3. Potential for Finance Improvements:

The final category in the value chain assessment tool looks at a set of features, unique to each value chain, that can make the potential for expanded financial services more likely to be successful for AVCF.

1. Loan scale: Would the average potential loan size to VC actors (value chain client segments) be attractive to a financial institution?
2. Organization of producers: Are the primary producers organized, i.e., are they members of effectively functioning groups or is there a prospect of their becoming well organized?
3. Apex buyers: Are there strong apex buyers with a track record of substantial buying?
4. Efficiency/maturity: Is the VC relatively efficient and well developed?
5. Possibility for new contracts: Are there existing or potential mechanisms for contract, off-take and/or other forms of pricing agreements?
6. Possibilities for new data/credit scoring: Can the creditworthiness of VC actors, e.g., primary producers, be enhanced by use of alternative data (e.g., payment/transactions data, other behavioral data)?
7. Scope for credit guarantees: Is there scope for the use of credit guarantees or partial credit guarantees to facilitate lending to primary producers?
8. Additional financing opportunities: Are there additional financing opportunities in the VC, e.g., working capital and equipment loans, factoring, cash management, and other "cross-selling" opportunities?
9. Potential for financial service impact on vulnerable: Would the availability of affordable VC-related financial products significantly benefit low-income, women, ethnic minorities or other disadvantaged primary producers or other VC actors?

First, the scale of individual loan sizes needed in a given value chain have implications for transaction costs in organizing AVCF services and achieving profitable volumes of financing. Fruit production is considered to be of a particularly intriguing scale as well as some upgraded tea production and coffee, as all of these value chains require significant upgrading and adjustments to existing farming practices and introduction of new plants with longer time horizons until productivity. On the other end, rice is considered the weakest by this measure. Although it has the greatest levels of aggregate production, the small scale of individual loans and production makes it less appealing to financial institutions and, in turn, less amenable to AVCF.

Second, an alternative way of reaching profitable loan volumes and reducing transaction costs are if producers are organized into larger collectives. Where this is already in place, coordination and transaction costs are likely to be lower for prospective AVCF actors. In this dimension, livestock producers are viewed as the most organized with pepper and tea producers as the most diffuse. Experts suggested that some value chains, such as tea, may have fewer natural complementarities to organizing in collectives and that linkages directly to buyers are more

valuable. In the case of pepper, forestry, and livestock, these types of collectives simply have not been well developed.

Next, presence of large, "apex" buyers can make value chains more appealing for AVCF, resulting from their ability to operate at a larger scale and potentially spread risk across a wide range of producers. With its historical dominance of Vietnamese agriculture, rice has the greatest relative presence of large apex buyers. However, the coffee value chain also has almost all major global coffee buyers operating in Viet Nam. Vegetables and livestock, primarily serving domestic consumption and local markets have lower presence of apex buyers. Tea has a number of large buyers, but their coverage of Vietnamese tea producers is incomplete.

Another important trait of value chains is whether they are relatively efficient and well-developed. While AVCF may be a useful approach for solving financing gaps along agricultural value chains, it is unlikely to be a remedy for all impediments and distortions in production along value chains. In particular, where input and export market linkages are not well established, improving financing will not be sufficient to create livelihood opportunities for its participants. Similar to the presence of apex buyers, rice and coffee were viewed as having relatively better developed supply chains. Livestock was viewed as having a relatively less developed value chain.

AVCF is likely to have greater potential where there is scope for contract structures between actors in the value chain. Off-take and price agreements can provide an opportunity for reducing exposure to price risk in exchange for up front financing. All value chains were rated similarly on these criteria with experts suggesting that relatively low levels of risk made these contracts most promising in the forestry sector.

Digitization of financial transactions and new methods in credit scoring may also open new opportunities for AVCF. Livestock was viewed as a sector where improved digital record keeping could greatly improve performance assessments, reduce limited liability, insurance transparency, and overall creditworthiness. Given large investment levels, relative to other value chains, adoption of new digital technologies to facilitate production in livestock is more likely to justify the adjustment costs and ultimately be profitable. By contrast, experts were sceptical that less well-educated, smaller scale farmers would be able to readily adopt digital based financial services.

Next, a major barrier to availability of agricultural financing is the lack of credit guarantees. AVCF has the possibility to facilitate these linkages, by linking buyers, producers, and finance providers. All experts recognized that at present, there are few such linkages. This situation may be reflective of high barriers to credit access for producers and prohibitive coordination costs for buyers with disperse farmers and formal financial institutions. In place, off-take agreements with buyers in exchange for inputs is more common, though experts voiced concern about terms of purchase, from the perspective of farmers, in these arrangements.

Overall Ratings

Looking across all measures, each value chain has different relative strengths and weaknesses when assessing both suitability and potential of AVCF for generating sustainable livelihood gains, and in particular for vulnerable populations. Considering all three groups of suitability criteria, application of this value chain assessment tool suggests that fruits and vegetables are likely to hold the greatest promise for AVCF. Forestry and coffee are the next two highest rated value chains; note these two products reflect longer term investments that have to be made by farmers.

