

Rwanda Economy Digitalisation Programme

Agriculture sector policy scoping project

April 2023



Background

The purpose of the deck is to provide an overview of the agriculture sector in Rwanda. The deck focuses on the priorities of the policymaker – Ministry of Agriculture – and which data sources are available to inform policymaking.

The research was based on data that is publicly available.

This research forms part of the work conducted under the Rwanda Economy Digitalisation Programme, in partnership with the Ministry of ICT and Innovation and the Mastercard Foundation.



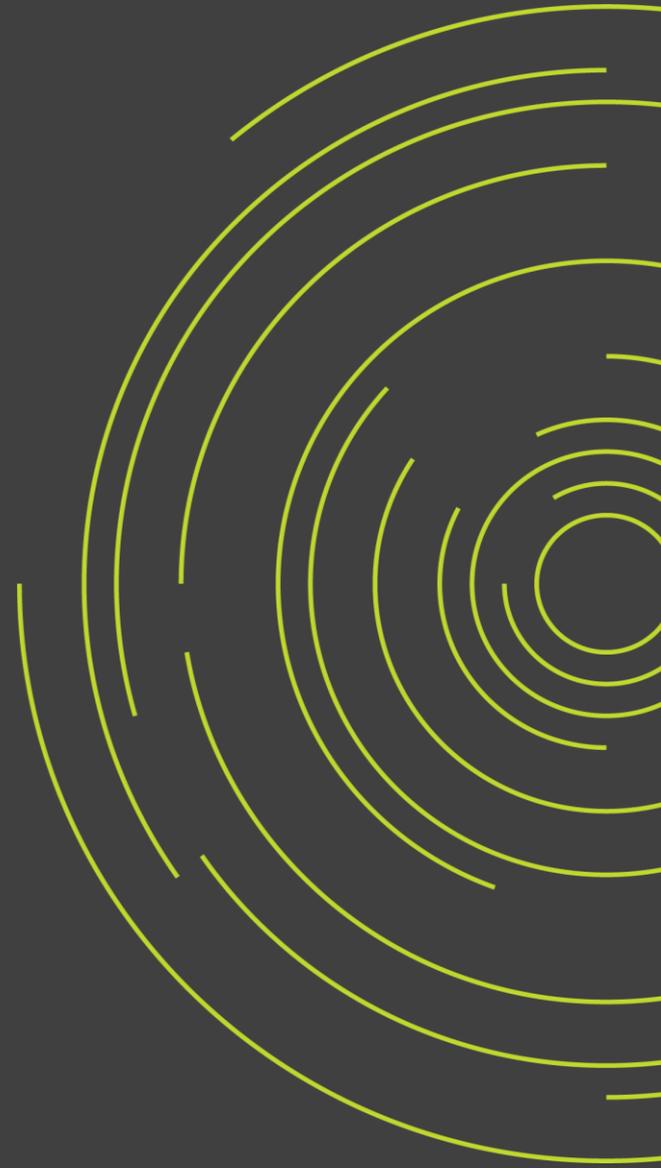
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Primarily FinScope



Policy priorities for the digitalisation of the agriculture sector



Overall Development Strategy informed by SDGs

2000

2020

2050

Vision 2020

Vision 2050

Long term

1. Good governance and capable state
2. Human resource for knowledge eco.
3. Private sector led development
4. Infrastructure development
5. Productive high value agriculture for export
6. Regional and international integration

Human development

Competitiveness and integration

Agriculture for wealth

Urbanise and Agglomerate

Accountable & capable state

PRSP then EDPRS 1&2

National Strategy for Transformation (NST1: 2017-2024)

Med term

National land use development master plan (2020-2050)

Themes: Pop urbanisation, settlements & housing (PUSH); Spatial economy (employment, manufacturing, industry, mining); **Agriculture**; Environment and Natural resources (land, forestry, water, mining, climate change environment); **Tourism** & Conservation; Transportation; Infrastructure – public utilities (water, energy, ICT); Public Services (Health, **Education**, Public administration, Religious, recreation facilities, etc.); **GIS database and National base map**; Legal analysis report; Implementation, compliance and **monitoring** strategy and guidelines)

Sectoral policies (5 years per sector) – Issued by relevant ministry

District strategies (5 years per administrative zones)



Sources: Rwanda Vision [2050](#), National Strategy for Transformation, National land use development master plan



List of relevant government policies

- National Strategy for Transformation (NST 1) 2017-2024
- Smart Rwanda 2020 Master Plan
- Finance Sector Strategy 2018-2024
- Strategic Plan for Agriculture Transformation (PSTA 4) 2018-2024
- NAEB Strategic Plan 2019-2024
- National ICT4Ag Strategy (2016-2020)



Policy overview - NST (1 of 3)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
National Strategy for Transformation (NST 1) 2017-2024	Parliament and cabinet provides overarching oversight; Ministry of Finance and Economic Planning (MINECOFIN) and Ministry of Local Government (MINALOC) will lead national development planning and delivery process	<p>Pillars</p> <p>1. Economic transformation pillar</p> <p>Objective: Increase agriculture and livestock quality, productivity and production</p> <p>Interventions</p> <ul style="list-style-type: none"> • Work with the private sector to increase the surface of consolidated and irrigated land and promote agricultural mechanization • Promote new models of irrigation scheme management 	<ul style="list-style-type: none"> • Increase area under irrigation from 48,508 ha (2017) to 102,284 ha in 2024. • Increase percentage of mechanised farm operations from 25% (2017) to 50% in 2024 • Increase consolidated land from 635,603 ha (2017) to 980,000 ha (2024). • Development and strengthening of farmers' and water users' associations



Source: NIRDA ([2016](#)) **cenfri**



Policy overview - NST (2 of 3)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
National Strategy for Transformation (NST 1) 2017-2024 (continued)	Parliament and cabinet provides overarching oversight; Ministry of Finance and Economic Planning (MINECOFIN) and Ministry of Local Government (MINALOC) will lead national development planning and delivery process	<p>Interventions (continued)</p> <ul style="list-style-type: none"> • Increase the land area covered by terraces • Enhance farmer access to improved seeds • Promote research and develop new seed varieties • Increase average productivity of key crops • Work with the private sector to build post-harvest handling and storage facilities <p>2. Social transformation pillar 3. Transformational governance pillar</p>	<ul style="list-style-type: none"> • Increase the land covered by radical terraces from 110,905 ha (2017) to 142,500 ha by 2024 • Enhance farmers' access to improved seeds, from 52% (2016) to 75% by 2024 and fertilizers application (kg/ha/annum) from 32 kg/Ha (2016/17) to 75kg/ha by 2024. • Doubling of yields in maize, irish potato, beans, and fruits; and an increase of at least 30 % on average in rice, wheat, cassava, sweet potatoes, soybean, and vegetables between 2017 and 2024. • Metric tons of grains (maize and beans) stored as reserves will increase from 184,814 MT (2017) to 260,052 MT (2024) • Capacity of storage facilities constructed will be scaled up from 295,495 MT (2017) to 350,431 MT by 2024



Policy overview - NST (3 of 3)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
National Strategy for Transformation (NST 1) 2017-2024 (continued)	Parliament and cabinet provides overarching oversight; Ministry of Finance and Economic Planning (MINECOFIN) and Ministry of Local Government (MINALOC) will lead national development planning and delivery process	<p>Interventions (continued)</p> <ul style="list-style-type: none"> Scale up the production of high-value crops Attract private sector and farmers to invest in flagship projects in the livestock sub-sector such as milk collection centers Put in place mechanisms to increase access to finance for farmers <p>2. Social transformation pillar</p> <p>3. Transformational governance pillar</p>	<ul style="list-style-type: none"> Scale up the production of high-value crops including horticulture, flowers, vegetables, fruits etc. Increase the quantity of meat and dairy products: Increase milk from 776,284 MT (2017) to 925,748 MT (2024), meat from 138,231 MT (2017) to 175,164 MT in 2024 and eggs produced from 7,475 MT (2017) to 11,211 MT by 2024 Double credit to agriculture sector (primary farming and agro processing in agriculture, fisheries & livestock) as a percentage of total loans from 5.2% (2017) to 10.4% in 2024.



Source: NIRDA ([2016](#)) 



Policy overview – Smart Rwanda overview

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Smart Rwanda 2020 Master plan	Ministry of Health, Education, Agriculture, Finance, Trade and Industry, ICT, Infrastructure , RDB	<p>Core objectives</p> <ul style="list-style-type: none"> Expand medical and health services to enhance citizens quality of time Utilise ICT for education as a tool to enhance teaching and learning Boost Agricultural productivity, industrialisation and commercialisation Improve financial infrastructure to expand access to financial services Promote trade and industry development by enhancing value of products and services Improve and expand access to ICT skills and innovation capacity Advance women and youths social economic empowerment through ICT Build a shared,robust & resilient infrastructure to uderpin service delivery & support national ICT initiatives Enhance the national ICT Governance and Regulatory structure Transform digital Government through E-Gov and effective service delivery 	<p>Objective: Transform agricultural practices to enhance productivity, and increased commercialisation and industrialisation</p> <ul style="list-style-type: none"> Improved productivity and increased efficiency in the agriculture value chain Diversified agriculture product portfolio Evolve from subsistence farming to commercial farming with export potential



Policy overview – SMART Rwanda Masterplan (1 of 3)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Smart Rwanda 2020 Master Plan (SRMP)	MINICT	<p>Priorities</p> <ul style="list-style-type: none"> • Outcome 1: Vibrant, competitive and innovative ICT private sector established • Outcome 2: High ICT skills leveraging knowledge-based economy development • Outcome 3: Government operational efficiency and citizens satisfaction improved • Outcome 4: Empowered and transformed digital community created • Outcome 5: Sustained vibrant smart cities established • Outcome 6: Secured Rwanda's cyber space and information assets 	<p>Outcome 1:</p> <ul style="list-style-type: none"> • 5% of ICT contribution to GDP • 30 new Technology Companies valued between 100K- One Million USD in Rwanda • 35 Number of new Technology Companies valued between one Million – Twenty Million USD in Rwanda • 18 Number of new Technology Companies valued at over \$20 Million in Rwanda (including FDIs) • 30% of business/companies participating in e-commerce • 7% ICT Export as % to total exports • 1,112 ICT Capital Investment (Amount in Million_ USD) • 5% ICT jobs as % of formal total employment • 17 000 Number of jobs created through Business Process Outsourcing (BPO) <p>Outcome 2:</p> <ul style="list-style-type: none"> • 12 000 number of elite professionals • 50% graduates with ICT professional certificates by gender • 75% Elite IT professional owning commercialised Innovation, IT operational Business company, jobs • 5, 500 ICT labour productivity (FRW/hour; Av or Med)- 11,969 Frw:OECD Av (2015) • 70% School with smart classroom as % of total schools (internet, computer and digital content)



Policy overview – SMART Rwanda Masterplan (2 of 3)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Smart Rwanda 2020 Master Plan (SRMP) - Continued	MINICT	<p>Priorities</p> <ul style="list-style-type: none"> • Outcome 1: Vibrant, competitive and innovative ICT private sector established • Outcome 2: High ICT skills leveraging knowledge-based economy development • Outcome 3: Government operational efficiency and citizens satisfaction improved • Outcome 4: Empowered and transformed digital community created • Outcome 5: Sustained vibrant smart cities established • Outcome 6: Secured Rwanda's cyber space and information assets 	<p>Outcome 3:</p> <ul style="list-style-type: none"> • 50% Fully digitised services as % of total online services • 80% of Public Institutions connected to 4G or faster Internet (Education, Health, Justice, Local Government) • 50% of digitised services out of total services • 60% of government Integration and interoperability • 30% of websites that use the .RW domain hosted in Rwanda • 45% of MIS integrated with GCC • 80% of ICT projects managed and updated into Smart Dashboard/Automation • 85% of public institutions using electronic signature (PKI) <p>Outcome 4:</p> <ul style="list-style-type: none"> • 95% of digital literacy for citizens by gender (aged above 15 years) • 55% Internet penetration • 95% Mobile Phone Penetration • 50% Proportion of smart phone as % of mobile subscribers • 47% Mobile-broadband internet subscriptions /100 pop. • 5% Cost of broadband access as a percentage of average monthly GNI per capita (average monthly income • 40% of Households with access to high-speed internet • 80% of citizens with digital single ID



Source: MinICT ([2017](#))



Policy overview – SMART Rwanda Masterplan (3 of 3)

Policy / strategy	Responsibility	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Smart Rwanda 2020 Master Plan (SRMP) - Continued	MINICT	<p>Priorities</p> <ul style="list-style-type: none"> • Outcome 1: Vibrant, competitive and innovative ICT private sector established • Outcome 2: High ICT skills leveraging knowledge-based economy development • Outcome 3: Government operational efficiency and citizens satisfaction improved • Outcome 4: Empowered and transformed digital community created • Outcome 5: Sustained vibrant smart cities established • Outcome 6: Secured Rwanda's cyber space and information assets 	<p>Outcome 5:</p> <ul style="list-style-type: none"> • 10% of Smart buses • 5 innovation centres established • 240 of innovations (intellectual property/patent) commercialised • 50% Value of electronic payment as % of GDP • 5000 Amount earned from digital exports ('000s' USD) • 80 Total sales from ICT local manufacturing (Million in USD) <p>Outcome 6:</p> <ul style="list-style-type: none"> • 300 highly skilled people in cyber-security



