



Catalyzing Markets Prospects for Horticulture Smallholder Farmers and Small and Medium Enterprise in Rwanda Project



French Beans Value Chain Analysis Summaries

FARMERS PRODUCING

Bugesera 40%

Gasabo 44%

Recommendation

Mobilize farmers to produce French beans especially in Kayonza with the lowest number of farmers producing yet it's marked as a suitable area for French bean production

Kayonza 9%

Rwagamana 46%

VARIETIES

Produced	Demanded domestically & regionally	Demanded internationally
Vanilla, Serengeti, Samantha, Star 2053, Argus	Vanilla	Vanilla, Samantha

All districts are already growing Vanilla. Only Gasabo grows Samantha variety.

Recommendations

- Prioritization should be given to varieties demanded in the export market (Vanilla and Samantha).

YIELD

District	Current Yield(kg/ha)	Potential Yield	% Yield gap
Bugesera	863.51	12000	93%
Gasabo	1606.74	12000	87%
Kayonza	273.43	12000	98%
Rwamagana	694.07	12000	94%

Recommendations

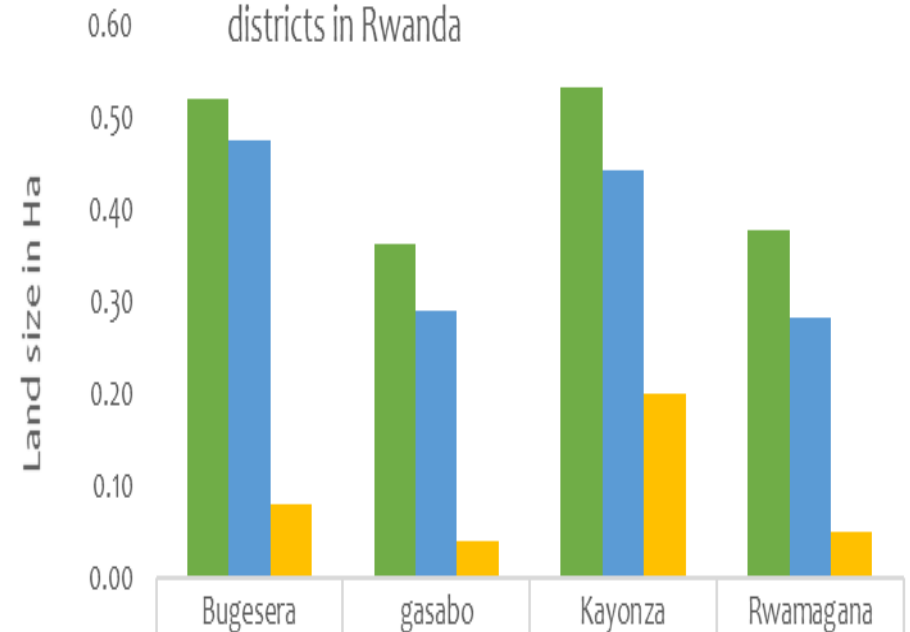
- Promote adoption of better production methods, efficient pest management systems to boost French bean productivity and returns and lower the existing yield gap.
- Training farmers on climate smart agricultural practices and proper use of inputs to increase production: terracing, crop rotation, water harvesting and use of the right varieties .
- Enhance use of other yield enhancing inputs like fertilizer, manure, integrated pests & disease control, irrigation technologies.
- To increase access to agro-inputs, promote last-mile distribution of inputs through models such as village agro-input stockists, digital input distribution channels, among others. This approach strengthens the connection between agro-input distributors, agro-dealers and farmers Which varieties are these? FCI was to advise on that.

LAND ALLOCATED

Recommendations

- ❑ Increase efforts on intensification and use of fertility inputs to optimize production per unit area to tap on to French bean high potential to earn foreign income.
- ❑ Encourage farmers to increase acreage under French beans to enjoy high prices at market gate and therefore higher incomes.
- ❑ Encourage farmer groups to farm together to aggregate production through increased acreage and tap into economies of scale and hence higher profitability.

