

Innovative Schemes and Partnerships to Leverage Investment in SPS Systems

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Abstract. This paper examines existing funding mechanisms in agriculture in order to elucidate recommendations for new mechanisms that could be transferable to SPS capacity building

Conventional forms of financing are hardly accessible in agri-producing states. Thus, traders are often excluded from full gains of trade exchanges and international markets. An objective to enhance financial sustainability and phase out traditional funding schemes calls to galvanize actions at the multilateral level. Declining ODA and inefficient public funding reaffirms the need to implement new financial instruments and services targeted on inclusiveness, efficiency and safety of agriculture development. The safety aspect is governed by sanitary and phytosanitary (SPS) measures, which are an essential condition to reach out to international markets. The implementation of food SPS provisions can be costly, yet the lack of conformity with SPS imposes bigger losses on actors of agri value chains. Improved access to finance will strengthen the capacity to improve production systems, protect public health and increase the market access. This paper examines existing funding mechanisms in agriculture and related fields in order to elucidate recommendations for new mechanisms that could be transferable to SPS capacity building.

Keywords. *market access, innovative finance, capacity building, sanitary and phytosanitary measures*

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1. Introduction

Concerns about limited access to credit in the agricultural sector are not novel, with the sector persistently lacking access to finance increasingly available in urban areas and in other sectors of production. Improved access to finance for individual farmers and Small and Medium Enterprises (SMEs) is a way to strengthen production systems, harness food safety and increase market access. Governments across the world have been attempting to reformat and sustain financial markets and increase the supply of agricultural loans since the latter half of the 20th century, while international donors have been stepping in to provide support where private finance is not an option. However, thus far, the actions of public authorities and donors have proved to be either insufficient or unsustainable.

In recent years, the inefficacy of public finance and the push within international development to promote sustainable investment and to phase out reliance on traditional funding schemes (tied to the overall decline in ODA) have promoted a number of new initiatives for tackling the limited agricultural finance. These new initiatives, loosely grouped here under the term “innovative finance” aim to provide services that are inclusive and efficient in spurring global agricultural production. Dalberg has estimated that by 2020, innovative finance in agriculture will grow to \$2.5 billion, with the principal allocation of funds to on-farm storage technologies, improved agronomical practices, safe processing techniques and strengthened quality infrastructure to enable market transactions (2012).

To be competitive in global markets, agricultural actors incur additional costs by implementing quality management and assurance schemes and conforming with assessment procedures and international standards. The recent analysis of UNCTAD (2014) suggests that Non-Tariff Measures (NTMs) in general are twice more restrictive than tariffs themselves for developing-country exporters. Where adequate SPS systems are not present at the national level, small-scale producers are further constrained by the need to establish their own means of SPS compliance and verification. The cost-benefit analysis of well-functioning SPS systems reiterates that in addition to ensuring food safety, SPS measures serve as a gateway to crop commercialization. Application of international standards translates into higher yields, better agriculture practices, lower risk and higher profit margins given that there is an enabling regulatory system.

The implementation of SPS measures is a costly and lengthy process that may require the

reorganisation of an entire value chain. On the other hand, the costs of non-compliance lead to potential trade loss, meaning that non-compliance can often be more costly than compliance itself. At borders, repeated rejections of agri-products shipments on SPS grounds cause stricter scrutiny of the importing counterparts and increase total transaction costs. Consignment rejections at borders damage the reputation of a traded commodity and inevitably undermine confidence in the competent authority's export certifications. Lack of capacity to address SPS requirements carries a significant economic impact that may be greater than direct production losses.

While providing an overview of innovative finance in agriculture as a whole, this paper aims to focus on one topic within agriculture in particular: sanitary and phytosanitary (SPS) standards. The paper will explore the applicability of new innovative financing schemes to specifically financing SPS-compliance.

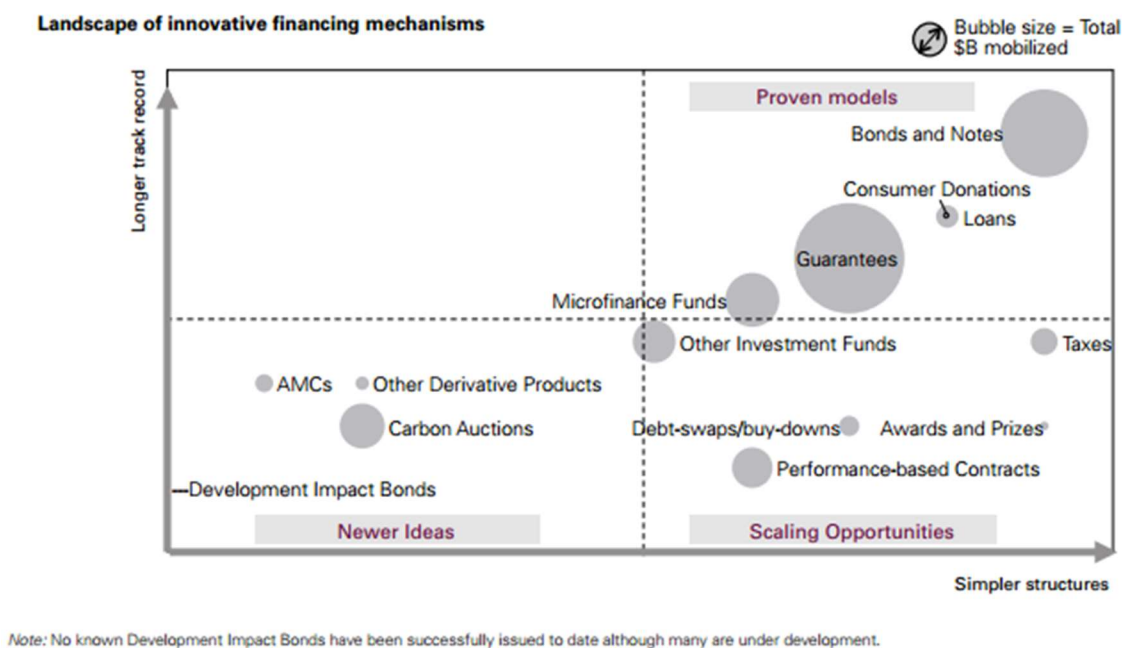


Figure 1: Landscape of Innovative Financing Mechanisms (Dalberg, 2014)

The Landscape of Existing Financial Mechanisms

In the context of Sustainable Development Goals, the portfolio of innovative financial mechanisms is being largely diversified. The agricultural sector is inherently capital-scarce, as the majority of its stakeholders are rural dwellers with low financial literacy and absent entrepreneurial skills. For the sake of better navigation within existing funding initiatives targeted at agriculture development, this paper provides an overview of current innovative mechanisms, tools, frameworks and other relevant schemes in order to explore their potential applicability to financing SPS compliance and their individual benefits and limitations. Where available, case studies will be used to further elaborate on how the financing mechanism is applied and whether it has produced positive outcomes in practice. A general overview of the current financing landscape in agriculture is provided below in Figure 1.

Channels for financing SPS compliance vary depending on the scope of a value chains or export channels. This paper identifies three major levels of SPS-related financial schemes, i.e. value-chain, national and regional. Beneficiaries of innovative financial services also vary with respect to their role in a given SPS system. Examples of beneficiaries are policy makers, institutions (e.g. laboratories, certification bodies), enterprises (farmers), exporters and traders. Innovative financial mechanisms streamline both short term credit, often used to finance quality inputs such as fertiliser, pesticide, better quality seeds, etc., and long term credit that covers investment in greater, infrastructure-related improvements, from building better storage on the farm to buying better machinery and other equipment

In recognition of this diverse landscape, this paper groups financing mechanisms into four categories. First are innovations within the framework of traditional agricultural finance, in particular microfinance institutions (MFIs). Second are mechanisms available at the value chain level, i.e., opportunities and funds that can be provided by the actors within the value chain,

bypassing the need for outside financial institutions. Third are mechanisms at the national level that can involve governments and also looking more broadly at building national capacity to sustain new initiatives in finance and leverage the interest of the private sector. Last is the regional level, looking at what is available beyond the borders.

2. Agricultural Finance

2.1 Access to Credit in Agriculture

Agriculture is the main source of income for 86% of the rural population (FAO, 2010), so the problem of SPS and agricultural financing is first and foremost the wider problem of a lack of access to finance outside of urban areas (Miler et.al, 2012). Typically, it is most difficult to secure credit for upstream activities in agriculture such as production and processing, the initial stages of the value chain where economies of scale are the lowest and risk is highest. Rural inhabitants are excluded from the formal financial sector predominantly for two reasons: lack of collateral and exceptionally high risk due to information asymmetries such as adverse selection and moral hazard. As an example, while 40% of Nigerian GDP is made up by agriculture, only 1% of commercial bank loans are attributed to that sector (UNDP, 2012).

Agricultural value chain actors have to bear additional costs if they want to participate in international trade. These are related to the costly standards management and assurance schemes, procedures related to the assessment of standards compliance and building of infrastructure that supports compliance with public and private standards (UNCTAD, 2007). Ultimately, capacity to finance SPS compliance – provided there is a will – comes down to farmers having extra disposable income, whether in the form of a credit or savings. At the producer level, SPS capacity can be built with better input supplies, such as crops resistant to particular strands of diseases, vaccinations for livestock, fertilisers and so on, to more substantial infrastructure, especially proper storage facilities. These costs increase the demand for agricultural finance, considering that many of these are

costly investments that will reap benefits in the medium- to long-run. Financing SPS compliance is necessary, especially since a lack of it has shown to prevent developing countries from fully benefiting from international trade liberalisation, with tariff rates and quantitative restrictions dramatically decreased over the recent decades (UNCTAD, 2007).

The lack of credit for financing agricultural production has been an ongoing concern over the last five decades, with several approaches having been taken in an attempt to remedy this. In the 1960s and 1970s, as Meyer (2012) states, governments typically intervened in the financial markets to increase agricultural lending by providing subsidised directed credit (Meyer, 2012). Governments became involved either through state-owned development banks, cooperatives, or commercial lenders, increasing the supply of credit provided to agricultural producers on lenient terms. This approach proved to be expensive and unsustainable. Suffering from a lack of repayment and profitability, a lack of positive effects on agriculture persisted (ibid).