Policy overview – Financial Sector Development Strategic Plan

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Financial sector Development Strategic Plan 2018-2024	<p>Overall - MINECOFIN – Ministry of finance and economic planning</p> <p>Other parties: BNR, MINICT, RISA, RBA, Fis, BDF, LODA, RCA, MINEDUC, BRD</p>	<p>Priorities:</p> <ul style="list-style-type: none"> • Mobilisation of savings (short, medium & long-term) for Private Sector Financing and Investment • Private Sector financing (includes strengthening SACCOs) <ul style="list-style-type: none"> ➢ BDF to create awareness and encourage SMEs to finance their business/ projects through Venture Capital Funds. SMEs will have to address the current weaknesses in the status of ownership, governance, incorporation, financial management and reporting ➢ Increase Access to Finance and saving through Strengthening the U_SACCO Program • Financial inclusion- Improve uptake and usage of financial services (includes low-cost transactions and MM) <ul style="list-style-type: none"> ➢ Broadening and Deepening Financial Literacy ➢ Promoting Products for Financial Inclusion • Position Rwanda as a cashless economy <ul style="list-style-type: none"> ➢ Implement the National Payment System Strategy • Establishing and maintaining Rwanda as International Financial Service Center 	<ul style="list-style-type: none"> • Total new loans to the private sector: 1397.42 by 2024 • 100% financially included adult population by 2024 • Gross domestic savings as a percentage of GDP at 23% by 2024 • Improve electronic retail payment to GDP ratio (80% by 2024) • Number of active mobile money accounts and subscribers increased (5 million subscribers by 2024) • Number of PoS and ATM cards increased • FDIs made in the financial services at ~317million USD by 2024



Source: Minecofin ([2017](#))



Policy overview – MINAGRI PSTA4 (1 of 6)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Strategic Plan for Agriculture Transformation (PSTA 4) 2018-2024	MINAGRI	<p>Impact areas</p> <ul style="list-style-type: none"> • Increased wealth contribution • Increased economic opportunity • Improved food security • Increased resilience <p>Priority</p> <ul style="list-style-type: none"> • Innovation and extension • Productivity and resilience • Inclusive markets and value addition • Enabling environment and responsive institutions <p>Agriculture digitalisation focus areas</p> <ul style="list-style-type: none"> • Monitor sector performance and support decision making processes • Provide services to farmers • Provide information and facilitate private sector market actors • Emerging technologies 	<p>Impact areas</p> <p>Increased wealth contribution</p> <ul style="list-style-type: none"> • Percentage of agricultural production growth measured by production volumes increased to 10% by 2024 <p>Increased economic opportunities</p> <ul style="list-style-type: none"> • Rural households living below poverty line reduced to 17% by 2024 from 43% in 2017 • Increase number of jobs related to agriculture to 300,000 jobs by 2024 <p>Improved food security and nutrition</p> <ul style="list-style-type: none"> • Percentage of food insecure households reduced to 10% by 2024, from 20% in 2015 <p>Increased resilience</p> <ul style="list-style-type: none"> • Share of agriculture land under Sustainable Land Management practices to 83% in 2024 from 56% in 2016



Policy overview – MINAGRI PSTA4 (2 of 6)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Strategic Plan for Agriculture Transformation (PSTA 4) 2018-2024	MINAGRI	<p>Impact areas</p> <ul style="list-style-type: none"> • Increased wealth contribution • Increased economic opportunity • Improved food security • Increased resilience <p>Priority</p> <ul style="list-style-type: none"> • Innovation and extension • Productivity and resilience • Inclusive markets and value addition • Enabling environment and responsive institutions <p>Agriculture digitalisation focus areas</p> <ul style="list-style-type: none"> • Monitor sector performance and support decision making processes • Provide services to farmers • Provide information and facilitate private sector market actors • Emerging technologies 	<p>Priority</p> <p>Innovation and extension</p> <ul style="list-style-type: none"> • Increase in percentage of farmers adopting appropriate technology and improved practices from 19.38% in 2016 to 40% in 2024 • Increase in percentage of farmers who received extension services from 69 in 2016 to 82 in 2024 • Increase in the number of farmers accessing extension services through private sector incentive scheme from 0 in 2017 to 25,000 in 2024 • Increase in the number of value chain actors (including farmers) trained and supported in business/cooperative management from 0 in 2017 to 30,000 in 2024



Policy overview – MINAGRI PSTA4 (3 of 6)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Strategic Plan for Agriculture Transformation (PSTA 4) 2018-2024	MINAGRI	<p>Impact areas</p> <ul style="list-style-type: none"> • Increased wealth contribution • Increased economic opportunity • Improved food security • Increased resilience <p>Priority</p> <ul style="list-style-type: none"> • Innovation and extension • Productivity and resilience • Inclusive markets and value addition • Enabling environment and responsive institutions <p>Agriculture digitalisation focus areas</p> <ul style="list-style-type: none"> • Monitor sector performance and support decision making processes • Provide services to farmers • Provide information and facilitate private sector market actors • Emerging technologies 	<p>Priority (Continued)</p> <p>Productivity and resilience</p> <ul style="list-style-type: none"> • Increase the yield of major crops such as coffee from 18,439 (MT/Ha) from 2016 to 32,500 (MT/Ha) by 2024 and tea from 25,565 (MT/Ha) in 2016 to 45,000 (MT/Ha) by 2024 • Increase the percentage of farmers that use quality seeds in non-consolidated sites from 18% in 2017 to 50% by 2024 • Increase the percentage of farmers who practice integrated pest management from TBD in 2017 to 11% by 2024 • Double the percentage of mechanized farm operations from 25% in 2017 to 50% by 2024 • Increase the percentage of farmers using improved feed/fodder and technologies from 9% in 2014 to 18% by 2024 • Increase the number of small livestock under the Girinka programme from 26,696 in 2017 to 35,000 by 2024



Policy overview – MINAGRI PSTA4 (4 of 6)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Strategic Plan for Agriculture Transformation (PSTA 4) 2018-2024	MINAGRI	<p>Impact areas</p> <ul style="list-style-type: none"> • Increased wealth contribution • Increased economic opportunity • Improved food security • Increased resilience <p>Priority</p> <ul style="list-style-type: none"> • Innovation and extension • Productivity and resilience • Inclusive markets and value addition • Enabling environment and responsive institutions <p>Agriculture digitalisation focus areas</p> <ul style="list-style-type: none"> • Monitor sector performance and support decision making processes • Provide services to farmers • Provide information and facilitate private sector market actors • Emerging technologies 	<p>Priority (Continued)</p> <p>Inclusive markets and value addition</p> <ul style="list-style-type: none"> • Increase the number of farmers accessing the Market Information Tool (E-soko) from 3,500 in 2014 to 500,000 by 2024 • The number of agricultural financial services and insurance products provided through SACCOs and coops still needs to be determined • Increase the number of formalized out-grower schemes from 48 in 2017 to 120 by 2024 • Increase the number of companies trained on quality assurance and regulation mechanisms from 0 in 2017 to 1050 by 2024



Policy overview – MINAGRI PSTA4 (5 of 6)

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Strategic Plan for Agriculture Transformation (PSTA 4) 2018-2024	MINAGRI	<p>Impact areas</p> <ul style="list-style-type: none"> • Increased wealth contribution • Increased economic opportunity • Improved food security • Increased resilience <p>Priority</p> <ul style="list-style-type: none"> • Innovation and extension • Productivity and resilience • Inclusive markets and value addition • Enabling environment and responsive institutions <p>Agriculture digitalisation focus areas</p> <ul style="list-style-type: none"> • Monitor sector performance and support decision making processes • Provide services to farmers • Provide information and facilitate private sector market actors • Emerging technologies 	<p>Priority (Continued)</p> <p>Enabling environment and responsive institutions</p> <ul style="list-style-type: none"> • Increase in percentage of FDI to Public Investment in agriculture from 9.4% in 2016 to 11.4% by 2024 • Double the credit to the agriculture sector as a percentage of total loans from 5.2% in 2017 to 10.4% by 2024 • Increase the number of domestic private seed and fertiliser production and extension services companies from TBD to 40 by 2024



Policy overview – MINAGRI PSTA4 (6 of 6)

Policy/ strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
Strategic Plan for Agriculture Transformation (PSTA 4) 2018-2024 – Cont.	MINAGRI	<p>Impact areas</p> <ul style="list-style-type: none"> Increased wealth contribution Increased economic opportunity Improved food security Increased resilience <p>Priority</p> <ul style="list-style-type: none"> Innovation and extension Productivity and resilience Inclusive markets and value addition Enabling environment and responsive institutions <p>Agriculture digitalisation focus areas</p> <ul style="list-style-type: none"> Monitor sector performance and support decision making processes Provide services to farmers Provide information and facilitate private sector market actors Emerging technologies 	<p>KPIs</p> <ul style="list-style-type: none"> 40% of farmers adopting appropriate technology and improved practices (gender and age disaggregated) by 2023/24 50% of farmers accessing weather and climate information by 2023/24 TBD the percentage of men and women engaged in agriculture that have access to financial services to be able to transact agriculture business TBD the percentage of farmers involved in agribusiness by gender and age 500,000 farmers (male/female) accessing the market information tool (E-soko) by 2023/24 TBD the number of agricultural financial services and insurance products provided through SACCOs and coops TBC the percentage of private investment to public investment in agriculture By 2023/24, the credit to agriculture sector as a percentage of total loans should be 10.4% The finance regulations score according to EBA report should be 84 by 2023/24 The number of information system applications developed and integrated into agricultural information platform should be 7 by 2023/24



Policy overview - ICT4RAg

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
National ICT4RAg strategy (2016-2020)	MINAGRI	<p>Core objectives</p> <ul style="list-style-type: none"> Objective 1: Development of a common user interface and a repository for farmer and farm information Objective 2: Increase the number of skilled and knowledgeable farmers using ICT Objective 3: Spur job creation among youth in agricultural sector Objective 4: Increase access to agricultural information, knowledge and market Objective 5: Support access to and the uptake of agricultural finance 	<p>KPIs for 2016-2020 period</p> <ul style="list-style-type: none"> Increase lending to smallholder farmers from 2% of total lending by commercial banks to 10% Register 2 million farmers countrywide from 300,000 farmers in 2015 in a centralized, accessible and secure database Increase private sector investment in agriculture from 5% to 15% Launch 5 new e-agriculture apps each year Digitise all agriculture related knowledge material and make it available online and through mobile telephone



Source: Imbaraga ([2015](#))



Policy overview – NAEB 1 of 4

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
NAEB strategic plan 2019-2024	National Agricultural Export Board (NAEB) MINAGRI oversees NAEB	<p>Overarching objectives</p> <ul style="list-style-type: none"> • Support an increase in productivity and quality of prioritised agri export value chains • Support increased value addition and market penetration of Rwanda agri-exports 	<p>Market linkage and export promotion</p> <ul style="list-style-type: none"> • Create unique buyer-exporter relations with a minimum of 30 for Horticulture, 10 for tea, 2 for pyrethrum, 6 for coffee and 3 for essential oils



Policy overview – NAEB 2 of 4

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
NAEB strategic plan 2019-2024 - Continued	National Agricultural Export Board (NAEB) MINAGRI oversees NAEB	<p>Overarching objectives (continued)</p> <ul style="list-style-type: none"> Enhance sector coordination and the enabling environment for sustainable growth of agri exports <p>Key focus areas</p> <ol style="list-style-type: none"> Market linkage and export promotion <ul style="list-style-type: none"> Objective: Create new buyer relationships for different value chains to support market diversification for Rwandan products, and potentially secure higher margins Branding <ul style="list-style-type: none"> Objective: Increase the visibility of Rwandan brands on regional and international agriculture export markets Global operators attraction <ul style="list-style-type: none"> Objective: Attract and support prospective operators before, during, and after investments take place 	<ul style="list-style-type: none"> Generated total sales value (USD): Horticulture: 100,000,000, tea: 50,000,000, pyrethrum: 2,000,000, coffee: 6,000,000, essential oils: 1,000,000 Number of product lines: Horticulture: 5, <u>tea: 2</u>, <u>pyrethrum: 1</u>, <u>coffee: 2</u>, essential oils: 1 <p>Branding</p> <ul style="list-style-type: none"> Increased recognition of Rwanda brands as quality brands <p>Global operators attraction</p> <ul style="list-style-type: none"> Value chain-specific businesses attracted: Horticulture: 5, tea:2, pyrethrum: 1, essential oils: 1 Total investments committed (USD): horticulture: 23 million, tea: 60 million, pyrethrum: 10 million, others: 4 million



Policy overview – NAEB 3 of 4

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
NAEB strategic plan 2019-2024 - Continued	National Agricultural Export Board (NAEB) MINAGRI oversees NAEB	<p>Key focus areas (continued)</p> <p>4. Business incubation</p> <ul style="list-style-type: none"> Objective: Support small exporters in existing and new growth value chains to grow into successful exporters on the international market and successful businesses, by offering them technical, financial and market support; while supporting ag tech and innovations to catalyze the growth of the sector <p>5. Productivity and quality management</p> <ul style="list-style-type: none"> Objective: Improve both the quantity and quality of production of agriculture export products by increasing yield, expanding the land area under cultivation and/or enhancing post-harvest handling practices that affect the quality of produce after harvesting. 	<p>Business incubation</p> <ul style="list-style-type: none"> Horticulture: 45 international-market focused businesses, 17 existing international-market focused businesses, and 20 existing regional-market focused businesses, others: 3 <p>Productivity and quality management</p> <ul style="list-style-type: none"> Optimised land area under cultivation: Horticulture: 7,442 ha for high value crops, <u>tea: from 26,897 to 35,000 ha, coffee: 24% reduction</u> of current area. Increased yield (MT/ha): Horticulture: 20% increase for high value crops, <u>tea: early estates (0.8 to 2.2), adolescent estates (3.25 to 6), Pyrethrum: 0.5 to 0.8, coffee: 0.5 to 0.7.</u> Exporters supported: 37 existing + 45 new for horticulture, 16 existing + <u>3 new estates for tea</u>, 1 existing for pyrethrum, 4 existing for cereals, 3 existing for essential oils and 1 existing for stevia Farmers supported: Horticulture: 85,000, <u>tea: 45,840, coffee: ~12,000, coffee: 355,771</u>