Land accessed, cultivated and land allocated to French beans in Ha selected districts in Rwanda



	Bugesera	gasabo	Kayonza	Rwamagana
Average Land accessed (Ha)	0.52	0.36	0.53	0.38
Average Land cultivated (Ha)	0.47	0.29	0.44	0.28
Land allocated to French Beans (Ha)	0.08	0.04	0.20	0.05

INPUTS

General challenges to access

84% high cost of inputs

53% lack of availability of needed inputs

40% delays in delivery

Access to inputs per district

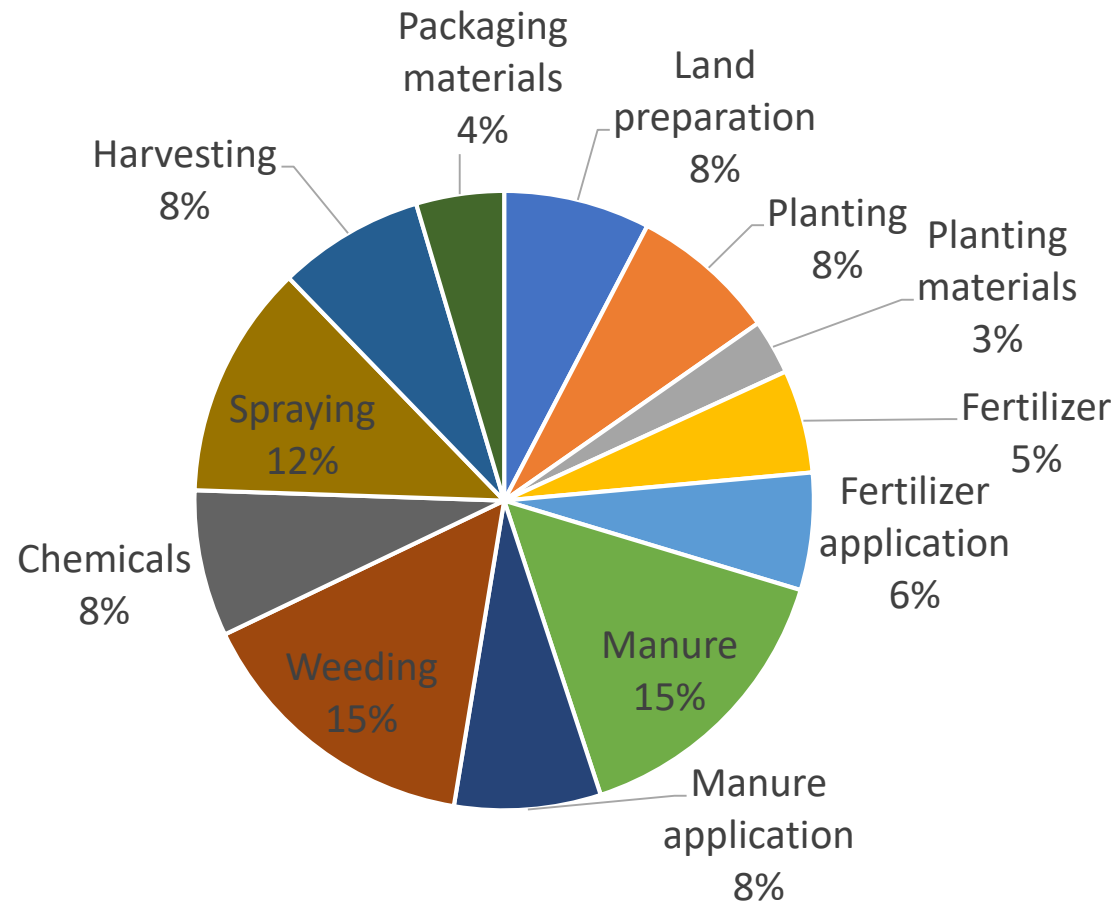
- Bugesera – 25%
- Gasabo – 34%
- Kayonza – 4%
- Rwagamana – 24%

Recommendations

- ❑ Need to develop and/or strengthen business partnership with the input suppliers and negotiate for farmers to get a favorable price especially in Kayonza which has high acreage allocated to French beans but the lowest access to inputs and the highest yield gap due to low productivity.
- ❑ Advocacy for government subsidies to farmers for agro inputs
- ❑ Empower existing groups to take advantage of the group structure and negotiate for better prices
- ❑ Mobilize farmers to participate in savings and investment in seed system

