The Sierra Leonean Cocoa Farmer from an Academic Perspective: Farming Practices and Inputs, Production, Knowledge, Marketing and Losses

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Development Economics Group

NWO
Netherlands Organisation for Scientific Research
WOTRO Science for Global Development

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KNOWLEDGE AND SERVICE

theobroma

AMS
Agroproduce Management Services

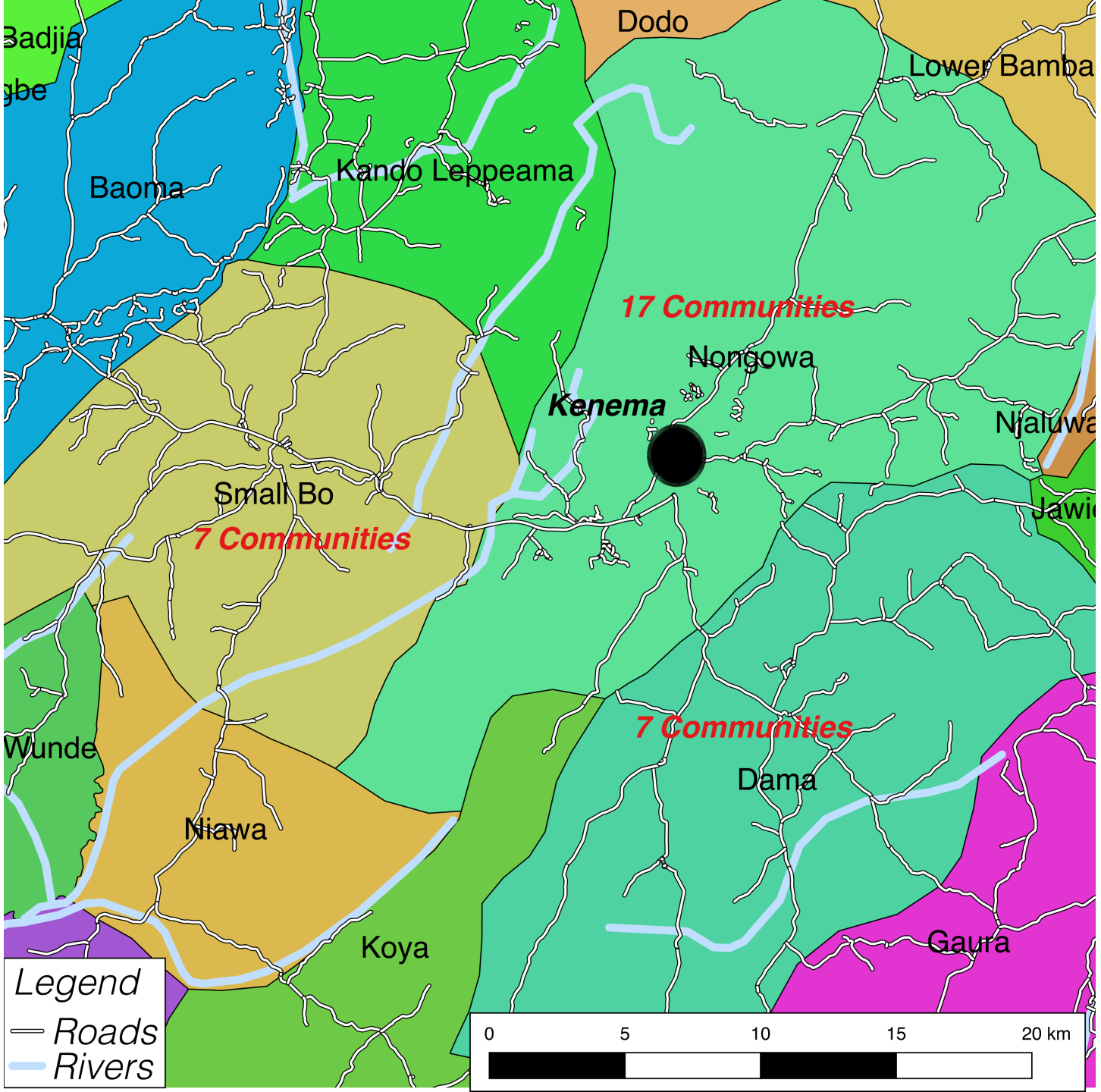
Introduction

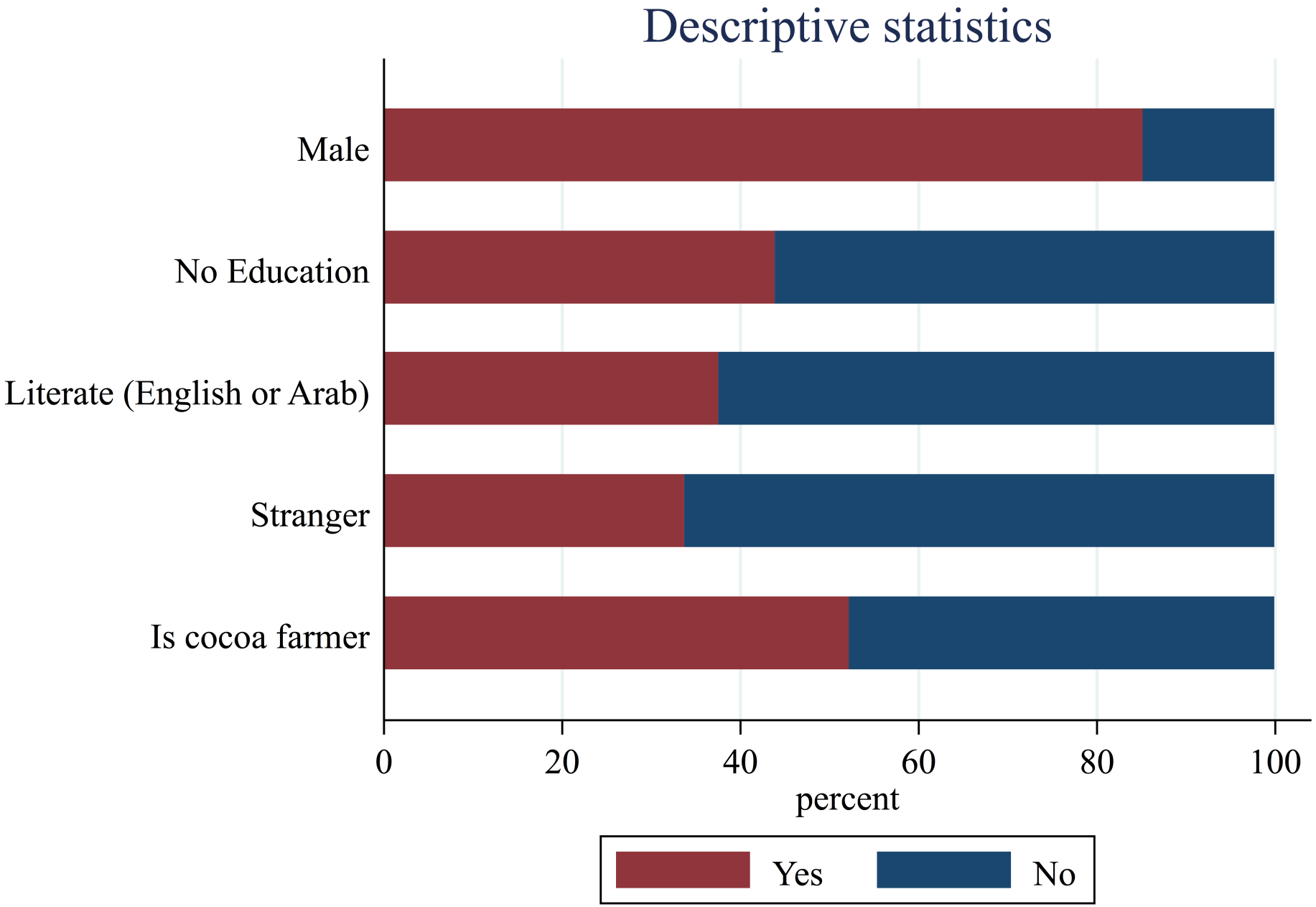
- Collaborative research project with Wageningen University, Njala University, Theobroma, Agroproduce Management Services
- Impact evaluation of a Plantation in the Kenema area.