When this proved unsustainable and detrimental to the development of the private financial sector, a period of liberalisation followed from the 1980s onwards, with public subsidies redirected towards microfinance with the aim of ensuring financial sustainability through “cost-covering interest rates” (Morvant-Roux, 2008). Microfinance was championed as a tool for financial inclusion of the rural poor. Without subsidies, the majority of rural branches of banks closed. However, traditional microfinance has since also become discredited, with huge doubts raised regarding whether it even decreases poverty or has a positive impact on agricultural production at all. The 2010 crisis of Andhra Pradesh further villainised microfinance, with international media publishing mass reports on suicides attributed to extreme debts and the aggression of collecting agents (Sherratt, 2015).

Since then, there have been attempts to modernise the microfinancial sector to make it more sustainable and useful for its clients. This meant

changing the traditional focus on microcredit alone and finding alternative solutions to the inherent problems of agricultural financing.

Some successes have emerged, particularly where microfinancial institutions were set up with a long term strategy in mind, and they relied heavily on local ownership. In an attempt to create financially sustainable institutions for agricultural lending, an innovative solution was formulated in Kyrgyzstan, where the Bai Tushum Financial Foundation was established by ACDI/VOCA, in cooperation with Swiss Caritas, the German Agency for Technical Cooperation and Winrock International (IFAD, 2006). Bai Tushum came into existence as a locally registered, non-commercial public foundation with the purpose of providing the same services as its MFI predecessors. However, the Foundation took a new approach to diversifying its portfolio, whereby only around half of its credits were issued to the agricultural sector and the other to more profitable areas such as trade finance or loans to the services industry. This allowed it to cross-subsidise the less profitable agricultural lending, which included credit for crop production, livestock and agro-processing.

The portfolio diversification formula allowed Bai Tushum to offer competitively low interest rates to its clients from the agricultural sector. The second key to the Foundation's success was an emphasis on thorough staff training and a robust information management system. This allowed for rapid loan processing and strong customer service. Moreover, there was a creative response to collateral: repeat borrowers were allowed to register the same collateral for up to three years even if their loans were on an annual or monthly basis.

Within its first year of operation, the institution achieved 230% operational self-sufficiency in 2000, following the initial donor support. USAID and Swiss Development Cooperation initially provided short-term technical assistance and an advisor for four years. In 2003 it was given a rating of A on a scale of D to AAA by Microfinanza Ltd. in recognition of its track record of meeting financial obligations and excellent operational performance.

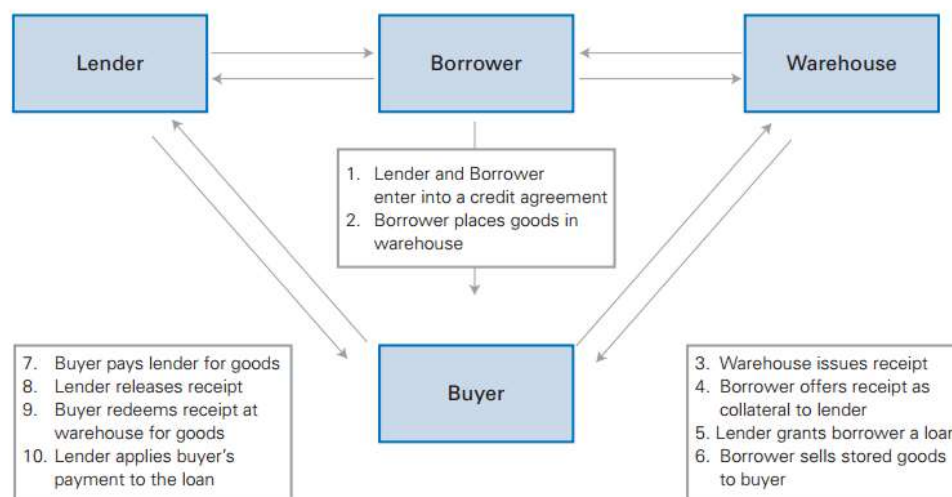


Figure 2: Basic Features of a Warehouse Receipt Financing System (FAO, 2009)

It became fully financially sustainable and continues to receive only some advisory assistance from ACDI/VOCA, which is part of its board of directors. In 2012, Bai Tushum became the first microfinance institution in Central Asia to be awarded a full banking license from the National Bank of the Kyrgyz Republic.

These types of innovative institutions bring further opportunities for SPS financing. As they proliferate the rural credit landscape, there will be increasing opportunities for more specialised financial products to become developed.

2.2 Warehouse Receipts

Titled assets are scarce outside of the large farming cooperatives. Consequently, harvest is the main asset of rural farmers. The development of a warehouse receipts system has enabled farmers to use stored crops as collateral to acquire microcredit or other financial services. In return for produce stored in a warehouse, the producer receives a receipt certifying the deposit of a good, its quantity, quality and grade. The loan is calculated based on the market price; therefore, farmers are interested at storing higher quality products to obtain maximum loans. Products in conformity with international standards are prioritized over uncertified goods. Farmers and SMEs repay the credit once the harvest is sold and withdrawn

from the warehouse. MFIs are incentivised to use this system because produce stored in secure facilities reduces risk and is highly liquid in comparison with land or property.

SPS issues are invariably tied to this because, in most cases, there are risks associated with storage of agricultural produce. Quality production alone can't guarantee safety of agricultural products in the post-harvest stage of a supply chain. Secure storage facilities are necessary to prevent contamination of agricultural products or grains before they are sold to external markets. Lack of proper drying techniques, necessary chemicals and secure storage facilities expose producers' crops to risks of contamination. As such, warehouse receipt mechanisms not only provide farmers with financing, which could potentially be spent on SPS financing, but also reduces post-harvest SPS risks. The quality and standard compliance of the produce can also be indicated in the warehouse receipt, enhancing the validity. It is a secure means of promoting quality control and ensuring high grain quality that will be competitive for exportation. In addition, properly equipped warehouses mean that farmers who do not have the necessary infrastructure for safe storage no longer have to immediately sell their produce post-harvest when market prices are pushed down by the increased supply. Therefore, warehouse receipt

mechanisms add value to the agriculture products and contribute to safety standards in accordance with SPS measures.

Case study 1

Malawian Agricultural Commodity Exchange

In Southern Africa, each country sets its own quality specifications that are standardised on a nationwide basis. Even though Malawi didn't have a national regulation for the WR system, the government recognised the contractual basis of accepting commodities as collateral and approved an innovative form of partnership between farmers-depositors, storage operators and financial institutions that took off in 2006. Five years later, in 2011, the first warehouse receipt was sold by the farmer at a profit of over 72%. A long delay in the establishment of an enabling regulatory environment eventually resulted in an efficient facility that promoted farmers' interests. Additional benefit was found in so called "grading" or assessing the quality of crops, which took farmers one more step forward toward market access and commercialisation. Up to this date, a total 16 facilities with a combined storage capacity of 53,200 tons are operated in Malawi. Warehouse construction was initially supported with funds from WB and USAID, but the phase out of donor support was successful and facilities are now fully autonomous.

Source: Van der Vyver, A., & Nordier, A., 2013. The Role of a Warehouse Receipt System in an Agricultural Commodity Exchange.

Limitations

One of the challenges for the warehouse receipt framework is the obsolete infrastructure and lack of reliable warehouse companies. Firstly, warehouses need to be well-established and recognised as trustworthy institutions for the receipts they issue to be accepted by credit-providing institutions. Secondly, there needs to be an appropriate enabling environment, comprehensive licensing and regulatory framework, which would give all actors confidence in the scheme and ensure that contracts will be enforced. In basic terms, producers, warehouse managers and lending agencies need to be confident in each other. In many developing countries where this is lacking, warehouse receipts cannot become eligible financial instruments. Therefore, in addition to commercial will, there needs to be a political commitment at the national level to ensure an enabling legal and regulatory structure.

Moreover, private warehouses, or those which are more selective with their clients (for example

controlling for their quality and grade of produce stored), involve large input costs. These warehouses need to be built with secure, disease-proof storage in mind with all the necessary drying and preservation technologies. Another problem is that transportation to warehouses is expensive for many producers, yet building warehouses in very remote rural areas is also comparatively more expensive. In addition, their maintenance also accrues high costs, especially for storage chemicals and electrical power. This suggests that operation at a larger scale is more profitable and sustainable but once again raises the question of who would fund large warehouse projects with the view of promoting warehouse receipt usage.

2.3 Tailored Insurance Plans

Insurance can help mitigate SPS risks and also helps farmers cope with managing temporary shocks and ensuring that they do not translate into long term losses. Supply of insurance is typically low, but so is the demand.

There are numerous barriers, including high prices for agricultural insurance, lack of trust, liquidity constraints, low levels of financial literacy and education, which means many farmers are unaware of the benefits insurance affords. The rural poor instead typically deal with risk on an informal basis through the diversification of landholdings into various crops, storage of grain from one year to the next and gifts and transfers in family and social networks (Townsend, 1994). To the extent of enhancing these informal insurance methods, warehouse receipts can play a big role in helping farmers mitigate unforeseen crises by storing their produce in secure facilities. In terms of gifts and transfers, these can be facilitated through the use of modern technology such as online banking.

There is an existing practice of enhancing flexible loan schemes with additional insurance programs. Livestock insurance is one of the most widespread insurance plans, as it enables farmers to acquire new herds while securing and monitoring animal health. Livestock plays a vital role in income generation in farmer families. It also stands as collateral, a form of insect control and a source of food security. In areas where the

animal disease risk is high, the delivery of balanced insurance plans is a way to sustain safe livestock production. Commercial bank entities either stand as insurance providers themselves or they inter-link borrowers with partnering insurance companies. In any case, insurance premium rates are discounted. But what is more substantial, farmers are provided with access to preventative veterinary services to increase the safety of livestock production and ensure standards compliance with international standards on animal products.