COST DRIVERS

Cost drivers share per are in production of french beans in Gasabo

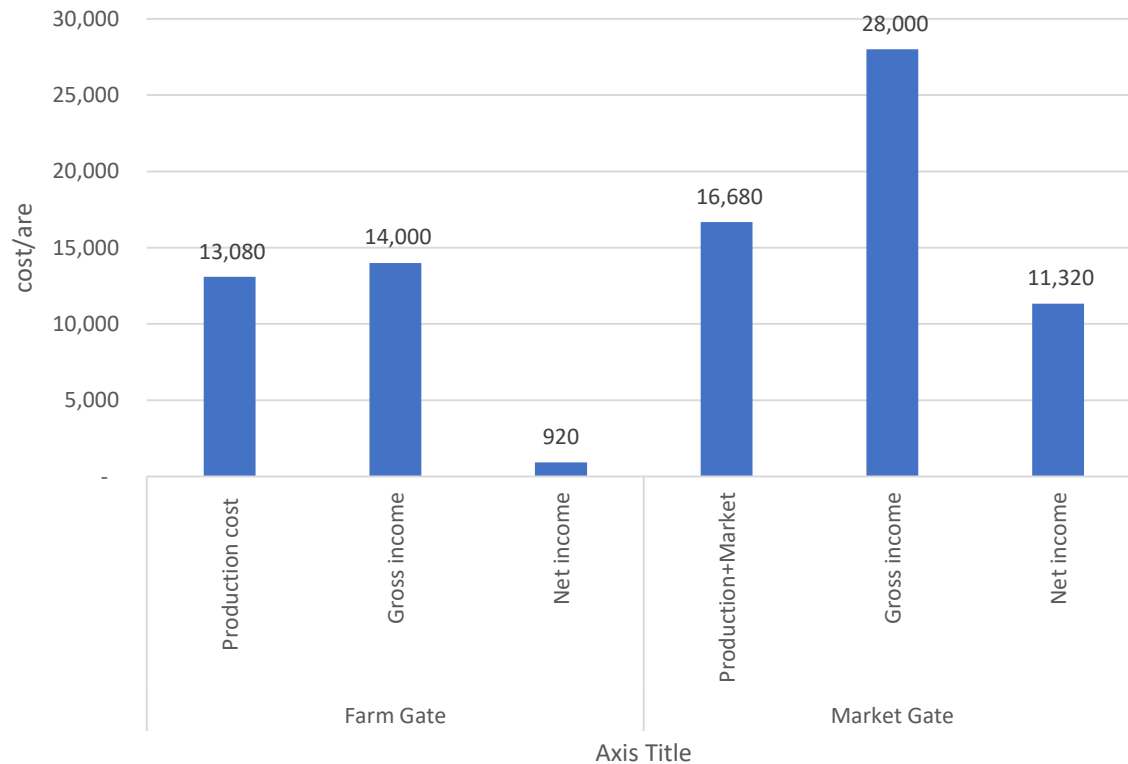


Recommendation

- ✓ Encourage farmers to farm collectively so as to easily access a wide pool of labor as it's the main cost drivers at 65% (manure & fertilizer application, planting, land preparation, harvesting, spraying, weeding)
- ✓ Encourage mechanization where applicable

PROFITABILITY

Comparison of farm gate and market gate net profits (RWF/Are) for frenchbeans production in Gasabo



Recommendations

- ❑ Encourage farmers to do collective marketing and deliver to markets in urban centers and exporters to tap onto economies of scale and greater profitability at the market gate.
- ❑ Collaboration and contracts between farmers, input suppliers, processors, and traders create more inclusive markets and positive spill overs when an enabling and transparent legal framework is laid out, ensuring contract enforcement and thus trust.
- ❑ Contract farming is an effective means of coordination and risk-managing instrument leading to vertical integration. To curb-side selling and enhance farmers' adherence to delivery contract commitment, it is essential that buyers and value chain stakeholders also adhere to contract terms such as timely payment to farmers

DOMESTIC VS INTERNATIONAL EXPORT MARKETS

Overall

- ❖ Annual trade value of French beans for sampled wholesale aggregators - \$223,265.7
- ❖ Annual value exported in selected districts - \$358463

Domestic & regional values (\$)

