

Developments towards Commercial Agriculture in Rwanda: Understanding the Determinants of Market Participation among Bean farmers in the North



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Pan-African Grain Legume
& World Cowpea Conference



Overview

- Introduction
- Conceptual framework
- Focus of the paper
- Methodology
- Data and Results
- Conclusion and Recommendation

1. Introduction...

- Transformation from subsistence to commercial agriculture is on the Rwanda's development agenda since 2000.
- Efforts have been mainly invested to facilitate access to inputs, access to market and also creation of farmers' organizations.
- Some crops have been even identified for more attention; Common Bean is among them.

1. Introduction.

- After about 15 years of efforts:
 - Though there are pockets of successful commercialization, many farmers are still mainly in subsistence farming; especially women (MINAGRI,2013).
- So far, scanty empirical research has been conducted to understand the drivers of commercialization among Rwandan farmers.

2. Focus of the paper

- Determine the level of households' bean commercialisation
- Examine the determinants of market participation and bean commercialization among smallholder farmers

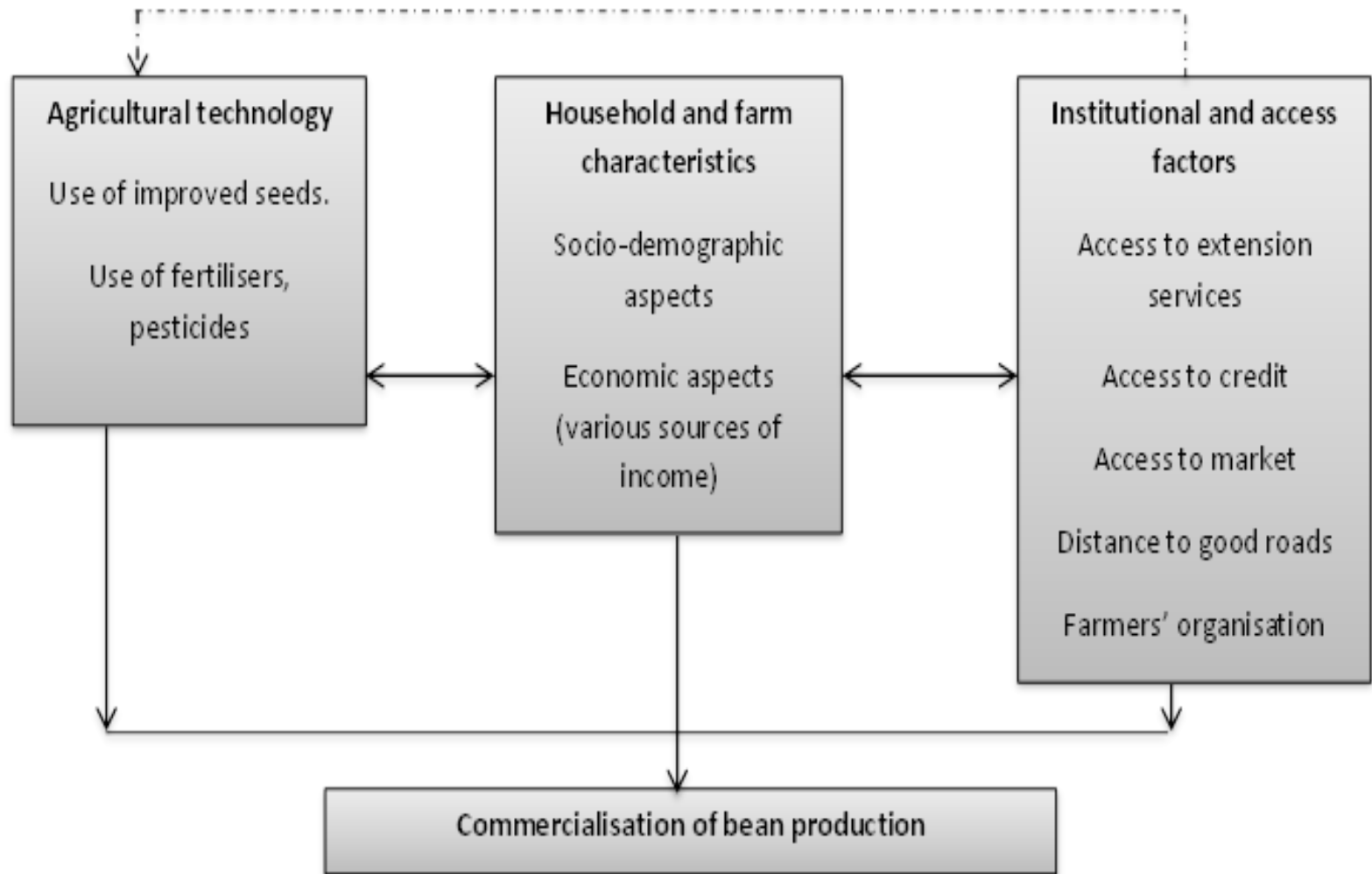
3. Conceptual Framework...

