Introduction

Investments in modernizing agricultural value chains are necessary to secure food availability, but farmers are sometimes constrained in their capacity to invest due to their limited access to finance. This is often mentioned as an important bottleneck in the development of small and medium commercial family farms (SMCFFs) in the aquaculture, horticulture, and dairy sectors in Kenya.

This brief considers access to finance specifically for farmers in these three sectors. It aims to provide insights about this topic and recommendations on how to improve access to finance for SMCFFs.

By the term 'finance', we mean the various financial mechanisms that enable short-term and long-term business investments, including savings, informal loans, formal credit and in-kind services. We look beyond ways of gaining access to credit and take into account alternative investment mechanisms, including those that are less cash-intensive or that lower the demand for cash.

The brief provides recommendations for how to improve access to finance for SMCFFs in Kenya as a means to stimulate business investments in the aquaculture, horticulture and dairy sectors. The recommendations are based on an analysis of demand for finance, existing supply of financial services and the gaps between demand and supply. This brief is based on a combination of literature review and interviews with experts working in the field.

Figure 1: Key questions to explore demand, supply and gap with regard to financial services

1. Demand for finance: Why do small and medium-sized family farms need finance? What type of finance do they need?

To provide a good understanding of the demand for finance, this brief first investigates the investment needs of SMCFFs, some important investment mechanisms and the reluctance of farmers to take on these financial obligations.

a. Investment needs: Equipment and inputs

In general, farmers need finance to meet two business needs:

- **Equipment**: Farmers who are at the tipping point from non-commercial to commercial farming need finance to invest in equipment. These are typically long-term (multiple years) investments for large amounts (thousands of euros). Examples are hardware investments in:
  a. the horticulture sector: constructing an irrigation system; building a greenhouse. The type of investment depends on the type of crop.
  b. the aquaculture sector: creating ponds.
  c. the dairy sector: building stables, buying machinery and cows.

- **Inputs**: Farmers who use high-quality production methods need more capital-intensive inputs; for example, feed is an important cash need for dairy farmers. Production cycles, and thus the need for finance, vary per sector and depend on the specific product and production method. Farmers in horticulture and aquaculture need these inputs throughout the production cycle and can pay back the credit after harvest. Dairy farmers typically receive monthly payments, but their production occurs daily. Examples are inputs in:
  a. the horticulture sector: quality seeds (5–8% of production costs); fertilizer. Production cycles are 45–90 days.
  b. the aquaculture sector: quality feed (80% of production costs) and fingerlings, pond maintenance. Production cycles are 6–12 months in commercial farms.
  c. the dairy sector: quality feed (60% of production costs); veterinarian costs.

b. Current investment mechanisms

Farmers use different investment mechanisms, including:

1) **Peer-to-peer, in-kind investments**: Mutual labour assistance is a well-known strategy used to limit cash expenses. People work on each other’s farms, assisting with labour investments such as digging water pans or fish ponds.
2) Personal resources. This also includes investments from people in the personal network: family, friends and close business associates. Personal resources can come from non-farm employment or income of other crops, personal savings, money from friends and family abroad or retirement pensions. Personal resources are used particularly for smaller investment amounts and for investments that are difficult to fund via credit providers due to, for example, higher risks. Furthermore, people are more willing to risk their own resources than to take on external financial obligations and bear the risk of being unable to pay them back (van der Lee, 13 March 2018. Lead of dairy sector 3R Kenya, pers. comm.). Investments from people within the personal network often become equity or part ownership instead of a debt (Waari and Mwangi, 2015).

3) Value chain financing: Value chain actors can enable investments in two ways:

a. Through supplying inputs, services and/or hardware on credit: In the horticulture sector, there are examples of traders who provide seeds and deduct the costs from the payment of the harvest. In aquaculture, there are examples of feed suppliers arranging payment after harvest. Dairy cooperatives and dairy processors supply inputs and services on credit, which is deducted from the monthly payment. International companies mainly provide this type of investment, making it available to the farmers who have a track record with the company involved, as it requires trust between the farmer and value chain actor.

b. Through improving payment conditions: In the dairy sector, advance payments are commonly paid by informal brokers before the final bill is settled or sometimes before the product (raw milk) is even delivered. In the formal economy, there are examples where retailers and cooperatives arrange overdrafts with the bank, enabling a quicker payment to farmers and improving the farmers’ cash flow. Another example is invoice discounting offered by banks to farmers, where farmers can show the bank the delivery invoices and the bank will pay a cash advance that is repaid after the milk buyer pays the bill.

4) Debt capital sources: A minority of farmers use cash loans from informal and formal actors (Waari and Mwangi, 2015). A recent 3R study of 262 horticulture farms (all sizes), found that 54% of the farmers reported a need for credit. Of those in need of credit, 72% actually applied for it, and 77% of these applications were successful (Koomen and Gema, 2018). The Kenya Financial Sector Deepening (FSD) programme (Fintrac, 2017) estimated that 9% of rural Kenyans have access to informal sources of finance. Access to formal debt capital services depends on the availability of some form of security that the debt will be repaid, such as collateral and proven profitability. As a result, in some geographical areas, farmers have better access to debt capital sources than others. These areas tend to be aligned to the geographical production hotspots, where the sectors are most developed in terms of number of farmers, farm specialization, access to market and infrastructure. As a result, not only the access to formal debt capital services, but also the use of these services is not evenly distributed over the country. Quagrainie et al. (2009), for example, analysed that fish farmers in the Western province have 19% more probability of using credit facilities than fish farmers in provinces such as the Rift Valley and Central and Eastern provinces.

Figure 2 shows the geographical production hotspots for dairy, aquaculture and fruits. No information has been found on the specific geographical production hotspots for vegetables. FSD Kenya (2009:60) says that “with respect to concentration of clients, the vegetable value chain is highly concentrated around ... not more than five urban areas.” However, which urban areas are involved and to what extent these demand hotspots are aligned with production hotspots is unknown. The limited information on horticultural hotspots might be due to the large variation in crops, resulting in various production hotspots for different crops.

c. Existing reluctance to take on financial obligations

Not all farmers need extra financial resources. The horticulture sector study of 262 farmers indicated that 23% have no cash constraint. Another 12% said they are not interested in credit, mainly due to the high interest rate or the lack of known sources of credit (Koomen and Gema, 2018).

