



# Comments on Paper

“Impact of labor outmigration on agricultural productivity in Nepal”

by

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# Presentation Outline

- Conceptual Issues: Relation between Outmigration and Agricultural Productivity
- Conceptual Issues on Agricultural Productivity
- Measurement Issues in Agricultural Productivity
- Overview of current status of research in Agricultural Productivity
- Gaps and Issues in measurement in Agriculture Productivity
- Importance of current proposed study

# Research Questions

- Does labor outmigration influence (i) **agricultural productivity**, (ii) women's participation in farming, and (iii) exit from farming?
- Do remittances influence (i) **farm technology use**, (ii) women's participation in farming, and (iii) exit from farming?
- Do modern **farm technology use** and exit from farming influence subsequent **outmigration**?

# Assumption on Rural-Urban Migration

A: Rural to urban migration of youth occurs as a result of “**surplus labor**” in rural areas

B. In reality it is not due to **surplus labor** but due to **greater income earning opportunities** and better perceived **welfare** in the urban areas.

C. **Push factors** (low productivity, poverty and lack of employment and lack of safety) in origin and **Pull factors** (better income and employment opportunities, access to better amenities, social safety) in destination influence migration decisions

- **Outmigration can affect agricultural production through both labor and capital markets.** The withdrawal of labor out of agriculture into non-farm activities may or may not negatively affect agricultural output, depending on the presence of **surplus labor** and the extent of **rural labor market perfection** (Bardhan and Udry 1999).

# Relationship between Outmigration and Agricultural Productivity

- The influences of migration on agriculture productivity in migrant sending households are complex and ambiguous.
- Literature does not support the pessimistic view that migration discourages production in migrant sending economies, nor the view implicit in separable agricultural household models that migration and remittances influence household incomes but not production.
- Since the relative influences of migration on liquidity, risk and labour constraints are unknown, the net impact of migration on production is ambiguous.
- If rural households face a missing or imperfect labour market, migration could exacerbate labour constraints by competing for scarce human capital.

# Relationship between Outmigration and Agricultural Productivity

- In an agricultural household model with perfect markets the allocation of family time to migration activities and the receipt of income transfers from migrants do not affect production. Under the assumption of perfect labour markets, households may hire substitutes for family members who migrate at a wage that is exogenous to the household.
- In an agricultural household model with imperfect markets and in a non-separable household model, in which migration and remittances can stimulate productivity enhancing investments- such as new HYVs, chemical fertilizers, agricultural machinery, soil fertility improvement
- Literature does not support the pessimistic view that migration discourages production in migrant sending economies, nor the view implicit in separable agricultural household models that migration and remittances influence household incomes but not production

# Relation between Outmigration & Productivity

Depend on the Context of farming systems, market access, irrigation availability and soil fertility and Socioeconomic (demography) context

