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# Degree and determinants of smallholder commercialisation in rural former homeland areas of South Africa

by

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## Presentation outline



- Background and research problem
- Research objectives and importance
- Data and methods
- Results and discussion
- Conclusions and recommendations



## Background: role of smallholder agriculture in rural economies

- Smallholder agriculture is the most dominant form of agricultural production for the poor in developing countries and RSA is no exception.
- The role of smallholder agriculture in rural economic growth and development has been widely recognized (see: Machethe, 2004; Haggblade *et al.*, 2009; Diao *et al.*, 2010; Wiggins & Hazell, 2011).
- Rural economic growth through smallholder agriculture can be achieved along many avenues, one of which, is increasing rural incomes through demand-led growth (Hendricks, 2003; Wiggins & Hazell, 2011).
- However, one of the necessary conditions for this role to be realised is a shift of smallholder agriculture from subsistent to commercial orientation



# Research Problem

- Trajectory of South African smallholders range from a continuum of subsistence to commercial orientation.
- The interesting group is the at least “commercial oriented” smallholders. Why?
- How much is at least?
- Existing studies paints an incomplete picture—only focus on crops, focusing on only output, use small samples.
- The present study fill this gap by tacking a multi-facet approach.





# Research Objectives

- 1. To what degree are emerging smallholder households commercialized in crop and live-stock activities in South Africa?
- 2. Is there any significant difference in the level of commercialization across farming activities?
- 3. What are the driving forces behind smallholder commercialisation across different farming activities?



