

Considering the benefits of hosting refugees:

Evidence from refugee camps influencing labor market activity and economic welfare in Rwanda

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Why look at this topic?

- UNHCR's annual update highlights that displacement continues to rise and remains at a modern-day high (i.e. since WWII).
 - 65.6 million displaced worldwide
 - 22.5 million refugees
- Vast majority of refugees move to neighboring countries, never making it anywhere near Western Europe, N. America, etc.
 - 84-89% of refugees reside in low and middle income countries
 - 35% in fragile states
- Length of displacement is rising, so need to consider medium- to long-term development issues, not just short-term humanitarian concerns.

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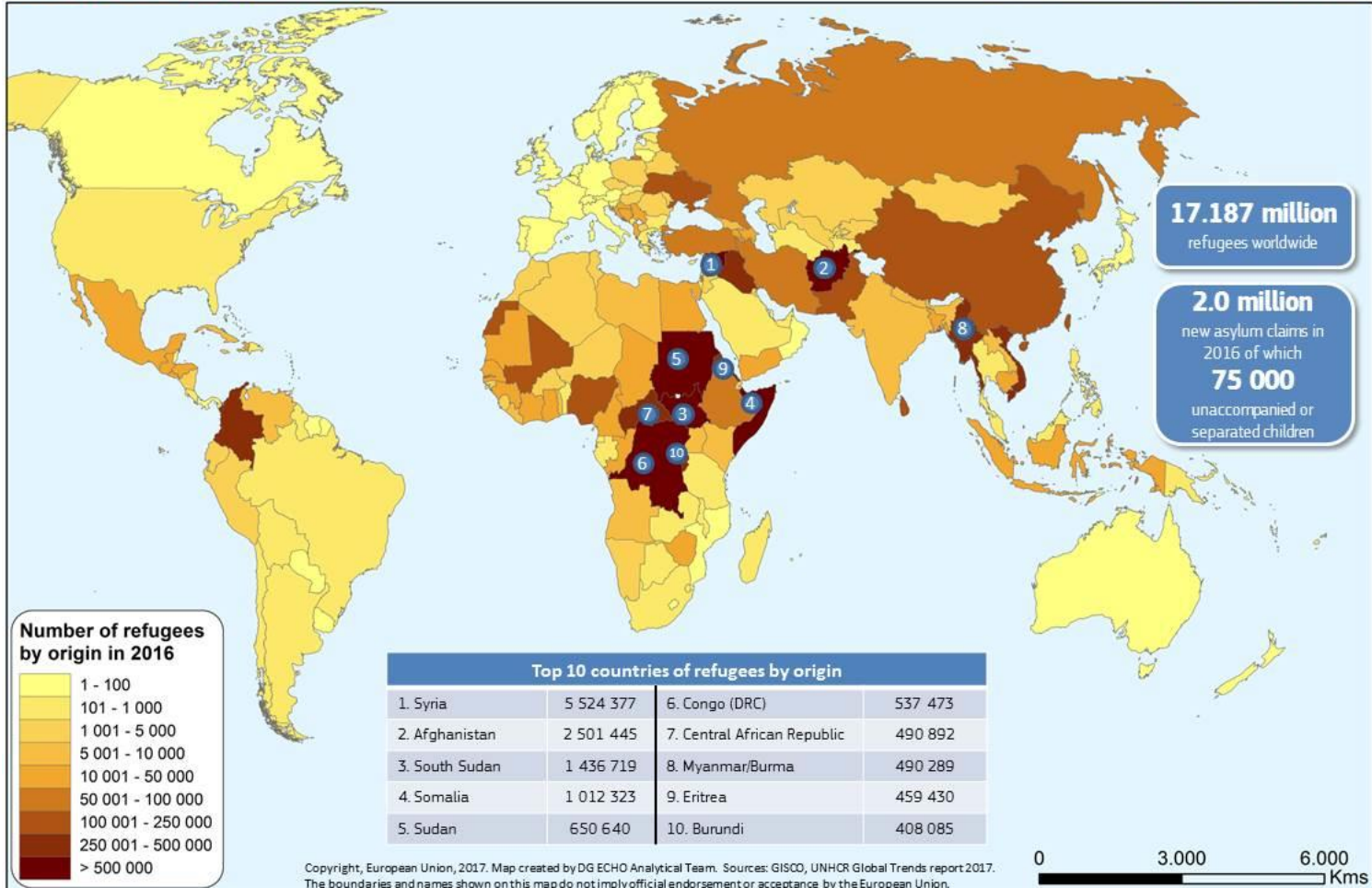
Emergency Response Coordination Centre (ERCC) | Analytical Team