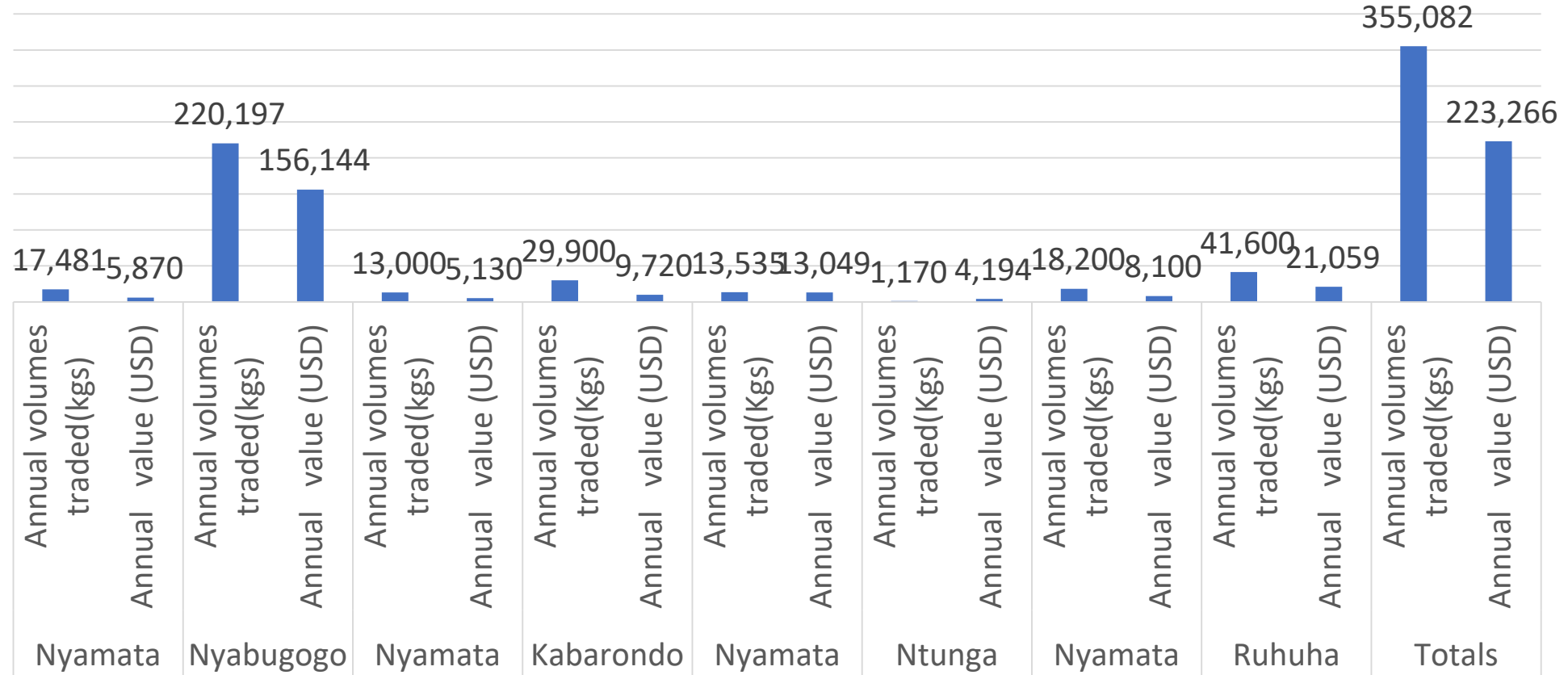
- Bugesera – 29,159
- Gasabo – 169, 193
- Kayonza – 14,849
- Rwagamana – 10,064