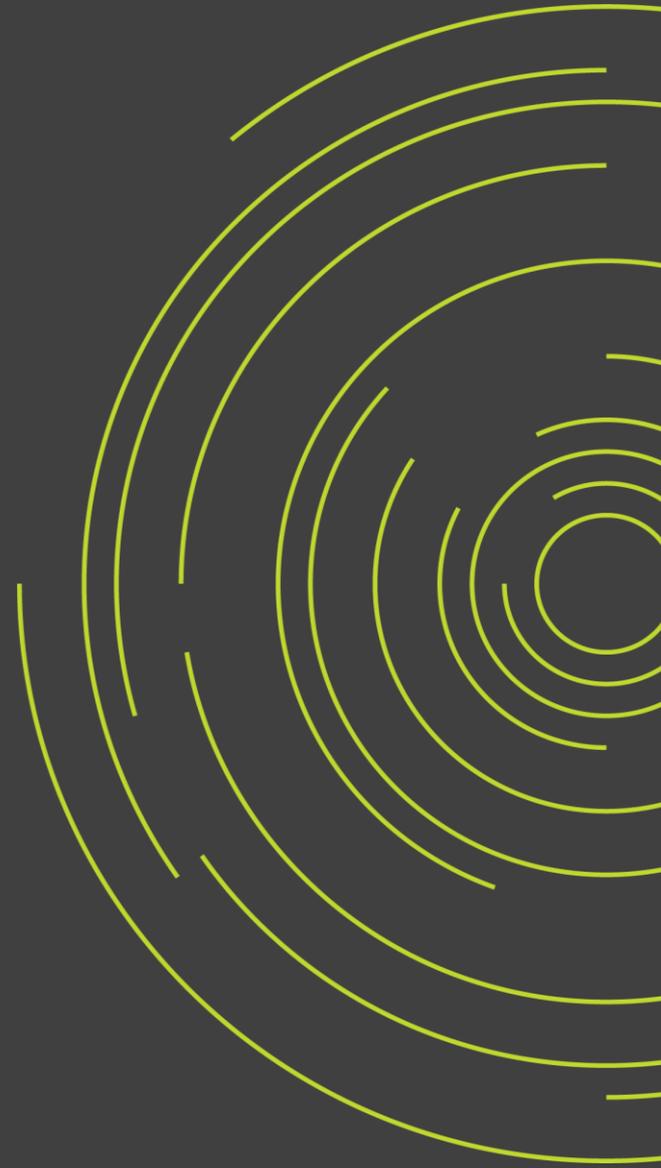


Policy overview – NAEB 4 of 4

Policy / strategy	Responsible	Relevant strategies/priorities	Relevant KPIs/ strategic actions
NAEB strategic plan 2019-2024 - Continued	National Agricultural Export Board (NAEB) MINAGRI oversees NAEB	Key focus areas (continued) 6. Logistics and infrastructure coordination <ul style="list-style-type: none"> Improve the efficiency of supply chain logistics of export products from production site to export destinations via grouped warehousing and transportation activities. 	Logistics and infrastructure coordination <ul style="list-style-type: none"> Number of businesses supported: 72 (37 existing and 45 new)



Understanding our farmer segments



Key summary of findings

Key issues

Access

- **Moderate to high financial inclusion:** Financial inclusion among farmers is moderate amongst subsistence farmers (61%) and high amongst commercial farmers (84%)
- **The majority of formally financially included farmers have a mobile money account:** Approximately 74% and 79% of subsistence and commercial farmers who are formally financially included have a mobile money account
- **Mobile money almost reaching saturation:** Roughly 6-7% of farmers owning mobile phones do not have mobile money

Usage

- **High cash use:** More than 90% of payments use cases not digitalized
 - Remittances, Water & electricity, Leisure and education payments are the most highly digitalized payments use cases

Key opportunities

Access: Opportunity to onboard new farmers

- Provide more specific marketing targeted at farmers in order to trigger the onboarding process for farmers who lack awareness
- Emphasise the ability of farmers to engage with mobile money in different ways (both online and offline)
 - Ensure that agriculture related innovations support offline capabilities (and it is well communicated)

Usage: To encourage the sustainable usage of financial services by farmers

- Ensure that mobile money agents are live and available within the required hours
- To encourage the digitalization of farming input payments, RURA to ensure that the pricing of mobile money is affordable to the farmers



Segment overview

A large proportion of the Rwandan population are engaged in agricultural activities, but only a small proportion farm commercially



Entire adult population (7.1 million) (100%)



Involved in farming (5.6 million) (79.52%)

Don't farm
(20.48%)



Farmer (5.3 million) (75.15%)

Don't farm or earn
a salary (24.85%)



Subsistence farmers (4.5 million)
(Don't farm to sell or consider turning their farming into a business)



Commercial farmers (882k)
(includes farmers considering turning farming into a business)

Don't farm or earn
a salary
(1.8 million)



**Subsistence farmers:
only farming
(3.5 mil)**



**Subsistence farmers:
mixed income
(928k)**

**Commercial farmers
(882k)**

Don't farm or earn
a salary
(1.8 million)



Comparison between segments

Key indicators	Population	All farmers 
Size	7,131,597	5,359,251
Youth (%)*	40	40
Female (%)	56	57
Average annual income (Rwf)	535,427	270,110
Rural (%)	74	90
Own phone (%)	75	70
Title deed owner (%)	70	72
Formal financial inclusion (%)	71	66
Mobile money (%)	57	48
Bank account (%)	24	14
Umurenge Sacco account (%)	34	37
Uptake of formal credit (%)	17	11
Uptake of informal credit (%)	67	70
Private Insurance uptake (%)	15	7

*Youth: 16-35 years old

 cenfri
Source: Finscope (2020)



Comparison between segments

Key indicators	Population	Subsistence farmer 	Commercial farmer 
Size	7,131,597	4,477,322	881,929
Youth (%)*	40	40	40
Female (%)	56	58	52
Average annual income (Rwf)	535,427	230,806	443,257
Rural (%)	74	91	84
Own phone (%)	75	67	88
Title deed owner (%)	70	71	79
Formal financial inclusion (%)	71	62	85
Mobile money (%)	57	44	67
Bank account (%)	24	11	28
Umurenge Sacco account (%)	34	35	50
Uptake of formal credit (%)	17	9	21
Uptake of informal credit (%)	67	70	70
Private Insurance uptake (%)	15	7	9



*Youth: 16-35 years old

 Source: Finscope (2020)

Comparison within subsistence farmers

Key indicators	Subsistence farmer	Subsistence farmers: only farming	Subsistence farmers: mixed income
Size	4,477,322	3,549,587	927,735
Youth (%)*	40	38	44
Female (%)	58	58	57
Average annual income (Rwf)	230,806	165,044	448,403
Rural (%)	91	94	78
Own phone (%)	67	63	82
Title deed owner (%)	71	71	71
Formal financial inclusion (%)	62	55	80
Mobile money (%)	44	38	67
Bank account (%)	11	9	19
Umurenge Sacco account (%)	35	32	43
Uptake of formal credit (%)	9	7	16
Uptake of informal credit (%)	70	68	76
Private insurance uptake (%)	7	6	10



Comparison within commercial farmers

Key indicators	Commercial farmer	Commercial farmer (cash crops)	Commercial farmer (No cash crops)
Size	881,929	129,827	752,102
Sample size	1,444	192	1,252
Youth (%)*	40	29	42
Female (%)	52	49	52
Average annual income (Rwf)	443,257	453,477	388,758
Rural (%)	84	94	83
Own phone (%)	88	85	88
Title deed owner (%)	79	82	78
Formal financial inclusion (%)	85	86	85
Mobile money (%)	67	67	67
Bank account (%)	28	25	28
Umurenge Sacco account (%)	50	52	46
Uptake of formal credit (%)	21	18	22
Uptake of informal credit (%)	70	72	70
Private insurance (%)	9	9	9



Source: Finscope (2020) 

*Youth: 16-35 years old



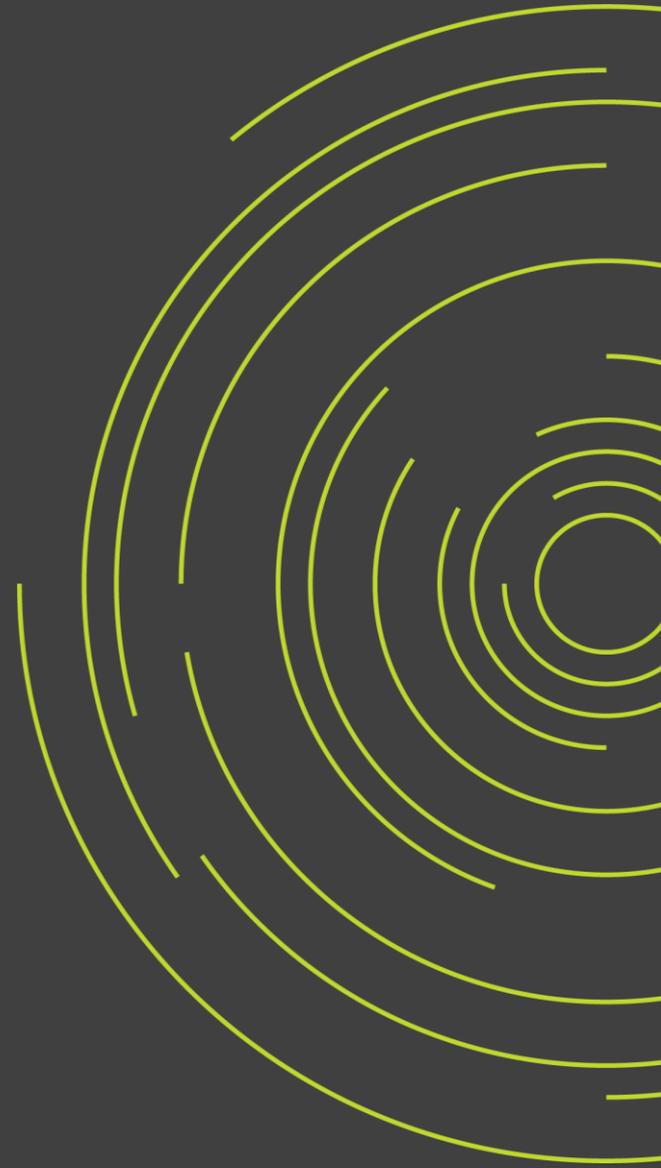
Differences between commercial and subsistence farmers

Agriculture interventions should differ for commercial and subsistence farmers

- **The key difference between commercial farming and subsistence farming is how farming activities are considered:**
 - **Subsistence farmers consider farming as a way of survival**
 - Needs are also more household focused
 - Social protection
 - Better farming techniques still relevant but less prominent
 - Finding income in other sectors is also relevant (income diversification)
 - **Commercial farmers see farming as a business**
 - Needs are business focused
 - Increased productivity is clear need (as in any business)
 - Entrepreneurship support
 - Market access
 - Resilient farming systems



Payments use cases

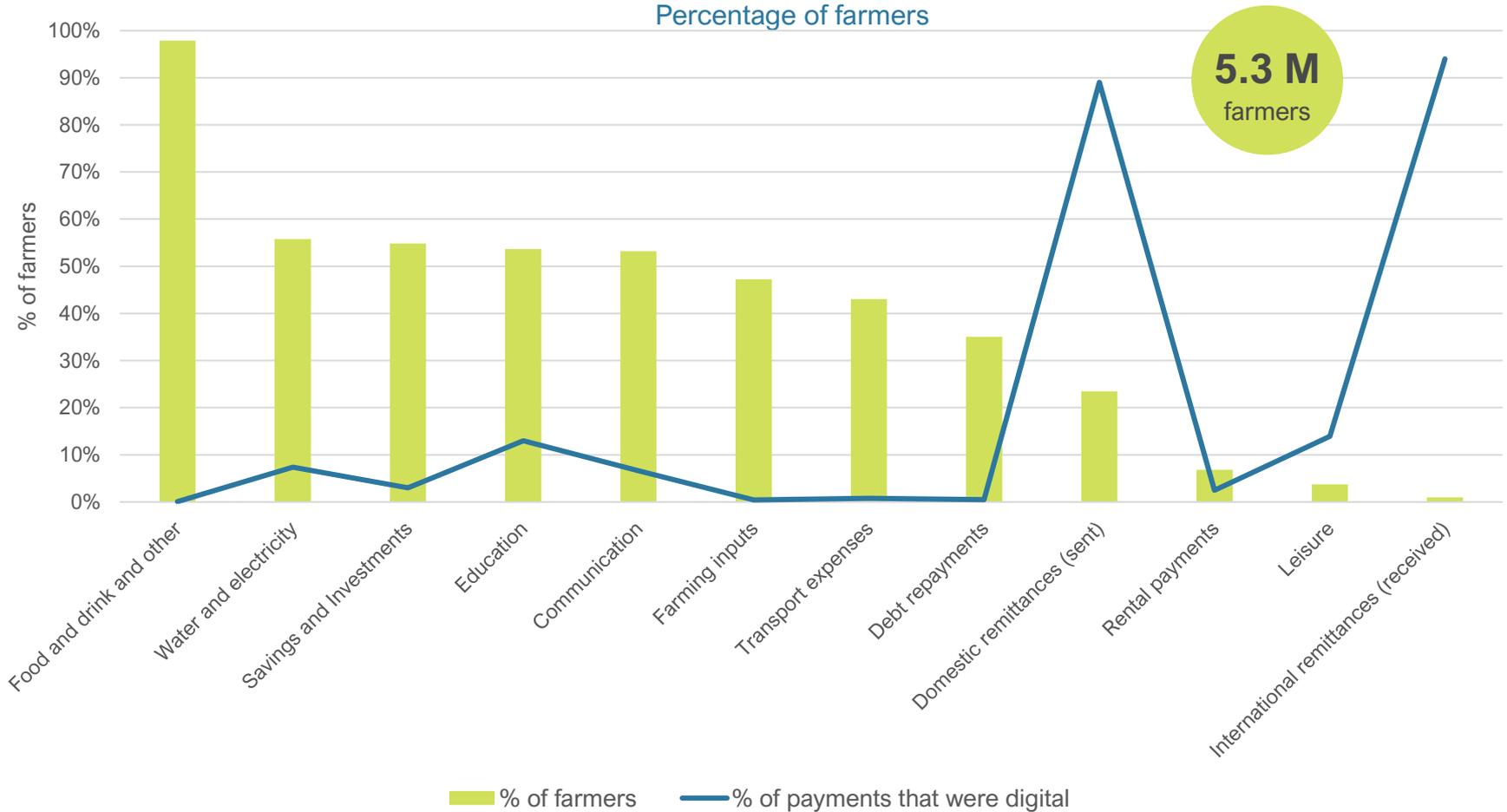


Payment use cases for farmers

Low use of digital payments by farmers, particularly for farming inputs

Uptake of different payments by farmers

Percentage of farmers



Payment use cases

Zooming in on payment use cases for farmers

	to Farmer	Business	People	Government
Farmer to:	Fodder, seeds	<i>Inputs (SNS)</i>	Wages	Tax, government services
Business	Farmers Markets (Esoko)	N/A	N/A	N/A
People	Direct sales	N/A	N/A	N/A
Government	Subsidies	N/A	N/A	N/A