Refugees by origin in 2016



European Commission

European Civil Protection and Humanitarian Aid Operations



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What do we want to understand?

1. How do host communities adjust labor market activity in the presence of refugees?
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Use data from original HH/community surveys collected in May 2016 within refugee camps and surrounding host communities at various distances to those camps.

Preview of results:

- On average, residing < 10 km from a refugee camp → + **wage employment**
- On average, residing < 10 km from a refugee camp → + **asset ownership**
- **Females** nearby a camp are more likely to be **self-employed**

Related Literature

The arrival of refugees has the potential to breathe new life and dynamism into a local and regional economies

(Callamard ,1994; Whitaker, 1999; WB, 2011; Betts et al., 2014; Alloush et. al, 2017)

Chambers (1986) frames a more nuanced discussion re unequal effects

Labor market:

- Locals face higher competition from refugees in certain sectors, and are less likely to be involved in agricultural work and casual labor
(Maystadt & Verwimp, 2014; Ruiz & Vargas-Silva, 2016)
- Native's informal employment declines, while formal employment rises
(Tumen, 2016)

Economic welfare:

- Positive wealth effect: assets and consumption
(Alix-Garcia & Saah, 2009; Maystadt & Verwimp, 2014; Maystadt & Duranton, 2014)

Rwandan Context

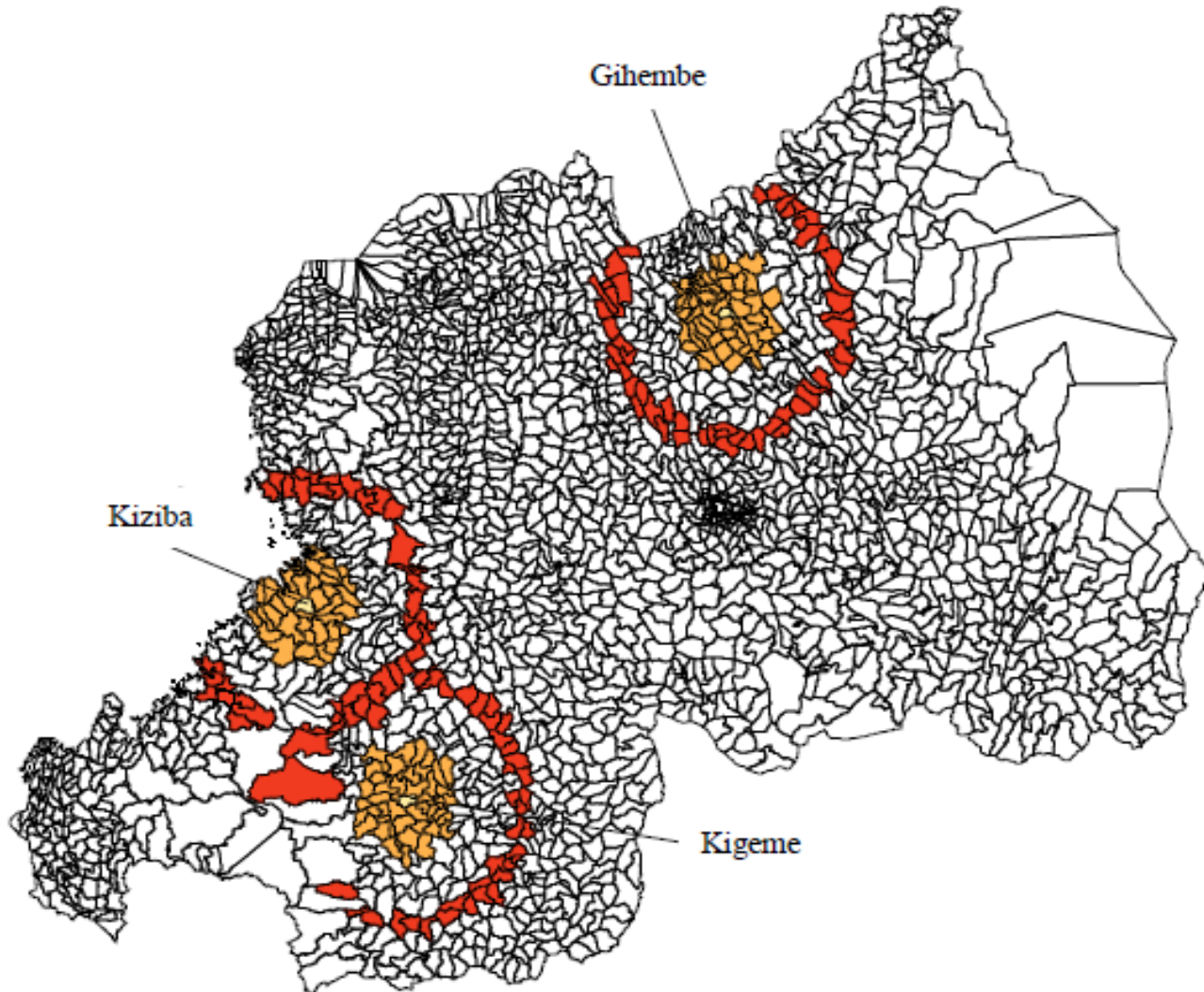
Of the ~75,000 Congolese refugees in the country today, the vast majority are in a protracted situation in one of five camps.

Officially, Rwanda does not impose restrictions on Congolese refugees re their right to work, access to education or freedom of movement.

In practice, however, the local integration of Congolese refugees into host communities has been a persistent challenge.

	Year established	Total population	Relative population
Gihembe	1997	14,205	9.49%