Recommendations

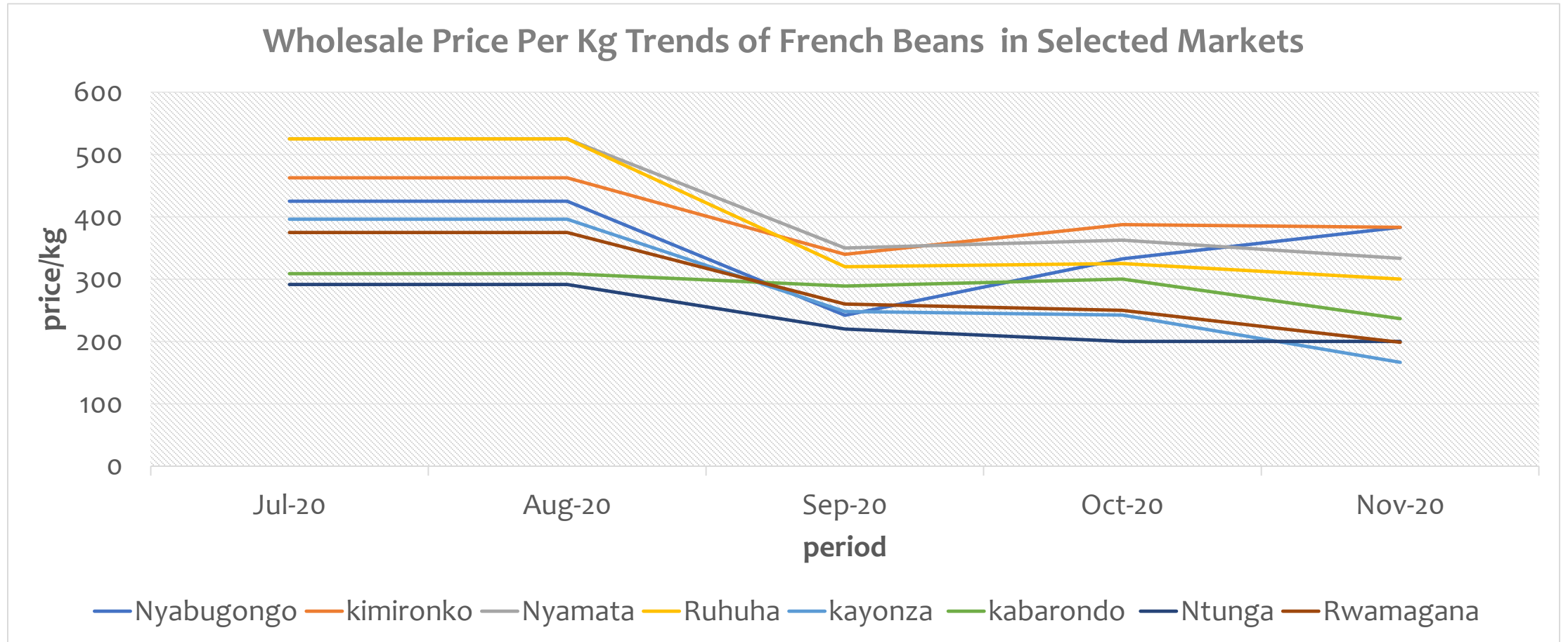
- Engage partnership with exporters
- Ensure secured contractual agreement with buyers, especially exporters before promoting production of French beans
- Support farmers for export certification
- Awareness creation to farmers to understand the government regulation for producing, marketing of French beans as it has more potential in cross-border markets than it does locally
- Structured training to farmer groups inclusive good agricultural management practices, postharvest handling, value addition and quality handling that conforms to the international market standards/requirements and GAPs
- Training on trade requirements for domestic, regional and export markets