Characteristics of payment use cases that ease digitisation

Based on BFA payment use case project

- **Market size**
 - The larger the value and volume of payments the more useful the digitalisation
- **Frequency**
 - How regularly are payments made
- **Concentration**
 - Are there any key network nodes that have market power to influence digitalisation
 - # of types of providers , Market share, Maturity of market players, Distribution of sales
- **Value proposition**
 - What pain points will digitalisation solve?
 - e.g. Distance, safety, convenience, cost
- **Potential for negative, unintended consequences to low-income people**
- **Degree to which existing regulations and infrastructure are enabling of digitising this use case**



Source:  cenfri and Melinda Gates (2018)



Commercial farmers overview of payment options

	Size (adults)	Frequency	Concentrator	Value (RWF per annum)	Current status (share digital)
F2F					
Inputs	0.5 mil commercial 2.0 mill subsistence (paid for inputs)	Mostly seasonal	SNS	37 bil (on SNS)	1% of farming inputs digital RWF 37 bill on SNS (2021 Season A)
Wages	173,026	Mostly seasonal	Coops?	375 bil (assume 2.17 mil per annum)	Near zero (tbc)
Taxes (> RWF 12 million for farmers)	62k (8%) commercial farmers earn \geq RWF 2.4 mil	Annual	Rwanda Revenue Authority	Minimal?	Irembo already cover
Farmers' Market	882k (all Comm. farmers)	Mostly seasonal	Esoko platform	282 bil exports 1.9 tril agri GDP	24,038 (esoko)
Direct sales	176k (20% of farmers had sales at farm gate 2019)	Mostly seasonal	None	3% of all produce sold at farm gate (NISR 2019)	Near zero (tbc)
Subsidies	1,5 mil Farmers used SNS in 2019	Regular	MINAGRI/ RAB / RAEB	115.5 bil development spending (2020)	Tbc but many cash payments still in place

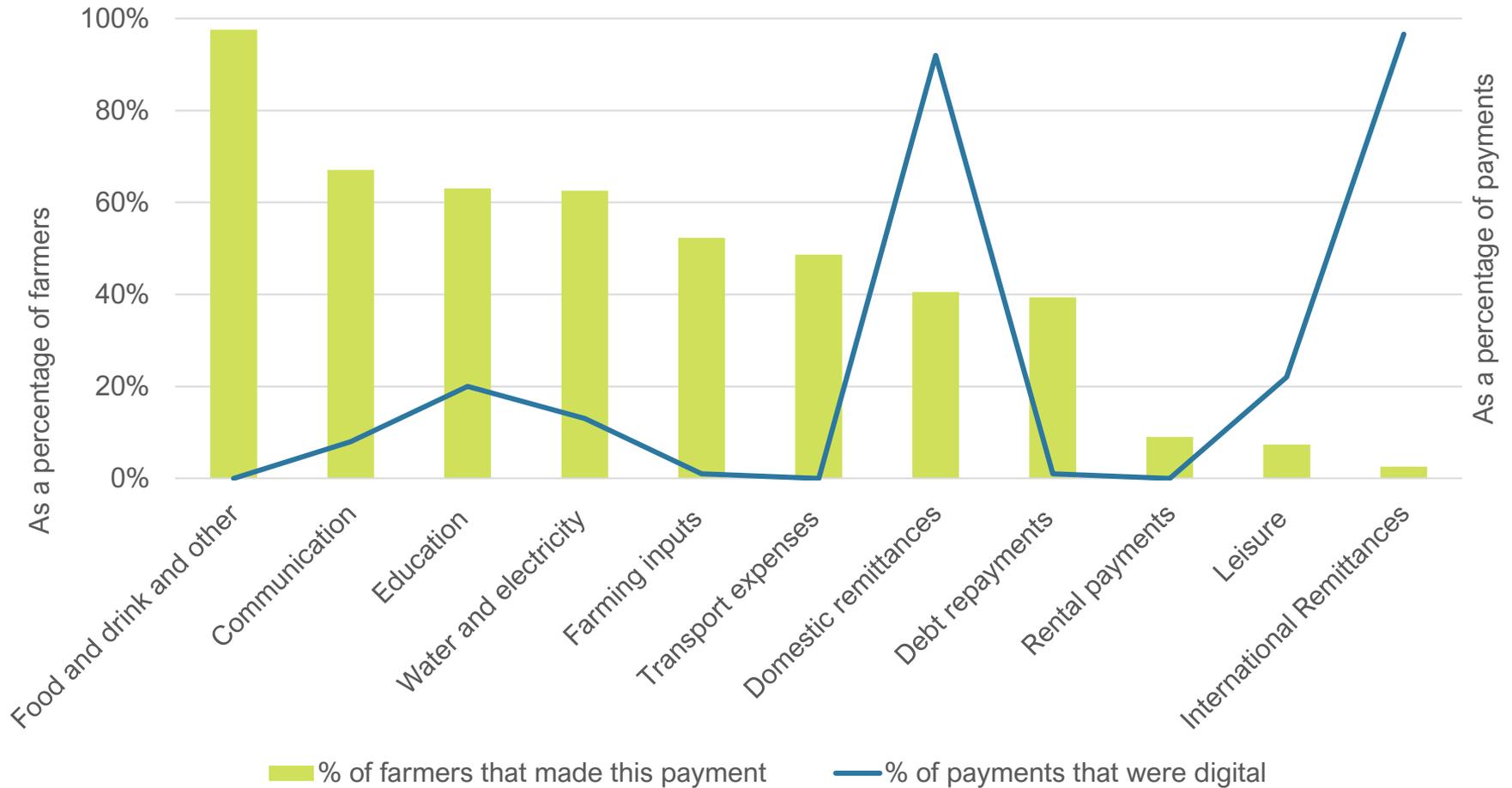


Source: Bank of Kigali ([2020](#)); Finscope (2020); Ministry of ICT ([2016](#))



Payment use cases Commercial farmers

Remittances is the most digitalised use case amongst commercial farmers



Source:  Finscope 2020



Payment use cases

Zooming in payment use cases for subsistence farmers

	To subsistence farmer	Business	Government
Subsistence farmer to	Labour	Groceries	Services (energy), taxes?
Business	<i>Wages</i>	N/A	N/A
Government	Social support	N/A	N/A



Subsistence farmers overview of payment options

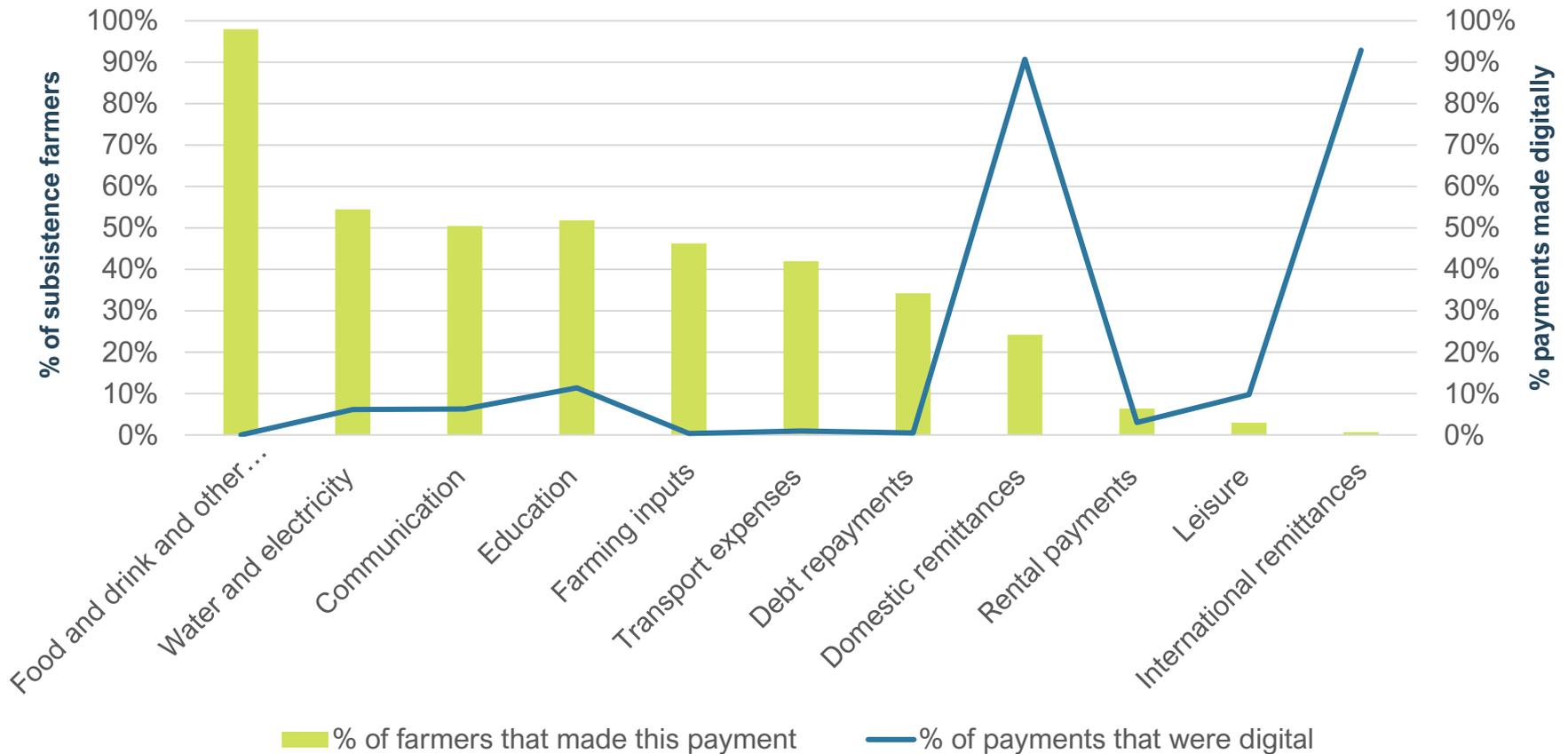
	Size (adults)	Frequency	Concentrator	Value (RWF)	Current status (share digital)
Labour	741k (wages from farm)	Mostly seasonal	None	Low (in kind often)	None
Groceries	4.7 mil (grocery payments)	Regular	None?		Near zero
Local remittances	919k	Mostly infrequent		7.5 billion (RWF)(Week of the 2 nd of February 2020)	88%
Services (energy/ water)	2,6 mil	Regular monthly	RURA		6% though should all be digital
Wages (none farm)	928k (mixed income)	Regular	None	262 bil (difference in avg income)	Medium
Social support		Regular – monthly	LODA	198 bil (6% of budget)	Low – Tbc



Payment use cases Subsistence farmers

Remittances is the most digitalised use case amongst subsistence farmers

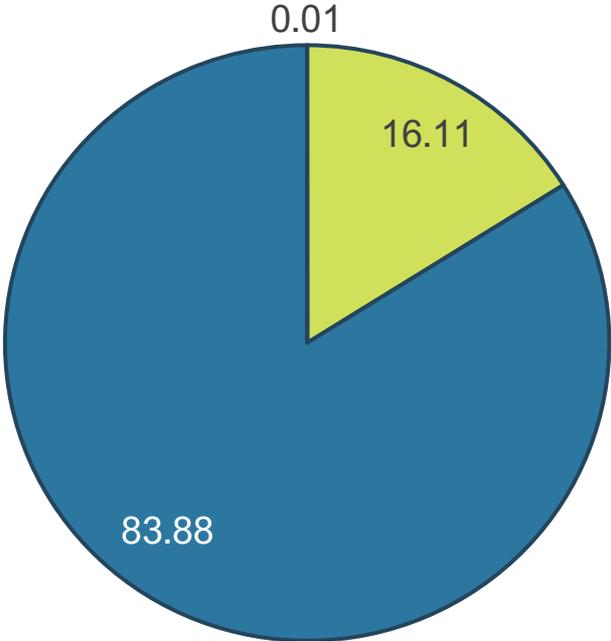
Subsistence farmers payment use cases



Farmer government receipts as priority for digitisation

Government payments to farmers are highly digitalised

How farmers who receive government payments as their main income source receive it