Kigeme	2012*	18,646	19.38%
Kiziba	1996	17,155	14.52%

Research Design



Note: Own generation based on publicly available administrative GIS data. Yellow cells indicate the location of each refugee camp. Orange cells are those within 10 km of each camp. Red cells are those above 20 km of each camp.

Empirical Approach

Linear probability estimates of the main variable of interest, **camp proximity (<10 km vs. >20 km)**, plus:

- Interaction terms to identify heterogeneous effects based on **gender**, as well as **camp-specific** effects

Robustness checks using:

- Limited non-selected sample
- IV estimate
 - Long-term precipitation trends → agricultural conditions → camp location
 - Exclusion criteria: 1991 census check
- 2012 census data

Outcomes

Labor market activity

- Primary daily activity (mutually exclusive)
 - Wage employment
 - Self-employment (business)
 - Farming/ livestock production
- Secondary activity where primary daily activity is farming/livestock production

Economic Welfare

- Asset ownership index of leisure items
- Subjective economic situation
 - 5 point Likert scale (1 very difficult, 3 neutral; 5 very comfortable)

Descriptives (1)

Descriptive statistics of outcomes

	< 10 km		> 20 km		Total
	Mean	SD	Mean	SD	
<i>Primary daily activity:</i>					
Wage employment***	0.20	0.40	0.12	0.33	1,632
Self-employment (business)*	0.11	0.32	0.08	0.27	1,632
Farming/ livestock***	0.68	0.47	0.80	0.40	1,632
<i>Secondary activity (farming/livestock):</i>					
Wage employment	0.41	0.49	0.40	0.49	1,205
Self-employment**	0.13	0.34	0.08	0.28	1,205
<i>Economic Welfare</i>					
Asset ownership index (leisure) ***	0.03	0.98	-0.31	0.78	913
Subjective economic situation (1-5)**	2.19	0.99	2.02	0.88	913

Note: *** indicates statistically significant mean difference across groups at the one percent level; ** at the five percent level. The 5-point likert scale for subjective economic situation ranges from 1 (very difficult) to 5 (very comfortable).

