

Does **Spatial** Misallocation of Labor undermine Development?

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Goals

1. Highlight **two facts** about spatial & seasonal productivity gaps.
2. Connect **micro** and **macro** development research on these topics
3. Methodological point about the complexities of **scaling** up micro interventions that can address spatial misallocation. [Bjorkman, Udry talks]
4. Connections to other markets – credit, savings [Breza, Casaburi, Karlan talks]
5. The future: **Climate**-change induced migration [Jayachandran talk]

Fact #1: *Within* countries, cities offer higher wages

| | All Countries |
|---------------------|---------------|
| 10th Percentile | 1.3 |
| Median | 2.6 |
| Mean | 3.5 |
| 90th Percentile | 6.8 |
| Number of Countries | 151 |

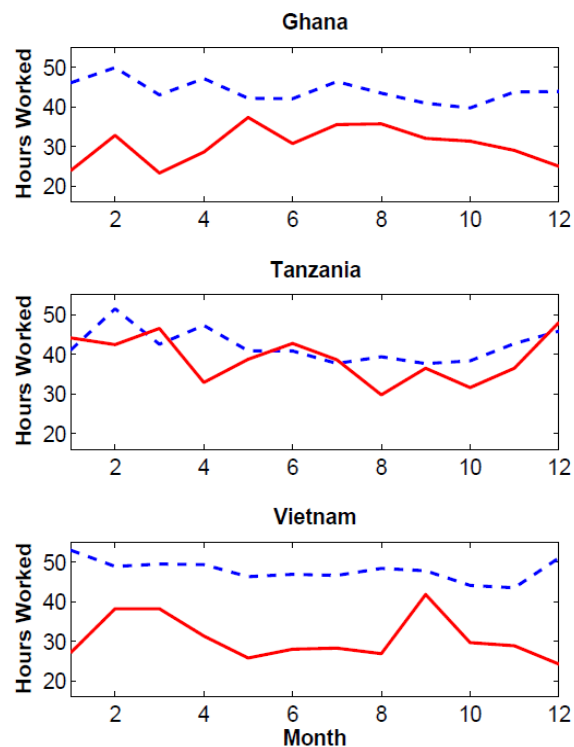
- Wages 350% higher in cities (Gollin, Lagakos and Waugh, QJE 2014)
- Wages are 220% higher in cities even after adjusting for hours worked, human capital, etc.
- (Gap is larger in poorer countries)
- **Panel Data:** No wage gaps among *movers* in Kenya, Indonesia (Hicks, Kleemans, Li, Miguel 2021), Brazil (Alvarez 2020), but 20-30% gaps evident in China, Ghana, Malawi, South Africa, Tanzania (Lagakos, Marshall, Mobarak, Vernot, Waugh JME 2020)

Micro and Macro/Growth Policy Implications

- Is this an arbitrage opportunity for poor households?
 - Why does the gap exist if there are no mobility restrictions within countries?
- Are developing countries poor because citizens are inefficiently spatially allocated within those countries?
- Could you generate **growth** simply by relocating people from unproductive rural areas towards thriving urban areas?
- **Contrary** view: workers already efficiently sorted across space
(Herrendorf and Schoellman, 2018; Lagakos and Waugh, 2013; Young, 2013)

Fact #2:

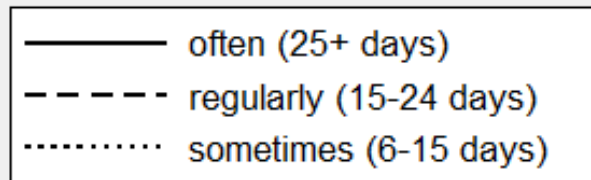
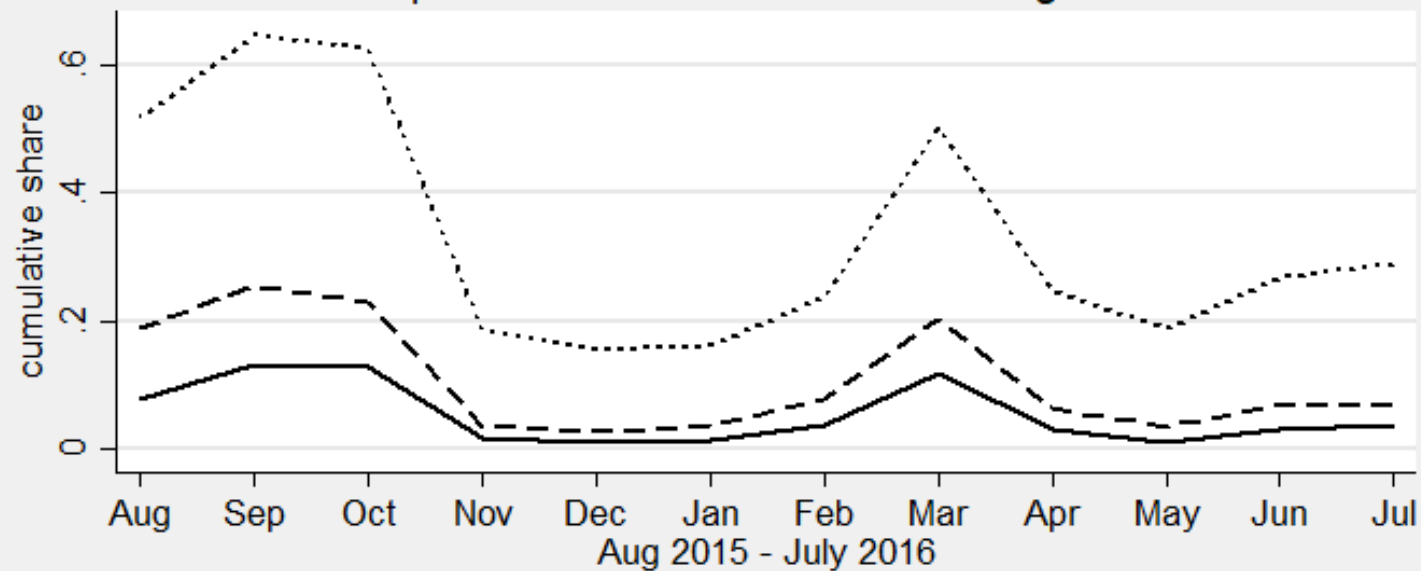
The rural-urban wage gap **increases** during certain seasons