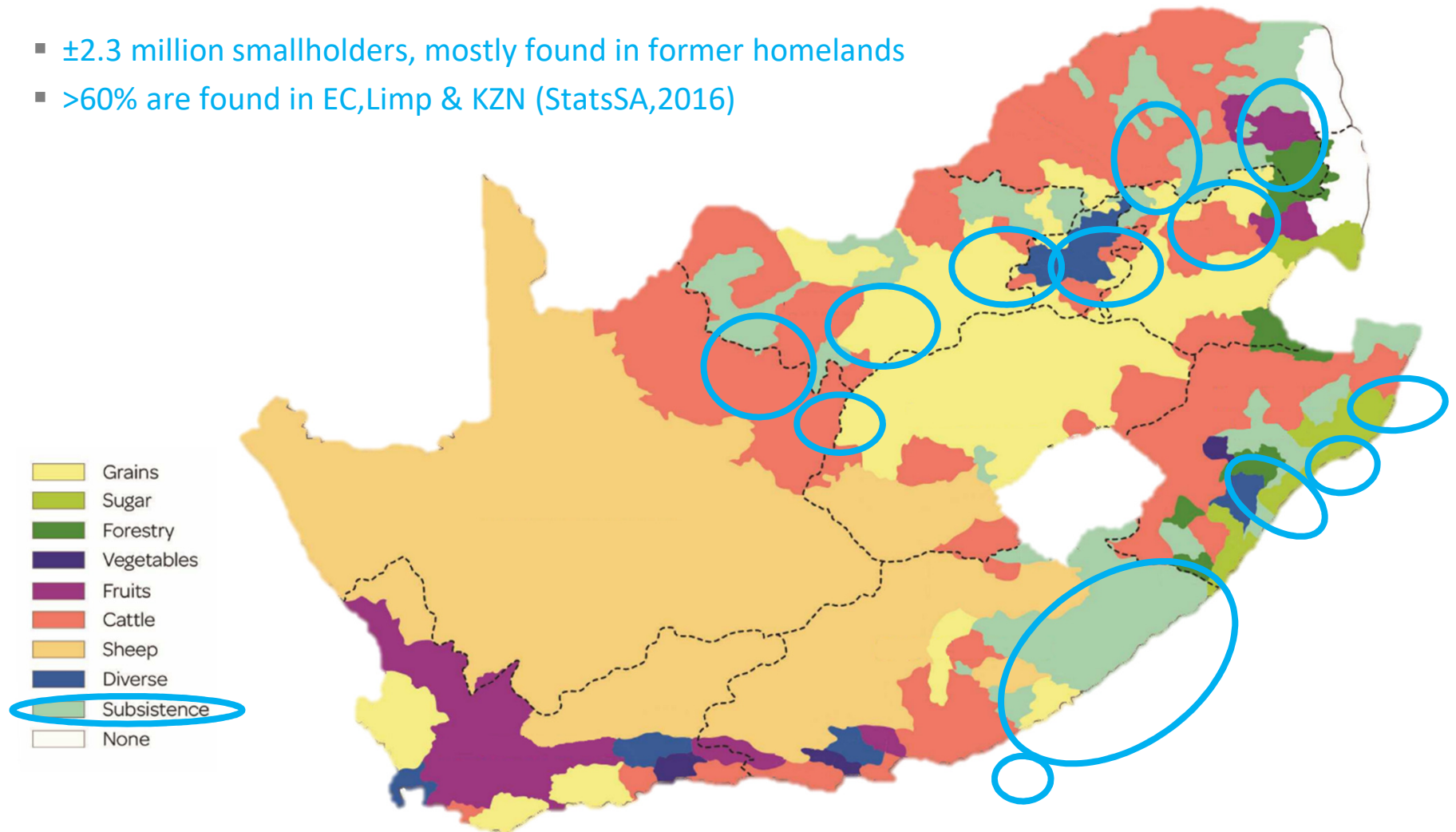
# Importance of the study

- Why smallholder commercialization is important?
  - Commercial oriented smallholders are focus of land reform and NDP.
  - Smallholders are envisaged as panacea for job creation.
  - 
  - There have been numerous smallholder commercialization initiatives, but success is limited.
  - The recent initiative is the DAFF “Commercialization of Black Farmers” which targets 50 farmers in each province to receive support including market access (DAFF, 2018).



# Data and Methods

- ±2.3 million smallholders, mostly found in former homelands
- >60% are found in EC, Limp & KZN (StatsSA, 2016)





# Data and Methods



- A multi-stage sampling approach was employed to survey 833 commercial oriented smallholders.
- Smallholders selling at least 20% of their produce were purposively and randomly selected.

Eastern Cape	(n)	KwaZulu-Natal	(n)	Limpopo	(n)
Amathole	175	Umkhanyakude	125	Vhembe	89
Chris Hani	120	King Cetshwayo	80		
OR Tambo	84	Harry Gwala	56		
		Zulu Land	104		
<b>Total</b>	<b>379</b>	<b>Total</b>	<b>365</b>	<b>Total</b>	<b>89</b>



# Measuring smallholder commercialisation

- Household Commercialization Index (Govereh et al., 1999; Ochieng et al., 2016/19; Randela et al., 2008), for measuring the degree of Commercialization.

- $HCI_j (output_j) = \frac{\text{Total } Q \text{ of agricultural produce sold}_j}{\text{Total } Q \text{ of agricultural production}_j}$

- $CCI_j (output_j) = \frac{\text{seasonal total quantity sold}_j}{\text{Total quantity produced}_j}$

- $HICI (inputs) = \frac{\text{Value of inputs acquired from market}}{\text{agricultural product value}}$



# Estimating determinants of commercialisation



$$\blacksquare \text{HLCI (inputs)} = \frac{\text{Total no. of hired labour on the farm}}{\text{Total no. of labourers on the farm}}$$