Descriptives (2)

Descriptive statistics of covariates (for working age individuals)

	< 10 km		> 20 km		Total
	Mean	SD	Mean	SD	
Female	0.56	0.50	0.56	0.50	1,632
Age	37.27	12.53	37.58	13.13	1,632
Married**	0.70	0.46	0.66	0.48	1,632
HH head	0.44	0.50	0.45	0.50	1,632
Lower secondary education***	0.18	0.38	0.12	0.32	1,632
Household size***	5.54	2.08	5.15	2.26	1,632
Share of children (per adult)	0.97	0.76	1.00	0.78	1,632
Market distance (in minutes)***	65.39	40.53	77.36	60.70	1,632
City distance (in km)***	30.07	7.72	21.83	7.65	1,632
Community population	840.78	857.17	830.2	339.22	1,632

Note: *** indicates statistically significant mean difference across groups at the one percent level; ** at the five percent level. City distance indicates the distance to nearest urban area including the capital, Kigali, as well as all secondary cities.

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Baseline Results (1)

Primary daily activity

Base: farming/livestock	Wage employment		Self-employment	
	(1)	(2)	(3)	(4)
Camp proximity (<10km)	0.14*** (0.03)		0.07** (0.03)	
<10km x Female		0.12** (0.04)		0.08** (0.03)
<10km x Male		0.17*** (0.04)		0.05 (0.03)
Controls	Yes	Yes	Yes	Yes
R-squared	0.20	0.20	0.10	0.10
Observations	1474	1474	1363	1363

Note: ***p<0.01, **p<.05, *p<0.10. Standard errors in parentheses are robust and clustered at the community level. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), market distance, city distance, community population and nearest camp.

Baseline Results (2)

Secondary activity of those engaged in farming/livestock

	Wage employment		Self-employment	
	(1)	(2)	(3)	(4)
Camp proximity (<10km)	-0.01 (0.07)		0.07** (0.02)	
<10km x Female		-0.03 (0.07)		0.09*** (0.03)
<10km x Male		0.03 (0.07)		0.03 (0.04)
Controls	Yes	Yes	Yes	Yes
R-squared	0.08	0.08	0.02	0.02
Observations	1205	1205	1205	1205

Note: ***p<0.01, **p<.05, *p<0.10. Standard errors in parentheses are robust and clustered at the community level. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), market distance, city distance, community population and nearest camp.

Baseline Results (3)

Economic welfare

	Asset ownership index		Subjective economic situation	
	(1)	(2)	(3)	(4)
Camp proximity (<10km)	0.36***		0.13	
	(0.11)		(0.12)	
<10km x Female-headed		0.27**		-0.03
		(0.11)		(0.14)
<10km x Male-headed		0.39***		0.19
		(0.12)		(0.13)
Controls	Yes	Yes	Yes	Yes
R-squared	0.28	0.28	0.10	0.10
Observations	913	913	913	913

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Standard errors in parentheses are robust and clustered at the community level. IHS indicates an 'inverse hyperbolic sine' transformation. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), market distance, city distance, community population and nearest camp.