- This presentation:
  - Data Description
  - Data on Cocoa farming
  - Exploratory analysis on Black Pod Losses

The data

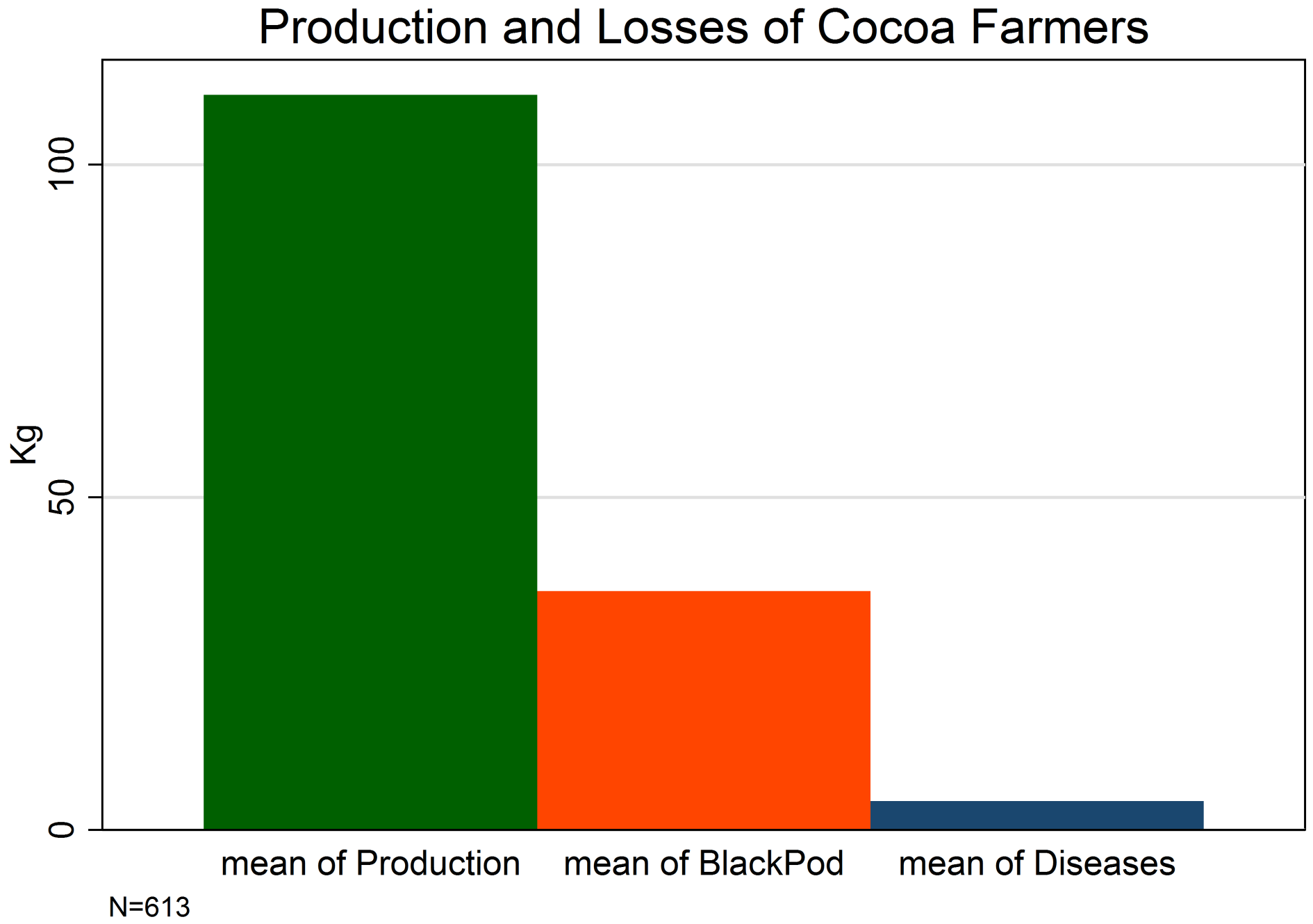
- Collected April this year
- Quantitative data from 31 villages
- 45 randomly selected heads of household per village
- Self-reported data
- Farmer-level data on Cocoa farming, Yields, Losses and Marketing
- Almost 1400 farmers