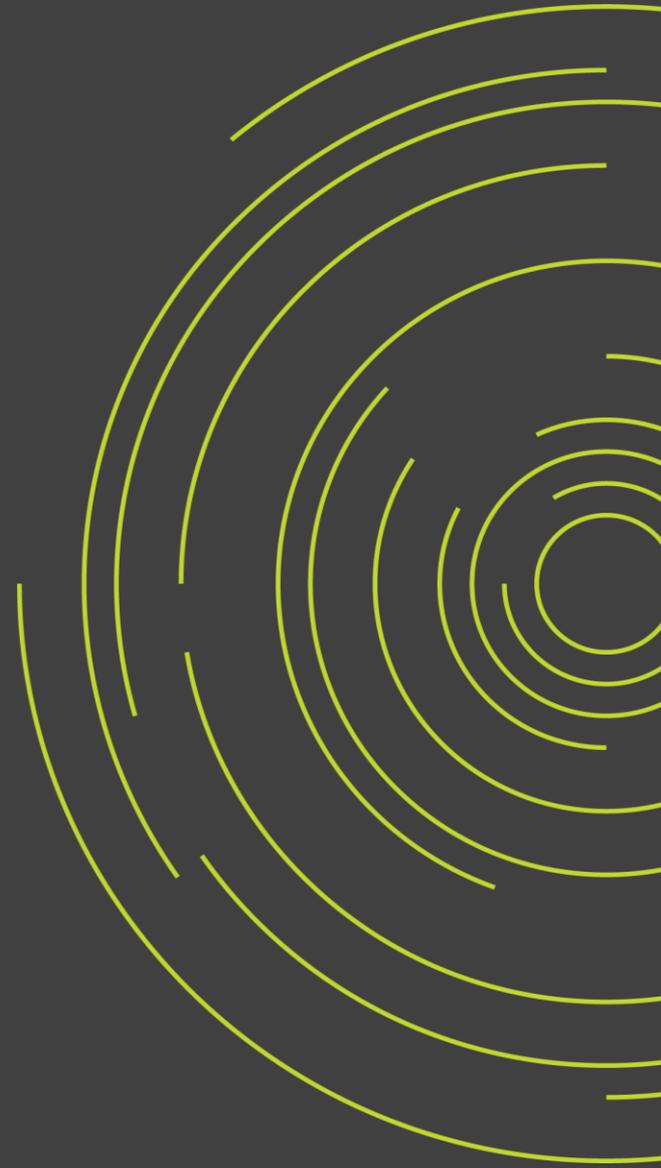
■ Cash in hand ■ Into bank account ■ Mobile Money

Number of farmers: 87,115

centri
Source: Finscope (2020)

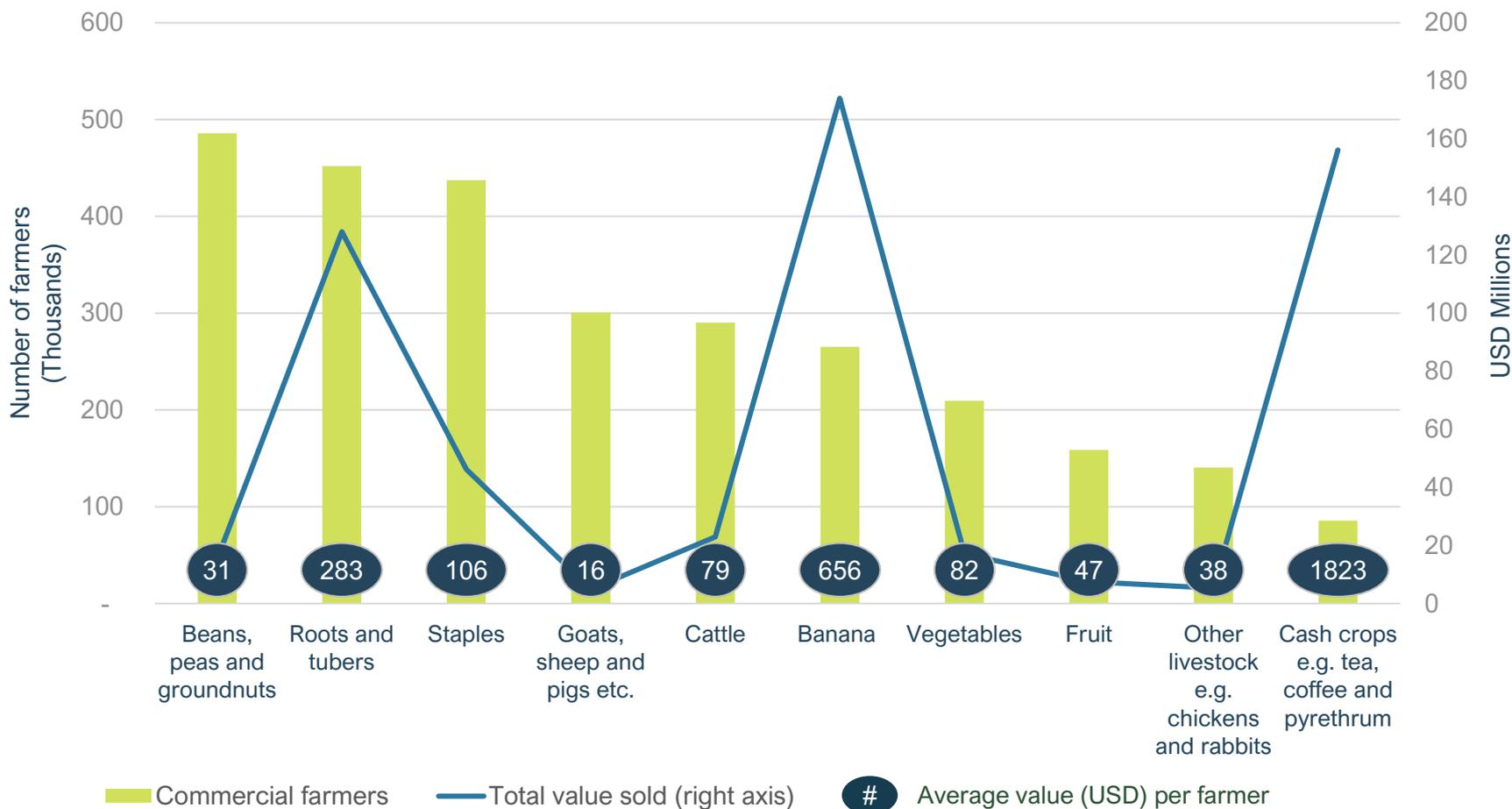


Agricultural value chains



Most agriculture production in Rwanda is not sold

Export crops are the exception, with only few farmers involved

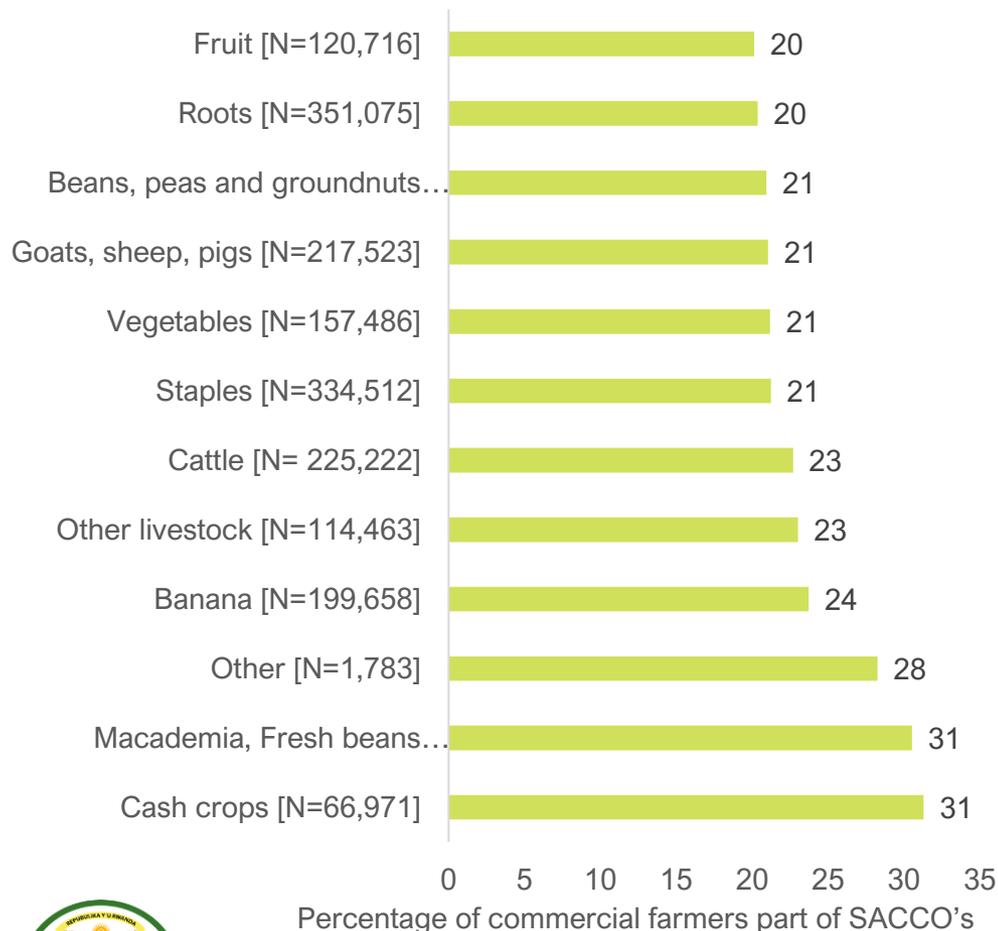


Source: Own calculations using FHScope (2020), Annual Agriculture Survey 2020 and Rwanda Statistical Yearbook 2020



Highly commercialised value chains suggest the presence of key nodes and that the value chain is ready for digitalisation

Commercial farmers part of SACCO



There is an economic incentive for large companies to enter into value chains where farmers often sell their produce

- Farmers in highly commercialised value chains tend to join SACCO's and other cooperatives (key nodes)
- The highest rate of Umurenge SACCO participation amongst commercial farmers occurs in cash crops
- Cooperatives and factories collect a significant amount of data that is reported to government, but gaps may exist
 - Need to find out the type of data they capture on farmers, seed distribution and fertiliser distribution

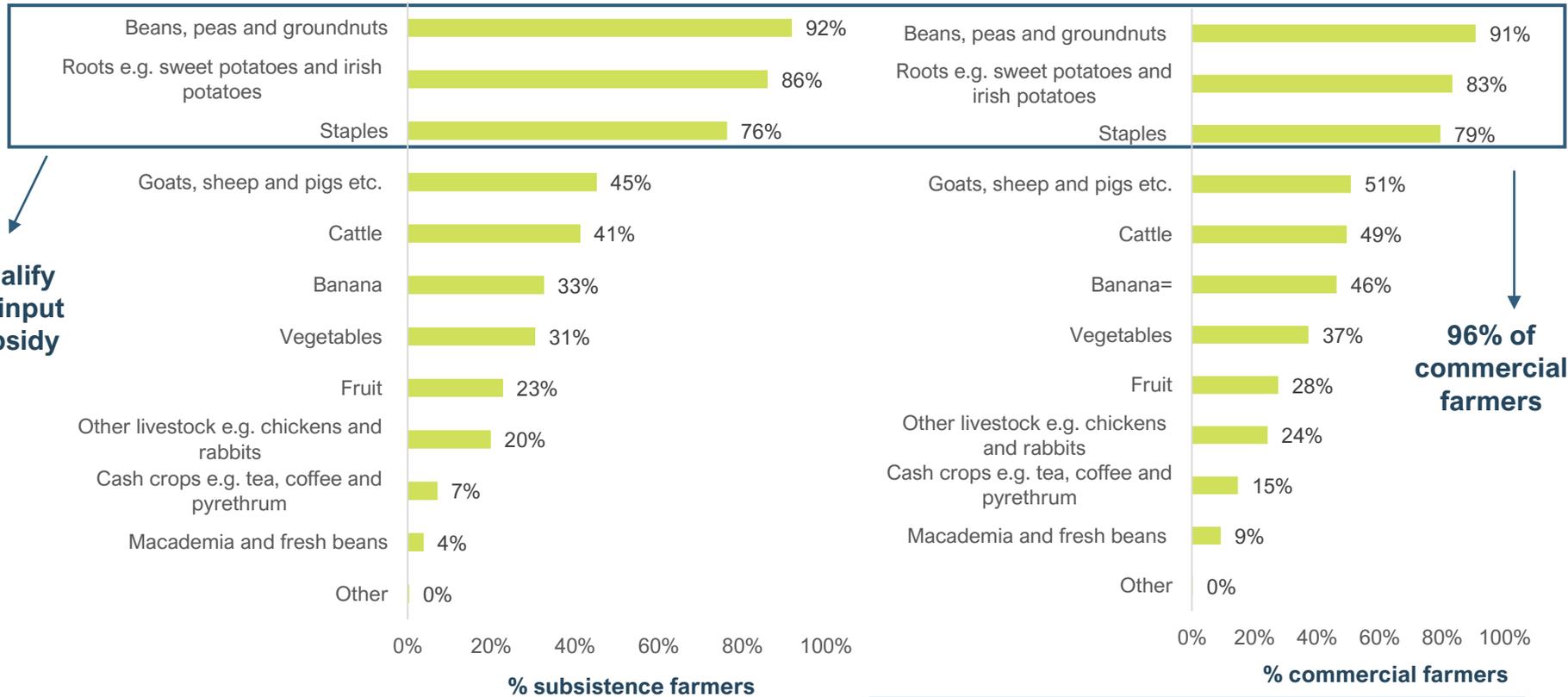


Value Chain Participation

Similar agriculture value chain adoption pattern between commercial and subsistence farmers, with commercial farmers having a slightly more diversified set of value chains they operate in.