No cash constraints

It is remarkable that this relatively high percentage say they are not cash constrained. We did not find an explanation for this but suspect that it is correlated with low-cost production methods and continued capacity to produce. Low-cost methods significantly limit yield (van der Lee, 13 March 2018. Lead of dairy sector 3R Kenya, pers. comm. Gema, 20 March 2018. Expert of horticulture sector 3R Kenya, pers. comm. Obwanga, 22 March 2018. Expert aquaculture sector 3R Kenya, pers. comm. More detailed understanding is not available at this time.

Not willing to have financial obligations

Experts from the various sectors mentioned farmers being reluctant to take on financial obligations. As Joyce Gema (20 March 2018, expert of horticulture sector 3R Kenya, pers. comm.) said: ‘Small and medium-sized farmers do not have the luxury to take risks, and credit is a risk’.

An important risk for farmers is related to market uncertainties. In the horticulture sector, farmers do not know at the start of the production season what revenue they will make at the end of the season. Sales contracts are often not respected from both sides, as both farmers and buyers look for the best deal for a specific harvest.

Need for a clear business case for investments

Getting detailed insights into the business case for specific investments can help farmers in the decision-making process. These business cases should include the cost of capital so farmers can identify the feasible maximum interest rate and finance mix.

These business cases are not yet available. Various studies have looked into aspects of the business opportunities of, especially, fish farming, including market potential (e.g. Rothuis et al., 2011) and product development, including a cost–benefit analysis based on product prices and sales prices (Kyule et al., 2014).
Figure 2: Production Hotspots for Aquaculture, Dairy and Fruits

The HortIMPACT project also works with business cases, focusing on the impact of specific technologies at farm level. No (model) calculations were found about the business case of typical investments, for example what their investment costs, payback time or internal rate of return are, let alone calculations that include the weighted average cost of capital to allow a calculation of the economic value added.

When the lifespan of an investment increases, it becomes more important to take into account systemic effects, including the inflation rate, business cycle, competitiveness and prospected market growth. The development of these business cases is important so that both farmers and banks can evaluate the business sense of the investment.

2. Supply of finance for agribusiness

The supply side focuses on the financial services available to the three sectors, as provided by financial institutions and value chain actors in Kenya. Some of these services are part of the classical standing offer of finance; others are more innovative.

a. Progress with financial inclusion, but little impact on finance for the real economy

Kenya has made enormous progress in the last 15 years in terms of financial inclusion. The number of Kenyans using some form of financial service has increased from about 27% in 2006 to over 75% in 2016 (FSD Kenya, 2017). Mobile money (M-Pesa) has been the main driver of this development: over 70% of Kenyans now have a mobile money account, and the number of bank accounts has increased since linkages between bank accounts and mobile money have been made possible (e.g. M-Shwari). Given this general increase in accessibility of the financial system, the strategy of the national financial sector development program, FSD Kenya, has changed. It now focuses more on the usefulness of financial services, their affordability and the trust between banks and their clients. FSD Kenya applies a Markets for the Poor (M4P) approach (Gibson, 2016), which aims to solve systemic constraints and enable larger scale sustainable changes.

Notwithstanding the boom in financial sector development in Kenya, efforts of FSD and other programmes to stimulate lending for the agricultural sector have been less successful. The impact assessment of FSD Kenya in 2016 (Gibson, 2016, p.23) is quite critical about this: ‘The [value chain finance] project failed to gain traction and achieved limited learning ... With the USAID project shifting their focus to other activities, FSD Kenya was left unable to deliver this technically-challenging task ... [Also] agriculture wasn’t really a major priority for most finance providers’.

b. Supply of finance for agriculture and agribusiness

Kenyan agribusiness has some typical characteristics in financial terms: ‘non-uniform cash flows, rural bias, poorly capitalized and widely dispersed producers, seasonal cash flows, price and market risks [mean that it] differs substantially from businesses conventionally supported by traditional finance and microfinance.’ (FSD Kenya, 2009: 2).

Still, some banks and microfinance institutions are more active in agriculture and agribusiness than others, for example:
- banks: Equity Bank, Family Bank, Cooperative Bank, KCB Bank
Several local banks and microfinance banks offer a range of specific and diversified loan packages targeting agriculture and agribusiness, such as:

- Equity Bank (with specific loan products for group loans, farm inputs, farm development, agricultural equipment, money transfer from family and friends abroad for agriculture, agribusiness, commercial agriculture)
- Family Bank (specific loan products for biogas, commercial crops, contract growers, dairy, grains trading, productivity investments)
- KWFT – with a focus on families, mainly women – has specific loan products for greenhouse farming, horticulture, cereal business, poultry farming, fish farming, dairy farming, agri-asset financing (equipment) and apiculture. In dairy, KWFT adopts a comprehensive financing approach, combining financing for high-quality inputs with technical support (agripreneurship, agrotechnical support, value chain linkages) and attention to household cash flow and risk management (KWFT, 2015)
- Rafiki Microfinance Bank: offers micro, small and medium-sized loan packages for farmers (loans up to KSh 100K, 300K and 35M respectively). Another loan product offers advances for farmers or farmer groups who deliver to a milk processor.

Most of these credit products are for individual farmers, but the microfinance banks also offer group-lending products.

In addition, the Kenyan government offers several targeted funds: Agricultural Finance Corporation (AFC) (www.agrifinance.org), Women Enterprise Fund (www.wef.co.ke) and Youth Enterprise Development Fund (www.youthfund.co.ke). The AFC finances farmers directly, whereas the WEF and YEDF work via banks and microfinance institutions.

c. How do financial institutions assess the financing potential of agricultural value chains?