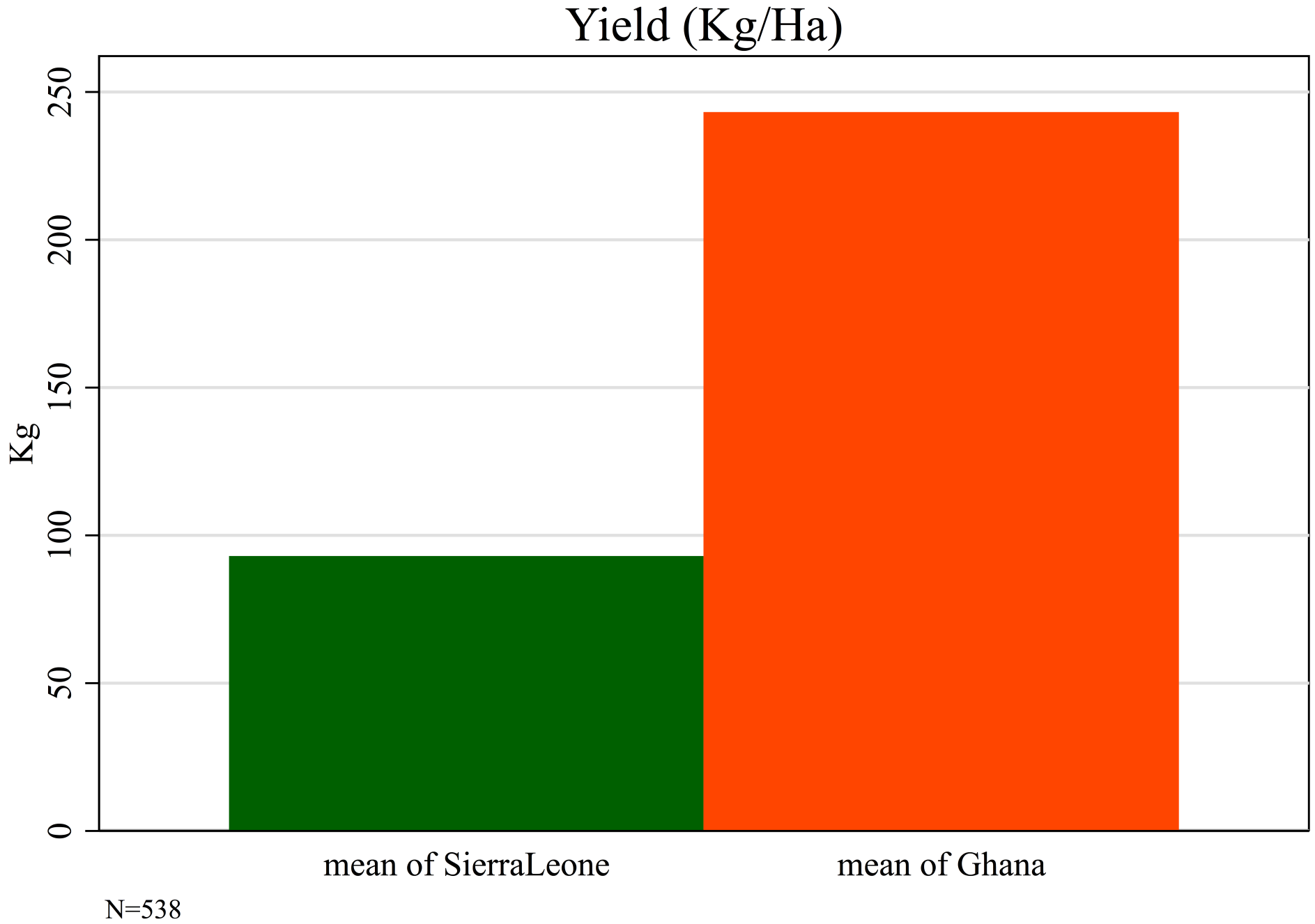

Badjia
gbe
Dodo
Lower Bamba
Baoma
Kando Leppeama
17 Communities
Nongowa
Kenema
Njaluwa
Small Bo
7 Communities
Jawi
Wunde
7 Communities
Dama
Niawa
Koya
Gaura
Legend
Roads
Rivers
0
5
10
15
20 km