- Work is seasonal in rural agrarian areas – depends on the crop cycle.
- “Hungry seasons” has become part of micro-development economists’ lexicon.
 - Bangladesh (Bryan et al 2014)
 - Zambia (Fink et al 2020, Augenblick et al)
 - Malawi (Brune et al 2017)
 - Nepal (Mobarak et al 2023)
 - India (Mani, Mullainathan et al 2013)

Seasonal Hunger in Northern Bangladesh

frequency in which households
restrict portion size or number of meals in given month



Source: No Lean Season research team's calculations; 2016 Household Follow-up Survey for the 2014 RCT (control group only)

not just a recent phenomenon...

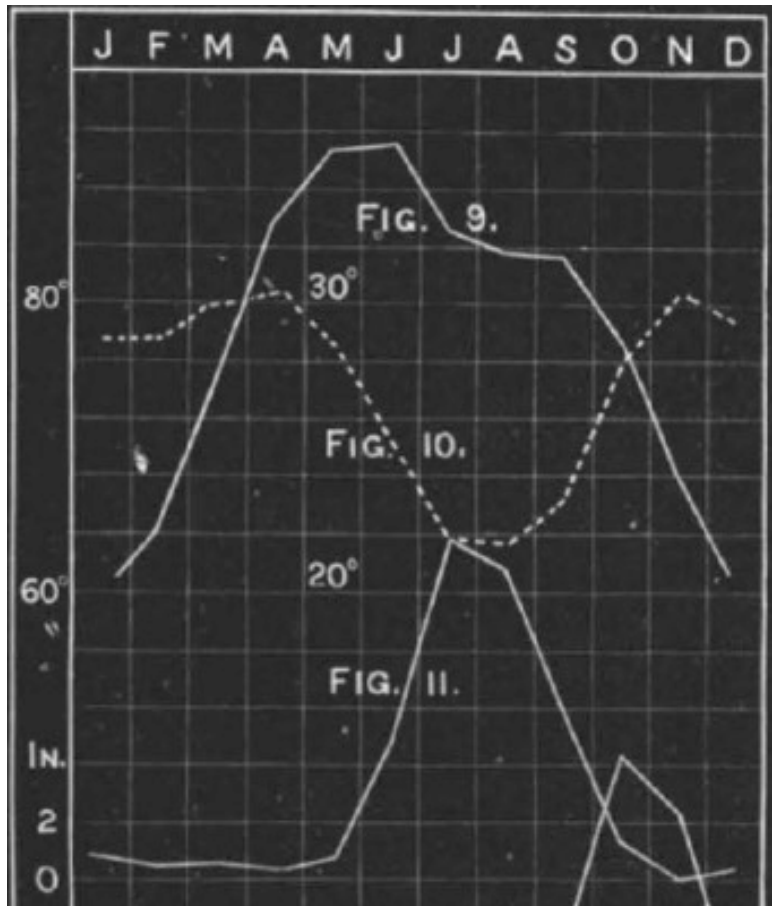


Fig 11: Rainfall

Fig 10: Mortality Rate (Northwest Provinces, Oudh)

Source:

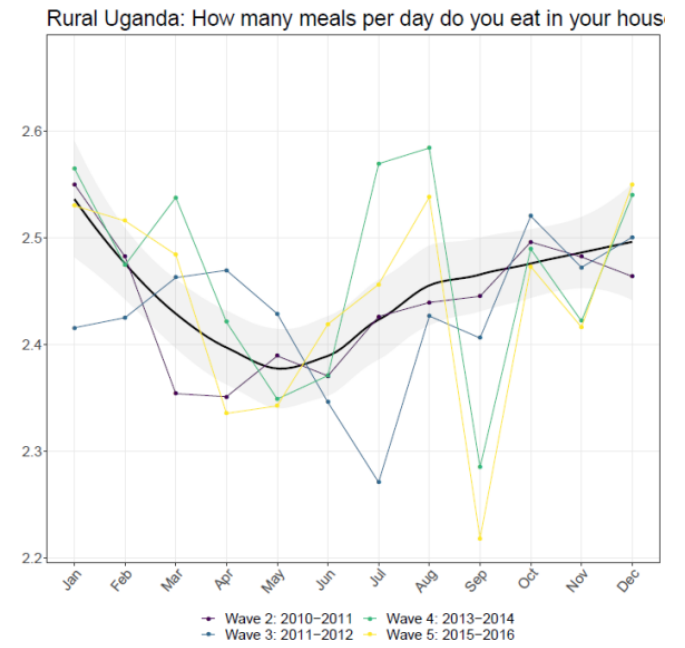
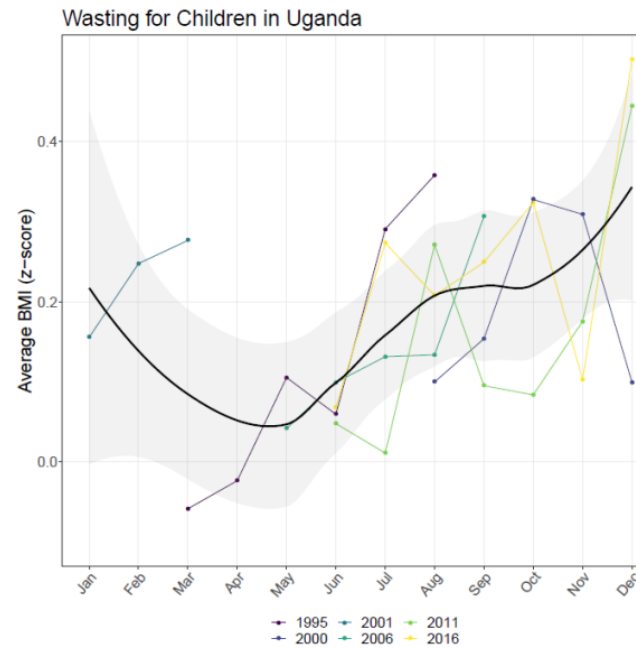
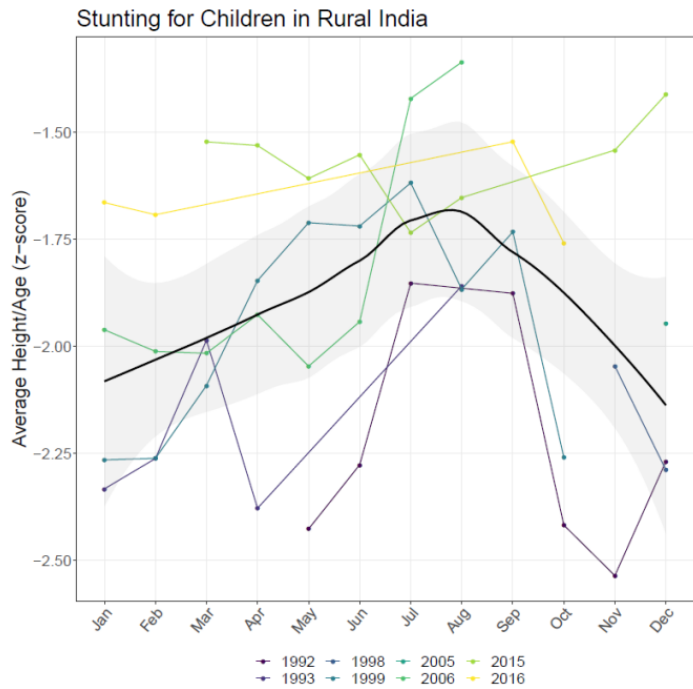
NATURE

[Feb. 7, 1884

Number of Deaths from all Causes Registered in the North-West Provinces and Oudh during the Five Years 1878-82

| Year | Jan. | Feb. | March | April | May | June | July |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 1878 | 137,161 | 140,173 | 143,760 | 157,326 | 136,867 | 120,767 | 91,677 |
| 1879 | 75,387 | 62,837 | 71,874 | 87,302 | 100,040 | 83,802 | 73,120 |
| 1880 | 116,366 | 72,030 | 69,250 | 72,534 | 76,622 | 78,200 | 56,502 |
| 1881 | 95,226 | 91,011 | 97,829 | 124,831 | 115,683 | 86,083 | 81,609 |
| 1882 | 114,220 | 92,472 | 96,596 | 107,628 | 119,714 | 114,382 | 122,110 |
| Hill Total | 538,360 | 458,523 | 479,309 | 549,621 | 548,926 | 483,234 | 425,018 |