Impact of COVID-19

As discussed above, the COVID-19 pandemic has had a major impact on Vietnam's agricultural sector, disrupting Viet Nam's export markets and imports of important t inputs. At the time of writing, disaggregated data on how much these trade disruptions have affected specific value chains is not available. However, these external market factors are likely to influence the potential profitability of investments in the near term, which changes the efficacy of AVCF for those markets. Impacts on livelihoods in these value chains as well as the promise of AVCF will continue to depend not only on the recovery in Vietnam, but also on export partners for specific value chains. To the extent, though, that specific value chains largely service domestic markets, they may be unaffected. So, for example, the fruit and vegetable value chains that came out with the highest ratings would continue to appear to be the best investments for AVCF as they are largely domestic markets.

Vietnamese Agricultural Value Chains: Selected Examples

Moving from a value chain assessment score to providing an actual AVCF arrangement or product is not a trivial exercise. The success of an AVCF arrangement or intervention will depend on details of the specific commodity. Detailed understanding of different value chain actors, linkages, existing relationships, and gaps are all important for determining where and how AVCF can be encouraged and facilitated. The value chain assessment tool points us towards the fruit and vegetable value chains as areas with high potential for impact. Next we look at value chain production schemes in these value chains, as well as an example of a tea value chain, in order to illustrate both the opportunities and limitations of this approach. Additional case studies are presented in the Appendix.

Example: Nafoods company and the Passionfruit Fruit Value Chain

The Nafoods Company, established in 1995, produces a range of products, including fresh fruits, fruit juices, and frozen fruits. Nafoods exports to more than 50 countries, and sources more than 13,300 tons of fresh and processed fruits per year. The company has a breeding institute with a

seedling garden of about six hectares and an output of six million seedlings per year. In Viet Nam, the company has formed a range of material production areas from the Central Highlands to the Northwest and a part of Laos. It has four processing factories in Viet Nam and 16 packing factories throughout Viet Nam, Laos and Cambodia.

Nafoods sources the majority of its raw fruit inputs from cooperatives and groups of households, with a smaller portion produced by Nafoods owned farms. In 2018, the company cooperated with nearly 50 cooperatives and household groups in Son La, Dien Bien, Lai Chau, and Hoa Binh, with 30 cooperatives and cooperative groups in Son La alone where they are trying, in particular, to expand passionfruit production. Nafoods engages with local farmers, holding workshops, and organizing them into groups, from district to commune levels. The company provides seeds, supplies and techniques up to the stage of collection to farmers.

While this has allowed Nafoods to begin working in Son La province, capacity must be further expanded and increased at the farm level in order for Nafoods to have sufficient supply to reach their production goals. Limited availability of credit presents a primary impediment to interested farmers who would like to begin or expand passionfruit production to a sufficient level for Nafoods' needs, which in turn hinders the overall supply of needed fruit for Nafoods to reach its optimal scale. The investment cost for production of passion fruit for a typical household is about 60-70 million VND (roughly USD 2,500 – 3,000) which includes investment in fertilizers and pesticides, mesh trusses, and the first set of seedlings. These passion fruit varieties can be grown for up to three years, with the highest output in the first year.

To help address the credit constraints facing the farmers in its supply chain, Nafoods provides in-kind loans with a deferred payment structure to farmers. Farmers pay 50 percent of the cost of seedlings upon receipt and the second 50 percent with no interest after six months. As their new crops begin producing fruit, contracts require farmers to sell their products back to Nafoods as payments toward their loan. If after six months farmer production has not been sufficient to fully repay their loans, they will begin being charged interest on their balance. To reduce this overall default risk for Nafoods, the government provides some assurance in the form of a commune-level guarantee, limiting some of the company's risk-exposure. The guarantee is implemented as district and commune officials contact farmers who do not pay back loans on time. Households are also potentially removed from eligibility lists for forms of government subsidized credit, such as loans from the VBSP. Even with these guarantees, Nafoods itself is constrained in its access to liquidity and working capital, thus slowing their rate of expansion and engagement with farmers.

The company also faces challenges enforcing purchase agreements with farmers when market prices are higher than those offered by Nafoods. A provision in the contract triggers an increase in Nafoods' offered price when market prices are also high. This clause is motivated both as an enticement for farmers to begin passion fruit production, as well as a recognition that ultimately preventing side selling is difficult and costly to enforce. This example highlights the delicate and multi-faceted relationship between producer and buyer, borrower, and creditor. It is worthwhile to evaluate how future credit innovations from third party groups may affect these relationships

in both the short and long term as well as any external involvement should provide credit directly to farmers or, instead, to Nafoods. A recent innovation has been that Nafoods began working with the DFAT-sponsored Gender Responsive Equitable Agriculture and Tourism (GREAT) program to increase credit availability for farmers who could potentially sell passionfruit to Nafoods. Recently, an external organization has emerged to facilitate finance in this passion fruit value chain. GREAT has begun working with Nafoods to increase financing for farmers, initially providing subsidies for Nafoods' loans to farmers, thus boosting the existing value chain finance scheme. The goal is to transit the initial loans to the Lin Viet Post bank, which has agreed to work with GREAT, so that formal finance becomes available to their borrowers. The goal is to facilitate cooperation with farmers for Nafoods, developing stronger incentives for farmers to invest in their passion fruit and expand high quality production.

