

## SUB-THEME: COMMERCIAL SUSTAINABLE SEED SYSTEM

### Eliciting farmers' demand for quality and nutritionally enhanced sweetpotato planting material in Rwanda Abstract code: CSS015

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#### Justification of the study

- Sweetpotato is a major crop in Sub-Saharan Africa (SSA)
- Urban population increases and thereby increase in demand for sweetpotato in the market
- Piecemeal harvesting is high for sweetpotato, but farmers force to increase production for market due to increase in market demand; Need for accessing quality vine for increasing yield of market preferred variety
- Quality vine comes with a cost but not clear value for quality attribute as sweetpotato largely sourced from own-saved seed or neighbours for free of costs
- Prevalence of high malnutrition in SSA, vitamin A rich Orange-fleshed sweetpotato (OFSP) proved to be a best solution; high demand among niche market segment which drives demand for OFSP variety but not clear value of the vine due to nutritional attribute

#### Research Questions

- What premium price are farmers willing to pay for quality vines and what are the drivers of the demand for quality vines?
- Are farmers willing to pay a premium for the high beta carotene nutritious biofortified varieties as opposed to the non-biofortified dominant local ones?
- What is the effect of information regarding the quality of vines on the demand for quality vines and the biofortified sweetpotato varieties?

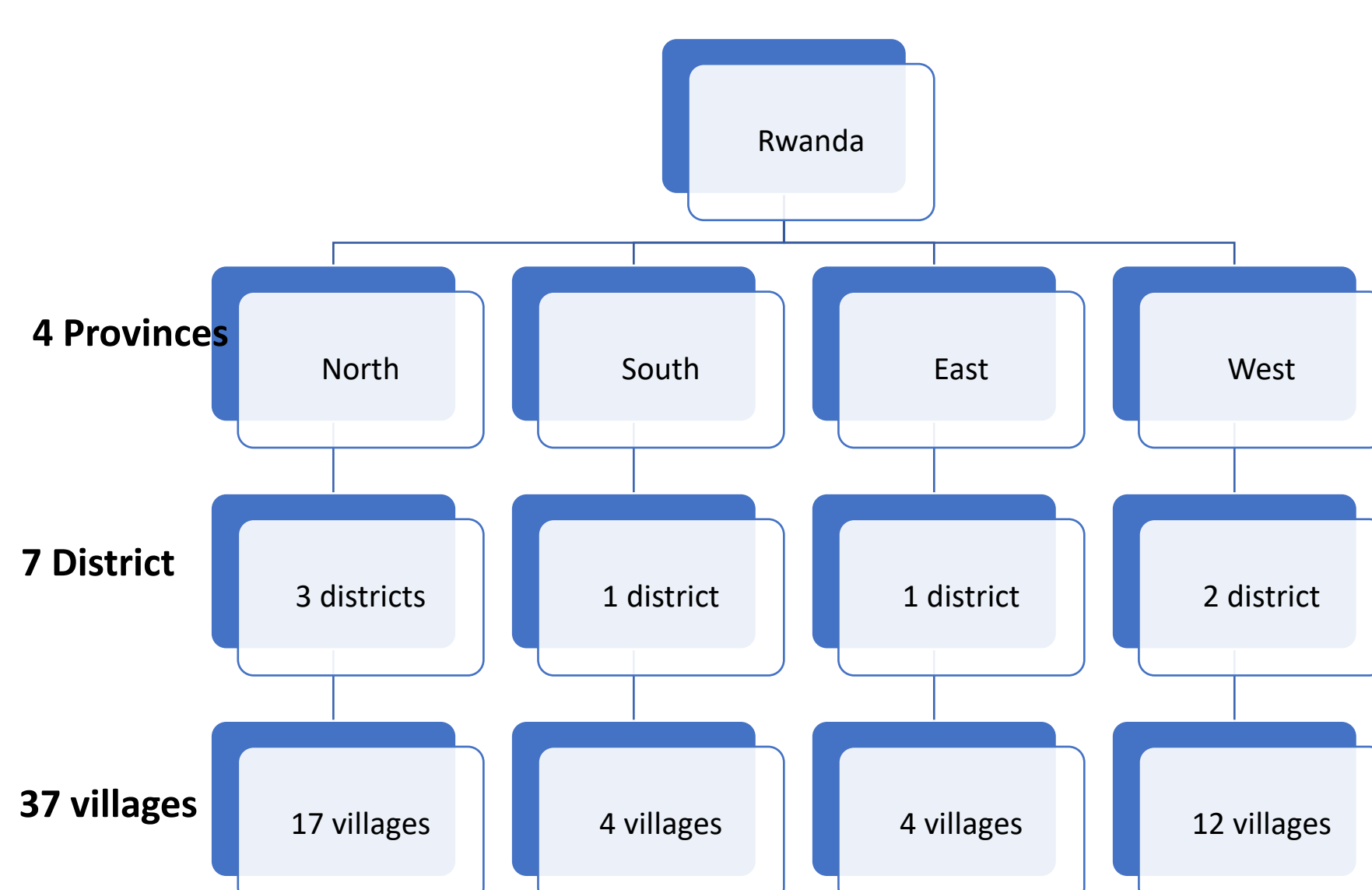
#### Sampling Technique and Sample Size

- Purposive Sampling at provinces, districts and villages level
- Stratified random sampling at household level.
- We aimed at 677 but manage to collect 697 farm households. The number of subjects: 24 subjects in each group; each village will have one group and Total 37 villages.
- Sample size is determined by power calculation.

#### Average bidding price (RWF) per 8 kgs of vine by rounds (mean, SD, min and max)

round	p1	p2	p3
1	449.2	413.4	337.7
	362.8	321.0	253.4
	3.0	2.0	0.0
	3000.0	2400.0	3500.0
2	498.3	366.1	
	375.9	301.4	
	15.0	0.0	
	3000.0	3000.0	
3		428.4	272.1
		308.8	194.2
		8.0	0.0
		3600.0	1500.0
4	506.1	398.3	
	375.0	326.4	
	15.0	10.0	
	3200.0	3000.0	
Total	484.5	401.6	304.9
	371.9	315.2	228.0
	3.0	0.0	0.0
	3200.0	3600.0	3500.0

#### Study Area



#### Survey Design



#### Experimental Auction Design (2<sup>ND</sup> Price Auctions)

Products	Variety	Round 1: Naive	Round 2: Information	Round 3: Nutrition	Round 4: Demo plots
sourced from seed multipliers, clean and pest free, early maturity	OFSP (Kabode)	P1	P1		P1
sourced from neighbours, recycled several times but same maturity level	OFSP (Kabode)	P2	P2	P2	P2
sourced from neighbours, , recycled several times but same maturity level	Local variety (Non-OFSP)	P3		P3	

#### Challenges and limitations

- Clear instruction required before conducting auctions as it is not same as normal household survey
- Credit constraints needs to be introduced;
- It can be conducted in two different seasons to see seasonal effect.



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Source: Experimental auction data, 2019

Average exchange rate in 2019: 1 US\$ =911.5004 RWF

#### Results

- Root producers willing to pay more than market price when product is labelled with source of vine, variety and seed classes (quality attribute)
- Root producers willing to pay premium when they hear varieties are nutritionally rich (nutrition attribute)
- When root producers visually observe performance of the variety, willingness to pay for quality vine is much more higher than market price – demo plays significant role
- Further analysis to identify determinants of willingness to pay for quality and nutritional attribute