...Evident in contemporary DHS and LSMS data from Asia and Africa



Micro and Macro Policy Implications

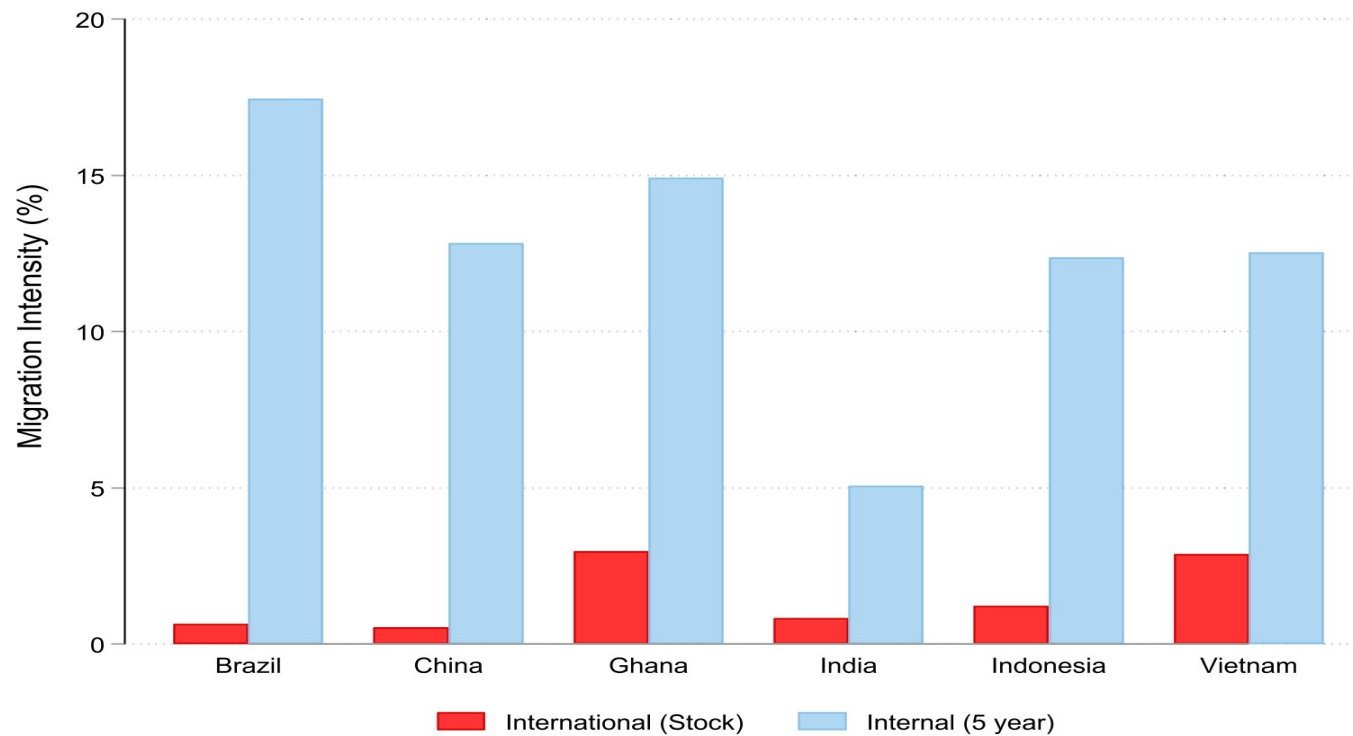
1. Should we create job opportunities in rural areas during lean seasons?
 - e.g. NREGA in India – can distort labor markets (Imbert and Papp 2015)
2. Or should we invest in better transport connectivity between rural and urban areas? [Asher and Novosad, 2020, Brooks and Donovan, 2020]

Two strategies above are substitutes in individual choices (Imbert & Papp 2020)

3. Should we directly facilitate individual/household migration?

Internal Migration More Common and Easier to “facilitate” through interventions than International

(but international migration offers *much larger* returns)



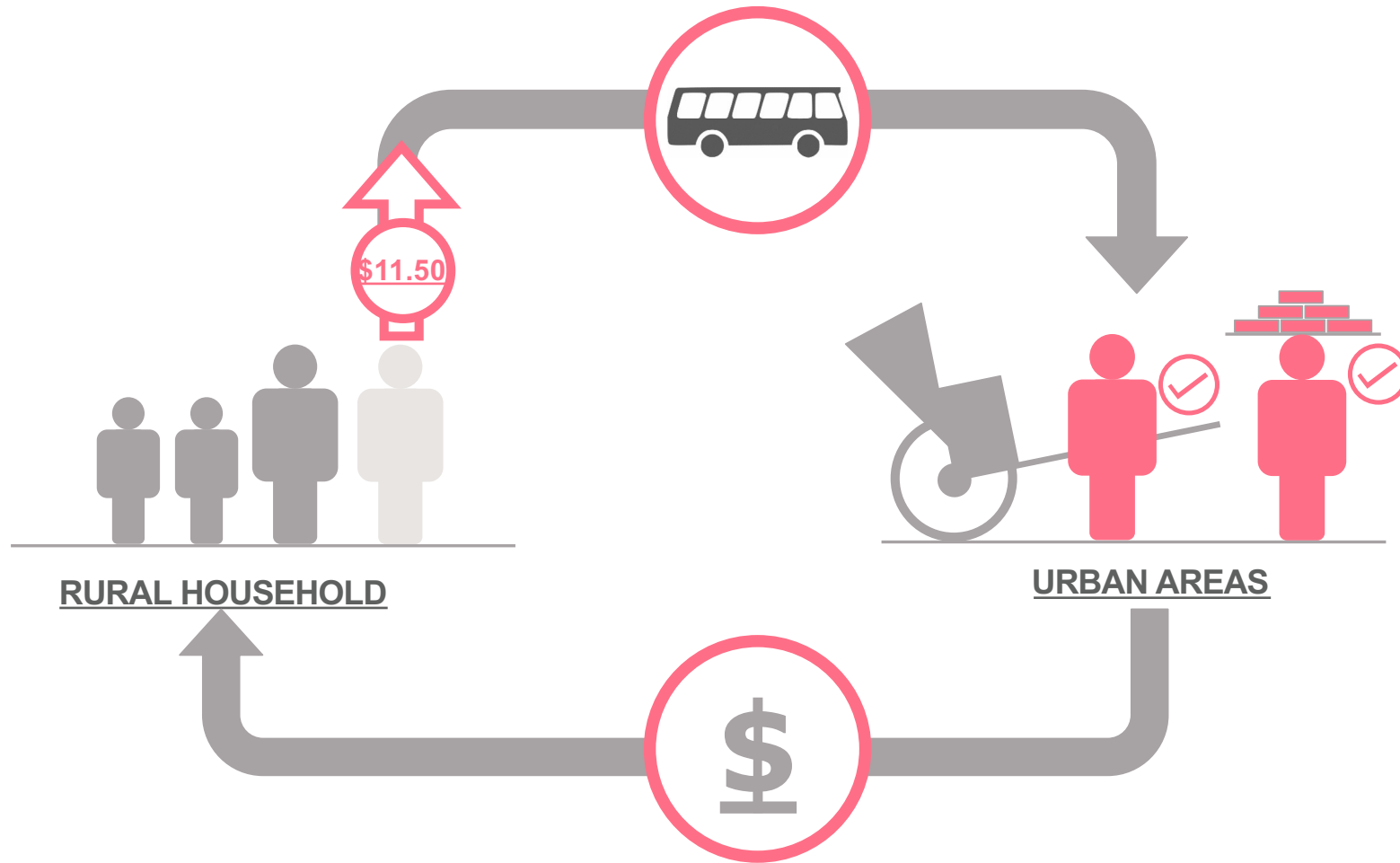
Data sources: UN DESA, 2020, 2022; Bell et al., 2015