Example: Vsapat Company and a Vegetable Value Chain

Vsapat is a domestic produce trading company whose main products include temperate fruit and vegetables such as cabbage, beans, and cucumbers in Moc Chau, Son La province; pigs and chickens in Hoa Binh province; and bamboo shoots in Yen Bai province. Vsapat sources its products from farmers in these regions, while providing them with agricultural technical staff to train them on pest control and safe pesticides. Vsapat works with the Microfinance and Community Development Institute (MACDI) to provide credit to interested farmers they identify as suitable and interested in their production schemes. MACDI provides interest rates comparable to those offered by AgriBank, but for whom other barriers and transaction costs hinder the availability of AgriBank loans. MACDI additionally, provides interest bearing savings products to participating farmers.

Vsapat contracts farmers for production, with terms designed to provide benefits to and reduce risk for both parties. Purchasing agreements commit farmers to selling 50 percent of their output to Vsapat. However, contracts afford farmers flexibility with the other 50 percent of their output, allowing them to search for the highest available market price. Similar to Nafoods, the price in these agreements can adjust depending on prevailing market prices at the time of sale. When the contract is signed, the company does not fix the contract price, but the price is determined in each period. If the market price fluctuates, the company and households renegotiate. In practice, these flexible, market-based, contracts limit risk for buyers who will not be required to overpay if prices are low. It also ensures that farmers have a reliable buyer for at least half of their production, while not exposing them to the full risk of prices falling lower than expected. For Vsapat, the contract helps to ensure they will be able to purchase produce from farmers to whom they have provided technical advice and developed quality standards, again without being firmly locked in on price. However, the arrangement does not insure against all possible risks, including crop failure. Thus, the contract serves as a partial form of insurance as well as a means to signal the credit-worthiness of the farmer to lenders such as MACDI.

For Vsapat to expand, it must expand the number of farmers incorporated in its supply chain. They report there is considerable interest among producers, and considerable demand from urban based markets, but liquidity constraints are preventing rapid expansion of these opportunities to farmers. As a result, Vsapat, despite high growth potential, currently operates at a small scale. The case is illustrative of the potential for growth when liquidity constraints are eased by a third-party entity.

Example: Chieng Di Tea Company

Chieng Di tea company is located in Van Ho District, Son La. The company produces high value tea products such as Matcha tea and Sencha tea. Chieng Di buys tea from farmers and processes tea both for the local market (green tea) and international market (mainly Japan). Production of the latter requires significant investments by farmers in order to begin planting new tea varieties and growing them with methods that will result in the high-quality levels needed for export. Chieng Di is currently buying tea from 1,000 farm families and providing them with training on how to properly grow new types of tea.

Chieng Di is eager to expand its production, in particular, the Matcha and Sencha varieties serving export markets. The company recently invested in an automatic tea processing and refining factory, with 20 tons of fresh tea leaves yielding five tons of dried tea with a maximum capacity of 25 tons. However, the factory currently only works 15-20 days per month, due to insufficient supply of tea from nearby farmers.

Traditional tea production does not require much capital, however high-quality tea production requires investment in inputs such as organic fertilizers, pesticides, and coated mesh to improve quality. In order to produce Matcha tea, it is necessary to invest about VND 100 million/ha/5 years to cover tea leaves. The company encourages households to grow tea of higher value because it would increase the company's profitability. There is enough demand for high-quality tea that if all 1,000 households switched to high quality tea production, Chieng Di could purchase all the tea they produce. However, farmers are constrained by lack of credit, which is needed for farmers to transition from traditional/green tea to higher value Matcha or Sencha. It is difficult for farmers to mortgage agricultural land to borrow from banks. Without available capital for farmers to expand their businesses, Chieng Di must provide inputs to farmers and, in the case of the high value teas, teach them new growing practices needed to maintain their high-quality standards. While most households they buy from are still producing the low-quality domestic oriented teas, there is sufficient demand to absorb production of high-quality tea even if all of Chieng Di's farmers switched to high value tea.