Financiers will only do value chain financing if they consider the value chain investable. In 2009, a study by FSD and USAID-KARF (Kenya Access to Rural Finance) analysed a series of agricultural value chains and systematically assessed their potential for increased value chain financing. Regarding the three subsectors of interest to the 3R project, the conclusions of the study were:

- The fruits value chain (as part of the horticulture sector) is developing rapidly in both the domestic and export markets. Further, it has low entry costs for producers and is of interest at all levels of banking. Some bankers expressed interest in financing producers if the market could be locked in (with secured offtake contracts), while other bankers expressed interest in large-scale financing of concentrated producers and exporters. USAID-KARF had already had good experiences in financing the export market for avocados, their products and their by-products.
- The vegetables value chain (as part of the horticulture sector) was considered more difficult to finance. At the time of the USAID-KARF study, the vegetables value chain had demonstrated quick development: large exports of fresh vegetables and a growing urban market. Relative to some other value chains, there are large numbers of producers. However, the input supply for vegetables was considered weak, and the prices had been falling in offtake markets. While the local chain with supermarkets was developing well, the majority of the value added seemed to be captured by the retailer not the producer. This does not offer good opportunities for a commercialized producer who might have other options available, nor for a lender to support a producer.
- Fish encompasses both aquaculture and export; it is a well-developed value chain in that relationships between and among buyers and sellers are sophisticated and in that it has large numbers of producers, processors and exporters. This sector enables many Kenyans to earn positive returns on their activity and is of great interest to lenders, given the government policy to promote aquaculture.
- Dairy is a key opportunity for expanding value chain financing in rural Kenya. Like fish, it gainfully employs many Kenyans; is a well-developed and functioning value chain; and is of great interest to lenders, because of its organization in clusters with collection and processing, and investable financing opportunities. (FSD Kenya, 2009)

In Annex 1 to this brief we present detailed information from the FSD Kenya 2009 study about the services of the interviewed banks and their expectations for financing these sectors.

3. Gaps between demand and supply: Bottlenecks, success factors and innovations in investment and access to finance

In this section we first summarize the bottlenecks and gaps in access to finance, from both the demand and the supply perspectives. Then we highlight some success factors that characterize well-performing finance initiatives. Finally, we present some initiatives for innovation that try to address the bottlenecks and build on the success factors.

a. Bottlenecks experienced in investments and access to finance

The bottlenecks for finance can be divided into demand bottlenecks and supply bottlenecks.

- Demand-side bottlenecks (related to farmers, their needs and their constraints)
  - Reluctant attitude of farmers towards capital-intensive investments and towards borrowing for such investments due to, for example, irregular income streams, entrepreneurial style, uncertain investment outcome and the high interest rates that make it difficult to fulfil payment obligations.
  - Lack of collateral (guarantees) to gain access to credit: farmers needing credit do not always have the land titles needed as security for the lender. Limited financial literacy results in a lack of traceable records of financial farm results. Farming assets are often not recognized as collateral.

---

1 Note that this is in contrast with various other sources (e.g. Ngugi et al., 2009; Rothuis et al., 2011). Furthermore, Arie van Duijn and Benson Obwanga both mentioned in their report that the Kenyan aquacultural sector is in an early development phase and is relatively undeveloped compared to the horticulture and dairy sectors (van Duijn A. and Obwanga B. 13 March 2018. Lead and expert of aquaculture sector 3R Kenya, pers. comm.)
**Bottlenecks and challenges for financing investments**

**DEMAND SIDE**

- Lack of familiarity with existing financial products: farmers are not always familiar with the specific products offered by financial institutions, nor with the language and practices of the financial institutions. Likewise, not all financial institutions understand the practices of the farmer.

- Quality of inputs: the inputs (feed, fingerlings, seeds, pest control, fertilizer) provided by value chain actors are not always of good quality, nor adapted to local circumstances. This affects the profitability of the investments, and thus the repayment capacity.

- Sector-specific bottlenecks:
  - Horticulture: Lack of trust between financial institutions and farmers, and between farmers and buyers. This has been caused by contracts not being respected, which is partly due to the difficulties in complying with continuous quality supply.
  - Aquaculture: the sector faces competition from (Chinese) imports; local market channels are underdeveloped due to recent development of the sector.
  - Dairy: high traction of the informal sector (over 80% of farmers sell their milk partly in the informal sector), problems of cooperatives not offering a good deal to farmers. Various options exist to improve this, as has been shown for example by Githunguri and Meru Dairy Central (Van der Lee, personal communication 2018). However, identifying and exploiting opportunities requires business insights and management capacities that cooperatives often struggle to attract. Payment conditions between supermarkets, dairy processors, cooperatives and farmers are often not favourable for farmers; farmers are actually financing the value chain. Is there an option for overdrafts and/or invoice discounting, and who pays the fees? In summary, demand-side bottlenecks in the input and product markets call attention to the value chain as a whole. They constitute risks for farmers’ and agribusinesses’ investments in modernization. At the same time, they represent business opportunities for those farmers and agribusinesses that find effective solutions to these bottlenecks. All value chain actors need to professionalize to improve their cash flow and to exploit investment opportunities in the sector.

**SUPPLY SIDE**

- Reluctance towards official loans due to insure market position
  - Mix of formal and informal sales makes financial track record complicated
  - Lack of credit/mixed in business case
  - Lack of land titles and financial literacy
  - Lack of familiarity with existing financial products
  - Questionable business case of value chain financing related to input quality

- Relatively large investments at the tipping point from non-commercial to commercial farming (construction of irrigation system, greenhouse, etc)
- Variation in production cycle per crop
- Quality feed consists of 80% of production costs
- Sector still in infancy; not many successful investment examples
- Variation in production cycle per method and fish type
- Relatively large investments needed for growth (cows, stable, machinery, etc)
- Quality feed is large, monthly expense
- Payment delays from retail and processors, increase working capital need for farmers.

- Vegetables: buyer credit/trade finance/working capital is available in the export chain and the supermarket-outgrower chain. Outside these chains, only informal and microfinance is available
- Investment finance is hard to get.
- Experiences with payment failures in aquaculture. No focused financial product available, except buy credit (and trade and asset finance for larger value chain actors). Developing this requires geographical concentration, and analysis of feasible investment projects.
- The dairy VC is relatively better organized, with several aggregators along the chain (commercialized producers, private buyers, transporters, cooperatives, processors, terminal market dealers) and daily transactions. This makes the dairy value chain attractive for lenders.

- Supply-side bottlenecks (related to financial institutions, their needs and constraints)

  - Risk of lending to farmers, due to farmers’ lumpy and irregular income streams, poor productivity, outmoded agricultural practices and seasonal crop cycle. Part of this is a real existing risk, and part is actually perceived risk, which could be reduced by increasing knowledge and understanding among lenders and investors about agriculture and smallholder needs and potential (Hong and Hanson, 2016), and about business cases of various investments.