- CF is founded on the Non-Separable Farm Household

Model:

- *Farmers do not purely behave profit maximizer, but their decisions on production levels, activities, are affected by its consumer characteristics (demographic characteristics, preferences,..) (De Janvry and Sadoulet, 2006).*
- From smallholder market participation behavior model by Barrett (2008): *poor access to institutions and public infrastructure, lack of incentives affect the farmers' behavior.*

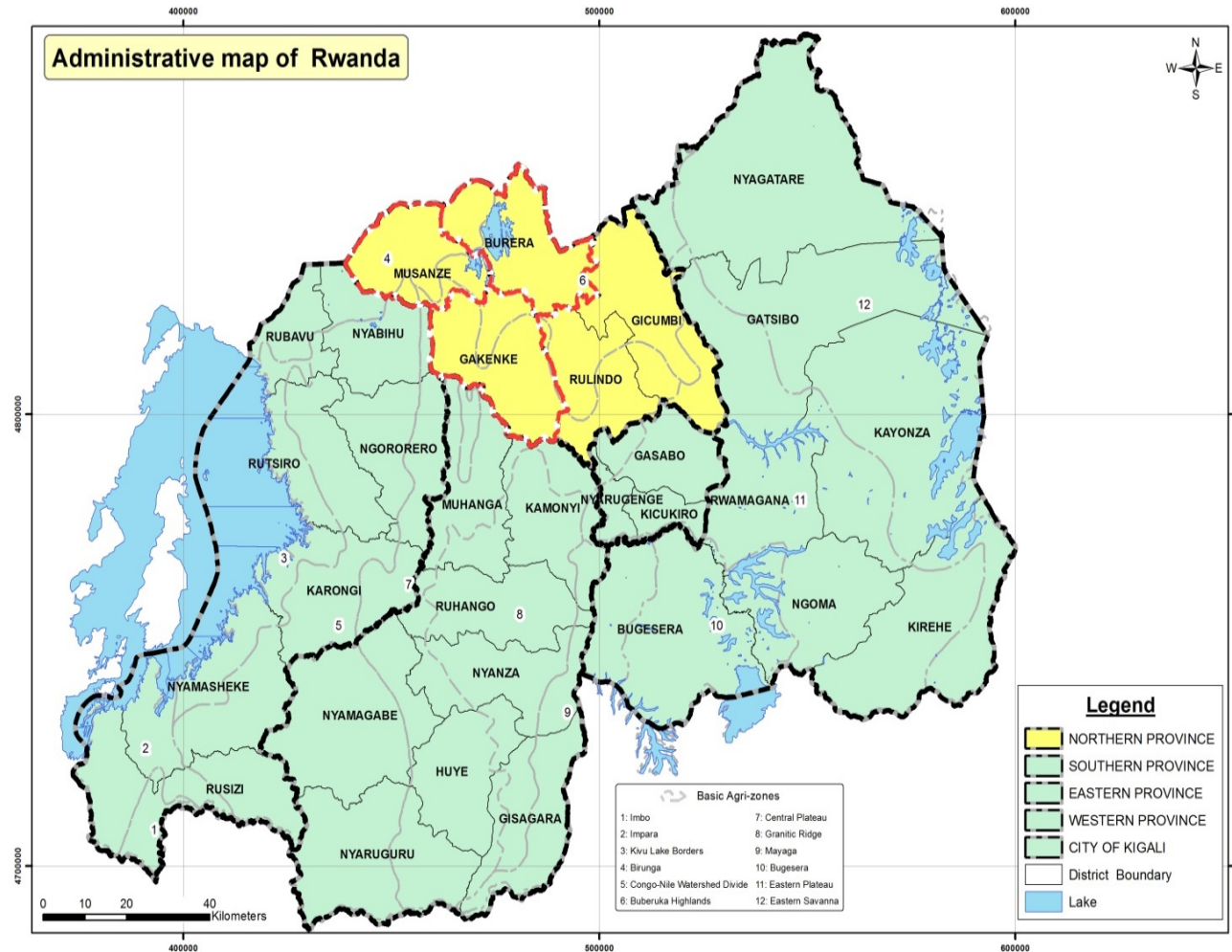
3. Conceptual Framework.