MARKET SIZES

Annual Volume (kg) & Value (\$) Traded in the Domestic Market

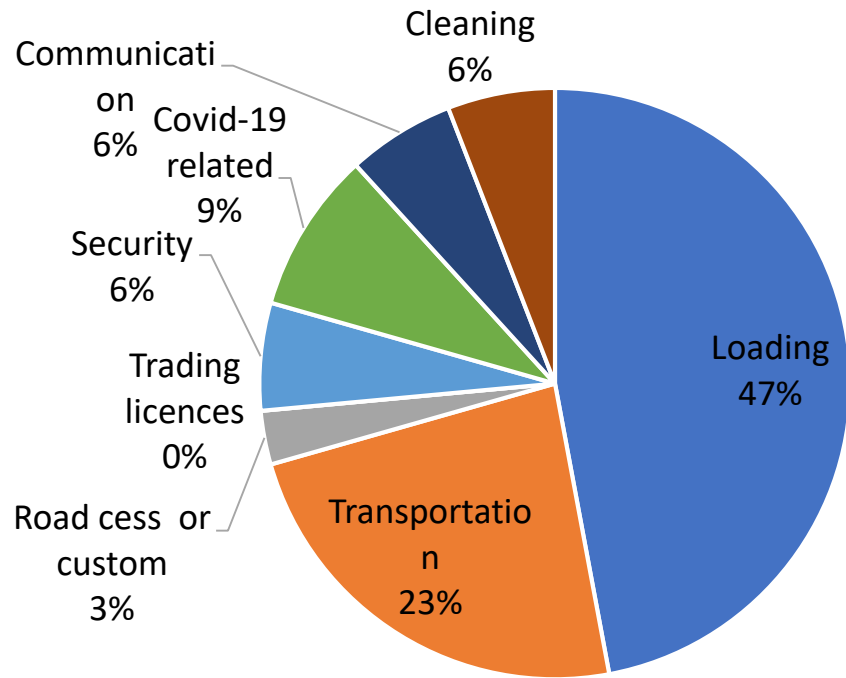


PRICE TRENDS

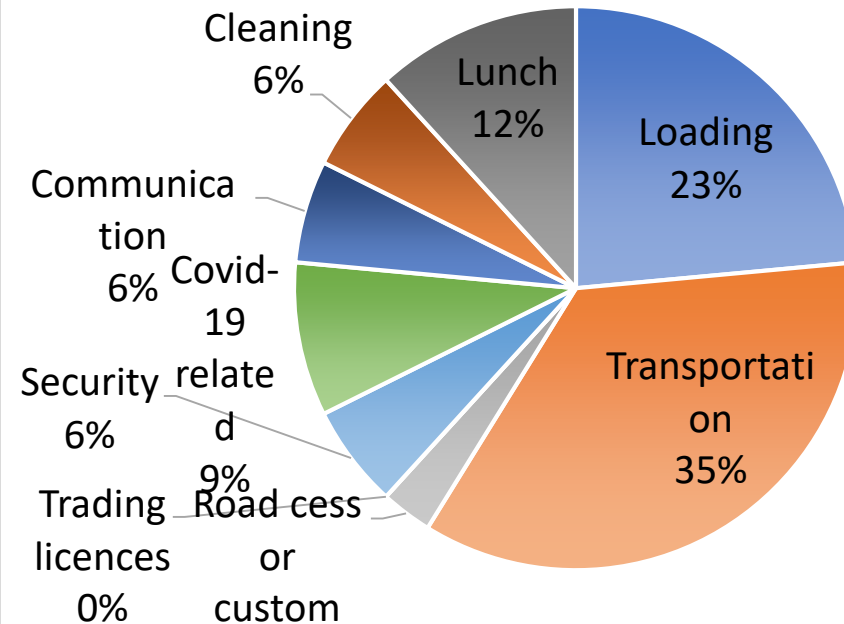


LOGISTICAL COSTS

Logistical costs share for a wholesale trader sourcing french beans from Kigali (30Km) to Ruhuha market during peak season



Logistical costs share for a wholesale trader sourcing french beans from Kigali (65Km) to Ruhuha market during peak season



POST-HARVEST HANDLING

Percentage of post- harvest losses

Overall: 5.3%

Per district

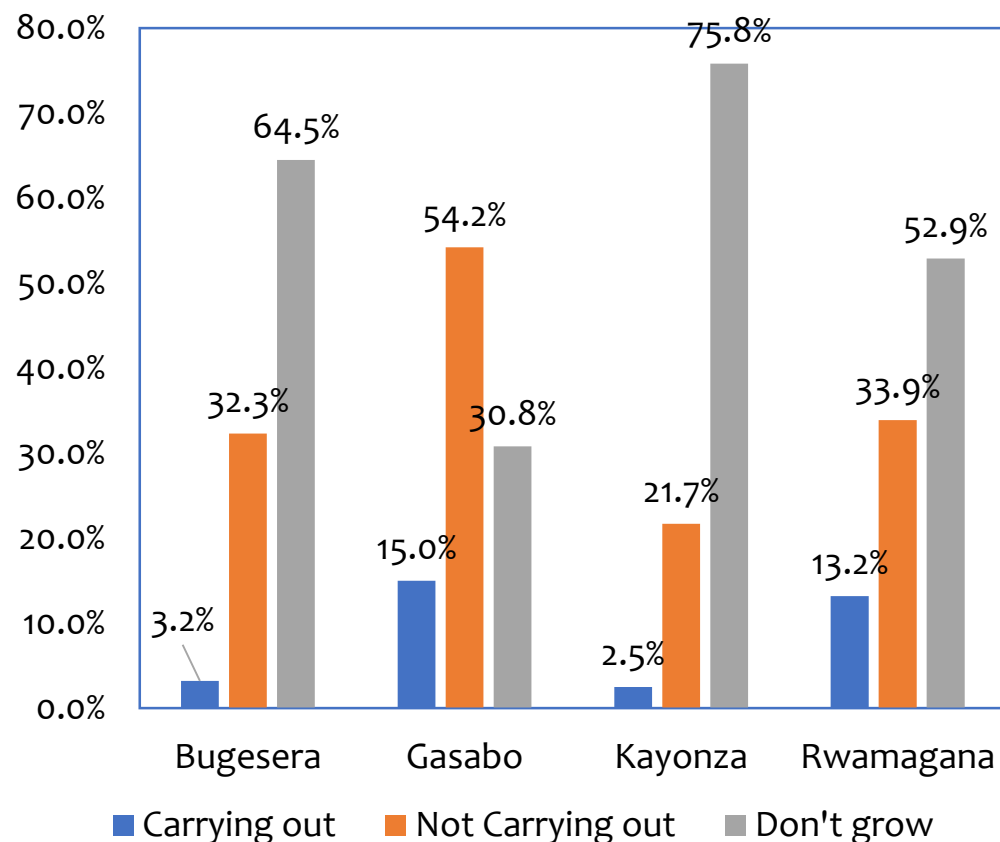
- Bugesera – 4%
- Gasabo – 4%
- Kayonza – 1.2%
- Rwagamana – 12%