- Financial products do not always match with sector-specific realities and demand. For example, credit products for short-term loans do not always have their disbursement and repayment schedules adapted to the specific production cycle of the crops. For longer term investments – with longer payback periods and larger investment sizes – farmers are sometimes reluctant to incur these debts, as they prefer short time horizons. In addition, financing for such bulky investments is often difficult to get because financial institutions also have short time horizons or do not always have long-term resources to finance such loans.

---

2 These solutions are variants of supply chain finance, as offered for instance by the FACTS fund, a spin-off of the F4A programme.
o **Lack of intrinsic commitment** – and incentives for – the banking sector to increase lending to the real economy, such as to agriculture and small to medium-sized enterprises (FSD Kenya, 2016). The share of lending to agriculture has significantly decreased in the period 2000–2012, and FSD’s activities to promote value chain finance in the period 2009–2015 have not been very successful. The boom in financial inclusion, including mobile money, has helped people to manage their financial lives better, but the effects on improved production and incomes are less evident (FSD Kenya, 2016).

o **Lack of aggregation points**: the horticulture sector is quite fragmented, with each vegetable representing a different market, and few processing facilities. The aggregation points are more on the inputs side (seeds, fertilizer and pesticides, irrigation equipment), and less at the side of the offtakers market. It is a similar case for aquaculture, except that the market is less developed and competition from imports is strong.

Dairy is a better organized sector, with a certain scale and geographica ( clustering around aggregators – milk collection cooperatives and private milk processing factories – where fresh milk is collected and processed.

o **Lack of concessional portfolio capital** specifically for agricultural credit (Hong and Hanson, 2016). Such concessional capital – at lower interest rates and softer conditions than commercial capital – has contributed enormously to the growth of microfinance in the previous decade. Well-structured concessional capital that benefited financial institutions as well as farmers would boost agricultural finance. The concessional element can lie in the duration (long-term capital), and in other capital conditions (interest, collateral, allowance for seasonal fluctuations in agriculture). The renewed interest for ‘blended finance’ (combining commercial and non-commercial finance) could be a solution path for this bottleneck.

b. **Success factors for investments and access to finance**

From the analysis of successful finance initiatives for farmers and agribusinesses, a series of success factors can be extracted. Annex 2 provides an overview of finance initiatives. Some of these initiatives are or were supported by the Dutch government, including the Finance for Agriculture (F4A) programme and the Equity Group Foundation. These success factors can be used as ways to resolve the most important bottlenecks described above.

- Successful finance initiatives create value at the demand side (for the farmers) and the supply side (financial institutions) of the financial chain. In other words, they are useful and affordable for the farmers and agribusinesses as well as being attractive for the financial service providers because they de-risk their portfolio at an affordable cost and an attractive scale. Some recent initiatives might conflict with this principle: for example, the interest rate ceiling agreed by the government might be beneficial to the clients, but it may reduce the incentives for the banks to lend to the real economy (FSD Kenya, 2016).

- **Client-responsiveness**: Successful finance initiatives are based on market research among the farmers that finds out what they need, and on a good understanding of the markets and value chains in which they operate. They offer farmers finance solutions that are easy to work with, useful and affordable. Flexibility in the credit scheme – for example by adjusting repayment schedules to the crop cycle – increases the uptake of agricultural financial products.

- **Aggregators** that cluster individual farmers into larger portfolios are crucial as intermediaries in the financial chain. They can channel services to farmers who are too far away or too small to be serviced directly. Examples of such aggregators are agrodealers, mobile phone companies, farmers’ organizations and cooperatives, bank agents, traders and processors. They create scale in the transactions and their outreach, as well as trust between the parties involved and the farmers. For the physical transactions – such as input delivery – aggregators should have a well-ramified distribution network in the countryside. This also implies that value chains with many strong aggregators (like dairy) are easier to finance than value chains without such aggregators.

- **Partnerships** between financial institutions, value chain actors and other organizations are often needed to bundle services that resolve interlinked bottlenecks for the farmer. For example, in DigiFarm, Safaricom collaborates with an agrodealer network, an NGO and a learning platform. Similar configurations can be found in the FSD Smallholder Finance initiative and in Equity Group Foundation’s project with EKN.

- The power of digital technology – combining mobile platforms (M-Pesa) and big data processing – creates opportunities for new solutions that were unreachable before. They can also scale up very quickly. Digital technology can also be used to quickly assess whether a potential client is creditworthy. Examples are DigiFarm, Agri-Wallet and One Acre Fund.

- Agricultural financing can be de-risked by addressing individual risks (credit risk assessment, linkages to market) as well as systemic risks (insurance, accepting movable collateral). It requires banks and financial institutions that have affinity with agriculture. Value chain financing – financing interlinked processes from farm to consumer – increases efficiency and reduces lending risk.

- **Financial literacy** increases lending efficiency and reduces default rates (Equity Group Foundation, 2016).

c. **Some efforts to innovate in agricultural finance**

Since 2013, several efforts have been made to innovate the supply of financial mechanisms for agriculture in Kenya. These initiatives try to resolve known bottlenecks in agricultural finance, while building on the known success factors. We see two types of innovation: the first is initiated by financial institutions, the second by value chain actors. In Figure 4, we show how each of these initiatives is positioned, some more in the upper segments of the farmer pyramid, and some more in the lower segments.
Figure 4: Finance for agriculture: innovations through the financial chain and the product value chain

The first type of innovation is led by financial institutions that aspire to offer better and more adapted products to agriculture. The initiatives are described in more detail in Annex 2, but in the text below we highlight the key ingredients of the innovations.

- **Capacity building and organization of farmers**
  Examples: Equity Group Foundation, KWFT Dairy initiative, F4A/SCOPEInsight (see Annex 2 for details of each programme).

  In these initiatives, the goal is to make the farmers more investable for the financial institutions. Farmers are trained in farm practices and business skills. They are organized into groups and clusters, to make training more efficient but also to enable easier access to credit. In addition, a rating tool (SCOPEInsight) is applied to assess the creditworthiness of agribusiness and producer organizations: the ratings help to orient the capacity building to the producer organizations and help the financial institutions get insight into their businesses.