4. Methodology...

Study area:

- Northern Province in Yellow.
- 3 out of 5 districts.



4. Methodology.

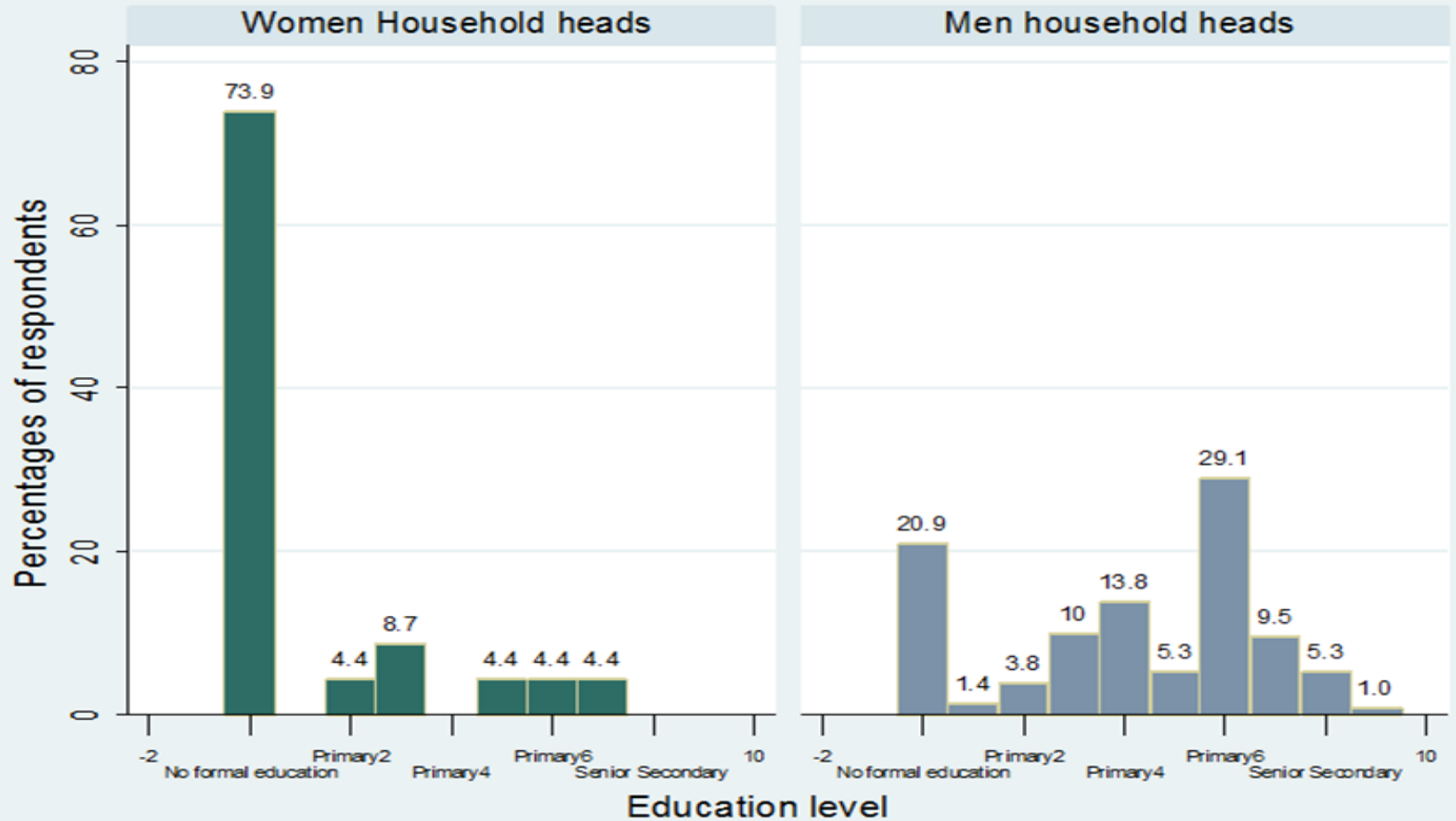
- Multi-stage sampling with a random sample of 256 farming households.
- A structured questionnaire was used for data collection; on 2 seasons of 2015.
- For the analysis:

Objective	Analytical method	Key references
Objective 1	Household Commercialization Index (HCI) by Strasberg et al.,(1999)	Bekele et.al, 2010; Hailua et.al,2015; Musah et.al.2014
Objective 2	A double Hurdle model by Cragg (1979),	Martey, 2014; Weyessa, 2014.

5. Data description

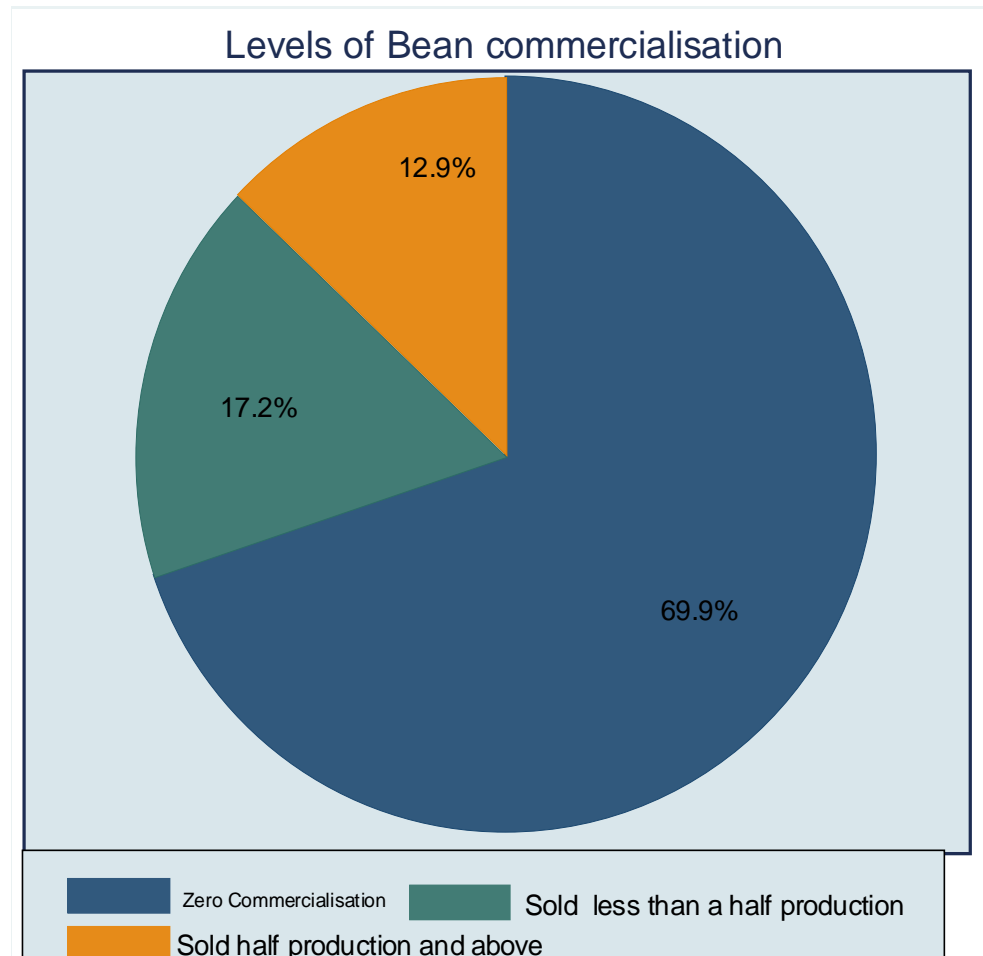
- 81% and 19% respectively headed by men and women,
- Age : 46 years household
- Size : 5 persons.
- Owned landholding : 0.36 ha (min.0.01 , max. 9 ha),
- Main occupation: 66.4 % farming
- 65.7% were members of farmers' groups.
- Education: next figure