With constraints on its own available liquidity, Chieng Di currently only lends to select households, enabling them to switch to high value tea. They prioritize households who meet the following criteria: good tea-production, adherence to technical process, and hard work. Ultimately, they rely on their personal relationships and trust when deciding to whom to give loans. The rest of the normal tea producing households do not need loans. Households rarely

borrow money as normal loans require collateral and complicated procedures. The company provides farmers with loans that accrue monthly interest. The loans are typically expected to be repaid over 4 years and the principal payment rate increases gradually over the years. Tea trees take three years to be able to harvest. Households that sign contracts with the company have already produced tea and the company only supports tea quality improvement to enhance value. Since many households borrow to do other activities (for example consumption), the company will selectively lend to only about 50 percent of the total of 1000 households in need if possible (around the Chieng Di area). Similar to the other case studies, there is scope for external support of farmers and growing businesses in this value chain by facilitating linkages with formal financial institutions so that they can seize export opportunities currently being under exploited.

Chapter 5

Conclusion and Policy Recommendations

This chapter was written by Alan de Brauw, Kate Ambler and Sylvan Herskowitz (International Food Policy Research Institute), and Nguyen Le Hoa and Truong Thi Thu Trang (Institute for Policy and Strategy for Agriculture and Rural Development).

The information presented in this report describes a landscape in which there are plenty of agricultural opportunities, and therefore opportunities for increased agricultural finance. However, they are constrained by the fact that multiple financial institutions are not present in all rural areas, by limited market flexibility, and by real or perceived constraints on the types of collateral that can be used for obtaining credit. Finally, formal insurance markets are quite thin. Therefore, there are some clear areas in which policy solutions could have a real impact on AVCF development, particularly when considering access for smallholder farmers, women, and ethnic minorities.

Our recommendations relate to financial policies, agricultural policies, and general policies:

Financial Policies

- **Allow all banks to set interest rates.** Fixed interest rates—particularly when subsidized—lead to credit rationing, which reduces the amount of credit available to lower-income farmers. Interest rate ceilings also constrain the development of banks. If not able to charge market interest rates, they cannot become self-sustainable.
- **Allow all banks flexibility in determining loan amounts.** When ceilings bind on loan amounts, they hinder the amount of investment that can take place.

Agricultural Policies

- **Facilitate the use of land use rights certificates for loan collateral.** Land use rights are the principal form of collateral available to most smallholder farmers, but transaction costs to using them in this way can be high. One option is to digitize information about plots including the land use rights certificates. From a value chain finance perspective, doing so would help streamline their use as collateral. Because smallholders and banks find the transaction costs to smallholder lending high, ensuring that more farmers can use an already acceptable form of collateral can facilitate financial flows from both traditional and nontraditional lenders. Ideally this information can be made publicly available.
- **Develop alternative forms of collateral.** Alternative forms of collateral, such as warehouse receipts, should also be made legally acceptable. There is no official provision for a warehouse receipt system in Viet Nam. We suggest finding ways to develop laws to legalize this alternative form of collateral. At the same time, the government should consider allowing for additional options for collateral, such as smartphone use (e.g. Bjorkegren and Grissen, forthcoming), or at the very least allowing piloting of such

models. If farmers have a difficult time accessing banks in their physical locations, they should have opportunities to do so digitally.

- **Reduce other forms of paperwork.** Accessing credit, particularly from VBARD, can have many complicated procedures and processes. Streamlining processing and eliminating unnecessary requirements could further increase access to credit for those for whom the procedures are burdensome.

Other Policies

Neither of these two recommendations fit well within clear policy areas, but both could help quite helpful in fostering increased AVCF.

- **Foster the development of business skills among farmer groups.** Small farmers, including ethnic minorities and women, may be better placed to benefit from participation in value chains, and be more attractive to lenders, if they received quality business training. One cost-effective method could be the development of "rules of thumb" related to business practices in value chains to facilitate widespread promotion. Increasing the business skills of farmers or groups of farmers can facilitate value chain development. This recommendation also from an analysis of Decree 57 (Ancev, et al., 2019).
- **Support the marketing of agricultural insurance.** Agricultural insurance can be an effective tool to encourage investments that are viewed as risky by smallholder farmers. Providing insurance linked to weather conditions reduces risks for farmers and allows them to make profitable investments. However, insurance products must be well designed to ensure that payments reflect the weather conditions experienced by farmers. Research has also shown that insurance take-up is usually low unless it is free or heavily subsidized (e.g., so policy makers should also consider whether agricultural insurance subsidies that fit within international agricultural trade regulations.

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Appendix – Case Studies

Case study of value chain finance for agriculture in Son La, Viet Nam

In Son La, average production scale of households is still fragmented, there are also few households with an average production area of 2-5 hectares in the Moc Chau plateau. There are cooperatives specializing in vegetables, such as the Tu Nhien Vegetable Cooperative.

In the new rural development program, one of the objectives is to build 42 value chains in Son La. Some potential value chains are tea, vegetable, and fruits. However, the District government for Agricultural and Rural Development (DARD) encourages the development of vegetable and fruit chains, as tea chains have been quite stable with long-operating companies. Moreover, Korean and Japanese companies are coming to buy vegetable and fruits in Son La to export to Korea and Japan.