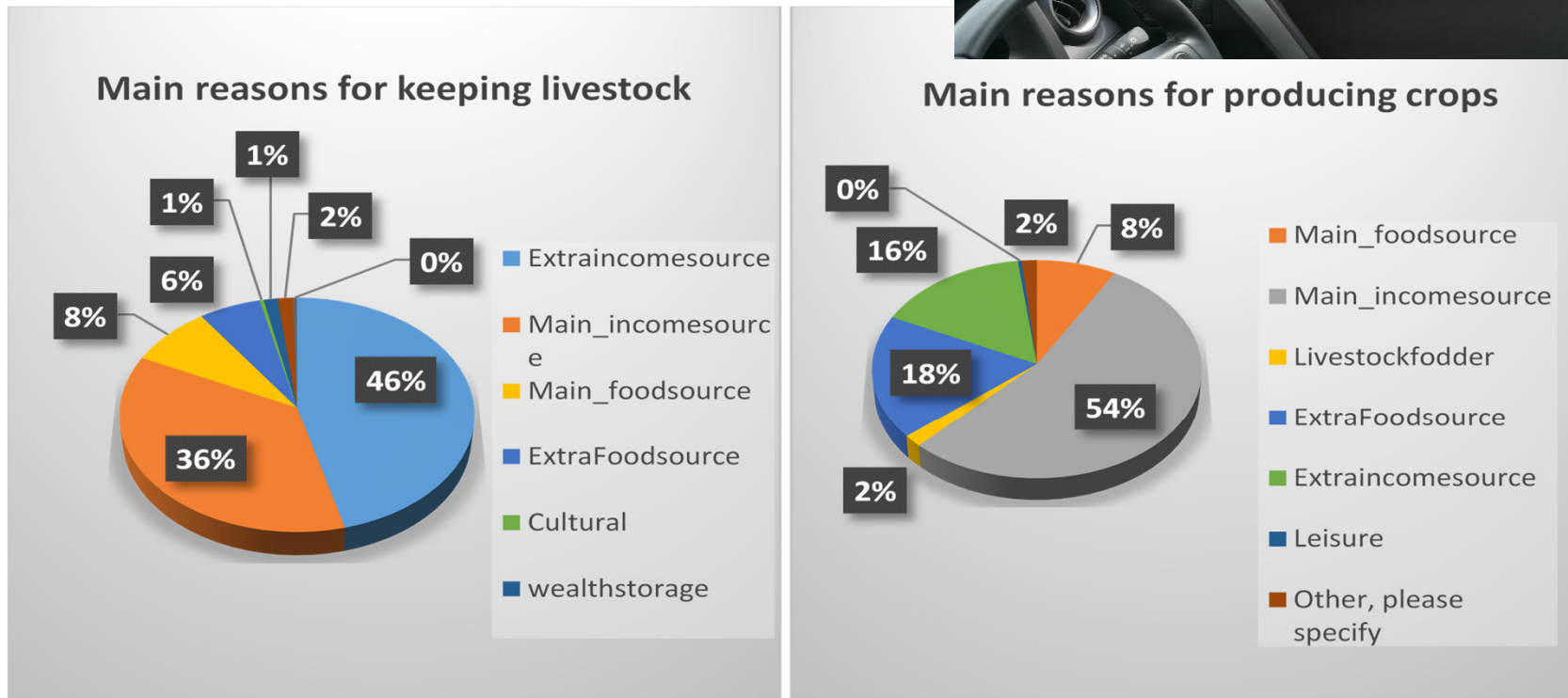
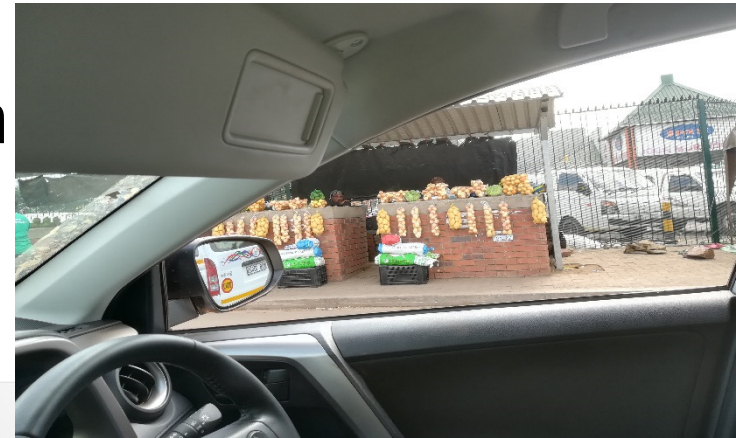
$$\blacksquare L = \text{Ln}[P/(1-P,)] = \alpha_0 + \alpha_1 X_1 + \dots + \alpha_n X_n + \beta_1 D_1 + \dots + \beta_n D_n + e$$

■ Where,

- $I = \text{Household}_i = 1, 2, \dots, n$
- $L = \text{Log of the odds ratio}$
- $P = \text{Probability that a household is commercial oriented (denoted by a value of 1)}$
- $1 - P_i = \text{Probability that a household is subsistent oriented (denoted by a value of 0)}$
- $\alpha_1 \dots \alpha_n = \text{Coefficients of explanatory variables } (X_1, \dots, X_n)$
- $\beta_1 \dots \beta_n = \text{Coefficient of explanatory dummy variable and } e, \text{ is an error term}$