Subsistence farmers

Commercial farmers



Average value chains per farmer: 4.6
1% operate in livestock only
32% operate in crop only
67% operate in both crop and livestock

Average value chains per farmer: 5.1
2% operate in livestock only
25% operate in crop only
73% operate in both crop and livestock

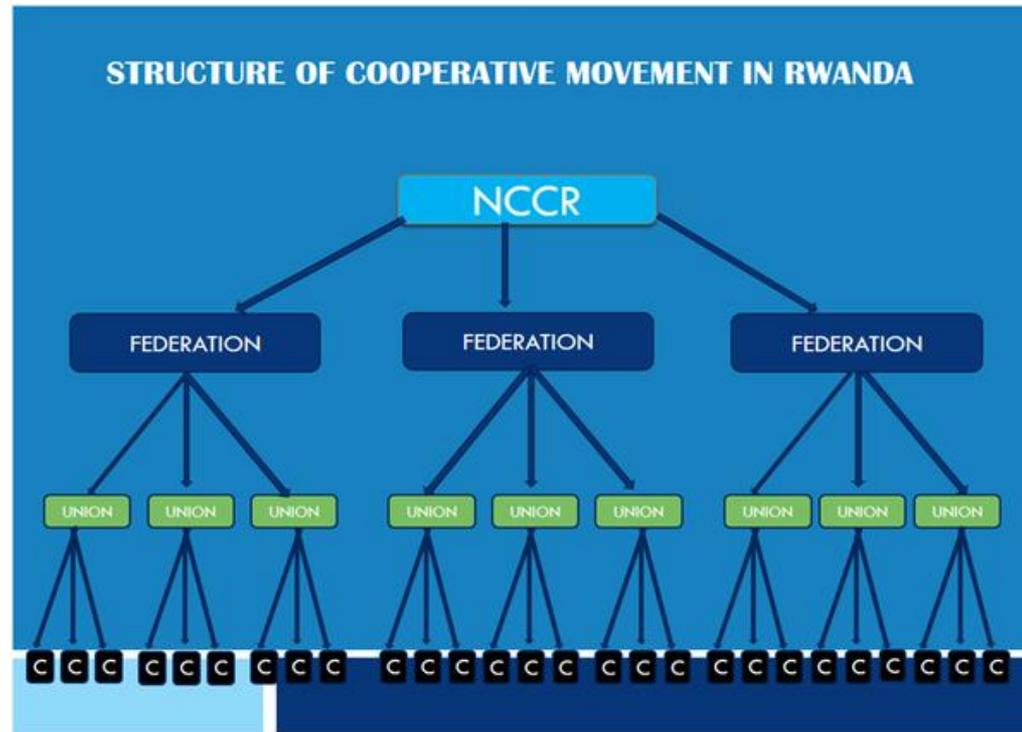


Cooperative grouping

Federations as a node for influence

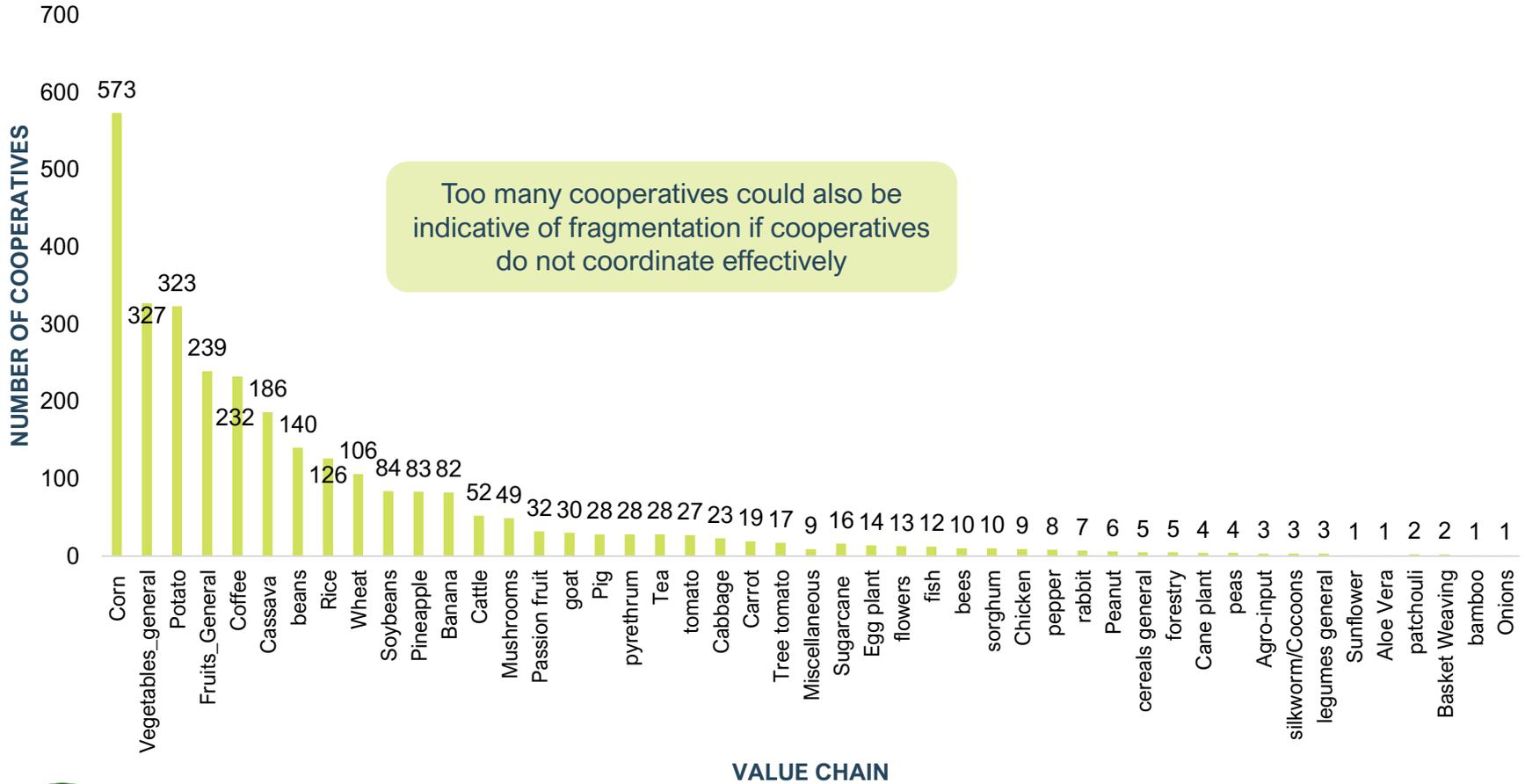
- **13 Federations**

- Maize
- Mining
- Irish Potatoes
- Transport (motos)
- Rice
- Livestock
- Coffee
- Transport (minibuses and coasters)
- Cassava
- Beekeeping
- Fishing
- Tea
- Wheat



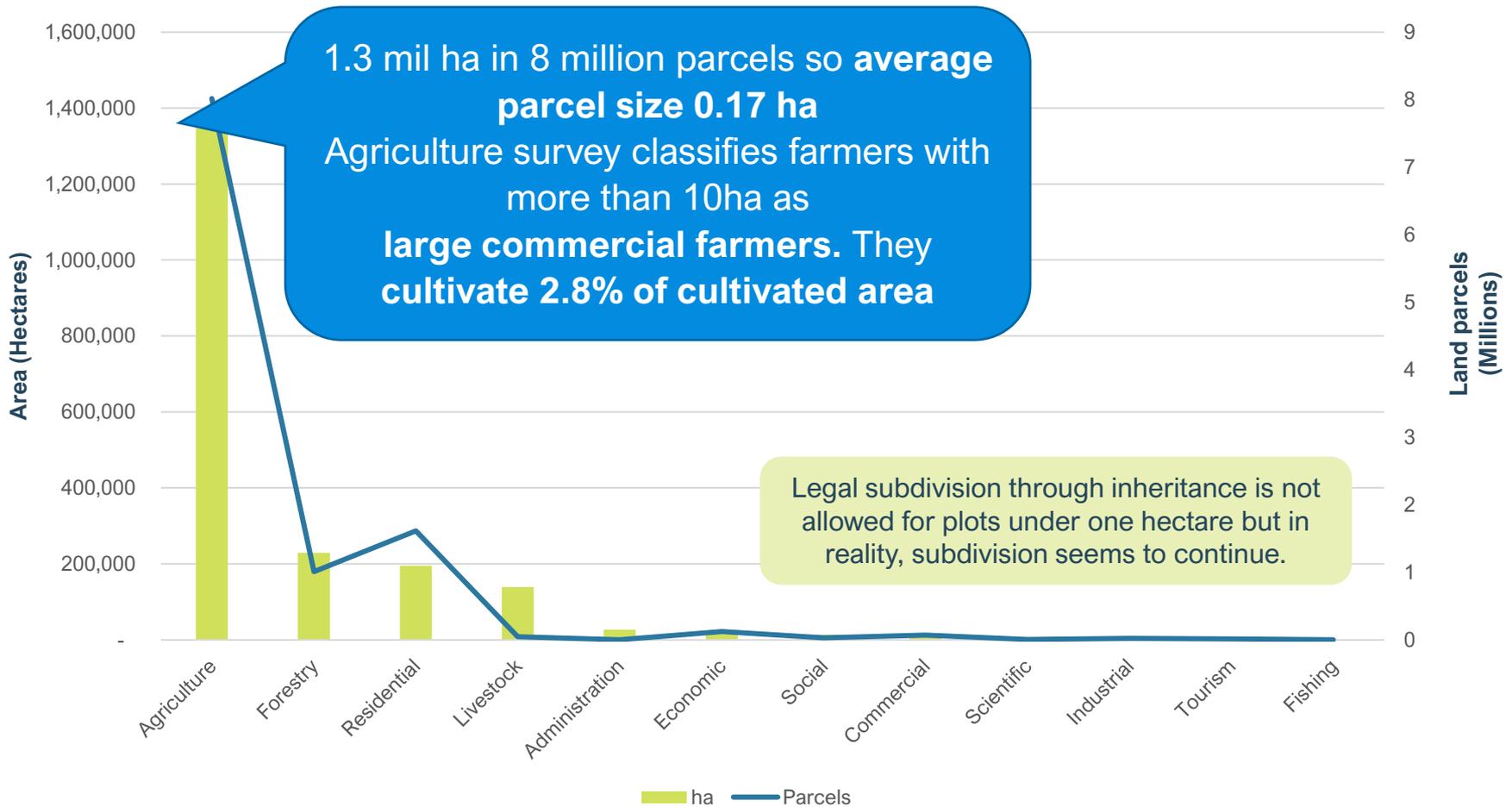
Co-operatives by value chain

Some value chains have a larger share of cooperatives as organising agent



Rwanda Land area overview

Large number of small farmers indicative of fragmented value chains



Source: [Rwanda Land Dashboard](#)



Top Agriculture value chains



Top value chains for digitalisation of payments

Based on criteria for digitisation mentioned under payment use cases

Value chain	Size	Regularity /frequency	Concentration points	Pain points (distance, safety, convenience)
Coffee	Medium (large forex earner)	Low – Seasonal	RAEB & of Coffee Processors and Exporters of Rwanda (CEPAR)	Fertiliser access organised by CEPAR
Tea	Medium (large forex earner)	Low – Seasonal	RAEB & <u>Wood Foundation & Gatsby Africa</u>	Local skills and capital
Pyrethrum (and essential oils)	Small (emerging forex earner)	Low – seasonal	Processor: Horizon SOPYRWA	
Perennials (bananas)	Large (if all types combined)	Regular	Sin Gerard Enterprise Urwibutso	Storage? Crop disease.
Cattle	Large	Regular and dairy highly regular	Inyange dairy processor. Livestock Bank.	Cold chain management

Legend

Included

Considered



Source: CEPAR (r.d), FAO (r.d) 



Aggregator focus areas for cash crops

Tea and Coffee

Rwanda Mountain Tea provided 566 smartphones to farmers in Sep

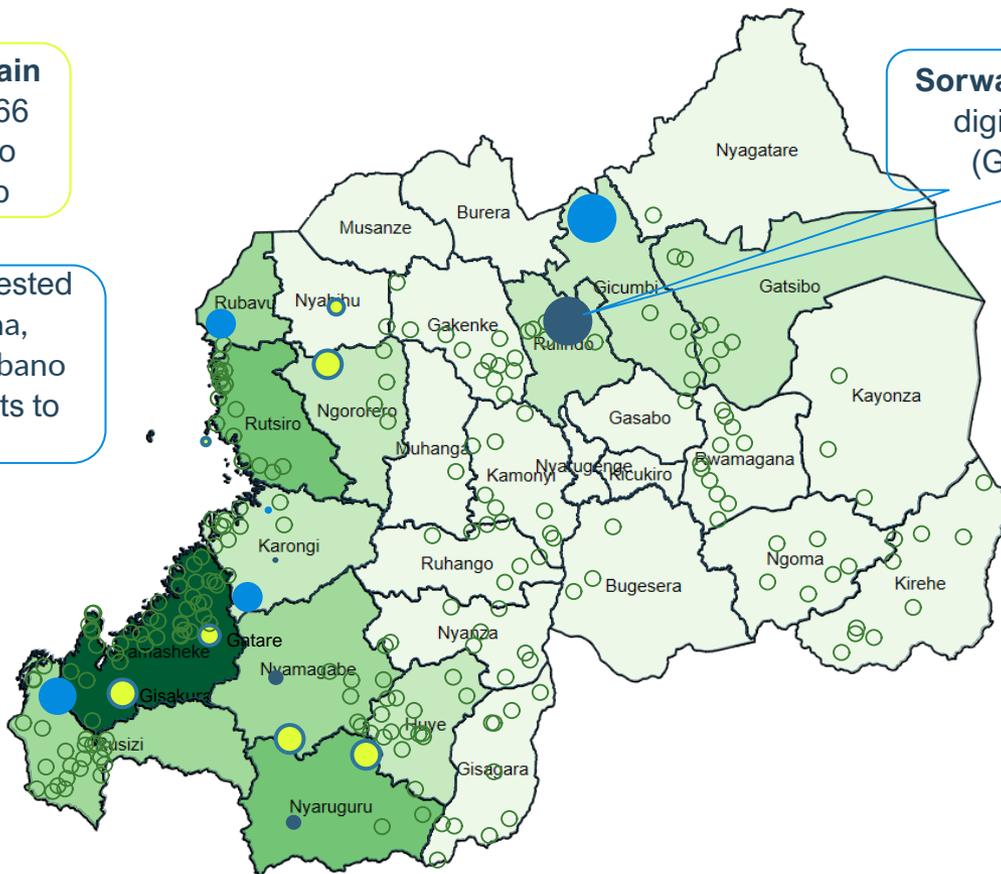
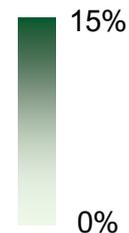
Woods Foundation invested in Mulindi & Shagasha, Gisovu, Pfunda & Rugabano provided bank accounts to all farmers