  Capacity building and organization of farmers are not the innovative components: the innovation is that the financial institution is leading this process. The critical eye of the investors increases the chances that the capacity building will lead to investable business cases.

- **Designing more specific financial products for farmers and agribusinesses**
  Examples: Equity Group Foundation, F4A/Financial Access (see Annex 2 for details of each programme).

  In these initiatives, the financial institutions change their product offer to make it more useful, accessible and/or affordable for the farmers. The banks customize their credit conditions to the specific cash flows and markets of the crops, and the credit becomes more useful, thus more profitable and less risky for the farmers. This improved credit product also performs better for the banks, because the risk of payment problems is reduced and the product attracts more clients for the bank.

- **Attracting investors to agribusiness**
  Examples: F4A, Agri-SME funds (see Annex 2 for details of each programme).

  In these initiatives, specific investment funds for agribusiness are set up that aim to provide specialized finance for agribusinesses and attract investors into that type of portfolio.

- **Organizing networks and market places**
  Examples: F4A (see Annex 2 for details of the programme).

  In these initiatives, investors and farmers/ agribusinesses are brought together to become more acquainted with each other, to make the market for agri-finance more transparent for the farmers and agribusinesses, and to make the agri-investment opportunities more accessible for the investors. Such initiatives often include investor fairs, online platforms, events, conferences and innovation awards.

The second type of innovation is led by value chain actors who want to offer better input or market services to farmers, often combined with (costly short-term) credit. Most of the initiatives relate to combining credit services with agro-input services.

- **Organizing integrated agro services**
  Examples: One Acre Fund, FSD agrodealer initiative, DigiFarm (see Annex 2 for details of each programme).

  In these initiatives, a more efficient input value chain is set up, combined with input finance solutions. Typical participants are agrodealers, farmers (or farmers’ organizations) and a credit provider. The programme organizes a tight input value chain, for which the credit provider pre-finances the input acquisition by the farmers, and the agrodealers provide the right quality inputs at the right time and place, sometimes combined with agronomic or veterinarian advice.

- **Applying ICT and mobile technology**
Examples: One Acre Fund, Agri-Wallet, DigiFarm (see Annex 2 for details of each programme).

In these initiatives, mobile phone technology is used to make transactions more efficient and transparent. This can apply to financial transactions (transfers, payments, credit and savings) but also to product transactions (buying and selling, transportation, etc.). In some cases, the value of data is also exploited to construct a track record for creditworthiness.

4. Potential solutions and recommendations to deal with these bottlenecks

First, it is important to realize that there are no quick fixes in finance. The bottlenecks in investments and access to finance are still quite substantial, as can be seen in section 3a above.

Still, a lot can be done to improve the situation:

1. Main gain at the demand side of finance: making agribusiness more interesting for investors
2. Main gain at the supply side of finance: systemic interventions are needed.

a. Demand side: making agribusiness more investable

This could involve the following actions:

1. Increase the willingness to invest:

   • Support the elaboration of business cases (model calculations) for prototype investments; support transparency about risk-return profiles of the business cases to financiers and to farmers/agribusinesses; support the submission of business cases to investors and farmers/agribusinesses; support the reality check on their viability.

   • De-risk investments, by bringing the most important risks for producers and financial institutions under control. De-risking can entail many measures, from insurance to irrigation and better soil management, to investment in good business management and entrepreneurship. It starts with prioritizing the risks that are most vital for financiers and farmers/agribusinesses in their decision to invest.

   • Reinforce aggregator relations in the value chain (stronger aggregators and better linkages). This increases the efficiency of the value chain and makes it more investable for financiers. It creates trust and improves the track record, both in finance relations and in commercial and production relations between value chain actors and aggregators. For some value chain aggregators, the business case should be strengthened to make it more attractive for farmers:

     o in dairy: stimulate farmers to supply to the dairy value chain by reducing the ‘late payment’ problem by supermarkets and the subsequent players waiting to be paid down the value chain (processors, cooperatives)

     o in horticulture: if contract relations with off-takers cannot be strengthened, try the financing options via agrodealers and equipment and irrigation providers. Research how the Dutch cooperative vegetable auctions – at village level – used to resolve this problem.

   o in aquaculture: work with the providers of fingerlings and feed.

2. Strengthen self-financing strategies:

   The reality is that most of the investments are financed by farmers/agribusinesses themselves, either by choice or by lack of external capital. Self-financing strategies could be based on:

   • reducing the cash costs of investments, for example by leaning on in-kind delivery of inputs and services, or mutual labour assistance or by using technologies that are less capital-intensive.

   • financing cash investments without credit, for example though savings, rotating credit, money transfer from family and friends abroad, retained profits or selling of other assets held for precautionary purposes.

   • graduality of investments: starting with a smaller investment – in line with the capacity to invest and to take risk – and expanding it gradually, rather than making a lumpy investment all at once.

   • use of risk management tools, such as insurance, risk prevention measures and safety nets, to create greater comfort to invest among farmers.

3. Increase availability of financial services

   • Stimulate bankability of farmers for example through investing in financial literacy, stimulate land title ownership or other collateral

   • Developing and negotiating financial arrangements to optimize the cash flow within the value chain: overdraft facilities, invoice discounting, asset finance, inputs on credit, use of mobile payments to accelerate transactions, etc.

   • Developing new business models that could create greater capital efficiency in the value chain, such as equipment leasing, machinery services, etc.