Value chains in Son La province include vegetables, fruits, etc., from production even to supermarkets in Hanoi. In 2018, there are 61 safe agricultural product supply chains (for supermarkets in Hanoi and other provinces), of which: 18 safe vegetable chains with a total area of 113.46 ha and output estimated at 5965 tons /year (Moc Chau has 10 chains, Van Ho has 2 chains); 35 chains of safe fruits with a total production area of 745.21 ha, output estimated at 8465 tons/year (Moc Chau has 5 chains of plum, orange, tangerine, passion fruit, persimmon, Van Ho has chains of longan, orange, mango); 4 seafood chains, 2 pork chains, 2 honey safety chains of 300 tons/year (Moc Chau: 1 chain). Among 61 chains, there are chains supported by the State to consume in supermarkets (mainly in Hanoi market), including: propaganda, support for stamps and food safety certificates; product exhibitions, etc. Support for exports is about VND 1,000/1kg of fruit if it is formally exported.

Farmers have loans from banks but still limited due to complicated procedures, collateral, lack of contract farming. Loans to farmers are mainly from VBSP (Viet Nam Bank for Social Policies) and credit cooperatives. VBSP have branches to communes where farmers mainly access loans. Some commercial banks in the area include Vietinbank, ABBank, Agribank, Lien Viet Post Bank, Maritime Bank, and BIDV. Commercial banks are not as popular as policy banks, however, and farmers still face many difficulties in accessing commercial banks. Besides, farmers often borrow from people's credit funds (with branches to wards and communes) – which is easier to access and operating very well.

Greenfarm company

Greenfarm company locates in Moc Chau, Son La. Main activities of the company include value chain building and seed supply.

The company is developing safe and self-produced vegetables and has contracts with 50 farmers to buy safe vegetables to sell to supermarkets such as Vineco, BigC, Lotte, etc and 50 convenience stores in Hanoi. The products of the company in Moc Chau are mainly cabbage and tomato.

Regarding seed supply, the company signs contracts with farmers to supply vegetable varieties and other inputs. The total area of vegetable seed production of the company in 2018 is about 600 hectares, which produces about 20 million seeds. The main seedlings are tomatoes and cabbage. The

company produces itself about 10 hectares (in addition to carrots, cauliflower, 100 percent of the tomato produced by the company - due to the need of high technology and roofs). The company also purchases vegetables from linkage farmers, such as cabbage, beans, gourds, and squash. The company selects households with large areas to avoid risks of production and quality. Criteria to select production households includes stable production; having land for production and labor; and having at least 8000 meters squared of land. The leader of a farmer's group is a university or master graduate. Other households can still attend training courses to improve their production further.

Regarding the chain of selling seedlings, the company organizes workshops to provide seeds and talk about the quality of the varieties, and the advantage of planting these varieties.

The company also buys land to develop a high-tech production area of about 2 hectares. The total investment has costed around VND 300,000/m^2, or about VND 3 billion/ha. Currently the high-tech area is planting Dutch and American tomato varieties, which were purchased through a Vietnamese agent enterprise and prices for these varieties exceed those for regular tomatoes.

Currently, the company works with Mong people to produce vegetables because they want to then sell in Hanoi to fancy markets. They seem to face interesting challenges with overcoming communication barriers and habits among the Mong of overusing fertilizer and insecticide.

Agricultural Value Chain Finance Pilot Program

In May 2014 a pilot program on agriculture value chain financing was launched by the Governor of the SBV. It is understood that the pilot program achieved some good results, contributing to form some closed value chains from production to consumption, however the lending only focused on one main actor or 'anchor', and as a result the businesses incidentally created a monopoly between the actors in the chain and other actors in the chain were limited to accessing formal credit. A key learning from this project was to include more than one 'anchor' participant in the value chain finance.

Building a new model of cooperatives

Beginning in 2016, The Cooperative Union developed a value chain project to link some key agricultural products and goods with value chains of scale. The Cooperative Union established 8 working groups in North, Central and South which are located in 8 economic regions across the country. By the end of 2018, 70 models were operational in 57 provinces and cities with a total capital of 20 billion VND (capital support, piloting of large-scale key products).

In 2019, the Cooperative Union has sent documents to provinces and cities to select commodity chains corresponding to the province characteristics, modify and supplement

regulations related to cooperatives and chains to be more suitable. Due to the success to date of the cooperative model the budget was lifted from VND100bn to VND350bn.

It is estimated that there are nearly 100 value chains cooperatives across the 57 provinces, of which 2/3 of cooperatives need loans from 300 million to several billion VND. The type of value chain finance needs varies between cooperatives, the needs include cold storage, transport vehicles, warehousing and investment in packaging products to name a few.

Agricultural cooperative value chains mainly focus on value added products, one example is a value chain of "Dien Bien Specialty Rice", from Muong Thanh fields. The value chain has been successful in changing producers' awareness of developing market demand as opposed to market supply. The partner company provides finance supports for inputs and sometimes payment for produce in the advance, depending on the contract. When borrowing, it is necessary for borrowers to have collateral as borrowing from banks.