Why don't more people migrate to cities?

Micro literature explains why workers remain in low-productivity areas (Caselli 2005)

- 1. Migration Cost**
 - Bryan and Morten 2019, Bazzi (2017), Kleemans (2022)
- 2. Informational Barriers**
 - Baseler (2023), McKenzie, Gibson, Stillman (2013)
- 3. Income Risk in urban areas**
 - Lewis (1954), Bryan, Chowdhury, Mobarak (2014)
- 4. Rural Amenities**
 - Informal insurance, caste networks (Munshi and Rosenzweig 2016, Meghir et al 2022)
- 5. Rural Support programs**
 - Public works (Imbert and Papp 2019), microcredit (Mahmud 2012)
- 6. Urban disamenities**
 - Pollution (Khanna, Liang, Mobarak, Song 2023)
- 7. Non-monetary disutility of migration**
 - Lagakos, Mobarak and Waugh (2023), Imbert and Papp (2020)
- 8. Explicit policy restrictions**
 - Hukou (Gao, Liang, Mobarak, Song 2023), Hukou in Vietnam (Huynh 2023)

A Micro Intervention on Seasonal Migration



Scaling Uncertainties and Complexities

Beneficiaries

Rural Spillovers

Urban Spillovers

Economic Effects

Migration
Consumption

BCM 2014

Income
Labor Supplied

ACM 2018

Non-Economic Effects

Unintended Consequences

Beneficiaries

Rural Spillovers

Urban Spillovers

Economic Effects

Migration
Consumption BCM 2014

Income
Labor Supplied ACM 2018

Non-Economic Effects

Migration Disutility LMW 2023

Female Empowerment
Divorce
Intra-household
Decision Making MRe 2018

Domestic Violence MRa 2018

Health (MUAC,
Nutrition)
Education (Exp.) BCM 2014

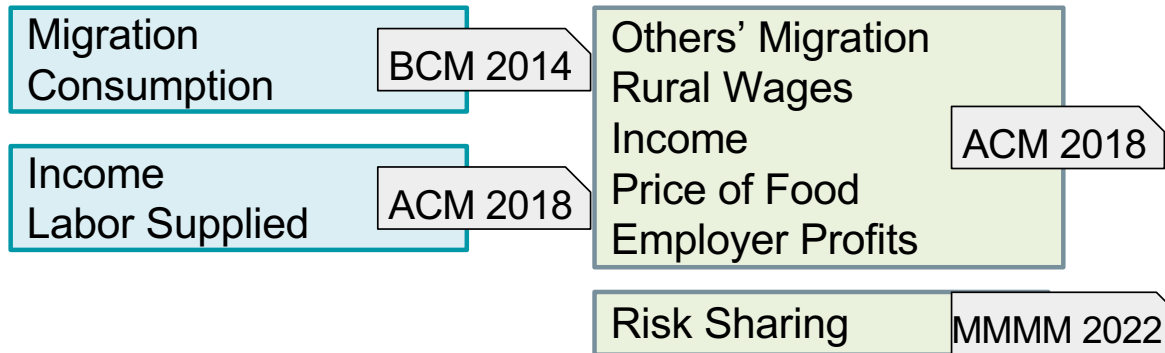
Scale up in Stages, Continue Collecting Data