Case study 2

Livestock Insurance in India

In India, the HDFC Ergo, a commercial bank, and the Dairy Network Enterprises (DNE) joined forces to design an innovative insurance product for livestock farmers to i) protect producers from the loss of cattle and ii) improve farmers' creditworthiness. Besides an appealing premium rate significantly below market value, farmers were provided with preventive veterinary services and robust drug treatment to stabilize and maintain animal health of the insured herds. Producers were also trained on the usage of electronic tracking chips to reinforce traceability practices. DNE ensured regular monitoring and evaluation activities to control timely vaccination procedures, veterinary checks and sanitary norms on the farms. Such a combination of financial and insurance services strengthened by the use of a new technology (chips) significantly improved animal health in the two provinces where this insurance program was launched, resulting in improved livestock production.

Source: Sharma A., & Gupta A., 2011. Integrated Insurance & Risk Mitigation Solution for Dairy Farmers. IMFR Trust, Technical Note.

Case study 3

Livestock Insurance in Malawi

In Malawi, the Dairy Development Alliance (MDDA) program, financed by the USAID, pioneered in delivering tailored livestock insurance products. Total insurance plans valued at \$879,000 to 1,665 dairy producers. Malawian farmers were grouped in "bulks", a form of producer cooperatives that allowed farmers to acquire otherwise costly and unaffordable insurance products. Premiums were not demanded upfront but rather deducted from farmer payouts upon the completion of sale transactions with contracted users. Additionally, private input suppliers contributed feed, seed, artificial insemination and veterinary drugs to farmers to help minimize the risk of animal disease outbreaks. MDDA has further engaged in a dialogue with national policy makers in areas of animal health and food safety with a goal to strengthen animal health and

deliver intensive veterinary care in parallel with loans and insurance plans.

Source: Land O'Lakes, 2007. Malawi, the Dairy Development Alliance Final Report. USAID Alliance.

3. Value Chain Level

3.1 Integrated Finance for Value Chain Finance: SPS Compliance at Every Step

Structure

While there is no single definition of value chain finance, this paper views this mechanism as "the flows of funds to and among the various links within a value chain". What is non-debatable is that Agriculture Value Chains (VCs) in developing countries can be highly fragmented.

Better interconnectedness among value chain actors buttresses financial flows inside a value chain bypassing external financial institutions. The framework of the value chain finance is an integrated approach aimed at consolidating linkages among all value chain levels and expanding financial opportunities. Such an integrated approach helps to determine the best combination of collateral type, timeline and interest rate to issue a loan. Lending conditions and the type of innovative mechanism used depend on a structure of a given VC. There are five main levels in a traditional agricultural VC: i) input supply, ii) production, iii) post-harvest, iv) processing and v) distribution. Value chain finance is not limited to the provision of financial services, and it requires a strong base of other external factors to make the integrated system work. Therefore, the four main components of agriculture value chains are identified as i) delivery of cost-effective credits, ii) provision of technical assistance and other forms of information services, iii) enforcement of regulatory practices and iv) risk categorisation and mitigation.

Aggregators and Credit Unions

Higher interconnectedness between value chain levels is ensured by intermediary points, also called aggregators or offtakers, that are put in place to channel the flow of information, finance

and goods among financial service providers and farmers. An aggregator can be a farmer cooperative, a trader or processors acting as "information depositories" and keeping record of requirements for production established by a financial institution and/or a subsequent buyer on the one hand and production capacity, possessed by farmers, on the other. This intermediary role represents a type of contract farming and helps solve the problem of information asymmetries, often encountered by farmers in their attempts to access a new market. In some cases, aggregators stand as a direct provider of financial assistance, flattening the structure of the VC and establishing direct relationships with farmers and outgrowers while ensuring stronger trust and cooperation.

Case Study 4

Aggregator Point in Honey Value Chain in Ethiopia

An excellent example of launching an aggregator point in a honey value chain in Ethiopia was demonstrated by SNV and Netherlands Foreign Aid Department through implementation of the Business Organisations and their Access to Markets (BOAM) followed by the Apiculture Scaling-up Programme for Income and Rural Employment (ASPIRE) programme. Both initiatives have promoted innovative contractual relationships between beekeepers, processors and buyers. The implementation of the business association was aimed to improve market access by the means public-private dialogue, effective public policy management and strengthened cooperatives. Both beekeepers and processors were trained on the usage of GAP. As a result, productivity increased by 30% while rejection of consignments at borders fell from 13% to 1%. Processing companies managed to conform to standards on honey exports and streamline 800 tonnes of product to international markets. Liaisons between processors and producers with a different commercial advancement strengthened all levels and actors of the VC. The objective to deliver appropriate financial services to each category of beekeepers was pursued through improvement of local banking and insurance services. Commercial finance was extended to seasonal credit, trade credit, investment credit and equity capital in certain cases. In addition to financial services, both producers and processor were supplied with innovative equipment. For example, innovative quality labs were introduced to control the composition and residue levels in honey with regards to international standards and SPS provisions.

Source: Gietema J., 2012. Private Sector Development (PSD) in Ethiopia. Ministry of Foreign Affairs, the Netherlands

Similar guarantees are provided through credit unions that are established to finance producers

holding trade agreements with direct buyers, with credit unions representing a model of contract farming that will be described in more detail in a following section of this study. A remarkable feature of internal VC financing is that transactions can be made without money, either through vouchers enabling only particular purchases or in-kind. Such forms of in-kind credit serve productive purposes and help generate sufficient cash flows to repay the credit. In-kind credit is a form of an input supplier credit scheme. An input supplier advances agricultural inputs to farmers for repayment once harvest is collected. The cost of credit (interest) is generally embedded into the price of an acquired input. High quality inputs enable farmers to increase sales and revenues. Another way to avoid unnecessary cash transactions is to acquire credit from credit unions that provide commercial lending upon proof of trade agreements with direct buyers. The goal of direct contracts is to avoid selling crops to intermediaries who pay directly in cash but at a price below the market level, which deteriorates both crop quality and yields.

SPS Focus

Food safety standards in export agriculture have become a defining factor of a product's export capacity. Value chain financing makes farmers more market oriented and considerate about a fair price rate, standards requirements and consumer expectations. Financial institutions have a right to condition loans, imposing certain production criteria (e.g. product quality, conformity with food safety standards, commercialisation strategies) on a borrower so to meet the expectations of potential buyers and exporters. Therefore, the VC financial model has a capacity to streamline incentives or penalties for achievement or non-achievement of targets for specific standards. Conformity with such standard requirements can be reinforced and strengthened in ways within an agri-value chain. Firstly, tailored capacity building programs on quality inputs and GAP help producers meet the quality standards expected by buyers. The integrated approach allows buyers and exporters to reach out to producers directly and directly encourage them to conform to international standards. Continuous and timely

training on production techniques and safe storage commercialization result in the production of more competitive products in full compliance with Non-Tariff Measures. Secondly, governments have to ensure effective policies and enable a regulatory environment to mainstream financial services across the VC. Macroeconomic fluctuations and erratic policy-making negatively impact VC financial mechanisms. Therefore, collaboration—not competition—with the private sector is essential to facilitate VC development and its focus on international standards. Lastly, the higher the degree of vertical integration in a value chain, the easier it is to ensure SPS compliance at each level. In order to improve the interconnectedness within VC levels, knowledge sharing and information dissemination should take place among VC stakeholders. Better integrated VCs have a higher potential to turn SPS regulations into benefits while overcoming cumbersome costs.

Case Study 4a Intermediary Points in Kenya

The Kenyan case of DrumNet Initiative has proven that the third party can stand as an efficient intermediary in linking farmers' outputs with a real demand pool of buyers. The largest agribusinesses buyer contracted a number of farmers to produce sunflower seeds in large amounts to cater to the existing industry demand. Input suppliers provided farmers with quality seeds and were reimbursed by the equity bank, eliminating the need for cash payments from farmers themselves. This model also ensured that loans were used strictly on purpose, leading to significant improvements in quality and quantity of production. While farmers managed to produce competitive outputs and secure the distribution channels through a reliable buyer, they also improved their financial proficiency as well as their understanding that safety measures and quality production generate higher income.

Source: ICTs in Agriculture Sourcebook, Module

Limitations

One of the limitations, but also benefits, of the value chain financial framework is a high level of integration at all value chain levels and stakeholder categories. Innovative financing schemes are not feasible if the VC is weak. Weakness is often created by either uncertainty - inability to fully understand market requirements and regulatory standards or lack of capacity of VC actors who have a constrained access to training

and education. To avoid potential failures, financial services should be facilitated through the "strongest" actor of the VC that will deliver holistic assistance to other actors and consequently minimize transaction costs.

Another possible challenge is limited access to transparent information, which is essential to identifying opportunities and constraints at early stages to make value chains more competitive. VC financing involves shared responsibility to assess production capacity, evaluate additional opportunities and economies of scale issues. Therefore, an open knowledge and information sharing system is in the interest of all stakeholders. Finally, a significant part of the finance available to value chains comes not from agriculture financial institutions but from other stakeholders within the chain or non-actor parties (FAO, 2010). Unstructured capital inputs from different stakeholders may appear less sustainable than official commercial credits from financial institutions.

Case Study 5 Analysis of Livestock Value Chains - Agrifin Study

A clear understanding of a given value chain and its actors requires improved overall efficiency of the agriculture finance. The Agrifin study (co-funded by the World Bank) of the livestock value chain assessed the gap in efficient allocation of credit among actors of the VC by the Centenary Bank, a commercial bank in Uganda. The objective of the study was to identify the gaps in existing financial services and structure credit schemes in accordance with each category of the livestock VC actors who are veterinary drug dealers, cattle traders and cattle and milk transporters. The aim was also identification of non-creditworthy levels of the value chain, which could diminish financial sustainability of other levels. The Agrifin study is relevant to this research paper as it points out how SPS components have a direct effect on commercial lending at all levels of the VC.