There are other significant agricultural value chains like: Dien Bien Specialty Rice, such as Cao Phong Orange in Hoa Binh, and off-season fruits in Son La, there are other products in other provinces. In these linkage models, companies have provided input materials, and or partial advance payment depending on contract conditions.

According to the Cooperative Union, lending to agricultural cooperatives has shown promising signs, it is said that people now do business with certainty, farmers are acknowledged for paying debts in time in order not to keep their reputation. However, the cooperatives still have difficulties accessing loans because credit institutions must follow the law, comply with procedures, paperwork and often prioritize businesses to borrow more, making it difficult for cooperatives to access the capital.

Value chain finance for agriculture through other microfinance institutions

Agriculture value chain financing through Microfinance and Community Development Institute (MACDI)

MACDI is an acronym for the microfinance and community development institute, founded in 2007 by a group of experts working in the field of microfinance, rural development, environment, climate change, clean water and sanitation, health and gender. The vision of the institution is to effectively contribute to poverty reduction and sustainable development in a fair society through

support and empowerment of the poor and vulnerable people. Currently the Institute is implementing loans according to the Dang sam - Ba kich value chain in the Central region and the vegetable and chicken chain in the North (funded by CARE).

The Dang Sam – Ba Kich[18] value chain (Open value chain) is sponsored by the US under the scheme of Sustainable Livelihoods and Green Finance from Aug 2018 – Aug 2020, the aim is to connect the local market with 188 thousand USD including microfinance and market connectivity in Quang Nam province. The project provide microfinance for production and early stage processing. The households selected are poor households with low income, living on agriculture. A restriction or condition of loan approval is the households must be able to qualify for debt repayment and must use capital for the right purpose. Households can borrow individually, borrow in community groups or through district women's union. The applicable lending rate is from 0.8 to 1 percent per month with a contract with each household. Up to now, the number of borrowed household borrowers are about 1800, of which more than 100 borrowers are in the Ba Kich value chain.

During the project, technical training has been provided to farmer groups, TOT training, and technical training on Ba Kich crop plantation, inviting experts to accompany and supervise capital implementation.

As for output market, there has been a pharmaceutical company committed to buy the products. Since this is an open value chain, a part of the products (50 percent) to be supplied to the offtake partners and the rest 50 percent of the product can be sold by households themselves.

MACDI works closely with the farmers during the implementation process required for the value chain. In addition, there are experts coordinating in technical training, agricultural extension centers, and agricultural staff in Dong Giang district who support project implementation.

MACDI supports a part of capital for economic resources and technical resources. In addition, there are experts who coordinate in technical training and district agricultural staff to support implementation.

Another value chain is vegetable in Moc Chau, in Son La province. This value chain was funded by Lend with Care (UK) in June 2018 with total area of 25-30 hectares of vegetables. The mechanism for household selection is similar to Ba Kich and Dang Sam value chain. The aim is to create one savings group which then on lends to households. The lending rate is based on market interest rates. Loan scale is about VND 15 billion with rotation mechanism, people can borrow up to VND 30 million/household.

[18] Dang Sam and Ba Kich are two kinds of medicine crops

MACDI creates a farmer (support) groups in areas to introduce MACDI activities. Households register with officials and MACDI staff and then MACDI verify the profile, time, amount of the loan and contract with each household, with the group's guarantee and ensure that the household is eligible to pay the debt. The typical loan amounts are up to 50 million VND. Currently, there are more than 200 households are borrowers producing a good variety of quality vegetables.

MACDI works side by side with farmers in the process of implementing the value chain. The Institute provides technical knowledges, pesticide and agricultural extension. In addition, there are experts in technical training and staffs from district Plant Protection Department and Extension Stations to support the implementation. In terms of output, MACDI and the partners seek markets for their farmers.

The key challenges for MACDI are many, due to the market that they are endeavouring to address. The main for focus MACDI is on helping the poor – whose access to finance are limited. MACDI aim to reduce poverty, provide credit based on beliefs and to give loans to farmers who work hard and lack capital. The poor households still faces difficulties due to their limited ability of perceiving and absorbing technology. Further to this MACDI's economic, technical human resources are limited, their financial level is low and they have a lack of investment in technology. The future goal for MACDI's are to promote market for agricultural products and cooperate with other stakeholders to develop projects to support farmers with technology, production, improve capacity, and to build research into agricultural products for farmers.

Agriculture value chain financing through World Vision International

World Vision currently has 37 programs in 15 provinces, including 20 market-linked programs with value chain activities. In addition, there are other activities to develop the economy of ethnic groups, projects of livestock development initiatives, etc.

World Vision provides financial support for value chains through training, supporting the provision of input through production groups and supporting weak stages in the production process. World Vision have many technical experts, production specialists, experts in planning, sales, marketing and development to enable small holder farmers. World Vision coordinates with the local staff of district agricultural department, agricultural extension and veterinary - plant protection center's (local partners).

