

Intra-Rural Migration in Tanzania and Pathways of Welfare Change

Ayala Wineman and Thomas S. Jayne

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MICHIGAN STATE
UNIVERSITY

Motivation

- Knowledge gaps around how rural people manage to exit poverty and the role of different types of migration.
- Most attention paid to rural-urban migration flows.
- Yet **intra-rural migration is prevalent** in many developing countries, including in sub-Saharan Africa (Bilsborrow 1998; Lucas 2015).
- Migration has been found to improve economic well-being, even for those who move to a rural area (Beegle et al. 2011; Garlick et al. 2015).

How?

Transmission channels of welfare change

Land access

Greater
agricultural
productivity

Income
diversification

- Strong relationship between land access and rural household income (Jayne et al. 2003)
- Rising land pressures (Jayne et al. 2014)
- Some evidence of rural migration being driven by land shortages / land availability (Potts 2006; Beegle et al. 2011; Jayne and Muyanga 2012; Wineman and Liverpool-Tasie 2015)

Transmission channels of welfare change

Land access

Greater
agricultural
productivity

Income
diversification

- Strong link between soil quality and economic well-being (Titonnell and Giller 2013; Barrett and Bevis 2015)
- Intra-rural migrants could potentially access land of greater agricultural potential (e.g., better soil fertility).
- Speculation that this drives migration (Baland et al. 2007)

Transmission channels of welfare change

Land access

Greater
agricultural
productivity

Income
diversification

- Decline in rural poverty partly attributed to shift into rural nonfarm economy, migration to secondary towns (Christiaensen et al. 2013)
- Why migrate to larger villages/ secondary towns?
 - Lower migration costs
 - Higher likelihood of finding an unskilled job (Christiaensen and Todo 2014)

Our plan

- Assess whether intra-rural migrants achieve higher consumption growth, relative to other household members
- What *else* is changing especially for migrants that can be linked to consumption growth?
 - Does this differ by type of rural destination?

Hypotheses explored:

1. They obtain **larger farms**.
2. They obtain **higher quality farms**.
3. They incorporate more off-farm income into their income portfolios (i.e., **shift away from reliance on the farm**).



Method

Using two waves of the LSMS Tanzania national tracking data set,
& focusing on the rural working-age population:

$$\Delta Y_{ih,2013-2009} = \alpha + M_{ih,2013}\beta + X_{ih,2009}\gamma + \delta_h + \varepsilon_{ih}$$

Change in outcome variable

Individual characteristics

Initial household fixed effect

Individual's location in 2013:
Urban center, **more densely populated rural** location, **less densely populated rural** location

From Beegle et al. (2011)

From Deb and Trivedi (2006)

Validated with a multinomial treatment effects model:

$$\Delta Y_{ih,2013-2009} = \alpha + M_{ih,2013}\beta + X_{ih,2009}\gamma + l_{iM}\lambda_M + \varepsilon_{ih}$$

Latent characteristics that determine migration destination

Method

Using two waves of the LSMS Tanzania national tracking data set,
& focusing on the rural working-age population:

$$\Delta Y_{ih,2013-2009} = \alpha + M_{ih,2013}\beta + X_{ih,2009}\gamma + \delta_h + \varepsilon_{ih}$$

Change in **outcome variable**:

- Value of **consumption** per adult equivalent per day (ln);
- **Land area** accessed;
- Indicator of local **soil quality**;
- **Farm profits** per acre;
- Individual **income-generating activities**; measures of household reliance on farm versus other sources of income

Individual's **migrant status** in 2013:
Self-reported + triangulated by location

'Urban' = main town in district
+ other urban areas



Descriptive results

Prevalence of migration from rural households, 2008/09 to 2012/13

	Status in 2012/13		
	Remained in same location	Migrated to rural location	Migrated to urban location
Rural residence in 2008/09 N=4,844 representing 12.64 million	88.21% 11.15 million	8.07% 1.02 million	3.72% 0.47 million