One of the findings identified competitive levels of transactions among veterinary drug dealers that ensured robust drug availability for farmers to mitigate various livestock diseases. The rate of adoption of veterinary treatments by farmers is very high, which could translate into significant profitability of drug dealers hence their high creditworthiness. Farmers demonstrated commitment to carry out timely vaccination while maintaining appropriate hygiene conditions in the farms. With a goal to support animal health measures, the bank based the credit categorization for veterinary drug dealers on the assessment of the quality of distributed drugs driven by farmers' demand. The bank ascertained the reliability of the supply of

good quality veterinary drugs as an essential ingredient in lending for this level of the livestock value chain.

At the dairy production level of the livestock value chain, milk producers recognized the importance of animal health and the impact it has on dairy production. The outbreak of animal diseases such as foot and mouth disease (FMD), contagious bovine pleuropneumonia (CBPP), lumpy skin and anthrax required severe quarantine programs that negatively affected the volume of production and distribution, hence hampering access to credit. Farmers and producer organisations mobilized efforts to maintain the safety and quality of animal products, ensuring good agriculture practices, safe transportation and packaging and timely veterinary testing. The quality of dairy production improved over time as more sanitary measures were put in place. This triggered the market pull effect and accelerated the demand for high quality dairy products. This positive result is due to the technical assistance provided by non-value chain actors that were interested in supporting sustainable dairy production in Uganda (such as SNV, Land O Lakes, East African Dairy Development Project (EADD). Technical assistance was targeted at improved production techniques to strengthen animal health, thereby boosting commercialisation and financial leverage. The animal health initiative focused on improving cattle breeds to minimize vulnerability to animal diseases. Better breeds coupled with good agronomical practices helped farmers to increase production outputs and thus improve their creditworthiness.

Source: Besigye A., 2014. Analysis of livestock value chains for potential financial opportunities

Specific Risk Factors of Value Chain Actors

Each value chain actor has a different capacity to obtain financing. Depending on a certain level of a given value chain, each VC actor is assessed for a risk factor to estimate creditworthiness. In formal banking, creditworthiness is evaluated through repayment history. In VC banking, creditworthiness is built up through production activities and added-value components. For example, farmers receive direct access to loans if they prove the appropriate level of commercialization of a produced commodity. Business associations, such as input suppliers, aggregators and traders, are evaluated for cost-effective credit based on the information related to counterparts, financial targets and quality of traded goods. Large agri-businesses comprised of farmer cooperatives benefit from the most guaranteed market access, as they control a wide array of VC processes from collecting to exporting. Hence, agri-businesses enjoy the most flexible lending conditions. Each financial institution should develop credit policies that will

take into consideration performance indicators of each client segment of the VC. This analysis should enable the bank to align the delivery of specific financial products to both risks and needs of identified actors in the value chain. Systematic financing at each transactional level is a way to underpin the efficiency of financial products. The rationale for systematic lending can be grounded by certain conditions, such as alternative forms of collateral, guaranteed contracts with buyers and also conformity with international standards.

3.2 Contract Farming

Contract farming, otherwise known as out-grower schemes, is a type of formal arrangement between a processor or a large firm and farmers. This type of arrangement establishes formal relations between value chain actors, leading to vertical integration of the agricultural value chains (Felgenhauer and Wolter, 2008). These schemes create contractual relationships between producers and buyers or a processor, whereby the producers commit to selling their goods at the end of the harvest period, usually for a set price. In return, the buyer supports the production process through various methods. This can be by providing credit to the farmers directly or by companies acting as a "front-office" for financial institutions to enable farmers to access formal credit and help them manage their loans (Dalberg, 2012). In addition, they can support production by providing non-financial inputs upfront, such as the supply of farm inputs or through provision of technical assistance and advice (UNIDROIT, FAO and IFAD, 2015).

Large international companies in particular have the capacity to experiment with this provision of non-financial inputs through contract farming given their larger pool of capital, access to technology and management expertise. At the same time, they have incentives to form long term partnerships in order to secure a steady supply of necessary produce. Contract farming facilitates repeat interactions between value chain actors, implying that in the long run, partnerships can become more advanced. For example, producers can be incentivised by the prospect of receiving rewards after delivering a

certain amount of produce, such as special training or finance advice.

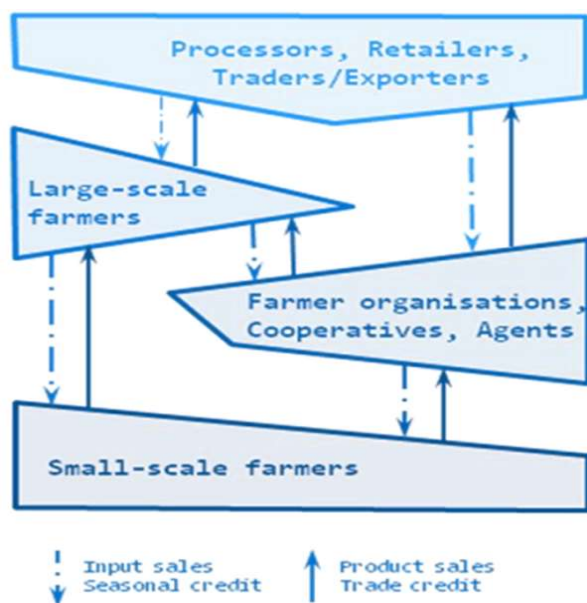


Figure 3: Outgrower Scheme (Felgenhauer and Wolter, 2008)

SPS compliance plays a huge role in this because international companies wishing to move agricultural products along the value chain in a way that will take them beyond the producers' borders must comply with standards. As such, contract farming can be a great way for farmers to not only secure the sale of their products but

also to have companies either financially sponsor tools necessary for compliance or to provide expertise and technical assistance themselves. An internal monitoring mechanism is inherent in this system, as farmers are obliged to maintain the standard of their output in order to continue benefiting from contracts.

Limitations

Although contract farming is a great scheme for involving larger actors further down the value chain in the earlier production stages in an equitable manner, these partnerships require a deep commitment from the side of the producers and buyers. Establishing the initial contact and trust between these actors can be a lengthy process of trial and error. As for schemes like warehouse receipts, the lack of contract enforcement and reliable set of regulations can be detrimental to this process. Similar to how companies worry that their advanced credit or provision of support could still leave them without a secure supply at the end of the harvest season, "side-selling" to other companies may occur (for example, prices fluctuate after the original contract was established), and farmers may fear exploitation in one form or another by the giant foreign companies. Given these challenges, and the fact that trustworthy and stable relationships can take a long time to establish, outgrower schemes can only really work if companies have a long term interest in a particular product.

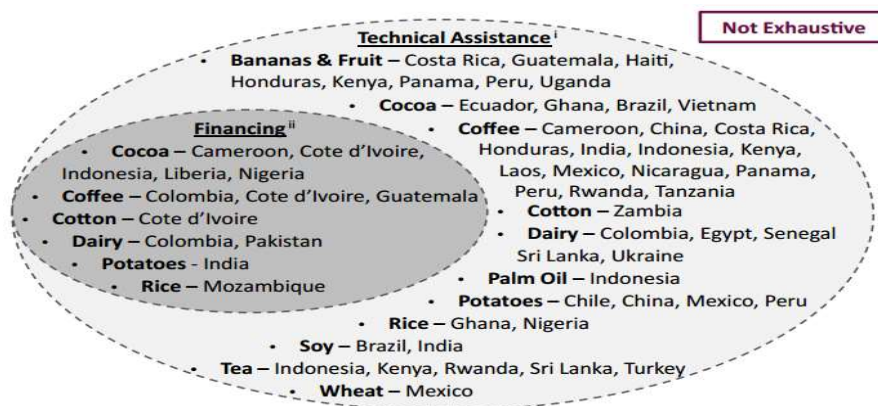


Figure 4: Markets with Existing Multinational Buyer Engagement with Smallholder Producers (Dalberg, 2012)

As evident from Figure 4, there are currently many markets where multinational buyers engage with smallholder producers through out-grower schemes, providing either financing or technical assistance.

The terms of these schemes vary considerably depending on the local needs. This flexibility is another great benefit of contract farming. For example, PepsiCo has schemes set up in the Indian potato growing sector whereby it is closely engaged throughout the entire production process, providing farmers with high quality seeds, crop insurance, supervision and loans, in return for which the company receives the guarantee to have the crops sold to it at pre-decided rates (African Development Bank, 2012). In another case, the Figaro Coffee Company in the Philippines provided very specific support to coffee farmers by supporting them in the certification of their produce, once again in return for the sustainable supply of coffee. This meant that farmers not only benefited from increased income but also learned the application of sustainable agricultural practices (African Development Bank, 2012). This model especially can have great application potential to SPS, as standard-compliant production and storage practices can be taught to farmers through contract farming.

A notable recent programme that attempts to further explore the potential positive impact of contract farming is Project Sunrise, which was jointly run by Oxfam and Unilever between 2010 and 2015 (Unilever and Oxfam, 2015). Recognising the benefits of contract farming, the project focused on learning how international companies could learn how to do business with smallholder farmers to bring commercial success to both parties and to advance development.

The project explored existing producer-buyer linkages, with the aim of extracting success factors that could help other international firms to better connect and work with farmers. As such, Project Sunrise had two key aims: (1) Find out how to make sure supply chains are commercially viable, socially and environmentally sustainable; and (2) Share knowledge to inform other companies and organisations on

good investment practices and business models. The original pilot projects were set up in Azerbaijan (onion farmers) and Tanzania (dehydrated vegetables). Research was also carried out in Nigeria (red berries), Ethiopia, Kenya (tea), India (tomatoes) and Indonesia (black soy bean).