World Vision provides support in two forms: in-kind and training. World Vision provides support for farmers with the provision of production inputs including seeds and fertilizers which is often provided through the local groups. The level of support per household depends on the needs of each household, depending on the budget of each project, each region.

As for policy side, World Vision cooperates with local authorities to create a legal corridor and create a business environment for products.

At present, World Vision has a project supporting Coffee Production in Quang Tri province. The aim is economic empowerment for the ethnic minority. This project links the product with consumption enterprises and innovative enterprises to improve quality for products. Enterprises should have a counterpart fund of 50 percent, equivalent to $5,000. Prior to projects being implemented technical committees and stakeholders assess the financial capacity of business, the level of commitment to the farmers, and whether the initiative really serves the farmers, bring true value for farmers.

World Vision enables financial support by creating capital through contribution groups. Each group has 20 people who contribute to a borrower. In addition, there are microfinance services – which still operating but in some districts. Loan size varies from 500 thousand VND to 25 million VND per household. Lending activity over 10 years ago from the Women's Union has now moved to a part of the World Vision to manage.

World Vision has a total 13,800 borrowers. In 2018, 92 percent of customers have improved their income by +75 percent on the previous year.

World Vision have highlighted some difficulties in their current work in supporting agriculture value chain. With regards to policy: some credit related Decrees are good for farmers to enjoy financial support but Decree 98 is unclear for farmer's benefit with wide range of flexibility making the support difficult for to reach farmers. Farmers lack capacity, knowledge and lack capital. Many of them are living in remote areas and may face many risks of natural conditions and natural disasters.

Agriculture value chain financing through Tao Yeu May Microfinance Institution “TYM”
TYM is the first official microfinance institution in Viet Nam established by the Viet Nam Women's Union in 1992. So far TYM has supported over 200,000 women, poor and low-income households in rural and semi-rural Viet Nam through financial and social services. The objective of TYM is to improve the quality of life for low-income individuals and households, especially giving priority to poor and disadvantaged women through financial and social services, creating opportunities for women to participate in economic and social activities, contributing to enhancing the position of women.

TYM focuses on supporting target groups of poor, nearly poor and low-income women, who have a need for financial and non-financial services, with ages ranging from 18 to 65 (when they first joined TYM family) and live in rural and semi-urban areas. TYM particularly prioritizes disadvantaged women in society, such as ethnic minorities, HIV/Aids, people with disabilities.

With support of TYM, borrowers can ask for a loan amount from 1 to 50 million VND. Interest rate is 10.8 percent per year. Loan and interest will be paid in the form that an amount of principal loan plus interest will be divided equally for the total loan period, then borrower will pay back this amount regularly during the borrowing period.

Loan products for TYM include:

- Policy Capital;
- Capital to support near poor households;
- Capital for economic development;
- Capital of Multi-purposes;
- Support Capital for construction and preparation.

During the period 2015-2016, 3 interest groups were set up including tea in Thanh Son (Phu Tho province), fish sauce in Cua Lo (Nghe An province). TYM supports interest groups in training courses on business skills and professional training. A Tea technician provides extension services to guide people. TYM staff supports farmers/households with labelling and web advertising of their products. Recently, the group has been upgraded to become a cooperative by the Women's Union. Through the time, such activities have helped to change the perception of small-scale Vietnamese farmers, change their business thinking, and seeking business cooperation together.

Currently TYM has been present in 13 provinces/cities in Viet Nam: Hanoi, Bac Ninh, Hung Yen, Vinh Phuc, Bac Giang, Hai Duong, Thai Nguyen, Phu Tho, Thai Binh, Nam Dinh, Thanh Hoa, Nghe An and Hai Phong (starting operations from January 2018). In particular, TYM has coverage in 67 districts/towns of nearly 600 communes. From 1992 to the end of 2017, TYM had supported nearly 300,000 women with gaining access to social and community activities; Disbursed more than VND 11,000 billion for more than 1 million loans. In 2017, TYM mobilized more than VND 800 billion of savings from members/customers. So far, TYM has still ensured a return rate up to 99.99 percent.

As evaluated by TYM, however, there are some difficulties in their activities. Funds for training in order to change people's awareness are expensive and TYM are constrained by the maximum lending limit which is VND 50 million. There have been training and business linkage support for TYM farmers, but not yet implemented because of the insufficient budget and lack of financial support. Moreover, TYM's experiences are not enough in supporting value chains for the farmers.

Agriculture value chain financing through World Bank Viet Nam

The World Bank is currently supporting an agriculture value chain finance project. The project comprises the following four components:

(A) Institutional Strengthening to Support Agricultural Transformation;

(B) Supporting Sustainable Rice-Based Systems;

(C) Supporting Sustainable Coffee Production and Rejuvenation; and

(D) Project Management, Monitoring and Evaluation.

Component A is on Institutional Strengthening to Support Agricultural Transformation. This component supports three activities:

(a) capacity development for MARD;

(b) capacity development for the provincial level, and

(c) capacity strengthening for value chain partners.