   • Negotiating – with the financial institutions already strongly present in the sector – about more adapted and affordable services: not only credit options, but also other financial services, like goal savings (for a specific investment purpose), investments with money transfer from family and friends abroad, asset finance, equipment leasing, etc. This can be a viable option in situations where projects represent commercially attractive clusters of producers and/or agribusinesses for which the financial institution is willing to spend time and energy to adapt their products.

b. Supply side: systemic interventions

A structural increase of the supply of finance for agricultural value chains would require a major long-term systemic intervention. Such an intervention should have a similar ambition level as the joint FSD Kenya – USAID project in 2009–2015 or the EKN/F4A initiative in 2013–2016: aiming at sector-wide impact on the availability of agricultural finance. However, it should be robustly organized to be successful: with a strong programme management and leadership on the ground, sufficient in-house expertise on value chain finance innovation, and sufficient oversight from the donors. It should entail a sector-wide intelligent M4P approach for agri-value chain finance, involving a variety of actors from the financial sector, the value chain and primary production.
In the meantime, it is possible to make progress with a pragmatic approach to the finance supply side, by appointing a person as a **Value Chain Finance focal point**. This expert would take leadership in promoting value chain finance solutions for food security field programmes. He/she would facilitate linkages with finance supply initiatives and help strengthen the focus on investability for the food security projects. The Value Chain Finance focal point could be charged with the following tasks:

- Staying connected and up to date with the existing agri- and value chain finance providers and with innovative promising initiatives in Kenya
- Exploring collaboration with Dutch inclusive finance investors (impact investors who are members of the NPM Inclusive Finance platform, including the Dutch development bank, FMO), who could be interested in financing larger investments in viable chains
- Referral of finance demand questions from the horticulture, dairy and aquaculture sectors to the most appropriate finance suppliers and initiatives
- Stimulating and supporting horticulture, dairy and aquaculture sector programmes to make their initiatives more investable or creditworthy
- Advocacy that increases the ambition of financial sector players to work towards a financial sector that stimulates the real economy of Kenya, including in agriculture and agribusiness
- Updating the FSD-USAID 2009 study on value chain finance, with a renewed round of interviews with financial service providers about their perspectives for the horticulture, dairy and aquaculture sectors
- Capitalizing on the achievements of initiatives at the finance supply side (F4A, EGF), by stimulating practical adoption of developed products from F4A (credit scoring, assessments from SCOPEInsight, etc.) and the further roll-out or replication of the EGF initiative (after its evaluation).
- Stimulating innovation in the field of agri–value chain finance, orchestrating the initiation of effective public–private partnership coalitions that could make use of the facilities at the Dutch Ministry of Foreign Affairs (FMO/MASSIF, the Dutch Good Growth Fund, and instruments from the Netherlands Enterprise Agency, RVO).
- Supporting innovation initiatives of key players in agri-finance, such as the EGF–EKN initiative on medium-sized farms. Such initiatives should be selected based on the real commitment and commercial interest of the financial institution to increase its agri-portfolio.

**Policy recommendation from Food for Thought** (IOB, 2017, p. 25)

“Use a differentiated targeting of farmers, anticipating agricultural transformation and rural transition. Some farmers may be helped by enabling them to transition to commercial farming (stepping up). For others it would be better to leave agriculture and to find off-farm employment (stepping out). In addition, policies should also acknowledge that for many others, subsistence farming remains their only livelihood option for the time being (hanging in). For the commercially-oriented farmers, it is important for the focus to be on helping them to be assured of income, but for subsistence farmers, a stronger focus on nutrition will be important. By emphasising commercial agricultural development, the Netherlands tends to address mainly the stepping-up farmers, yet an inclusive policy for development in a broader sense also needs a strategy to address the farmers who are stepping out or hanging in.”
**3R Kenya Project**

The 3R Kenya (Resilient, Robust, Reliable: From Aid to Trade) project is a learning initiative supported under the Agriculture and Food and Nutrition Security (FNS) program of the Embassy of the Kingdom of the Netherlands. 3R Kenya seeks to assess evidence and lessons from FNS and other related programs that support competitive, market-led models in spurring agricultural development. It focuses on the aquaculture, dairy and horticulture sectors. 3R Kenya is running at a time when the Dutch government's bilateral relations in Kenya are transitioning from a focus on aid to trade to enhance the development of agrifood sectors. Through evidence generation and stakeholder dialogue, 3R seeks to contribute to an understanding of effective conditions for sustainable inclusive trade for transforming resilient, robust and reliable agrifood sectors.

---

**Recommendations on the supply side of finance**

1. Pragmatic: value chain finance focal point
   - Stay connected with value chain finance initiatives
2. Collaboration with Dutch investors
3. Referral function
4. Stimulating investability in sector projects
5. Advocacy about finance for the real economy (useful, affordable, accessible)
6. Update FSD-USAID 2009 study on value chain financing
7. Capitalise on achievements F4A and EGF-EKN
8. Stimulate innovative public-private partnerships and partnerships with financial institutions and value chain actors

References
Hong, D., Hanson, S. 2016. Scaling up agricultural credit in Africa. Frontier Issues Brief. Presented by the One Acre Fund to the Ending Rural Hunger Project at Brookings Institution.
ANNEX 1: Financial institutions’ interests in dairy, fish, fruits and vegetables

In this annex, we present a compilation of observations about financial institutions’ interests for financing our value chains of interest. The texts are direct quotes taken from the study undertaken by FSD Kenya and USAID/KARF (FSD Kenya 2009).

The nine financial institutions interviewed about these value chains were:

- Banks: Equity Bank, Family Bank, Fina Bank, KCB
- Microfinance banks / microfinance institutions: K-REP Bank, Kenyan Women’s Microfinance Bank (KWFT), Faulu Microfinance Bank
- Others: ECOF, K-REP Development Association

DAIRY: pp. 16-17

- All financiers interviewed continued to hold a strong interest in financing dairy. There were in fact multiple inquiries regarding when FSD and KARF would assist the banks with product development. Particular interest in savings mobilization among producers and development of leasing for vehicles and milk processing equipment were noted in interviews. As before, lenders continued to hold specific interest in the particular opportunities in Kabete, Nyeri, Nakuru and Eldoret.
- With respect to existing credit and risk management the dairy value chain was very strong according to the documents reviewed. Commercialised producers, private bulkers, transporters, the majority of cooperatives, processors and terminal markets dealers realize returns capable of attracting commercial finance and are thus creditworthy. Several financial institutions are lending to the dairy value chain (Equity Bank, Coop Bank, KCB, K-Rep and Family Bank, and others). Livestock mortality and theft insurance products are available and accessible.
- While performance of the dairy value chain and its constituent businesses was strong, diversification of financial services to support the chain was not presented in the literature reviewed. There is some formal credit to the diary sector and this seems to be growing. For the most part, however, dairy businesses receive generic credit products if they receive credit at all. With respect to savings products, payments by processors and cooperative bulkers are made through financial institutions but there is limited evidence to suggest that the beneficiaries and financial institutions consider these cash flows savings.
- Access to buyer credit from buyers to sellers in the dairy value chain included: equipment provided by the bigger processors (both Brookside and New KCC provide cooling equipment to a number of bulkers and also quality testing and volume measuring equipment to contracted transporters); feed suppliers; and veterinary drugs dealers offering inventory credit to some of their agents and stockists; limited producer credit from feed and vet drugs stockists; and cooperatives extending inputs credit to their farmer members that is recovered from milk deliveries.