Although the pilot programmes themselves were eventually deemed unsustainable – Tanzanian farmers proved to be better off supplying the local market, and Azerbaijan was only able to supply Unilever Russia but not the European market – Project Sunrise delivered a number of useful tools and recommendations. The final products that were delivered at the end of the project were the "Enhancing the Livelihoods of Smallholder Farmers" guide for procurement teams to engage suppliers, which included a supporting toolkit and training module, and the "Guide for NGOs" on working with private companies. The set of recommendations and lessons learned can be found in the project's Final Report, but in summary, they caution that setting up these private sector partnerships takes time, patience and potentially a lot of resources, especially where value chains are built from scratch. This means that meticulous planning, research and viability assessment is key to the success of any initiative linking smallholder farmers and international companies. In reference to SPS standards compliance specifically, the project suggested that contract-buying models are especially useful for meeting specific produce requirements, making upfront investment profitable.

Following the end of Project Sunrise, Unilever and Oxfam have set up the Enhancing Livelihoods Fund with support from the Ford Foundation starting from January 2015. The Fund is intended to take up the guidance provided in Project Sunrise, acting as an investor in suppliers to achieve positive social impacts through inclusive business practices.

3.3 Training and Education

Training tied to the provision of finance to farmers – as will be detailed later, this is already a common practice in contract farming – can enhance value chain competitiveness and core

practices of food production, including utilization of acceptable standards and best practices (ADP, 2013). Training provides farmers with the skills necessary to maximise their use of the credit money. It can be supplied either by financial institutions themselves, financing it through increased interest rates and relying on the assumption that successful training should in theory result in better returns to the farmers and therefore increased ability to pay back loans; or it can be financed or subsidized by international donors, banking on the given knowledge to be passed on, making training self-sustaining.

Trainings are normally conducted on financial literacy, certification and agriculture practices (Dalberg, 2012). Training related to farming practices and new technologies can be directly applied to sanitary and phytosanitary standard compliance. Firstly, training can be used to resolve information asymmetries, such as the fact that many smallholder farmers are not aware of the various SPS requirements that exist in foreign markets or indeed that there is a demand for their products in foreign markets. Secondly, training and technology transfer can help farmers learn best farming practices for ensuring their produce is standards-compliant.

In addition, training related to accounting and business practices, or any skills that enhance farmers' entrepreneurial capacity, can be vital for the sustainability of the benefits reaped from credit received by farmers. The success of such trainings in enhancing the success of micro-finance schemes has been supported by a number of academic studies. Karlan and Valdivia's (2011) field experiment in Peru, for example, evaluates the impact of adding business training on topics such as cash management, investment, and marketing to micro lending programs. They found that participants adopted strategies they had learned and their business profits increased. Additionally, loan repayment increased as well as client retention of the micro credit institution, suggesting that the individuals valued their training. Bruhn, Karlan and Schoar (2013) found similar results in Mexico, citing that the "overall entrepreneurial spirit" increased significantly in clients who received management consulting, and profits doubled for the firms participating in the

program. Therefore, this entrepreneurial training is highly relevant for farmers moving beyond subsistence farming, commercialising their crops and making them fit for export.

Case Study 6

HNB's Success in Overcoming Obstacles in Rural and Agricultural Finance

Another successful story of enhancing financial services with the training and technical assistance component is the program of involving large agricultural businesses to support farmers in Sri-Lanka applying GAP and quality fertilizers. HNB Bank helped to establish market linkages between farmers and secure buyers, using upfront contractual agreements as collateral. Technical assistance helped to improve production capacity and increase margins but also to sensibly use financial services without risking default. A competitive advantage of this model is that HNB also has trained bankers working with agriculture loans by sending them to participate in training programs at the Sri Lanka Agriculture Development & Training Institute. Bankers with higher proficiency in the agriculture industry and trends in international trade in agriculture products were better prepared to match financial services with the needs and capacities of individual clients.

Source: Cracking the Nut, Joint report.

Case Study 7

GIZ Cocoa Business School

The value chain financing project in West Africa is a good example of how tailored capacity building and a technical assistance component strengthened the Sustainable Cocoa Business Initiative. The objective of this project developed and implemented by GIZ was improving agriculture practices through more efficient cocoa production techniques. The project was aligned with the innovative financial structure, consisting of village and micro-finance banks that provide individual and group loans to cocoa producers. These loans are dedicated to the adoption and implementation of Good Agriculture Practices (GAP). Cost-profit calculations showed that the application of GAP increased profits by 80% and boosted personal incomes. In addition, agricultural loans linked to GAP indicators had a lower risk rate and, therefore, more favourable interest rates. Delivery of GAP became more cost-efficient while repayment scenarios became secure, exceeding 96% of successful repayment. Financial flows generated through the cocoa business lending ensured sustainability of farmer business school operations without additional donor contributions. Another valuable component of the GIZ Initiative is the inclusive approach that ensures technical training not only for farmers but also for finance managers at established farmer schools. While technical assistance is not a financial service per se, it has ensured capacity to understand lending conditions and importance of financial assistance in meeting market requirements.

Source: GIZ, 2015. *Sustainable Agribusiness Program Overview*.

3.4 Farmer Associations

Farmer associations may act as a vehicle for the realisation and better management of other financing schemes, such as those described above. As such, they represent a framework at the producer level through which various mechanisms available in the financing "toolkit" can be implemented. Here, "farmer associations" is used as an umbrella term for different forms of farmer groupings, including cooperatives, producer organisations and so on. These farmer associations are particularly efficient at tackling a number of problems specific to smallholder farmers. Thus, their advantage is that they allow for schemes to be "scaled up" by dealing with one single entity representing numerous farmers rather than with each individual micro-producer.

Specifically, the following mechanisms could be applied to farmer associations rather than individual producers to enhance their sustainability and simplify the procedures:

- *Group lending*, which can be in the form of a group loan or solidarity group loan agreements, whereby farmers in associations collectively guarantee one another's repayment
- *Contract farming*, otherwise known as out-grower schemes, which establish a contractual relationship between farmers and actors further down the value chain (e.g. traders, processors, etc.)
- *Training* related to SPS standard compliance as well as financial education

For the farmers themselves, there are a number of benefits and incentives to create groupings. In the case of smallholder farmers, groupings help them to commercialise their crops and move away from subsistence farming. Moreover, producer organisations help farmers gain bargaining power through their collective strength, helping farmers to enter into partnerships with sellers on more even terms. This can be useful for gaining access to financial and non-financial inputs, technologies and other services.

Diverting certain production activities through the framework of a group also provides the opportunity to benefit from economies of scale and utilise collective planning for production, procurement and marketing of the produce, thereby reducing transaction costs and tapping into higher value markets. All of these factors lead to an increase in the overall farmers' power in the market place, reduce risks and help them move up the agricultural value chain.

Farmer associations are a particularly practical framework through which farmers can finance their SPS compliance. As suggested above, the key here is the ability to benefit from the economies of scale. A producer group can obtain a larger (long-term) loan than an individual farmer and use the credit to purchase more sophisticated machinery or invest in necessary infrastructure such as properly equipped storage facilities that prevent the spread of pests, fungi and so on. Resource-sharing makes large investments more profitable for small-scale farmers. The economies of scale that can be achieved by forming farmer groupings can help build shared storage facilities, which are of higher quality due to pooled resources including loans and credit, among other things. Similarly, buying certain inputs in bulk – such as appropriate fertilisers, higher quality seeds, etc. – becomes more affordable if they are then shared.

Group Lending

Group lending is a way through which existing microfinancial schemes can be enhanced and made more efficient and sustainable. This is due to the fact that a number of elements make lending and applying financing mechanisms to groups more attractive. In effect, this mechanism helps "solve" the limitations of imperfect credit markets by overcoming information asymmetries by transferring the responsibilities of screening, monitoring and enforcement to the farmers' clients in the group.

Firstly, it eases the financial institutions' persistent challenge of monitoring and oversight, as loans are frequently not spent for the purposes they were intended. Some studies of microfinancing schemes have revealed that agricultural loans are in fact often spent on

individual side-businesses that otherwise would not receive credit. Giving out a loan to a farmer association, in theory, prevents this from happening because it means that the monitoring activities are reduced from each individual farmer to one single entity, as the farmer association becomes accountable as one.

Through groups, it also becomes more feasible to establish initial credit relationships. The major bulwark to the farmers' integration into the modern financial institutions is the initial step of establishing connections. It is harder for institutions to deal with a multitude of smallholder farmers rather than one association representing them. Through associations, these relationships can be established with for-profit lenders or with sellers/processors. This is sustainable in itself, for once a relationship is established, lending institutions gain more information about a borrower (producer), while the producer can enhance the trust and their credit score by making timely payments.

This is reinforced by the notion of social accountability. Typically, farmer associations are created within local communities, making members accountable to each other not only through group loans, but also on a social level. An incentive is therefore created, not only to spend the loan for the original purpose stated but also to ensure the loan is paid back in a timely manner. Solidarity group loan agreements encourage a greater sense of respect and accountability when it comes to micro-financial lending since the credit history, financial stability and reputation of others in the community are also at stake.

Lastly, farmer grouping provides a form of risk management. If one farmer fails for some reason to gain profit from crops, it is likely that others will still be able to pool enough resources together to cover the cost of the loan.

Contract Farming

In addition to enhancing opportunities to be reaped from traditional microfinance schemes through group lending, another innovative approach that can help SPS financing is contract farming, also referred to as outgrower schemes. As detailed above, the basic concept is the

creation of a contractual relationship between a producer and a seller or processor whereby the producer commits to selling their produce at the end of the harvest period, usually for a set price. Such schemes can be optimised through farmer associations, primarily because scaling up creates more incentive for private companies to become involved since the contractual relationship with one entity in the form of a producer association is more time and resource-efficient than establishing partnerships with numerous farmers. Farmer associations allow farmers to retain independence, as their collective bargaining power ensures that they are able to avoid exploitation and have the power to negotiate the technical assistance or financing provided to them by the companies.

Training

Farmer associations are also a practical way to realize training activities, such as those previously discussed and related either to i. accounting and group management or ii. SPS practices. First, farmer associations can be trained to manage their group finances, utilise loans appropriately and overall be able to efficiently organise themselves. Second, farmer associations can be trained on good SPS practices, how to work together to control quality of produce, how to manage collective storage and so on.