Characteristics of migration



Distance moved (km)	Mean = 125
Moved within the same district	46%
Moved to new district in same region	20%
Moved to new region	34%
Moved to an urban center	32%
Moved to a more densely populated rural location	22%
Moved to an equally or less densely populated rural location	46%
Observations	539

Results

	(1)	(2)			(3)
	DID-IHHFE	First-stage MMNL 1=Migrated to			Second-stage MSL
	Δ consumption (ln)	urban location	more densely populated rural location	less densely populated rural location	Δ consumption (ln)
Migrated to...					
1= urban location	0.63***				0.19***
1= more densely populated rural location	0.31***				0.45***
1= less densely populated rural location	0.17**				0.25**
1= Head or spouse		-0.82**	-2.21***	-1.04***	
1= Son of HH head		-0.71*	-1.66***	-1.02***	
Age rank in HH		-0.03	0.32**	0.12	
Distance to district headquarters (km)		-0.00	-0.01**	-0.00	
Individual characteristics (2008/09)	Y	Y	Y	Y	Y
Household characteristics (2008/09)		Y	Y	Y	Y
Initial household fixed effects (IHHFE)	Y				
λ (Migrated to urban location)					0.55***
λ (... more densely populated rural location)					-0.16***
λ (... less densely populated rural location)					-0.12***
Observations	4,742	4,742	4,742	4,742	4,742
Adjusted R-squared	0.79				
Sargan statistic P-value		0.33			

Standard errors clustered at HH level; *** p<0.01, ** p<0.05, * p<0.1

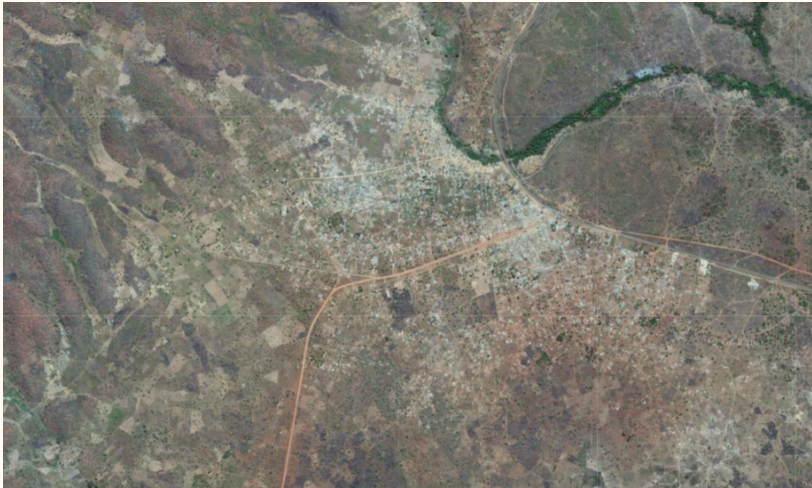
Multinomial treatment effects model estimated with 2,000 simulation draws.

Results

	Δ HH land per capita (acres)	Δ Net value crop harvest per acre	Δ 1= Soil not severely nutrient-constrained	self-employed	Δ 1= Individual is... a non-agricultural wage worker	an agricultural wage worker
Migrated to...						
1= urban location	-0.74***	0.17	0.12	0.03	0.26***	-0.04
1= more densely populated rural location	-1.04*	0.72**	0.14*	0.06	0.14*	0.00
1= less densely populated rural location	-0.12	0.45	-0.00	0.05	0.08	0.08
Individual controls and IHHFE	Y	Y	Y	Y	Y	Y
Obs.	4,742	3,594	4,742	4,742	4,742	4,742

	Δ Share HH income from... off-farm sources	non-farm sources	Δ 1= HH specializes in... agriculture	self-employment	non-agricultural wage work
Migrated to...					
1= urban location	0.36***	0.38***	-0.28***	0.09	0.32***
1= more densely populated rural location	0.32***	0.23***	-0.34***	0.17**	0.06
1= less densely populated rural location	0.08*	0.06	-0.05	0.06 ⁺	0.03
Individual controls and IHHFE	Y	Y	Y	Y	Y
Obs.	4,742	4,742	4,742	4,742	4,742