Variables	Variable description	Anticipated sign
<b>Household background characteristics</b>		
Age of head (in years)	continuous	-
Gender	1=male, 0 otherwise	+
District the household is located	Refer to Table 1	+/-
Education of the head	0=none, 1=primary, 2=secondary, 3 Passed matric, 4=tertiary	+
Primary income source	0=Salaries/wages, 1=Old Age grant, 2=Other grants, 3=Remittances, 4=Selling of crops, 5=Selling of livestock	+
<b>Household physical asserts</b>		
Monthly income (Rands)	Continuous	
Number of Cattle owned	Continuous	+
Number of Car/s owned	Continuous	+
Land size (Garden and Field)	Continuous	+
<b>Commercial orientation</b>		
Reasons for crop production	0=main income source, 1=extra income source, 2= main food source, 3=extra food source, 4= livestock fodder	+
Reasons for livestock production	0=main income source, 1=extra income source, 2= main food source, 3=extra food source, 4= wealth storage, 5=Leisure	+
Family labour (in persons)	Continuous	-
Hired labour (in persons)	Continuous	+
<b>Risk attitudes</b>		

# Results: market orientation

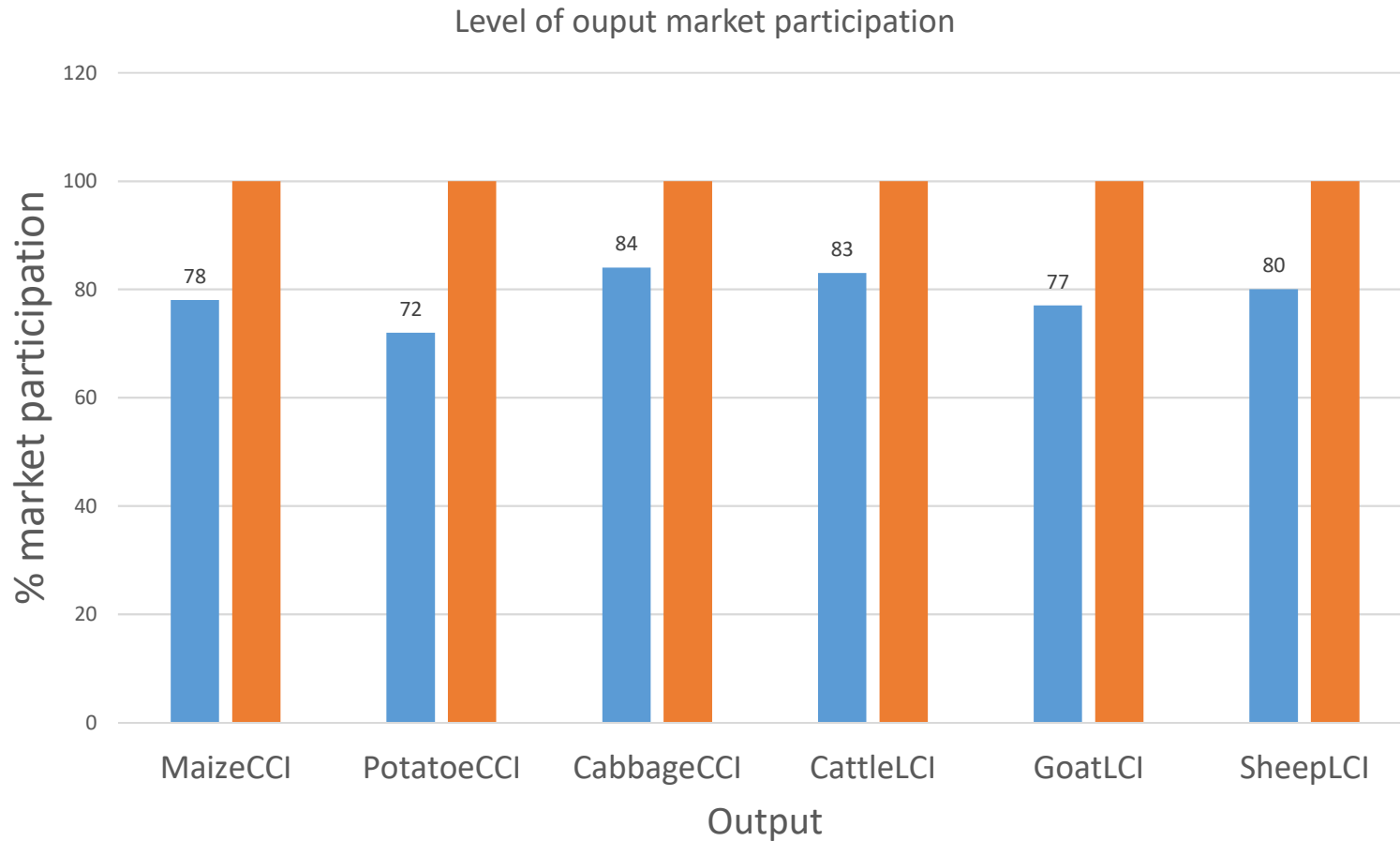


**Figure 1: Level of market orientation**



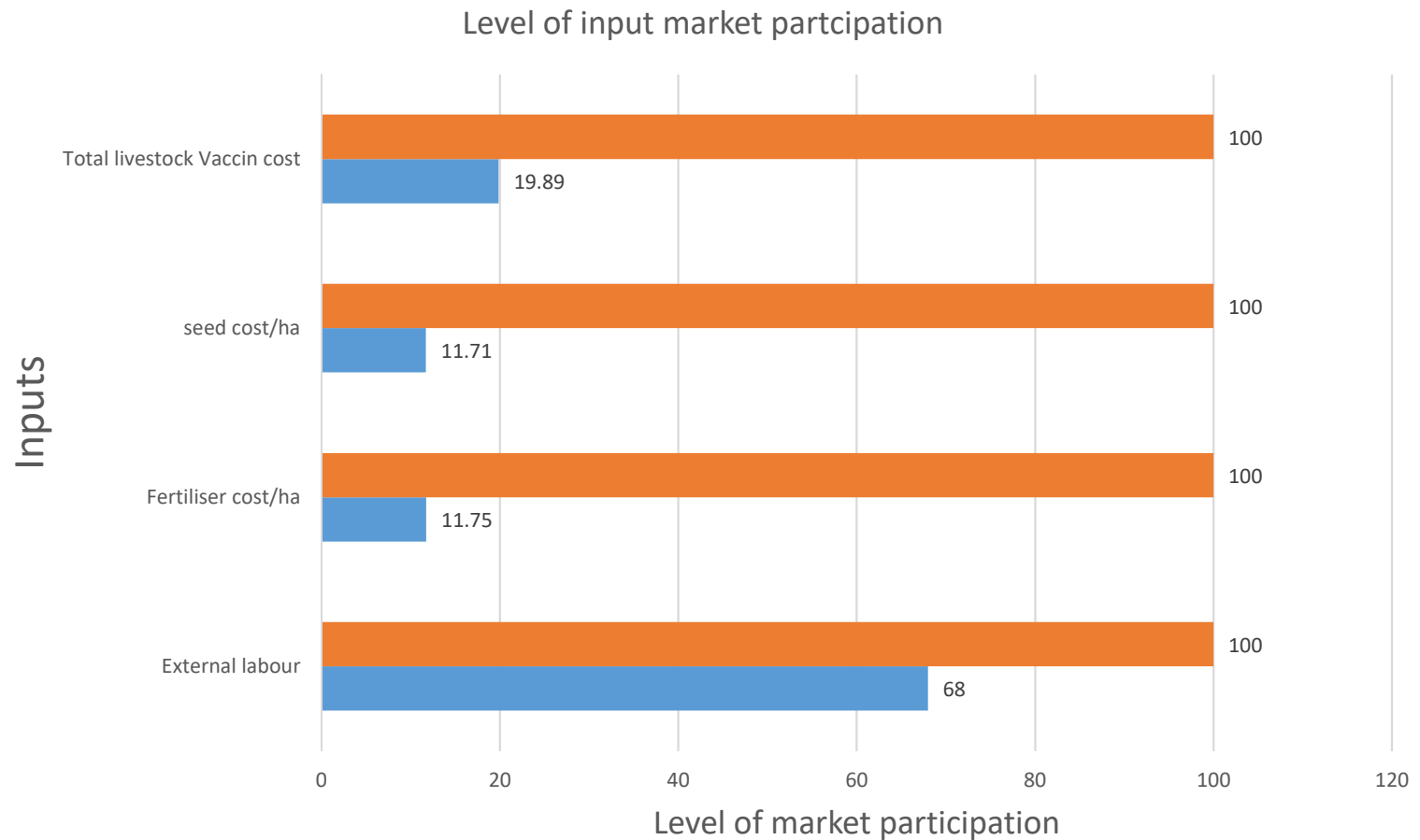


# Results: output market participation





# Results: input market participation





## Results: determinants of maize commercialization



## Results: determinants of maize commercialisation

Variables	Coef.	S.E	P>Z	Odds Ratio