The idea is that in the long-run through training, these associations become fully self-managed and self-operating in the area of SPS. Some of the more sophisticated schemes have been put in practice in developed countries where farmer associations develop forums and credit committee structures that become responsible for soliciting and evaluating business plans and carrying out other "high level" activities. The ideal example of this is the US "Farm Credit" network, which is a series of financial cooperatives that are owned by its customers and governed primarily by those elected from among the customers. The profits are shared with its borrower-owners through patronage dividends. However, this is a sophisticated mechanism, which is something that could serve as the aim/model to move towards as farmers are trained to become more financially responsible.

Case Study 8

Commercial Lending to Farmers in Mozambique

The Cooperative League of the USA (CLUSA) launched its Rural Group Enterprise Development Programme in Mozambique in the mid-1990s. This project organised 26,000 isolated farmers in the Northern provinces into associations, thereby helping them commercialise their cash crops including maize, cotton and cashews. CLUSA helped local producers to develop and strengthen their associations, providing training on how to pool and market the crops to commodity traders. It also helped farm associations build stronger relationships with agribusiness that could provide input credit and later purchase the farmers' produce. This resulted in a dramatic increase of farm revenues by 85%. Lastly, CLUSA helped create partnerships between the associations and a local financial services provider. Although this programme was cost-heavy at the outset, in the long run, it has the potential to become self-sustaining, especially if the relationships fostered are maintained. This could help set standards by providing incentives to comply as well as provide revenues, which can finance continued compliance (e.g. after an initial injection of aid).

Source: Nadeau & Novoa, 2012. CLUSA Business Plan Evaluation.

Limitations

One major limitation is that it can take years of continued financial and technical support before farmer initiatives become self-sufficient (money, time, expertise required). It is important to ensure cooperatives are well trained and modernised in order to ensure participation of all types of farmers. In particular, they need to be even more competitive, offering better credit and other product baskets (Miller and Jones, 2010). As the results are long term, this also creates a problem of monitoring and evaluation and creates a responsibility for someone to ensure the programme is running smoothly.

Moreover, while group lending could provide a form of risk management, it could also do the opposite. If the crops of one farmer fail due to endemic conditions such as bad weather, this will most likely effect the entire farming community and the entire cooperative or all the farmers in an association as a result. This increases the chances that the farmers are unable to collectively pay back a group loan.

4. National (Country) Level

4.1 Enabling Regulatory Environment

Regulatory frameworks and rule-making procedures impose a direct effect on the implementation of issues concerning SPS agreement. For example, many countries today apply a risk assessment approach, which defines the regulatory intensity of food flows depending on the typology of the products and related risks (Murina and Nicita, 2014). The risk-based approach ensures that products that are ready for consumption are subject to less rigorous assessment checks than raw products, saving time and money for agriculture traders. Nevertheless, the total average cost of testing and certifying exported food is enormous. Administrative procedures associated with SPS measures, including quality control, inspection, testing and border certification, impede the profitability of farmers by hampering market access. Hence, SMEs and individual farmers are automatically excluded from reaching out to new markets and meeting international standards. The UNCTAD research (2014) on trade gaps in low-income countries imposed by SPS measures indicates “that an increase of one point of regulatory intensity increases the trade gap of lower income countries by about 7.6 percentage points”.

Public intervention in national SPS systems are hampered by insufficient technical and financial resources. For example, in Africa, some regulatory agencies tried raising resources internally by providing inspection and certification activities, but the exercise served purely mercantile purposes rather than objectives to promote safe trade (World Bank, 2012). Moreover, in cash-crop exporting African countries, the market access is open to a few private distributors that are capable of covering the cost of mandatory licenses and certificates. If not integrated into a value chain financing scheme where commodity prices are fixed in the contract, farmers trade with intermediaries at a price lower than the market value with no capacity to reach to the end-market. This results in bypassing more powerful distributors and collectors and fulfilling export-related procedures. Good regulatory practices should address

monopolistic positions of large agri-business and promote inclusiveness of SMEs in the exportation processes.

SPS regulations are not only about procedural obstacles but also about adequate infrastructure and technology required to meet certification and conformity standards. For example, laboratory facilities and equipment have to be up to date to accelerate clearance and inspection procedures. Automated solutions for information kiosks on export-related procedures (Single Windows) are to be facilitated, and advanced storage facilities should be available to prevent contamination of food products. Public entities play a critical role in determining market access conditions while ensuring sufficient liquidity to finance administrative structure and control infrastructure and human capital. Regulations do not equal barriers, as they can add value and competitiveness to agriculture trade in developing countries.

Similar to a wide array of regulatory measures needed to facilitate the implementation of SPS measures, an appropriate regulatory structure is needed to adopt innovative financial schemes and enforce their linkages with various actors of agriculture value chains. A feasibility assessment of each financial model includes the analysis and legal and regulatory environment in a specific country context to evaluate existing channels of public investment in agriculture, legal environment risks and administrative structure related to trade. Systematic analyses of environment for the business of agriculture lending, such as the World Bank's annual report of "Doing Business", help assess the overall feasibility of innovative financial structures.

CASE STUDY 9

Support Institutions to Foster Efficient and Stable Regional Food Markets

The case of Tanzania is sad evidence of how budgetary constraints impede the trade flow while decreasing food safety and animal and plant health measures. The cost of inspections at the Tanzania Food and Drug Authority is substantial, and the procedure is not based on risk analysis. Border posts are understaffed and underequipped, missing agency inspectors and basic testing materials. Plant health service experts are present at only 28 out of 56 total border entry points some of

which lack reference materials for pest identification or any sampling kits. Pest and other SPS authorities didn't have sufficient resources to develop surveillance systems and thus little capacity to prevent the spread of animal and plant diseases. In this case, the private sector is a source of critical feedback and innovations to improve the role of standards in enhancing trade and competitiveness. Investing in quality infrastructure and policy development could improve the capacity of farmers and producers to apply basic food, plant and animal safety procedures throughout all stages of a production cycle. Conditional lending is a feasible solution to improve national SPS compliance as well as regulations of trade procedures.

Source: Africa Can Feed Africa Report, World Bank

4.2 Smart Subsidies

Governments are largely reluctant to co-finance innovative services in agriculture, as they don't see clear feasibility of such an investment. However, investment in quality inputs, farming practices and bio-control methods have yielded sufficient financial returns. The goal of enforcing standards and adopting more innovative production practices is not always emphasized in national strategies of developing countries, making private investors de-incentivised to invest in production and distribution of agriculture inputs. Currently, government agencies are more willing to support solid business plans that trigger innovation in agriculture directed at reinforcement of international standards. Distribution of quality inputs, specifically quality seeds, is the first step to ensuring product quality and safety.

Sustainability of subsidies in agriculture is an arguable concept. However, a new generation of public policies has produced so called "smart subsidies" that are channelled to support high quality inputs that are essential to meet export requirements for resulting products.

Commodities of higher quality standards are associated with reduced risk for financing, as returns on investment are more guaranteed. Certified seeds and approved chemical inputs can be measured, and they serve as indicators of food safety and quality. Subsidised high-quality inputs are an investment in itself, as they guarantee consistently higher yields of better quality.

Case Study 10

Smart Subsidies and Value Chain Development

A positive experience of applying smart subsidies for trade growth and agriculture development is proved by the sunflower value chain in Tanzania. The program engaged agro-dealers to produce high quality seeds locally to further distribute them to farmer communities. Initially, the seeds were purchased from the Agriculture Seeds Association (ASA), the organization that also stood as a provider of technical training GAP to outgrow quality sunflower seeds. This approach was applied on a reverse basis: leading farmers produced high quality seeds under the Quality Declared Model (QDM) and distributed them to agribusinesses. Farmers were obliged to receive certification on purity and germinate rates from the Tanzania Official Seeds Certification Institute (TOSCI) to further trade the seeds locally and regionally. This quality exercise proved that local supply can be more competitive than imported alternatives. QDM initiatives helped farmers to spur local demand and supply for quality inputs supporting quality production in conformity with international standards

Source: Capacity.org report on Innovative Finance

4.3 Public-Private-Producer Partnerships

SPS capacity programs sometimes result in diverse partnerships involving international, national and regional stakeholders to expand the pool of resources and better address market access issues (STDF, 2010). One of the most efficient forms of partnerships in the development field is Public Private Partnerships or PPP, which is widely implemented in the agriculture sector. PPP is a form of collaboration that allows the public and private sectors to share risk and ensure strong expertise from the private party side to assist national programs and objectives. PPPs in the SPS sector are not limited to financial assistance, as they also help parties to collaborate in policy-making, technical assistance and knowledge sharing. Donors and international organizations also represent essential players in a PPP model, as they often maximize the scope of a partnership. If necessary, these players provide technical training programs to farmers and producer cooperatives to link them to other collaborators in the commodity value chain. This inclusive approach is a new form of a PPP in the agriculture sector called public-private-producer partnerships (PPPPs). This approach is based on the joint forces of the public and private sectors to engage local farmers and producer

cooperatives into sustainable agriculture development.

IFAD carried out a number of case studies to estimate the benefits of PPPPs (Thorpe and Maestre, 2015). In Ghana, a PPPP was founded to enhance market access maize, one of the most heavily exported commodities, by engaging the global corporate food producer, Nestle, and an aggregator organisation, Savanna Farmers Marketing Company (SFMC), to maximize benefits for local producers. SFMC stood as a major intermediary between the Ministry of Food and Agriculture, rural commercial banks, buyers and producers, ensuring payback processes and consistent contracts with buyers and even providing equipment for post-harvest activities. Nestle organized and implemented a training program for small-scale producers. The training covered food safety, aflatoxin contamination and post-harvest storage practices. On the one hand, Nestle is committed to sourcing safe grains of maize, following its quality standards. On the other hand, the company fulfils its corporate social responsibility and contributes to sustainable growth in agriculture. At the government level, the District Value Chain Committee was established to oversee parties of the PPPP and engage all relevant maize value chain stakeholders to ensure their access to finance, inputs, markets and technical assistance services.