FISH: p. 31

- Several lenders have been engaged in the financing of live catch and fish farming. K-Rep Bank noted that they were entering an agreement with the Government to assist in the extension of credit to aquaculture. They further noted that their branches along the shores of Lake Victoria were already lending (though not purposefully) for fishing and developing a product would be very relevant in order to assure that financing was done in the best way possible.
- Equity Bank noted that they offer a financing for fisher-folk under their agricultural loan product. This could benefit from greater focus.
- KCB had in the past engaged in financing fish under their Lake Victoria Fishing Scheme but it encountered recovery problems. Though KCB has no specific product for fish, there are fish farmer clients who are financed based on their other enterprises with existing loan products. Thus, KCB is interested in reviving financing fish (particularly processing and production) if client concentration is identified and proper analysis of feasible financing is done.
- Fina Bank, while presently not financing fish, though again they may be indirectly financing it through other existing financial products, is interested in financing fish processing, fish by-products and (may be) aquaculture. Because of the emphasis by Government on increasing aquaculture, the bank expects to play a collaborative role.
- KWFT has not yet developed financial products for fish, but there are quite a number of clients involved in fishing as a key economic activity. KWFT is also in the process of promoting aquaculture targeting women within the Nyanza region. Because traditionally in Kenya, women trading fish encounter horrific and degrading demands when buying from fish mongers, KWFT sought support from Ford Foundation, to carry out a study for promoting aquaculture in Nyanza province and this is expected to be ready by end of 2009. There will definitely be a need for refining the product and training KWFT staff.
- Credit and risk management, particularly for larger actors in the fish value chain, are commonplace. Specialised trade finance, large asset financing and insurances underpin the more sophisticated segments of the value chain. Un-specialised microfinance products are available to fisher-folk.
- Diversification of services, like credit and risk management above, was as well present for the more sophisticated players in the fish value chain.
- Access to buyer credit for fish traders, and to a lesser degree for fishing operations, was present according to the literature. The literature noted that credit to fisher-folk from buyers was inadequate and at times unfair in its terms, but present nonetheless.

FRUITS: p. 37

- CFC-Stanbic noted that it was very interested in financing fruit, particularly structured trade for inputs, if a limited off-takers’ market could be identified. Further, providing large-scale investment for processing equipment for export could further be interesting.
- Family Bank noted that they are currently already financing urban fruit processing operations. They would be further interested in expanding this portfolio especially with larger potential clients.
- K-Rep Bank has not ventured into financing commercial fruits producers but would interested in understanding the financial dynamics of this value chain with a view to actively engaging in financing it, with a properly developed finance product. A feasibility study/value chain analysis would be very important for this purpose. Of particular focus would be the existing fruit value chain operations.
- KCB noted that it did not currently engage in financing fruit but financing irrigation and cold chain equipment for fruits would be of interest to the bank if support for market analysis could be accessed.
- Existing credit and risk management for the fruits value chain received a score of two percent of the four percent available for this rate. There was a little evidence of financing of fruit producers with generic microfinance loan products. This is not surprising given the relatively few producers of the commodity. There was no evidence of risk management strategies or products.
- From the literature made available for the review there was no specialization of services for financing the Fruit value chain.
- Access to buyer credit was documented. There was limited credit available from processors to their agents and some of their farmers to facilitate supply. Production finance, other than that provided by financial institutions, was not in evidence in the literature reviewed.

VEGETABLES: p. 60

- Commercial and semi commercial producers clearly access both credit and insurance. Subsistence vegetable producers are, of course, excluded from these services.
- In terms of diversification of services, there was evidence of specialised financial products to support the export market for vegetables and the supermarket-outgrower value chain including structured trade finance and working capital financing arrangements
- Access to buyer credit was also evident for the export and supermarket-outgrower vegetable value chains. Particularly, buyers provide the farms with seeds on credit and technical advice while other inputs are purchased locally.
ANNEX 2: Innovative finance initiatives in more detail

The following initiatives aimed to improve access to finance through financial institutions:

- **Equity Group Foundation**: This is an initiative with EKN to develop medium-sized farms in Kenya (2014–2017). The project targets 2,000 farmers, in three regions. These farms are medium-sized, with 15–30 acres per farm in Eastern and Central regions, or 10–100 acres in the Rift Valley. Farmers are organized in peer groups (8–15 farmers), which are clustered into business groups (3–4 peer groups = 30–60 farmers). The project offers technical training, field days and farmer exchange visits. This technical support covers topics such as soil management, farm business planning, agricultural marketing, use of inputs, creation of market linkages, and farm records (FSD Kenya, 2017).

Achievements 2016 (from the Annual Report 2016 of the project; Equity Group Foundation, 2017):

  o Finance demand side:
    - Facilitated capacity building of a cumulative of 6,493 farmers through technical trainings, field days and farmer exchange visits of both direct and indirect beneficiaries.
    - trained farmers in financial management, record keeping and business planning, making it easier for them to access financial services as the bank gives better credit ratings when business records are available.

  o Finance supply side:
    - developed a wide range of agriculture products for all the players in the value chain
    - designing a bundled financial product suitable for small to medium-sized enterprise farmers (EGF, SCOPEInsight, FSD).

- **F4A**: In the Finance for Agriculture programme, financed by EKN across 2013–2016, the Dutch financial consulting company Financial Access worked with the Dutch agribusiness intelligence firm SCOPEInsight to accelerate lending to small and medium-sized enterprise agribusinesses. F4A was an ambitious programme; it included the creation of a series of technical tools such as an agri-risk scoring tool, supply chain finance platform, agro-portal AMEA, mapping of guarantee and insurance providers; financial mechanisms such as the missing middle fund Financial Access Commerce & Trade Services (FACTS); and a series of rating assessments of agribusiness and producer organizations that would be used for capacity building towards greater creditworthiness.