Beneficiaries

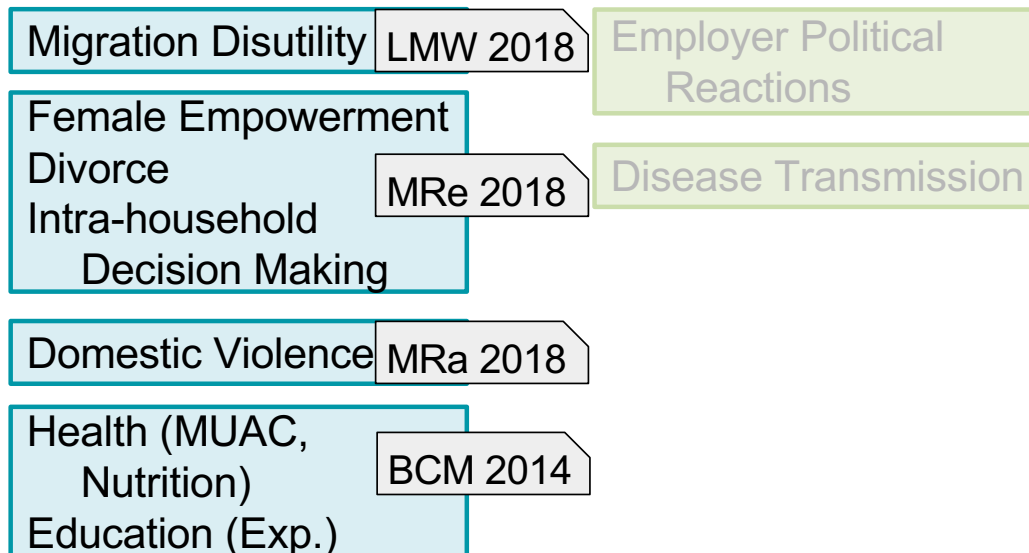
Rural Spillovers

Urban Spillovers

Economic Effects



Non-Economic Effects



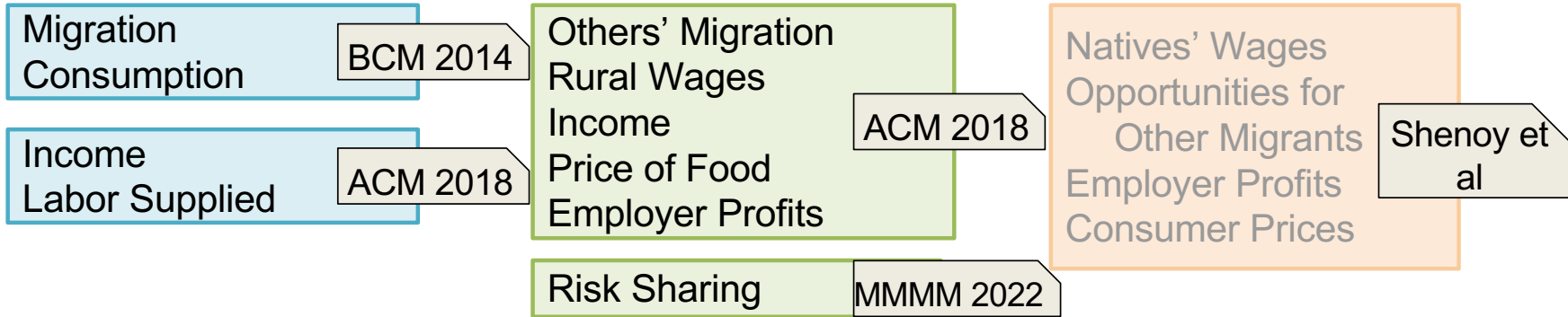
Continue Asking New Questions as you Scale