4.4 Pull Mechanisms

In another model, donors engage the private sector in providing a new technology or innovation and provide them with extra payments when specific outcomes from the use of the technology are delivered. Long term access to innovative technologies is ensured by requiring suppliers to continue providing the product at a fair price for some time after the donor commitment ends (Elliott, 2010).

Since innovation is a public good, incentives are often needed for its provision. There is an under-investment in agricultural research and development to tackle problems faced by developing countries (Elliott, 2010). As with investment in farm production itself, it is deemed too risky to have too few potential gains for the private sector. Therefore, the idea is that public or donor

funds provide the financial "kick-start" that would otherwise not be sponsored by the private sector company alone. This is known as Advanced Market Commitments (AMC), which is considered a "pull" mechanism because demand for new technologies is stimulated by donors (IFAD, 2014). AMCs were propelled forward as a potential funding mechanism in agriculture after their success in the health sector where it was used by GAVI to promote pneumococcal vaccines. The innovative financing mechanism stimulated the development and manufacture of new vaccines for developing countries.

In agriculture, AMCs can be used as a pull mechanism whereby a donor establishes an agreement with individual entrepreneurs/producers or a group of producers on a certain level of quality production, including pesticide rates, quality inputs (e.g. seeds) and mandatory laboratory testing in order to benefit from the financial support. AMCs are particularly useful in situations where it is clear which innovations are needed (for SPS compliance this means a pesticide against a particular pest or vaccination against a particular livestock disease), meaning technology provided is demand-driven, ensuring that there will be a substantially profitable market.

AMCs in agriculture, and specifically in SPS, operate on the basis of measurable indicators. Compliance with SPS standards is, therefore, an indicator of increased food safety and high quality production, which is mandatory to sustaining financial services. It is also an indicator of higher export capacity and increased profit margins. Above all, a desirable outcome of agricultural conditional lending may be improved storage facilities or safe pesticide control practices or higher yields.

In exploring how AMCs could be applied to agriculture, the AgResults Initiative was launched by Canada, the US, the UK and Australia together with the World Bank and the Bill & Melinda Gates Foundation. The Initiative committed over USD 110 million for testing pilot programmes in agriculture. By using the pull mechanisms, including AMCs, AgResults promotes the adoption of innovative technologies

with high-yield development impact. Specifically, these are intended to utilise the "pull" mechanism of AMCs to promote innovations that could increase yields, reduce post-harvest losses, improve livestock management and enhance nutrition. Some of the more SPS-relevant targeted innovations included using the "pull" mechanism to encourage the provision and use of tailored seeds and fertilisers and the development and use of cattle vaccines. In 2012 it was agreed that AgResults would begin implementing three pilot programmes: maize intervention in Kenya (on farm crop storage), introduction of Vitamin A in Zambia (Bio fortification) and Aflatoxin control in Nigeria (World Bank, 2012).

Case Study 11 Aflatoxin Control AMC Model

*The Nigeria Aflasafe™ Pilot launched by the AgResults Initiative focuses on incentivizing the use of Aflasafe™, a new biocontrol technology, by smallholder maize farmers. This new technology is an innovative technology for tackling aflatoxin contamination. It prevents its formation in crop fields by using *Aspergillus* fungi strains incapable of producing aflatoxin. This method ensures that post-harvest, during transport and storage, the crops remain safe. Although aflatoxin-controlling technologies have existed for decades, they have been widely underused due to various reasons including barriers to market. Also, due to the lack of enforcement of aflatoxin contamination regulation limits, there has been little incentive to invest in its control in Nigeria.*

Therefore, AgResults piloted a project in which economic incentives are provided to the farmers to use the new aflatoxin control technology, making it available through existing contract farming schemes. The project pilot provides economic incentives to smallholder farmers to use the new aflatoxin control technology through existing contract farming schemes. The buyers within these farming contracts (called here the "aggregators") are incentivised to provide Aflasafe™ to smallholder farmers, as this ensures that the crops the farmers later sell to them are healthy, aflatoxin-free and eligible for sale in downstream markets. In addition, this project also offers technical assistance, which helps farmers produce these new crops and increase their yields, with the expectation that the farmers will share their new knowledge with others in their respective communities. The aggregators receive per-unit payments for performance, which is measured by the number of kilograms of maize treated with the product. It is expected that in the long-run with the increased outputs, healthy crops and higher revenues, donor support can be phased out without compromising the continued use of the new technology

Source: Aflasafe & IITA, AgResults Pilot Challenge.

4.5 Development Impact Bonds

Initially, development impact bonds were created to enhance collaboration of development funders and service providers. Development impact bonds were pioneered in the public health sector through incentivised distribution of vaccination. Today there is a vision of applying DIB in agriculture. The DIB structure implies that the investor gains interest from the outcome funder upon the achievement of social results. The risk factor is transparent as the investor is free to evaluate desired outcomes and available innovative mechanisms. This form of impact investment has secured various performance-based contracts, hence structured monitoring and evaluation is involved at all stages of project implementation.

In agriculture, the DIB financial mechanism was first developed by the Department for International Development (DFID) of the UK with a goal to mitigate the Rhodesian Sleeping Sickness in Uganda. This zoonotic sickness is transferred to human, thus representing a serious risk of infection. To prevent the infestation and spread of the disease, livestock had to be exposed to effective control mechanisms. Previous deployment of treatment against the parasite in cattle wasn't sustainable and linearly structured, and interruptions in financial inflows weakened the fight against epidemics (CDG, 2013). The sickness imposes a burden on agriculture due to massive reductions in milk and meat production. DFID initiated the role of the up-front investor to implement the DIB framework and establish infrastructure to monitor and control the transmission of zoonotic sleeping sickness. The objective was thus set at reduction of parasite prevalence through massive treatment of the livestock. The mass treatment approach protects cattle from re-infestation, ensuring sustainable disease reduction across targeted districts. This broad-scale approach is feasible due to an up-front capital allocation instead of fragmented funding mechanisms. Also, DIB is associated with better monitoring of project activities as the investor is motivated to ensure expected social results. This model is highly applicable to objectives of SPS capacity building and specifically its animal and plant health components.

The limitations of this mechanism are explained by difficulties to find likely bodies to pay for outcomes within each performance-based contract. DIBs hold a long term structure and are unlikely to be cashable in the short term. Donor participation is necessary to leverage financial obligations under the performance-based contracts. Therefore, sustainability of DIB, where donors act as outcome funders, is uncertain.

4.6 Risk Management and Investment Prioritization Tool (SPS map)

Agriculture imposes greater challenges on investors trying to ensure the benefits of their efforts. Innovative financial resources grow and diversify, yet the supply is limited and usually applied in prioritized fields. Lenders avoid financing agriculture, as it is an inherently risky activity with significant constraints such as informational asymmetry, lack of collateral and unstable natural conditions. However, economic research points to extreme price volatility and uncontrolled production as to the main barriers to credit. While commodity prices are susceptible to fluctuations because of globalization and interconnected markets, agri-production is mostly affected by insufficient agriculture practices as well as SPS-related risks. Therefore, systematic and robust SPS measures have a direct impact on the credit-worthiness of actors along the agriculture value chain.

SPS-related risks are encountered on production, post-harvest and market levels. On a production level, agriculture outputs are endangered by pest use and plant/animal diseases. The post-harvest and commercialization stage faces the risk of contamination of seeds or products. Market dimensions includes the risk of restrictive border procedures and assessment controls. These risks should be mitigated at all levels through capacity building activities that ought to be strategically crafted and prioritized. If commercial lending is not backed up by additional guarantee mechanisms (e.g. warehouse receipts, livestock, insurance) to support robust risk transfer, agriculture finance will keep lagging behind.

Numerous gaps in SPS capacity building require efficient application of resources. State institutions tend not to engage in agriculture finance

because of absent strategic planning and a high risk of resource losses. Prioritisation of the SPS-related component not only increases public, animal and plant health but also increases competitiveness of agricultural commodities and improves the wellbeing of outgrowers. Multi-criteria decision analysis (MCDA) has already been successfully applied to guide investment on most perspective and financially viable SPS needs. Measurable outputs reflecting on multiple criteria, such as trade costs, social impact, value chain potential, economic viability etc., are decoded into graphs. This tool provides quantitative evidence in relation to a change in the value of exports or trade diversification brought by a specific SPS-investment.

A structured approach to establish investment priorities in agriculture is often constrained in the developing world because of insufficient data. The MCDA approach, on the other hand, produces a set of priorities in SPS systems that will generate maximum gains from improved export capacity even with limited variables and statistics.

5. Regional Level

5.1 Regional Agriculture Fund

As the scale and depth of individual markets is limited, stronger regional integration can improve access to innovative financial services. Multifunctional regional trade in agriculture products is a solution to resist volatile prices on food and overcome extensive trade barriers. The Food Security Task Force has come up with a model of a Regional Fund aimed to scale up innovative finance in agriculture and trade-related processes. The Regional Fund is an innovative approach to facilitate resources and create incentives on both the private and public levels. The model is a pilot project, and though it hasn't been implemented on the ground yet, the rationale represents a promising tool to facilitate the distribution of innovative financial mechanisms (CDG, 2013). The Fund's objective is to centralise private and public resources and utilise them to finance credit, guarantees, training and technical assistance, subsidies for quality inputs and more. Additionally, the Fund

could operate as a learning platform to share successfully implemented innovative financial schemes among regional partners.