5. Data description



5. Results...

- Average HCI was 12.6%.
- Among those who have participated : HCI was 41.81% (min. 7% and max. 87.5%).
- Similar trends were identified on pulse and cereals by other researchers in Africa (e.g. Hailua et al.,(2015) (Barrett,2008).



5. Results...

		Observ	256	
Log likelihood	451.2613	Wald chi2(12) :	35.7	
		Prob > chi2 :	0.0004	
	Coef.	Std. Err.	z	P>z
Market participation(Binary)				
Age	-0.011	0.007	-1.510	0.130
<u>Gender(0=Woman,1=Man)</u>	-0.498	0.278	-1.790	0.073*
Schooling years	0.045	0.037	1.230	0.219
<u>Land size</u>	0.002	0.001	2.230	0.026**
Household size	0.037	0.038	0.960	0.337
<u>Health insurance</u>	0.814	0.323	2.520	0.012**
Distance to the market	0.022	0.076	0.290	0.775
<u>Distance to the Border</u>	-0.094	0.057	1.660	0.096*
<u>Distance to the main road</u>	-0.223	0.086	2.590	0.010**
<u>Agricultural training</u>	0.710	0.353	2.010	0.044**
Group Member	0.309	0.209	1.480	0.140
Number of livestock	0.034	0.051	0.670	0.501
_cons	-0.377	0.579	-0.650	0.515

5. Results...

Degree of commercialisation(Continuous)				
<u>Gender(0=Woman,1=Man)</u>	-12.578	6.847	-1.840	0.066*
<u>Schooling years</u>	1.877	0.890	2.110	0.035**
Household size	0.644	0.985	0.650	0.513
Land size	-0.010	0.014	-0.730	0.465
<u>Market Price</u>	0.128	0.033	3.930	0.000***
<u>Livestock income</u>	0.000	0.000	2.250	0.025**
Off- /Non-farm employment	3.725	5.365	0.690	0.487
Credit	-0.959	5.311	-0.180	0.857
Remittances	-11.523	12.526	-0.920	0.358
Distance to the market	-1.036	1.830	-0.570	0.571
<u>Distance to the Border</u>	-5.261	1.510	-3.490	0.000***
Distance to the main road	1.402	2.395	0.590	0.558
Improved inputs	-15.019	9.727	-1.540	0.123
<u>Shock(Illness of a member)</u>	14.748	5.354	2.750	0.006***
_cons	71.215	32.454	2.190	0.028

6. Conclusion

- Bean farmers are predominantly subsistence oriented and few participate to market.
- Decision to commercialize is influenced by:
 - Gender, Access to institutional and physical infrastructures, land size and training.
- Difference in the degree of market participation are explained by :
 - Gender , education ,income, market price, distance to the border but also shocks.

6. Recommendations

- Access to Agricultural training, education, health services and good roads should be increased for more participation and higher degree of participation in bean market.
- Opportunity for other agricultural income (e.g. animal raising) should be considered ,especially for women.

7. Further area of research

- In-depth research of Bean value chain (e.g. mapping the product flow and the farmers' input market participation).

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THANK YOU

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