Beneficiaries

Rural Spillovers

Urban Spillovers

Economic Effects

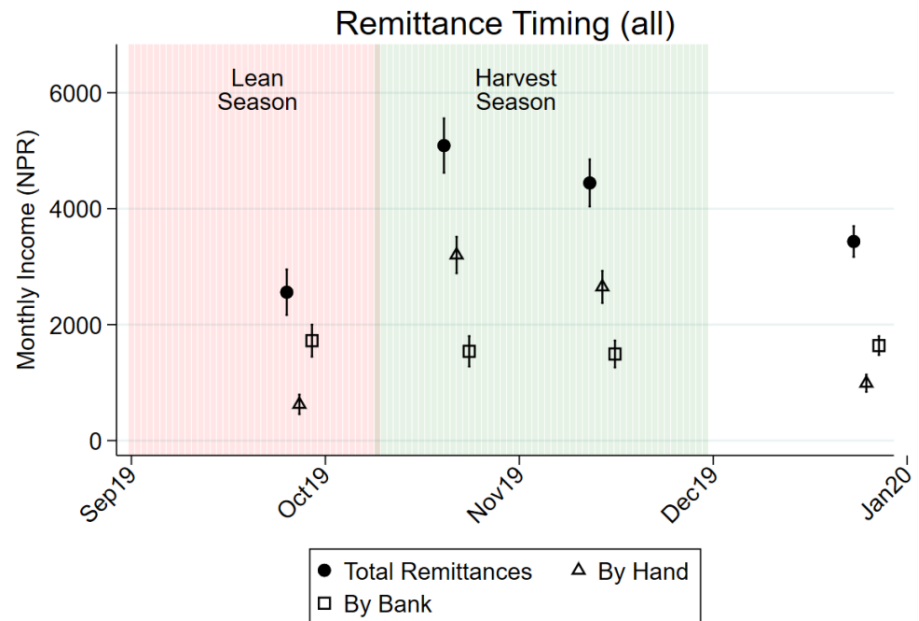
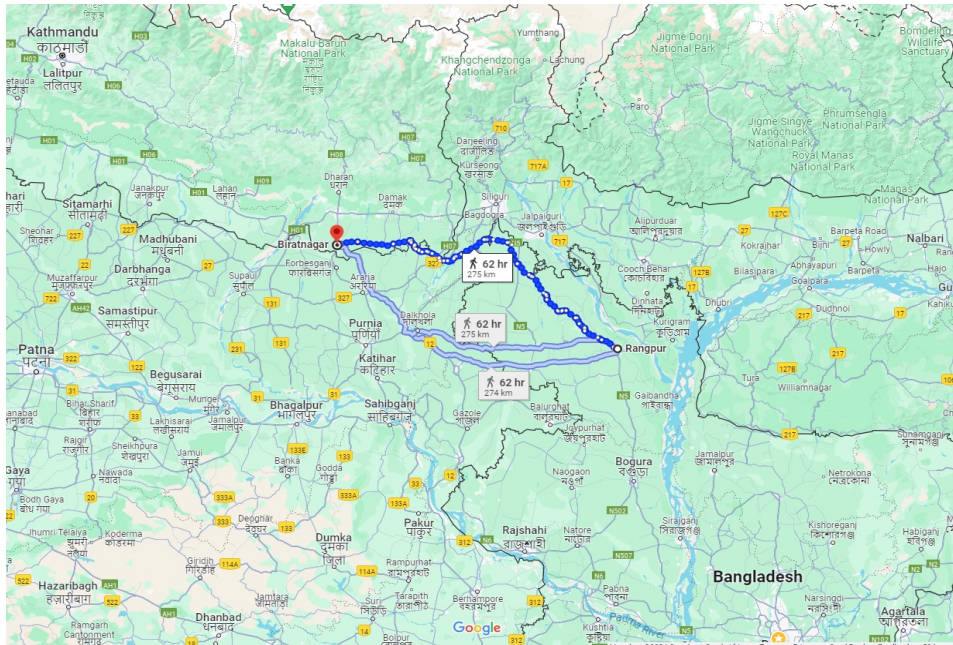


Non-Economic Effects



Udry's point about context-relevance

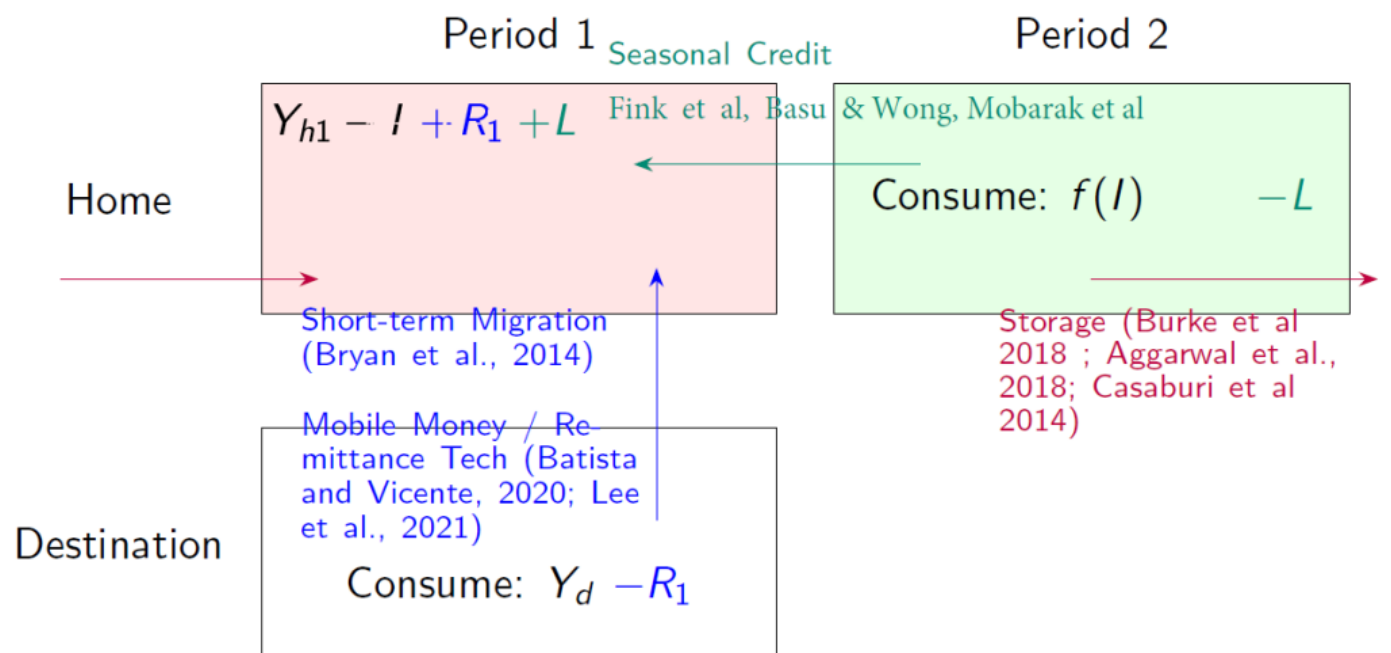
- Idea *completely* irrelevant in Nepali terai, only 132 miles away!
- There is a lean season, but 65-85% of people already migrate
- New problem: **remittances** come back at the wrong time, during harvest ☹️