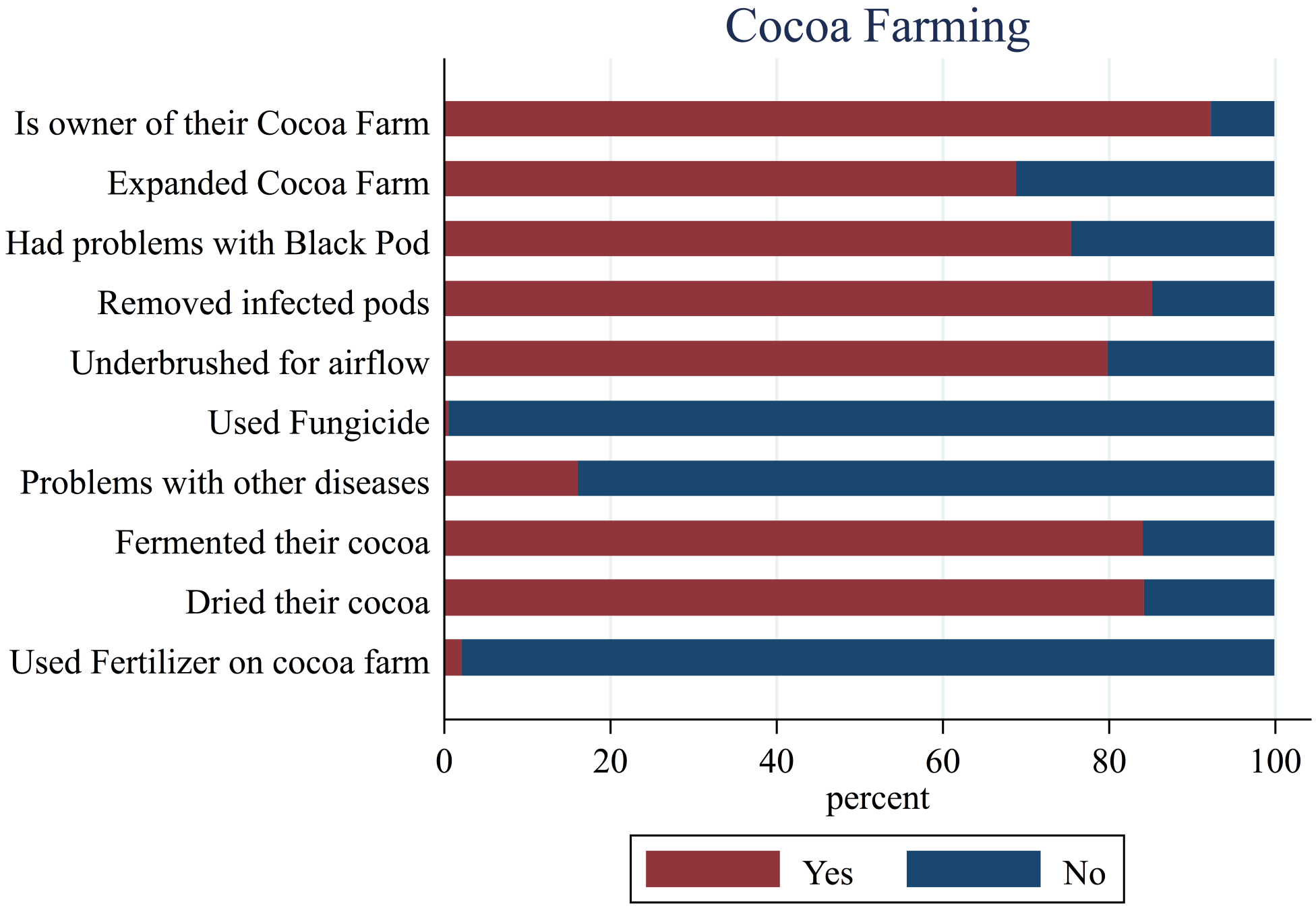

Descriptive statistics
Male
No Education
Literate (English or Arab)
Stranger
Is cocoa farmer
0
20
40
60
80
100
percent
Yes
No
N=1346

Descriptives

	N	Mean	Standard Deviation
Age	1343	43.4	13.8
# Children in the household	1346	3.31	2.37
Total size of farms (Ha)	1340	2.88	2.84


Production and Losses of Cocoa Farmers
Kg
0
50
100
mean of Production
mean of BlackPod
mean of Diseases
N=613