At the end of the programme in 2016, an evaluation was done by PWC. The participating financial institutions had started to increase their active involvement in agriculture, but the agri-risk tools were not yet fully deployed. The producer organizations assessed had not yet made much progress in gaining creditworthiness, because the capacity building was not well articulated in the programme. The collaboration between the two project partners (Financial Access and SCOPEInsight) was not optimal, which limited the synergies in the program (PWC, 2017). A missing middle fund was being launched (FACTS), which focuses on supply chain finance for a wide range of small and medium-sized enterprises in Kenya, including agribusinesses (FACTS 2018). The overall impression of the evaluation was that many technical tools and initiatives were launched, but that – at that moment – the real impact of the programme was still to be realized.

- **KWFT Dairy programme**: Kenya Women Microfinance Bank (KWFT) is one of the largest microfinance banks in Kenya. In the dairy programme, it finances farmers to buy high-quality dairy cows for milk production, as well as animal insurance to cover the most important risks. It offers asset financing for farm equipment and value chain finance for agribusinesses such as agrodealers and processors, transporters and traders of agricultural commodities. KWFT provides ‘agro-preneurial’ training to farmers, and it links with the government (county) extension officers (KWFT, 2016).

- **Rafiki finance schemes for dairy**: ‘In the dairy sector, equipment such as walking tractors and road compaction rollers can be introduced through bank loan and leasing schemes or Rafiki finance schemes. Commercial fodder production equipment can also be financed or leased to commercial farmers. However, increased use of equipment requires capacity building in mechanical support services and spare parts supply. The KMDP [Kenya Market-Oriented Dairy Programme] could assist in building such capacity partly through creating awareness on such needs and facilitating acquisition of requisite skills for these critical companion services. Furthermore, the concept of contractors, having high capacity equipment, providing services to farmers might also be a solution towards increased mechanisation at farmers’ level.’ (de Jong et al., 2016:24).
• **Chase Bank with KMDP Eldoret**: Chase Bank has collaborated with KMDP to finance Eldoret Dairy Farmers Association with asset improvement and working capital and to support private milk processors with asset financing, trade finance and working capital (Chase Bank, 2016).

• **Private equity for agribusiness?** Private equity could also be a solution to financing of growth capital for existing agribusinesses, in situations where no security can be offered and the business is willing to use equity to secure the investment and to receive business advice from the investors (Gichini, 2016). In a similar line of thinking, Van Maanen has described challenges and potentials for agri-SME investment funds in Africa (Van Maanen, 2018).

The second group of initiatives aims to improve access to finance through value chain actors:

• **FSD initiative for credit for smallholders through agrodealers**: FSD Kenya collaborated with Farm Shop, a social enterprise with a network of agrodealers. They developed a lending methodology and data collection mechanism to create credit scoring for farmers. Farm Shop granted its franchisees (there were three in the pilot) inputs on credit, and the franchisees in turn issued the farmers loans in the form of farm inputs. The soft information that franchisees had on the farmers was turned into four risk profiles. FSD is piloting a point-of-sale data-collection system with Farm Shop and its franchisees. FSD’s ambition is to roll out this pilot to other franchisees and to other agrodealer networks in Kenya (FSD Kenya, 2017b).

• **One Acre Fund**: offers a complete bundle of services to maize producers using a market-based model to offer in-kind credit for key inputs (seed, fertilizer), distribution and delivery of those inputs close to the farmer, training in agricultural techniques, and storage and market facilitation to increase sales prices for the farmer.

One Acre Fund is a not-for-profit agricultural service company that operates at 74% financial sustainability (in 2014) and covers the losses through donations (e.g. from Mastercard Foundation). Loan repayments are 99%, and the farm income is 50% higher per acre than for non-participants (Hong and Hanson, 2016). This model involves 280,000 farmers in Burundi, Kenya, Rwanda and Tanzania.

One Acre Fund has also been experimenting with repayments of their loans via M-Pesa mobile money channels, starting in 2014. This system proved successful with the farmers (quick payment confirmation, reduction of fraud with repayments) and with One Acre Fund (lower transaction costs, transaction staff redeployed to farmer services). Initial problems with reconciling accounts were solved, and use of a unique identification number is being tested to make the system more efficient (Waldron and Amusin, 2017).

• **DigiFarm (Safaricom–Mercycorps)**: DigiFarm is an integrated mobile platform in partnership between Safaricom and Mercycorps. DigiFarm provides the farmers with farm inputs (fertilizer, phytosanitary products, and seeds) at affordable prices and/or loans to acquire such inputs, accompanied by training modules about their use. The farm inputs are provided by agrodealer Inprocure, the learning content by Arifu, and the credits are in the form of e-vouchers that can be exchanged for inputs at Inprocure. DigiFarm was piloted early in 2017 in three counties and already has 167,000 farmers registered.

• **Agri-Wallet**: Agri-Wallet is an innovative mobile business account that can be used to save, borrow and pay for income-generating activities. The Agri-Wallet is a specific-purpose account used by farmers, buyers/traders and agrodealers. It enables them to pay each other on time, even when their buyers pay them later. Agri-Wallet enables farmers to save money specifically for buying inputs. It gives buyers and agrodealers short-term working capital credit to bridge the period between paying their suppliers and getting paid by their buyers. Agri-Wallet is fully integrated with M-Pesa.

---

**Acknowledgements**
The 3R Kenya project is funded by the Embassy of the Kingdom of the Netherlands in Nairobi, Kenya, within the framework of the Agriculture and Food & Nutrition Security program.

This brief is based on desk review and synthesis of selected literature and expert views related to the topic. The review was undertaken to feed into EKN’s Multi-Annual Country Strategy (MACS) development process.


The brief is available at [http://www.3r-kenya.org/](http://www.3r-kenya.org/)

---

**Contact**

**Ingrid Coninx**

Wageningen University and Research
3R Kenya Project manager
E: ingrid.coninx@wur.nl

---

**Catherine Kilelu**

African Centre for Technology Studies
3R Kenya Project coordinator
E: C.Kilelu@acts-net.org

---

3R Kenya project | Wageningen University & Research | 14