An example of a densely populated rural settlement in the Kagera region



Established: ~1995

Status: Rural

Population: ~2,000 households,
12,000 people

Population density: ~200
persons/km² (per village
boundaries)

~70% first-generation **migrants**

**Ethno-linguistic fractionalism
index:** 0.8 (extremely diverse)

Main findings

- Rural population is quite **mobile**.
- 68% of rural migrants move to another rural location.
- Migration results in consumption growth, regardless of destination.
- Intra-rural migration not generally used to access more land, though perhaps to obtain better quality (more profitable) farms.
- Intra-rural migrants are fashioning income portfolios of **reduced agricultural emphasis**
→ Importance of rural nonfarm economy.



Further research

- Distinguish between permanent/ temporary migration
- Consider perspectives of the sending/ receiving households and communities
- Alternate pathways of welfare change

Implications for policy makers and researchers

- Facilitate labor mobility
- Development strategies should encompass growing villages/ hotspots of rural in-migration.
- Consider role of intra-rural migration in the structural transformation process

Thanks for your attention!



Extra descriptive results

Changes associated with migration (Mean Δ)

Variable (2012/13 minus 2008/09 values)	Migrated to...			Did not migrate
	Urban location	More densely populated rural location	Less densely populated rural location	
Land accessed per capita (acres)	-0.37***	-0.30**	0.02	0.13***
Net value crop/tree crop harvest per acre (100,000s TSh) ^a	0.42	0.52**	0.60**	0.14**
1= Has done non-agricultural wage work in past year	0.29***	0.16***	0.11***	0.03***
Share HH income from non-farm sources	0.47***	0.19***	0.10***	0.06***
Observations	183	106	250	4,203

Note: Asterisks reflect the results of a Wald test of the null hypothesis that the mean change equals zero;

^a Applicable if individual resided in a cropping household in both 2008/09 and 2012/13.

Extra robustness checks: 'Migrant' definition

DID-IHHFE		Δ HH land per capita (acres)	Δ 1= Soil not severely nutrient-constrained	Δ 1= Individual is a non-agricultural wage worker	Δ Share HH income from off-farm sources	
Migrant definition: Self-reporters and movers		Δ consumption (ln)				
Migrated to...						
1= urban location	0.62***	-0.80***	0.13*	0.26***	0.36***	
1= more densely populated rural location	0.28***	-1.23	0.11*	0.12*	0.28***	
1= less densely populated rural location	0.15*	-0.15	0.00	0.07 ⁺	0.09**	
Moved for reasons other than school or marriage						
Moved for reasons other than school or marriage		Δ consumption (ln)	Δ HH land per capita (acres)	Δ 1= Soil not severely nutrient-constrained	Δ 1= Individual is a non-agricultural wage worker	Δ Share HH income from off-farm sources
Migrated to...						
1= urban location	0.60***	-0.72***	0.06	0.33***	0.30***	
1= more densely populated rural location	0.26	-0.78**	0.09	0.19*	0.34***	
1= less densely populated rural location	0.10	-0.06	-0.00	0.13*	0.08 ⁺	

Individual controls and IHHFE in all regressions; N=4,742

Extra robustness checks: Model specification

Multinomial treatment effects model	Δ HH land per capita (acres)	Δ 1= Soil not severely nutrient-constrained	Δ 1= Individual is a non-agricultural wage worker	Δ Share HH income from off-farm sources	Δ 1= HH specializes in agriculture
Migrated to...					
1= urban location	-0.15	0.11*	0.32***	0.35***	-1.24**
1= more densely populated rural location	-0.50**	0.11*	0.40***	0.54***	-0.45
1= less densely populated rural location	-0.11	-0.00	0.12***	0.06 ⁺	-0.19