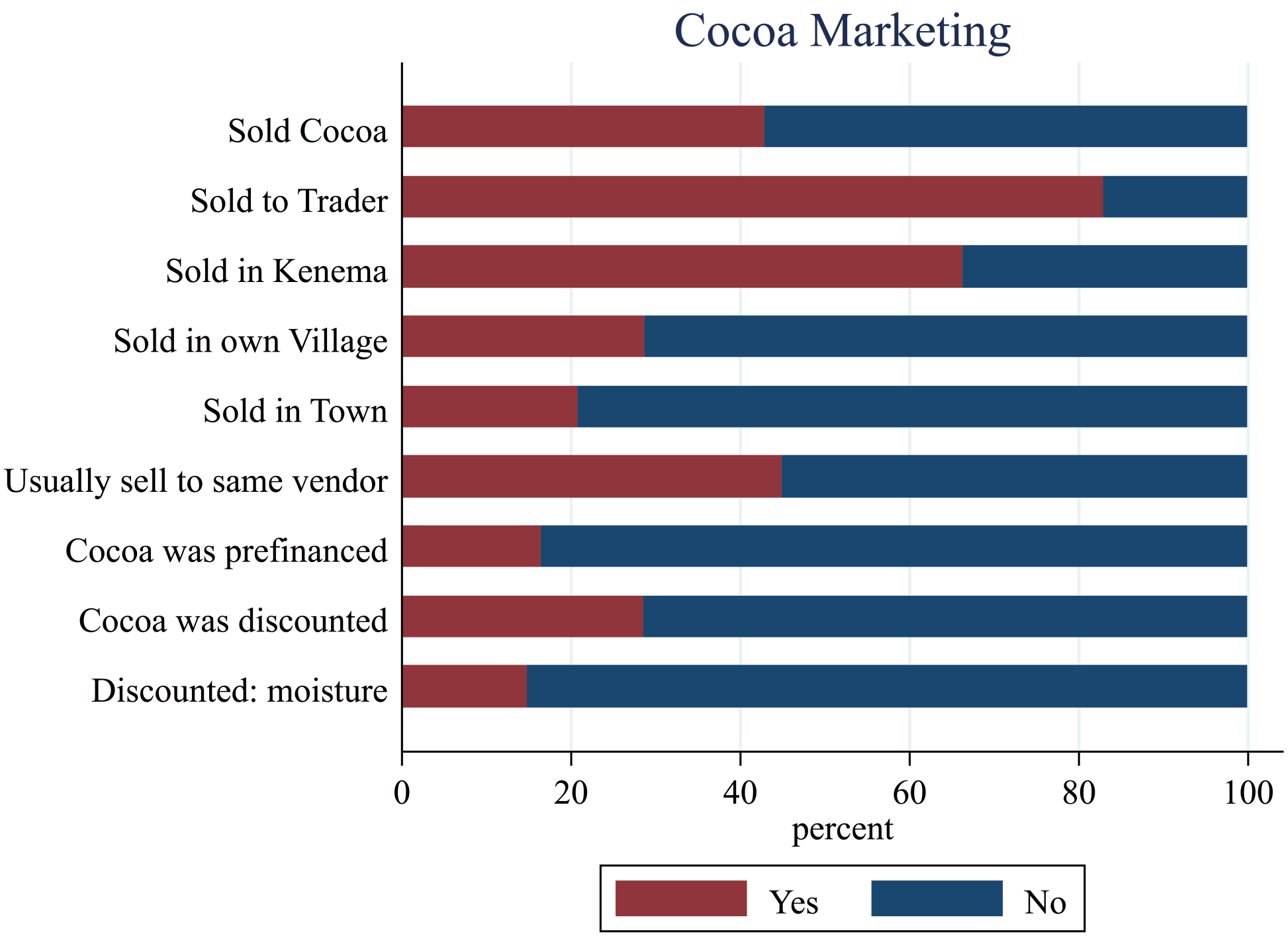

Yield (Kg/Ha)
Kg
0
50
100
150
200
250
mean of SierraLeone
mean of Ghana
N=538


Cocoa Farming
Is owner of their Cocoa Farm
Expanded Cocoa Farm
Had problems with Black Pod
Removed infected pods
Underbrushed for airflow
Used Fungicide
Problems with other diseases
Fermented their cocoa
Dried their cocoa
Used Fertilizer on cocoa farm
0
20
40
60
80
100
percent
Yes
No

N=702

Cocoa Farming

	N	Mean	Standard Deviation
Size of cocoa farm (Ha)	702	1.59	1.81
# days work on cocoa farm in 2015	638	77.9	73.9
# of seedlings expanded with	454	275.5	359.8
% shade cover	695	51.6	17.3
# Times brushed in 2015	700	2.64	2.05
# days fermented	569	4.73	1.64
# days dried	569	4.84	1.50
Age of cocoa farm	529	10.7	10.0


Cocoa Marketing
Sold Cocoa
Sold to Trader
Sold in Kenema
Sold in own Village
Sold in Town
Usually sell to same vendor
Cocoa was prefinanced
Cocoa was discounted
Discounted: moisture
0
20
40
60
80
100
percent
Yes
No

Cocoa Marketing

	N	Mean	Standard Deviation
Price received for 1 kg of cocoa (in 1'000 Le)	532	10.1	11.3
Earnings from cocoa in 2015 (1'000 Le)	659	536.6	846.1

Predicting Black Pod Losses

- Exploratory: can we characterize farmers with low losses?
- Very preliminary: a research, not policy recommendation

Predicting Black Pod Losses (Kg/Ha)

Variable	Effect	Standard error
Farm Size (Ha)	-9	2
Farm Age	+0.6	0.2
Cocoa Price (1’000 Le)	-0.3	0.1
Mean Black Pod Losses	24	

Tobit Regression. N=406, Robust standard errors clustered at the village level (# clusters=29). All variables significant at the 5% level or higher.
All other variables shown so far were insignificant or unstable

Conclusion

- Cocoa important for many farmers
- Yields are low compared to Ghana
- Losses to Black Pod high, despite high knowledge of prevention measures
- Farmers travel to sell their cocoa
- Big and young farms have fewer problems with Black Pod