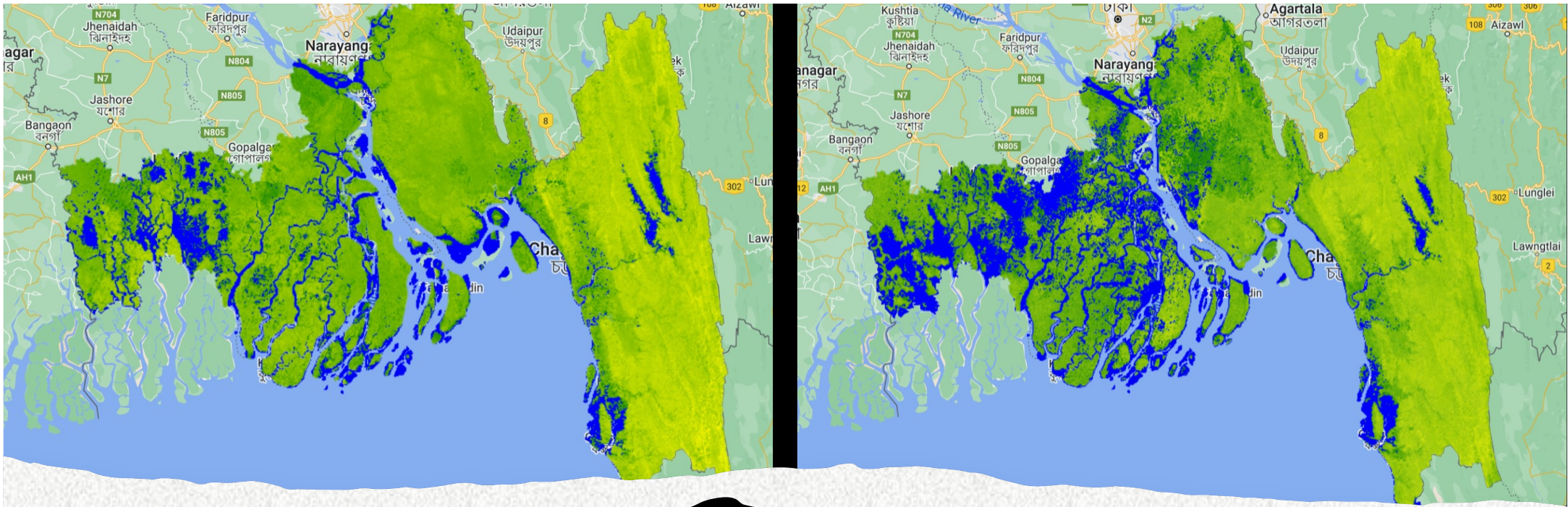


Consumption Smoothing Fails because *many* markets fail

Two broad ways to smooth consumption:

1. Inter-temporally (save from past or borrow from future)
2. Spatially (migrate and send remittances)



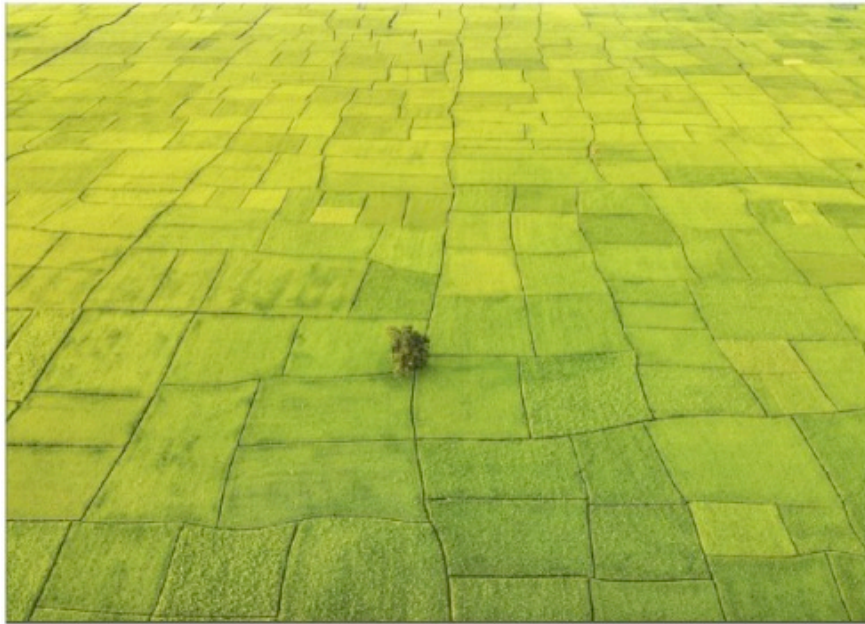


4. Creeping Effects of Climate Change on Migration

- Change from 1988 to 2019
- Increased Soil and Water Salinity
- Relative Mean Sea Level rising at a rate of 7.9 mm/year

Effects of Rising Salinity

- Before



- After





Agriculture gives way to Aquaculture