Rainforest certification widely used in Rwandan tea and coffee



Sorwathe tea factory digitised by MTN (GSMA, 2019)

% of agriculture production value



- Tea factories ●
- Rwanda Mountain Tea factories ●
- Wood Foundation Tea factories ●
- Coffee washing stations ○

BK TechHouse developed **Smart Kungahara System** to support coffee sector digitalisation and access to credit from Bank of Kigali

* Production not sold considered to have no production value as no transaction takes place which can be digitized. Estimated based on GVA per hectare and share of crop reported as sold for not cash crops

Sources: Rwanda Geoportal (2021), Agriculture Survey 2020, GSMA 2019



Narrowly Excluded value chains

Value chain	Size	Regularity /frequency	Concentration points	Pain points (distance, safety, convenience)
Grains (food 1)	Large (particularly with additional processing)	Low – Seasonal	Millers	Storage (national reserve)
Roots & Tubers	Medium (Cassava as key)		KCA miller (Cassava)	Short storage time (Cassava)
Beans (food 2)	Medium – key crop for GoR	Low – Seasonal	Voice for Change Partnership (V4CP)	Fortification
Fruit	Small (emerging forex earner)	Some perennials	RAEB?	Small sector
Vegetables	Small (emerging forex earner)	Low – seasonal	?	
Small ruminants	Medium	Regular (pigs) Seasonal (sheep)	MINAGRI?	Cold chain management
Poultry	Medium	Regular		Distribution



Source: CEPAR (n.d), FAO (n.d.)



Non-value chain specific use cases

The data nodes

- **Input providers**

- SNS provides a logical digital node for this
- Seed provision – Alliance for a Green Revolution in Africa (AGRA) has started and expanded to a number of seed providers including One Acre Fund (Tubura) and Rwanda aim to stop imports by 2021
- Agro-Processing Trust Corporation
- Livestock bank provides livestock in a similar manner but also cover feed costs etc.

- **Export markets**

- NAEB seems to collect substantial data on horticulture exporters
- Trade portal already natural hub that could include a payment option if they want to extend their functionality

- **Local markets**

- Esoko already provides market information to farmers (prices)

- **Financial services**

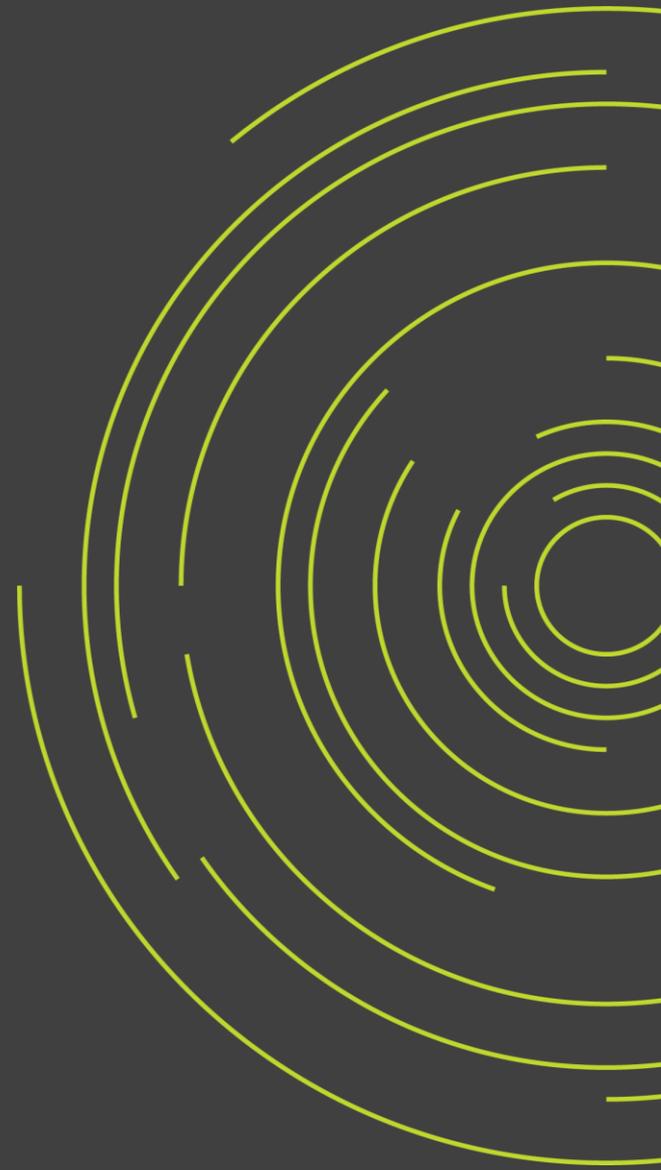
- Credit – most notably with ikofi – free payments by Bank of Kigali (links to SNS)
- Insurance - National Agriculture Insurance Scheme (NAIS) – SONARWA, Prime and Radiant insurers



Source: APTC ([n.d.](#)); Taarifa ([n.d.](#)); Agra ([2021](#))



Tea Sector



Tea sector controlled by few players with significant international support

- **NAEB plays strong role in sector**
 - Co-created Rwanda Tea Packers to market Rwandan tea
- **Most tea factories also have links to donors**
 - Woods Foundation philanthropic investor
 - MIG group
 - Mutangana received Oikocredit international support foundation support
 - Sorwathe had government pilots with USAID and EDF and IMF and Overseas Private Investment Coprorpation
 - MIG started by GoR
- Payments for factory workers are into bank accounts but some pluckers still paid cash

Owning company	Tea factories	Share
COTHENK	Nshili	5%
Multisector Investment Group (MIG)	Mushubi	3%
Mutangana Tea	Karongi	4%
	Muganza	
Rwanda Mountain Tea Ltd	Gatare	42%
	Gisakura	
	Kitabi	
	Mata	
	Nyabihu	
	Rubaya	
	Rutsiro	
	Rwanda Tea Packers*	
Tea Importers	SORWATHE	11%
Woods Foundation	Mulindi	34%
	Shagasha	
Woods Foundation (Luxmi)	Gisovu	
	Pfunda	
	Rugabano	

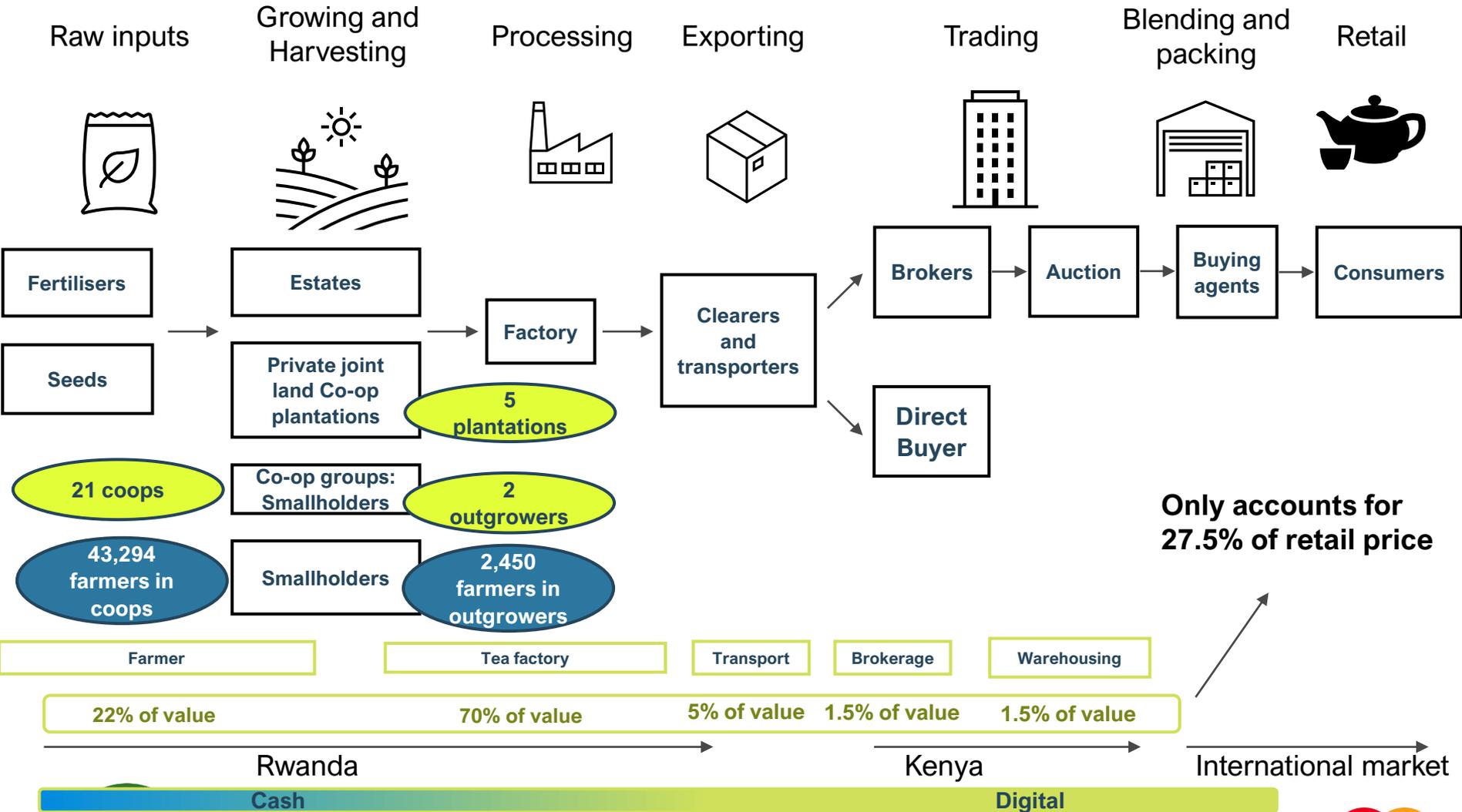


Source: Rwanda Geoportal ([2021](#)) NAEB ([2020](#)) and Company websites



Tea value chain

The farmer to co-op/outgrower relationship is not the highest in value but presents the biggest digitalisation opportunity



Source: Source: NAEB (2020), Oxford internet institute (2014)



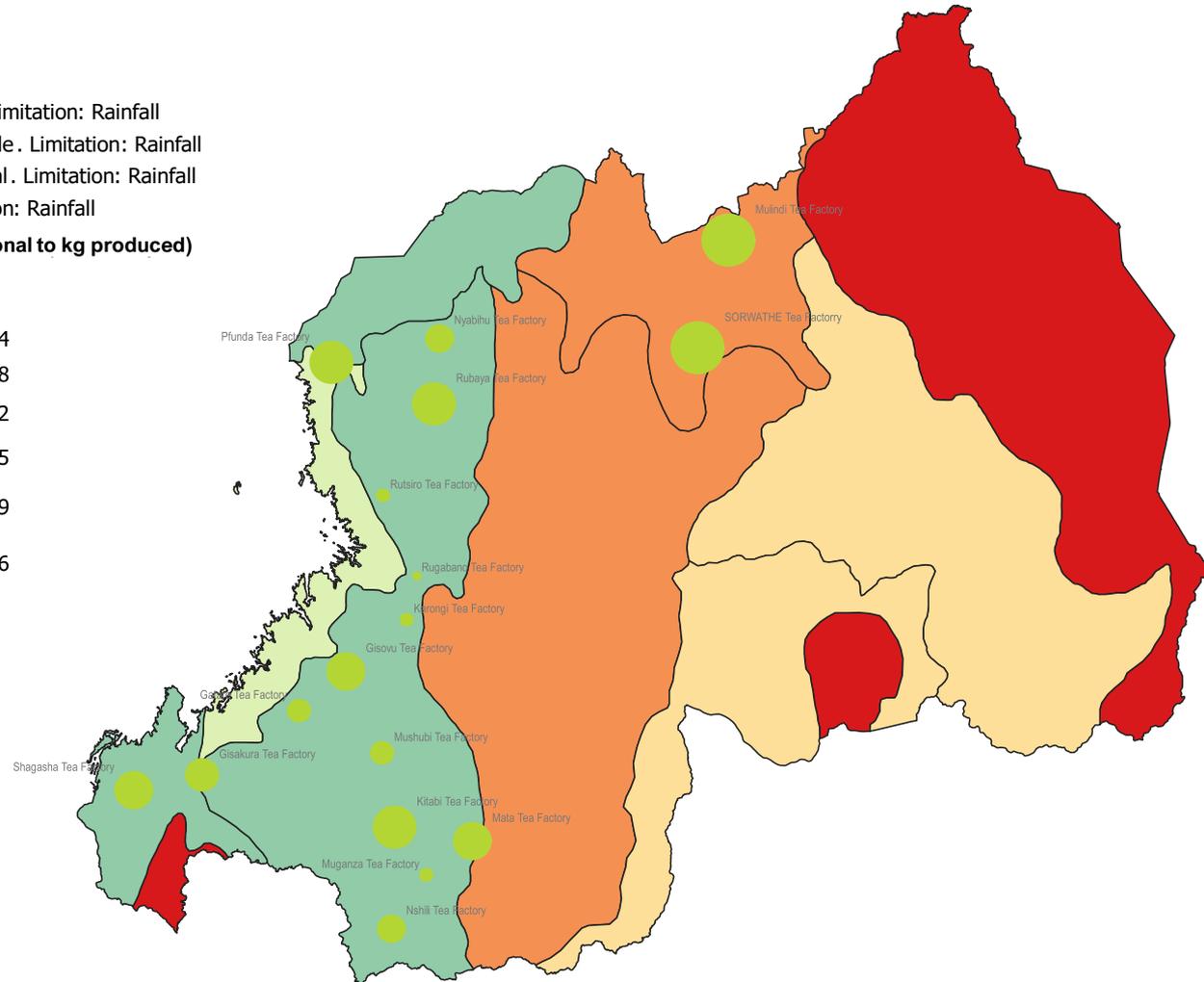
Tea factories proportional to production size, including climate suitability