Component B is about Supporting Sustainable Rice-Based Systems. This component supports some 30 key rice producing districts in eight provinces in the Mekong Delta, in a cluster approach which consisting of three activities:

(1) supporting a large-scale program on improved agronomic practices and management;
   a. technical training and demonstration on the basis of establishment and capacity building of farmer organizations;
   b. matching grants to support farmer organizations in certified seed multiplication, leverage investments in collective harvesting and processing equipment and post-harvest facilities to reduce post-harvest losses and improve their marketing position, and improve selected collective small scale infrastructure (i.e. feeder roads, connecting electricity, pumps and irrigation, etc.) to maximize farmer organizations production system efficiency including crop rotations and by-products recycling; and
   c. link them with agribusinesses to improve quality management and incentives for sustainable practices.

(2) supporting private sector investments in upgrading rice processing technology and facilities for high value and quality rice; and
   a. through provision of medium- and long-term loans (4 – 7 years) by BIDV via commercial banks on a commercial basis to support private sector Agribusinesses to upgrade their rice processing technology and facilities in order to raise efficiency and produce higher quality rice. Selected Agribusinesses would directly source paddy from FOs (who are supported

under B1) to reduce post-harvest losses and enable the shift to higher quality market segments.

The project has been implemented in thirteen provinces: Kien Giang, An Giang, Tien Giang, Hau Giang, Dong Thap, Can Tho, Soc Trang, and Long An (Mekong Delta Region), and Lam Dong, Dak Lak, Dak Nong, Gia Lai, and Kon Tum (Central Highlands Region). The project implementing agencies are MARD and the PPCs of the thirteen project provinces.

One of the project's aims is to support the smallholder farmers who produce rice in Mekong Delta and coffee-producing households in the Central Highlands. A further objective of the project is to enhance the implementation of value chain in some areas and improve the operation of Viet Nam's Agricultural Restructuring Plan. The project supports collaborative linkages between smallholder farmers and agribusinesses and strengthens the private returns to partners along the value chain. By leveraging the participation of the financial sector in e-lending to agribusinesses and small-holder farmers through the use of credit lines to PFIs together with the strengthening of technical capacity of local public service agencies, the project will demonstrate the scope for leveraging bank finance to induce changes in farmer practices and demonstrate the returns available to banks thereby increasing their lending to the sector.

Implementation of the Line of Credit will be the responsibility of BIDV. Part of the IDA financing will be on-lent by the Recipient to BIDV by means of an On-Lending Agreement. BIDV would manage these funds as a wholesale bank, making them available through eligible PFIs to rice processors in the Mekong Delta area and farmers investing in coffee rejuvenation in the Central Highlands. It plays an important role in ensuring the long-term financing for investment and storage facility. In this project, the government would provide amount of money in counterpart financing and farmers, farmer groups and agribusiness entities would provide some amount of money associated with their matching grants and borrowing commercial bank.

While each individual financial institution will take credit risk on the individual loans it makes, BIDV will take the overall credit risk on behalf of the government in case of the default from a retail financial institution. The project would leverage an existing institutional arrangement under previous IDA-financed rural finance projects in which BIDV will be engaged to help MARD to manage and monitor the loan activities. BIDV have a demonstrated track record in implementing IDA-financed lines of credit. BIDV would be responsible to accredit the interested PFIs based on the agreed accreditation criteria. BIDV would on-lend the IDA credit to the accredited PFIs in accordance with subsidiary loan agreements signed between BIDV and those PFIs indicating the obligations of each party and the on-lending terms. The PFIs would in turn extend sub-loans to eligible rice export agribusiness and coffee replantation farmers. The advantage of this arrangement is that the monitoring of the PFIs and the LoC function is transferred from the overall project owner (i.e. MARD) to BIDV.

The combination of supported policy and institutional reform would help the Mekong Delta rice and the Central Highlands coffee clusters and bring benefits for targeted farmers, adjust market and help the farmers involved in the supply chain.

Rice and coffee were selected for the project because both rice and coffee are large and it will have huge influence at local and national scale. There are many enterprises focusing on these sectors and want to cooperate.

World Bank also held a number of technical and other training programs for farmers. Every 6-months the World Bank holds discussion with officers of government and relevant sectors in the project to give support and extend their profound knowledge on the implementation of policy and production.

According to World Bank, the main obstacles for the project is that it is difficult to organize farmers and instruct them how to use the money and put them under the mechanism. As for term of loan, for coffee, it takes 3-4 years to get harvest, so it is difficult for farmers to pay back money in time and get benefits.

The project is divided into two parts, first one is support facilities (bank and enterprises), second one is the lending (bank lending to farmers). The support to banks and enterprises is going well with 80 percent of expected loans provided, there is especially high demand in the coffee sector. However, the loan distribution to farmers is slow, with only 10 percent of total expected loans. The implementation of the lending program in Daklak and Lam Dong has been better than other provinces. The application of technology is high, coffee is very productive, local authorities are very helpful and supportive.