Robustness Check 1: limited sample (1)

Primary daily activity

Base: farming/livestock	Wage employment			
	Baseline		Limited	
	(1)	(2)	(3)	(4)
Camp proximity (<10km)	0.14*** (0.03)		0.14*** (0.03)	
<10km x Female		0.12** (0.04)		0.14** (0.03)
<10km x Male		0.17*** (0.04)		0.15*** (0.04)
Controls	Yes	Yes	Yes	Yes
R-squared	0.20	0.20	0.18	0.18
Observations	1474	1474	1132	1132

Note: ***p<0.01, **p<.05, *p<0.10. Standard errors in parentheses are robust and clustered at the community level. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), market distance, city distance, community population and nearest camp.

Robustness Check 1: limited sample (2)

Economic welfare

	Asset ownership index			
	Baseline		Limited	
	(1)	(2)	(3)	(4)
Camp proximity (<10km)	0.36*** (0.11)		0.29*** (0.10)	
<10km x Female-headed		0.27** (0.11)		0.26*** (0.10)
<10km x Male-headed		0.39*** (0.12)		0.31** (0.12)
Controls	Yes	Yes	Yes	Yes
R-squared	0.28	0.28	0.22	0.22
Observations	913	913	704	704

Note: ***p<0.01, **p<.05, *p<0.10. Standard errors in parentheses are robust and clustered at the community level. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), market distance, city distance, community population and nearest camp.

Robustness Check 2: IV estimates (1)

Primary daily activity

	Wage employment Full sample	Wage employment IV 2nd-stage	Camp proximity (<10km) IV 1st-stage
	(1)	(2)	(3)
Camp proximity (<10km)	0.14*** (0.04)	0.32*** (0.07)	
Mean precipitation ('84-'94)			-0.37*** (0.03)
Controls	Yes	Yes	Yes
K-P. F-statistic		193.60	
R-squared	0.20	0.10	0.41
Observations	1474	1474	1474

Note: ***p<0.01, **p<.05, *p<0.10. Standard errors in parentheses are robust and clustered at the community level. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), market distance, city distance, community population and nearest camp.

Robustness Check 2: IV estimates (2)

Asset ownership index

	Asset ownership index Full sample	Asset ownership index IV 2nd-stage	Camp proximity (<10km) IV 1st-stage
	(1)	(2)	(3)
Camp proximity (<10km)	0.36*** (0.11)	0.36* (0.19)	
Mean precipitation ('84-'94)			-0.40*** (0.03)
Controls	Yes	Yes	Yes
K-P. F-statistic		127.55	
R-squared	0.28	0.28	0.26
Observations	913	913	913

Note: ***p<0.01, **p<.05, *p<0.10. Standard errors in parentheses are robust and clustered at the community level. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), market distance, city distance, community population and nearest camp.

Robustness Check 3: '12 census data

Employment activity

Base: agricultural	Wage employment		Self-employment	
	(1)	(2)	(3)	(4)
Camp proximity (<10km)	0.06*** (0.01)		0.04*** (0.00)	
<10km x Female		0.06*** (0.01)		0.04*** (0.01)
<10km x Male		0.07*** (0.01)		0.04*** (0.01)
Controls	Yes	Yes	Yes	Yes
R-squared	0.21	0.21	0.06	0.06
Observations	44565	44565	39542	39542

Note: ***p<0.01, **p<.05, *p<0.10. Standard errors in parentheses are robust. Other covariates not reported but controlled for include female, age, married, household head, education at lower secondary level, size of household, share of children (per adult), city distance and the administrative sector.

Focus Group Discussions

Since [the refugees] arrived here, economic activities have increased. Many houses were built and selling activities were multiplied. There are different market centers which were created because of the camp.

-Participant 1, Gihembe community <10km

When we first arrived, there were no businesses. But after our arrival, there are so many types of businesses. There were no schools, no health center. So, when we arrived that's when everything started, life came, jobs were created.

-Participant 7, Kiziba camp

What we are aware of is that wealthy people in this community take products to the refugees' camp because refugees are hungry and they have money. Products are bought here at a low cost and taken there for sale. Wealthy people in this community are the ones who take the products there.