<b>Maize determinants</b>				
Age of household head	-.194	.062	.011	.82
Hired Labour	.553	.40	.017	1.73
Field Size	-.420	.116	.018	.65
Producing crops as an extra source of food	-1.86	.17	.090	.15
Income from selling crop	3.15	1.00	.077	23.35
R-square	.37			
Number of observations	153			





## Results: determinants of vegetable commercialization





## Results: determinants of vegetable commercialisation

Variables	Coef.	S.E	P>Z	Odds Ratio
<b>Cabbage determinants</b>				
Number of Sheep owned	-.34	.014	.018	.966
Garden Size	.438	.257	.088	1.55
Risk attitude	-.72	.36	.047	.484
No formal education	-4.35	2.11	.039	.012
Primary education	-4.16	1.68	.012	.015
Passed matric	-2.92	1.68	.082	.053
R-square	0.38			
Number of observations	88			
<b>Potato determinants</b>				
Age of household head	.24	.11	.037	1.27
Total household income	-.00	.00	.088	.99
Number of tractors owned	4.12	2.10	.050	62.12
Garden size	.89	.43	.041	2.43
Income from other none farm sources	-4.88	2.50	.052	.007
Female	8.67	3.88	.026	5832
R-square	0.50			





## Results: determinants of livestock commercialisation





## Results: determinants of livestock commercialisation

Variables	Coef.	S.E	P>Z	Odds Ratio
<b>Goat determinants</b>				
Number of Goats owned	.07	.02	.008	1.07
Age of household head	-.06	.033	.074	.94
R-square	0.24			
Number of observations	53			
<b>Cattle determinant</b>				
Number of cattle owned	.02	.016	.076	1.02
Female	1.95	.92	.078	7.04