Climate Suitability

- High
- High to moderate. Limitation: Rainfall
- Marginal to unsuitable. Limitation: Rainfall
- Moderate to marginal. Limitation: Rainfall
- Unsuitable. Limitation: Rainfall

Tea Factories (proportional to kg produced)

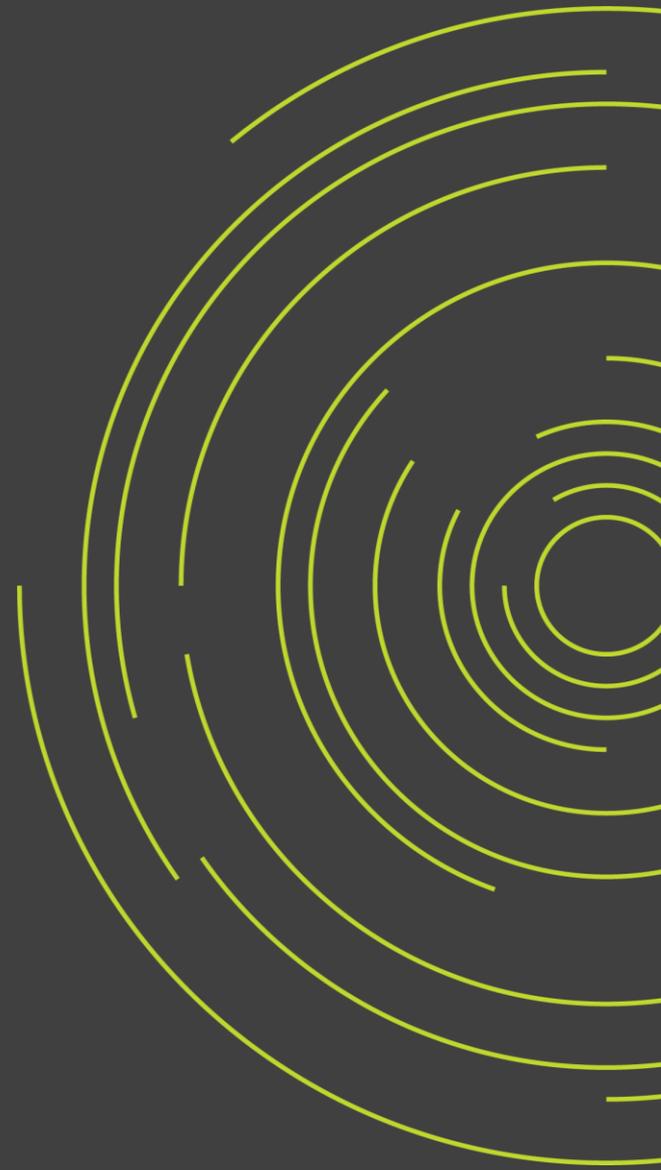
- 0 - 336904
- 336904 - 673807
- 1010711 - 1347614
- 1347614 - 1684518
- 1684518 - 2021422
- 2021422 - 2358325
- 2358325 - 2695229
- 3032132 - 3369036



Source: Rwanda Geoportal (2021)



Coffee Sector



Rwanda coffee sector

- There are approximately **400,000 small-scale coffee growers** in Rwanda
 - Cultivating about 35,000 ha of coffee
- **Geographical location:** Coffee growers are predominantly found in the Kivu, Kizi rift, Akagera, Muhazi and Virunga regions in Rwanda
- **Coffee varieties:** The different varieties of coffee grown in Rwanda include Caturra, Catuai and Bourbon (Arabica)
- **Growing season** is in September and October while **harvest season** is between March and July
- **Association:** Coffee Exporters and Processors Association of Rwanda (CEPAR) is a not-for profit organisation established in 2012
 - It currently has 34 coffee exporters and processors members, with 147 washing stations registered with the association
 - The association plays an important role in setting the price of coffee

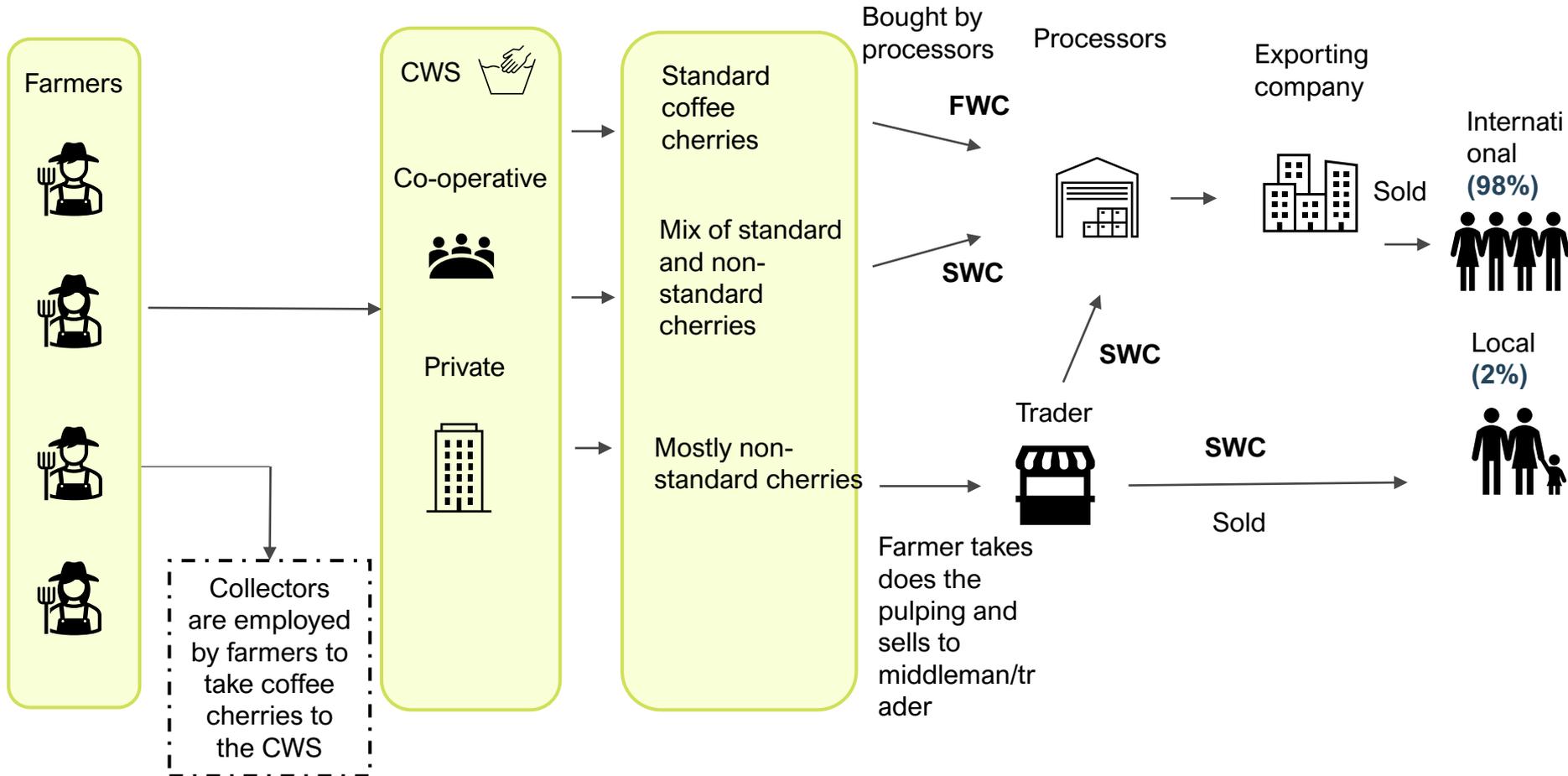


Source: [Rwanda Development Board \(n.d\)](#); [Ceparwanda \(n.d.\)](#); [Homegrounds \(n.d\)](#); 



Coffee value chain (goods flow)

Coffee washing stations (CWS) act as a key aggregation point that can be targeted to digitalise coffee payments



Farmers have their coffee cherries taken to the CWS for inspection



248 RwF per kg*

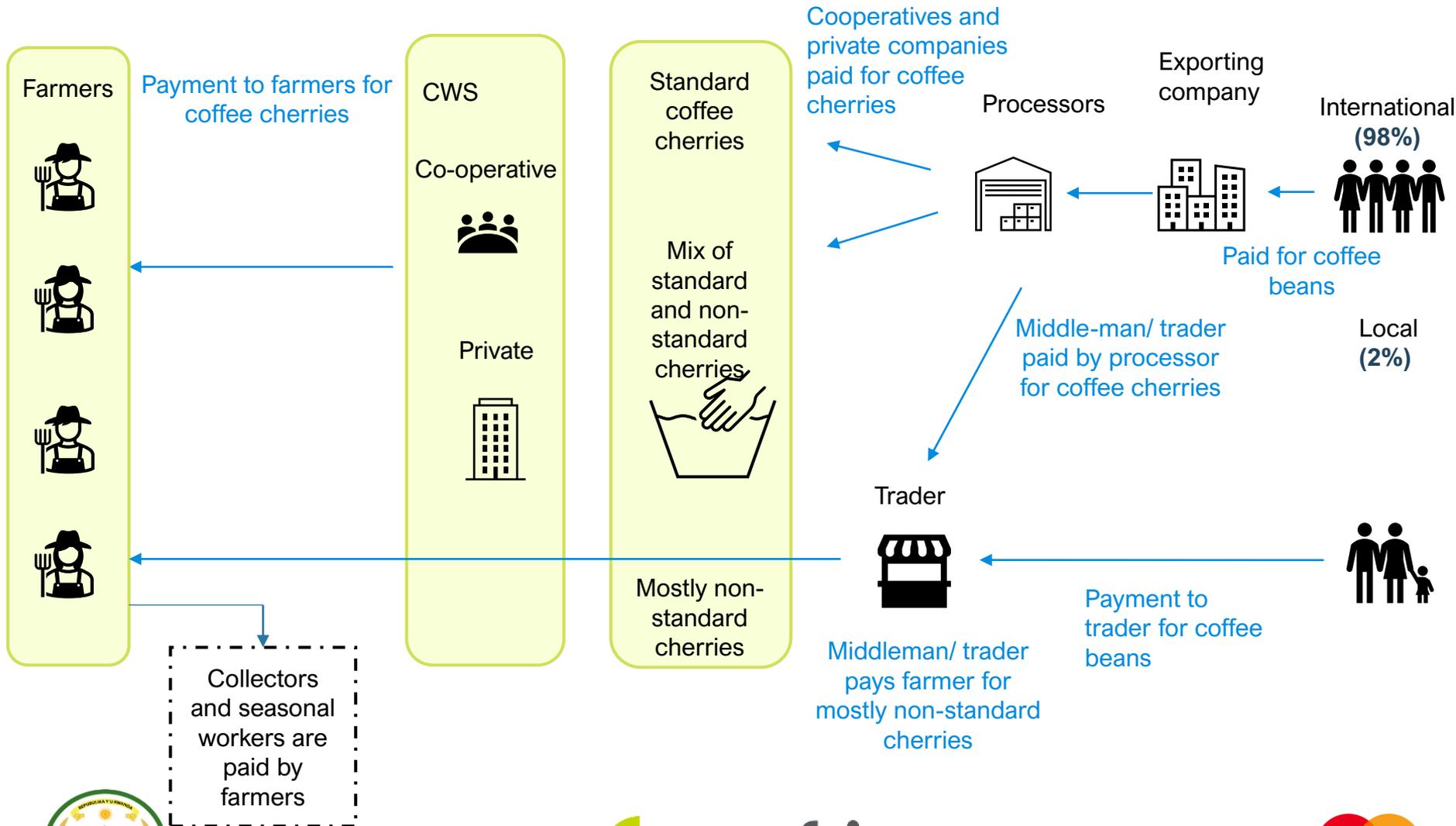
*Farmgate price

Source: Sangwa (2015)



Coffee value chain (payments flow)

Coffee washing stations (CWS) act as a key aggregation point that can be targeted to digitalise coffee payments



248 RwF per kg* *Farmgate price

Source: Sangwa (2015)



Thank you

About Cenfri

Cenfri is a global think-tank and non-profit enterprise that bridges the gap between insights and impact in the financial sector. Cenfri's people are driven by a vision of a world where all people live their financial lives optimally to enhance welfare and grow the economy. Its core focus is on generating insights that can inform policymakers, market players and donors who seek to unlock development outcomes through inclusive financial services and the financial sector more broadly.