Recommendations

- ❑ Training farmers on post-harvest handling and proper use of storage technologies to avoid mechanical damage, physiological and biological deterioration mainly affected by handling, transportation, storage, and processing of French beans
- ❑ Construction of storage facilities for contracted farmers to use
- ❑ Post-harvest losses dent farmer incomes and threaten food security. Improving the situation requires investments in infrastructure and innovative logistics models, appropriate operation and maintenance activities that ensure efficiency and effectiveness

VALUE ADDITION

Percent of farmers carrying out value addition across select districts in Rwanda



Only 8.5% of farmers across the selected districts add value to the French beans that they harvest

Recommendations

- Promote value addition techniques and agro-processing technologies to extend shelf-life and reduce loss.
- Capacity building of farmers and traders on preservation, processing, value addition and packaging as well as exploring new markets for value-added products for increased profitability.
- Link farmers to suppliers to facilitate access the right technology and make them knowledgeable in value addition.

FCI FRENCH BEAN SWOT ANALYSIS

Strengths

- Existence of farmer groups
- Highly profitable at market gate
- Collective marketing
- Both food and cash crop
- Existence of farmers already farming the crop
- Adapted to region
- High yielding crop
- Short growing /life cycle
- Harvested over a period of time
- Highly nutritious
- Good climate
- High demand locally and internationally

Opportunities

- Availability of suitable land
- Existence of NAEB strategic plan (2019-2024) for French bean export
- Partnership with input suppliers, processors and traders
- Existence of a demand gap
- Government support through exhibitions, research, certification and infrastructural investments
- Adoption of climate smart agriculture
- Adopt water harvesting technologies for irrigation
- Formation of trade associations through farmer groups to access export markets

Weakness

- Small land holdings
- Inefficient postharvest management
- Limited access to markets
- High cost of transport
- Lack of storage facilities
- High perishability/short shelf life
- Highly sensitive to diseases and pests

Threats

- Unavailability of inputs
- High cost of inputs
- Resource depletion
- Reduced ecosystem quality
- Effects of climate change; drought and flood events
- Price fluctuations
- Poor financial institution understanding of agribusiness
- Covid19 induced lockdown
- Highly labor intensive
- Competition for farming land with other crops

French beans Key Informant Interview SWOT Analysis

Strengths

- Adapted irrigation
- High yielding crop
- Good climate
- Short growing /life cycle
- Highly nutritious
- High market demand locally and in export market

Weakness

- Poor quality seeds
- Lack of improved varieties
- Lack of storage facilities
- High perishability/short shelf life
- Lack of storage facilities
- Post-harvest losses
- Low price
- Market fluctuation
- Not tolerant to drought
- Expensive seed

Opportunities

- Availability of suitable land
- Adequate water for irrigation as well as good drainage
- Crop is supported/promoted by Government policy
- Increasing demand for export market
- Increasing hotels and liked by the population
- Possibilities to be a seed multiplier
- Intensive cultivation
- Short harvesting interval
- Suitable land
- Adopt water harvesting technologies for irrigation