Income from selling livestock	1.10	.64	.085	.33
R-square	0.13			
Number of observations	83			
<b>Sheep determinants</b>				
Number of sheep owned	.14	.85	.089	1.15
R-square	.26			
Number of observations	29			

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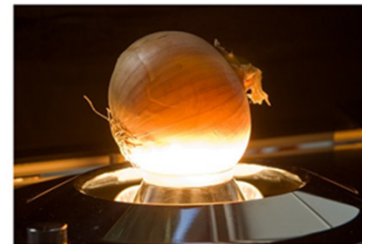
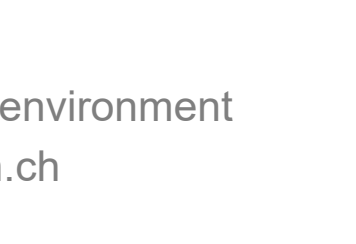
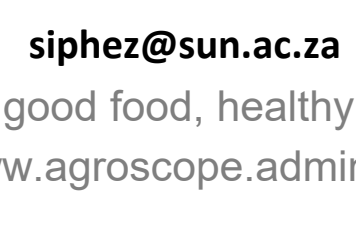
# Conclusions

- On average, smallholders under study are commercially oriented.
- The level of commercialisation, however, differ between inputs, output and labour.
- Smallholders are more commercial oriented in highly perishable products (e.g. vegetables) than maize.
- Commercialisation is influenced by various factors and the determinants differ between enterprises.
- Land size, income, flock size, age and gender are the most prominent influential factors.



# Policy recommendations

- Policy makers need to caution against one-size fits-all approach and focus on building smallholder typologies.
- Smallholder commercialisation initiatives need to apply market segmentation approach.
- Smallholders have not yet cracked the formal markets because of institutional factors, therefore, intervention is needed from the state to enhance smallholder formal market participation.
  - Incentivise supermarkets to buy from smallholders
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**THANK YOU!**

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