-Participant 1, Kigeme community <10km

Summary

- Overall, residing within 10 km of a refugee camp makes it more likely that an individual is engaged in wage employment compared to farming/livestock production.
- Likewise, households nearby a camp have greater asset ownership in comparison to those living beyond 20 km.
- Females and males are more likely to be wage employed relative to their same gender counterparts further away, however females alone nearby a camp are more likely to be self-employed both as a primary and secondary activity.

Explanations/ Implications

- Refugees compete with native workforce for informal agricultural activities, pushing natives into formal labor activities like wage employment.
- Presence of refugee population presents market opportunities at the margin (e.g. small-scale trade/ commerce / construction / NGOs) that certain members of the host population are able to take advantage of.
- In light of the refugee presence, and despite their minimal formal integration, appears to be a local shift away from subsistence-based agricultural activities in line with the governments' Vision 2020 plan.
- Might be high time to consider a more development-oriented narrative with respect formal refugee integration, and support the potential for them to bring positive change to local host communities.

THANK YOU

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List of asset ownership items (leisure) and common goods of expenditure

Asset ownership items (leisure)	Goods of expenditure
<ul style="list-style-type: none">• Large pieces of furniture• Refrigerator• Kitchen appliances• Radio• Television• Telephone/ mobile phone• Iron• Fans• Stove• Blankets• Bicycle• Motorbike• Car/ van/ truck/ pick-up	<ul style="list-style-type: none">• Natural gas (propane)• Electricity• Water• Telephone (land line)• Cellular telephones (in total for household)• Internet for household• TV services• Buses• Taxis• Gasoline (petrol)• Expenditures at local restaurants• Rent (for housing, excluding rent of building for business)• Health hygiene (e.g. soap, toothpaste, etc.)• Hospitalizations• Doctors and dentists• Medicines• Festivals, weddings, celebrations• Trips and vacations• Construction materials (e.g. wood, bricks)• Clothing and shoes• Education (incl. school fees, books, uniforms, etc.)• Core living items (e.g. blankets, sleeping mats, pots, plates, etc.)

Baseline Results (4)

Primary daily activity, *within* camp areas

Base: farming/livestock	Wage employment	Self-employment
	(1)	(2)
Gihembe x <10km	0.19*** (0.06)	0.12** (0.06)
Kigeme x <10km	0.09** (0.03)	0.05 (0.04)
Kiziba x <10km	0.16*** (0.04)	0.02 (0.04)
Controls	Yes	Yes
R-squared	0.20	0.10
Observations	1474	1363

Baseline Results (5)

Secondary activity, *within* camp areas

	Wage employment	Self-employment
	(1)	(2)
Gihembe x <10km	0.01 (0.11)	0.03 (0.04)
Kigeme x <10km	-0.00 (0.09)	0.12*** (0.04)
Kiziba x <10km	-0.03 (0.11)	0.00 (0.03)
Controls	Yes	Yes
R-squared	0.08	0.03
Observations	1205	1205

Baseline Results (6)

Economic welfare, *within* camp areas

	Asset ownership index	Subjective economic situation
	(1)	(2)
Gihembe x <10km	0.39* (0.21)	-0.24 (0.15)
Kigeme x <10km	0.36*** (0.10)	0.45*** (0.12)
Kiziba x <10km	0.29** (0.13)	0.19 (0.11)
Controls	Yes	Yes
R-squared	0.28	0.12
Observations	913	913

Exclusion Criteria Check

Exclusion criteria check using '91 census data

	Wage employment
Precipitation ('84 - '90)	0.00 (0.00)
Controls	Yes
R-squared	0.18
Observations	49,718

Note: Estimates are based on a linear probability model, but robust to maximum likelihood estimation. Standard errors in parentheses are robust. Controls include household head, gender, married, lower secondary education, household size, share of children (per adult) and the administrative sector. The measure for long-term precipitation in this check only includes yearly averages from 1984 - 1990, given the census data is from 1991.