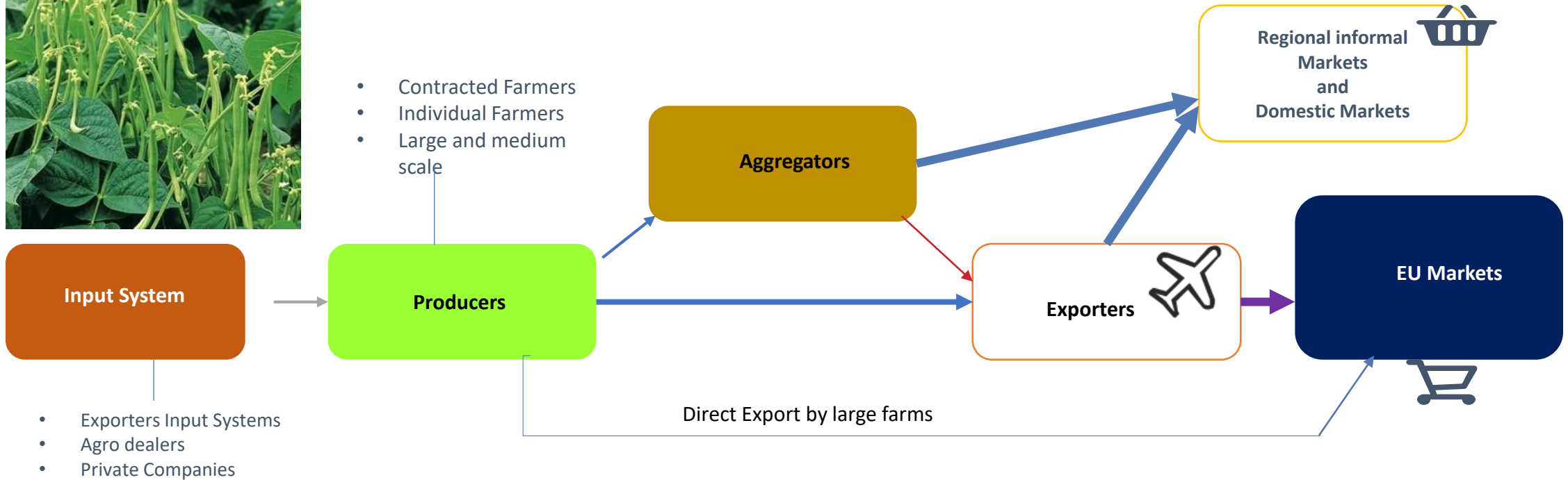
Threats

- Effects of climate change; drought and flood events
- Price fluctuations
- Sensitivity to diseases and pests



French Beans Value Chain Process Maps

Rwanda Formal and Informal Market Systems



OVERALL RECOMMENDATIONS

- 1. Sustainable affordable integrated production and soil fertility management to increase yield:** An average of 93% yield gap for target Districts in such a highly commercial crop demonstrates large losses for smallholders farmers and the immediate focus is a stepwise simplified productivity pathway. The approaches would need to be Season A, B and C specific per District based on practical approaches for immediate implementation. With 76% concerned on chemical use for their health, it is of priority that the program adopts a highly integrated approach to delicate smallholder cropping systems.
- 2. District Commercial Zones and Enhance Crop prioritization Prioritize Public-Private Partnerships for multiple crops, GLOBAL GAP Certification and Participatory monitoring of progress:** French beans are in direct collision path and stiff complex competition with cereals, legumes, root crops, other fruits and vegetables as well perennial commercial crops. The land available for seasonal crops is limited and under competition between buyers, NGOs, Household food security and Government strategies. Commercial Zones action plans to be multiple crop inclusive with guidelines for farmer groups

District Prioritization

Crop	% farmers Producing the crop	Rank 1=Highest performing) 8=lowest performing	Commercialization Index (%)	Rank 1=Highest performing) 8=lowest performing	% Using Improved planting materials	Rank 1=Highest performing) 8=lowest performing	Average Number of seasons	Rank 1=Highest performing) 8=lowest performing	Percentage Yield gap	Rank 8=Highest performing) 1=lowest performing
Bugesera	39.5%	3.00	36.7%	1.00	89.8%	4	2	1	93%	3
Rwamagana	45.5%	1	27.3%	3	94.5%	2	2	1	94%	2
Kayonza	9.2%	4	27.3%	2	100.0%	1	2	1	98%	4
Gasabo	44.2%	2	1.9%	4	94.3%	3	2	1	87%	1

District	Farmer level Trade Index (%)	Rank 1=Highest performing) 8=lowest performing	Domestic market supply gap(%)	Rank 1=Highest performing) 8=lowest performing	Domestic markets Annual volumes supply (MT)	Rank 1=Highest performing) 8=lowest performing	Domestic markets Annual volumes Demand (MT)	Rank 1=Highest performing) 8=lowest performing	Total Rank
Bugesera	88.0%	2	65.0%	2	60	2	196	3	21
Rwamagana	81.2%	3	93%	4	19	4	209	2	22
Kayonza	96.2%	1	50.5%	1	43	3	83	4	21
Gasabo	79.1%	4	85.5%	3	234	1	1238	1	20

District	Total Rank	Overall rank 1
Gasabo	20	1
Bugesera	21	2
Kayonza	21	2
Rwamagana	22	3

Parameters were carefully selected and ranked to determine French beans performance across the districts. The value chain ranked highest in Gasabo , followed by Bugesera. When ranked with other crops using same parameters to determine which value chains to prioritize on, the analysis indicated the value chain to be promoted in all the districts ranking among the top 4 priority value chains



EUROPEAN UNION



MINECOFIN



Catalyzing Market Prospects for Horticulture Smallholder Farmers & Small and Medium Enterprises (SMEs)

VCA Summaries 2021