The regional approach is not novel in the context of SPS systems. Existing regional SPS policy frameworks are targeted at reducing discrepancies within the SPS Agreement among regional member states. The modality of regional SPS frameworks can be tackled in the Regional Agriculture Fund to ensure access to finance for practical implementation of SPS requirements. Streamlining SPS requirements on a regional level is one of the most effective mechanisms to increase market integration and help eliminate the red tape in trade transactions. Harmonization of SPS standards leads to measurable gains for regional trading communities. It also encourages sharing infrastructure and expertise and provides capacity building programs across all levels of value chains. Capacity building programs targeted at the SPS measures are often most efficient when implemented at the regional level. Initiatives such as laboratories for reference testing, record-keeping activities to access previous scientific investigations as well as surveillance of pest and diseases accelerate harmonization and regulation of the SPS matters (ITC, 2002). It is important to harmonize financial capacity to implement and reinforce SPS measures among regional members. This goal can be achieved through the Regional Fund's model and its capacity to diversify financial resources in a structured and inclusive way.

Why do regional SPS frameworks require guaranteed funding? Regional integration is resource-demanding being exposed to a number of persistent bottlenecks. Consignments that lack conformity with an importer's standards constantly result in detentions and consequent losses for trading communities. Even the most regionalised developing parts of the world (e.g. Africa) are confronted with insufficient systems of mutual recognition of testing, burdensome certification and inspection, unsound border control and laboratory and upstream services that add considerably to the transaction costs of regional trade. Moreover, diversion of budgets and different financial allocations of regional

member states might impede the goal of harmonization of standards because of inevitable additional costs. However, the cost-benefit analysis of regionalisation with a goal to enhance national value chains while strengthening national SPS systems indicates financial viability of this approach. Once a national SPS capacity building plan is integrated into the strategy of the Regional Fund, market turbulence and price hikes on quality inputs are less likely to occur (Fleischer, 2012). Surveillance of compliance with international standards and SPS measures will be facilitated on a more transparent and multilateral level.

Structure of the Regional Fund

Banks

Commercial banks willing to partner with the Fund are granted access to the Guarantee Fund that will secure repayment of credits acquired by small-scale producers, farmer cooperatives and agri-businesses.

Financial Intermediaries

Financial intermediaries protect stakeholders from information asymmetries and identify promising opportunities to generate social and financial returns. For example, aggregated farmer groups are associated with a lower risk factor and therefore benefit from more flexible loan terms and repayment frequencies. A profound market analysis, as well as a good comprehension of national legislative systems and national strategies, will ensure the highest liquidity in agriculture markets.

Governments

A coordinated effort of public sector entities is essential to interconnect all stakeholders of the fund and create an adequate regulatory environment for a more efficient facilitation of public goods and financial services. States should commit to enabling legal instruments for implementing financial and insurance schemes. The regional framework ensures linkages between financial intermediaries and officers of ministries of agriculture and trade that possess technical information. For example, information on cost production, total exports, certification requirements and licensing procedures can be shared with investors to help them customize credit schemes and develop tailored technical assistance.

Donors

Donor organization may or may not support the agriculture investment strategy in a certain region. The portfolio of investment of the Regional Agriculture Fund targets both financial returns and development impact. If a donor pursues similar development objectives in agriculture development, capital allocated in the Regional Funds has the potential for maximum efficiency.

Farmers

Whereas small scale producers are not capable of providing financial contributions, they offer valuable in-kind investment and expertise on specific agri-value chains. Producers also report on existing challenges in production and commercialization and request tailored capacity building activities that often include an SPS component.

Strengths and weaknesses

A regional fund framework is a useful tool to overcome countries' weaknesses in enabling positive environments for financial infrastructure, it identifies priorities in agriculture-directed investment and helps enumerate actions under development of each financial scheme.

The main limitation is that the model and design of the regional fund is implied on theoretical merits. Clear, comprehensive and credible performance information is at the core of cross-sectoral cooperation. There are a number of national and regional initiatives that are implemented within the proposed "Agriculture Fund" framework, but the principle benchmark is yet to be developed. Another challenge associated with the regional model is a need for large up-front ("start-up") contributions in the form of ODA. These contributions allow the project to take off and engage private investors to facilitate stable financial flows. In the context of financial performance, little is known about the long term profitability and financial sustainability of such multi-stakeholder funds. However, a well-functioning institutional framework is the backbone of a market-friendly environment for private investors and a key to mitigating the risks of financial default.

Case Study 12 COMESA Regional Model

COMESA is actively working on harmonisation of SPS standards in sub Saharan Africa, integrating institutional frameworks and quality infrastructure development. There is a strong need to develop market-oriented agriculture businesses by means of value-adding initiatives. To contribute to the goal of African regionalisation, the African Agriculture Fund was launched with a budget of \$300 million jointly contributed by a \$300 million fund supported by the African Development Bank, Agence Française de Développement, Alliance for a Green

Revolution in Africa, Banque Ouest Africaine de Développement, Ecowas Bank and IFAD. Apart from credit services to agriculture businesses, the Fund implemented a technical assistance facility responsible for conducting feasibility studies of agriculture investment trends and also providing technical training for farmer associations and SMEs on GAP to improve food safety and market access.

Source: Meyer, 2011, Africa Can Feed Africa, World Bank.

6. Recommendations for Scaling Up Innovative Finance in Agriculture

- Promote multilateral forums for participation of large agribusiness corporations, policy-makers and representatives of donor organisations to come up with strategies to attract private finance and link agriculture value chains to financial services.
- Customize capacity building programs to both farmers and financial institutions to ensure the optimality of financial services portfolio.
- Raise awareness of national standards setting bodies and ministries responsible for strengthening national SPS systems on existing financial frameworks in agriculture and their capacity to finance SPS-related procedures along the value chain.
- Revitalize the regulatory environment to enhance the portfolio of legally approved financial mechanisms extending them, inter alia, to innovative schemes.
- Ensure SPS-related investment initiatives produce no unfair competition and/or market distorting effects (intensive monitoring and evaluation framework is one of the solutions).
- Encourage farmer cooperatives and producer groups to strengthen their borrower capacities.
- Come up with unconventional and creative forms of credit distribution to lower transaction costs (implies cooperation among VC stakeholders).
- Combine financial services and technical assistance services, especially GAP and training on meeting exportation requirements, and encourage investment in sustainable production methods.
- Link customer segmentation to customized financial products, services and distribution channels to maximize efficiency.
- Outline socio-economic benefits, improvements in the balance of trade and foreign currency reserves to policymakers setting priorities in resource allocation in the SPS area.
- Solicit national legal, scientific and technical assistance to strengthen private and public financial channels.
- Train farmers on how to forge better links with agricultural buyers and export organisations to meet the revenue expectations they set at the planting stage (apply integrated value chain strategies).
- Encourage dissemination of information on export market requirements, regulations and demand-driven capacity building initiatives to further strengthen financial institutions.

7. Conclusions

The allocation of financial services in SPS capacity-building needs and achieving the goal of improving national food safety and agri-food export performance is not an easy task. Domestic economic and social policy objectives to enhance SPS capacity are constrained by insufficient public resources and diminishing ODA. Current trends in agriculture finance are focused on alternative sources. Social lenders, commercial banks and corporate private investors represent the new mechanism to scale up access to agriculture finance and SPS compliance needs in particular. Innovative financial mechanisms are largely based on private financial resources moving away from the traditional bilateral and multilateral financial agreements.

Innovative finance should be allocated to SPS compliance needs for a number of reasons. The most important objective though is to minimize the risk of market distorting effects of SPS measures and enhance producers' capacity to

understand and implement science-based international standards. Challenges in establishing strong SPS systems are not solely caused by inadequate policy-making but also by simple lack of resources. Resource constraints include shortages on the supply side (quality inputs), poor infrastructure and logistics (on-farm storage facilities, improved drying and processing technologies) and insufficient training and education (absence of GAP). At a larger scale, poor finance infrastructure in agriculture is aggravated by the lack of institutional incentives to pursue innovative schemes.

Therefore, key obstacles behind the allocation of finance in agriculture are generated on a public-private level and can be summarised as follows:

- Limited understanding of innovative financial business models and various constraints on the institutional level
- Complex risk portfolio because of socio-economic, environmental and political risks in agriculture
- Alternative forms of collateral stay limited and require an appropriate legislative system
- Financial institutions lack access to long term funds - socially responsible investments are typically short term
- Institutional capacity to categorize and mitigate risks stays low, as financial products and services are rarely analyzed with regards to the crop cycle
- Complexity of the transition from subsistence farming to entrepreneurial and commercial agri-production
- Farmers face significant information asymmetries

In the meantime, a number of studies and national case stories have confirmed the fact that a bundle of agriculture-related innovative financial mechanisms and training programs has the potential to propel the efficiency of SPS systems in a holistic manner. These services can be allocated on a value chain, national and regional levels and structured as short term or long term investments targeted at individual or collective recipients. What matters is the potential to

enhance exportation of agrifood produce and enable farmers to improve their productivity and their own investment in agriculture processes.

This research demonstrated that innovative finance is not an exclusive singular process but rather an integrated framework shaped by various external factors including extension services, regulatory conditions and market requirements. First, social and economic outcomes of a well-functioning SPS system are proven to be maximized through various technical trainings and capacity building programs on the use of both agriculture practices and financial services. This added-value component to the investment scheme is what makes finance work. Secondly, categorization of risks and prioritization of investment linked to the most viable SPS areas reduce the uncertainty of investors and solve the persistent problem of information asymmetries in agriculture markets. Lastly, enabling regulatory environments ensures transparency in the allocation of funds while streamlining financial opportunities for front runners in agriculture production.

A key finding is that SPS compliance is a vital part of agriculture financial systems. Strict customer preferences on food products in developed countries reinforces a need to comply with international food safety standards within exporting developing countries. On the other hand, animal and plant health as well as food safety should be national priorities in trade and agriculture strategies. While the cost of compliance with SPS measures varies among sizes of farm holding and existing government regulations, it is an indispensable trade obligation and has to be financed accordingly.

Finally, it is important to note that the role of private investment is still complimentary to the public funding and ODA. Nevertheless, governments around the world are actively engaged in harnessing the participation of the private sector in developing innovative financial products in the agri-sector. In this regard, donors' financial support and strategic advice is a way to leverage private resources and strengthen channels for their outreach to the most financially marginalized farmer communities.

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