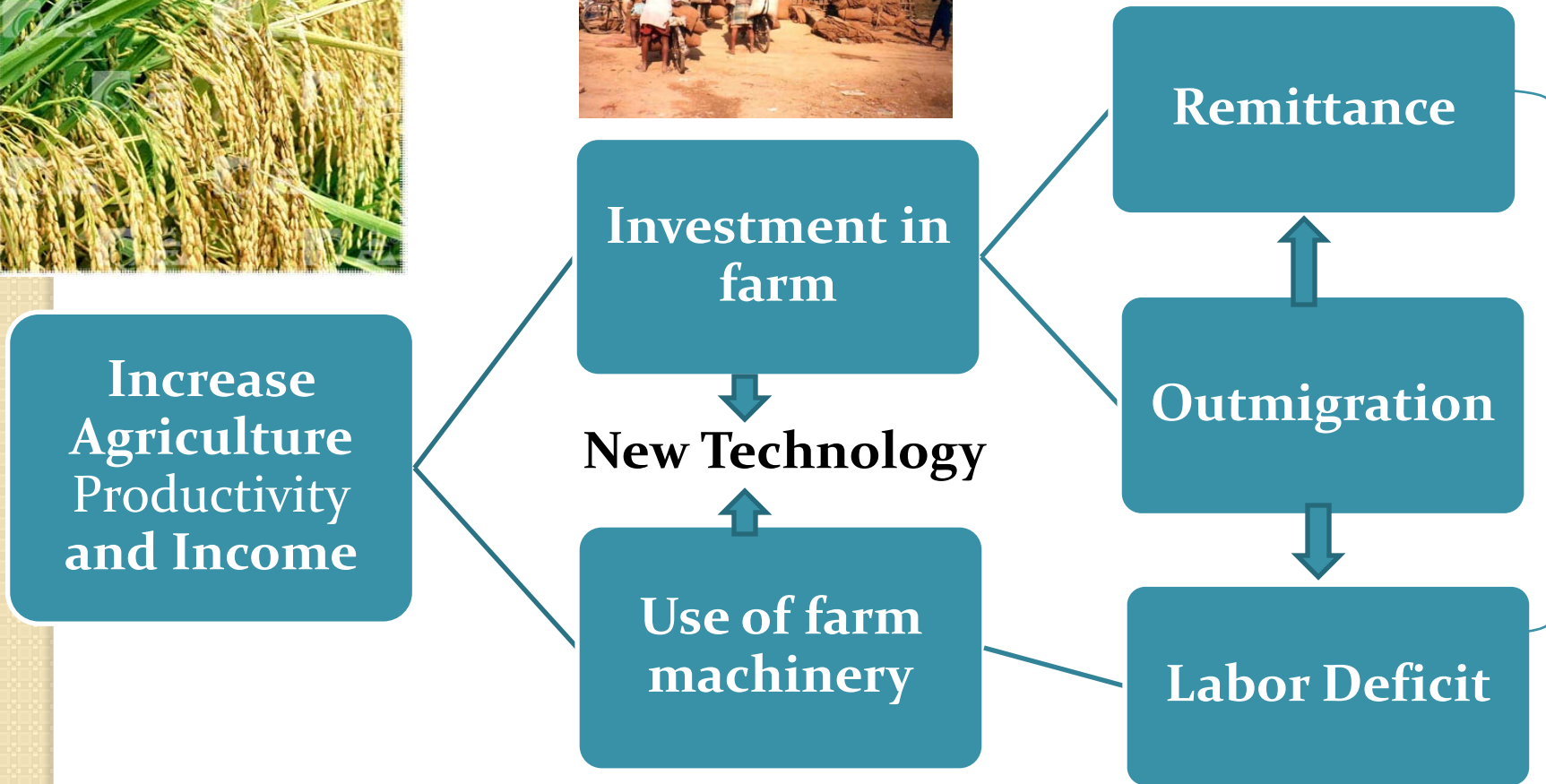
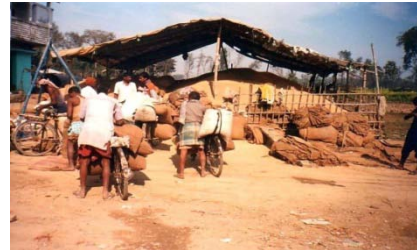
- In market accessible irrigated area with better soil fertility- Substitution of labor with farm machinery and modern technologies-which increase agricultural productivity and also increase efficiency in production
- In remote market inaccessible rainfed area with poor soil fertility-less interest and emphasis on farming resulting in low cropping intensity, low productivity and in extreme case abandonment of land-due to outmigration
- In locations with higher proportion of educated youth and better social networks in migrating destinations are more likely to have outmigration of youth, the effect is ambiguous-which is determined by above two factors-market access and favourable land holding



# Concepts of Agricultural Productivity: Theoretical and Empirical Studies

- **Theoretical studies** define productivity and its determinants more rigorously and set precise relationships for estimation. They also suggest hypotheses that can be tested empirically.
- *Empirical studies* on the other hand examine trends over time and quantify the contributions of specific inputs technologies policies, and other productivity-enhancing factors.
- These are measured at three hierarchical levels “**macro**”, “**meso**” and “**micro**” level of studies.
- Macro studies use time series data reported at the national level, while meso studies use national data disaggregated into farm types (large or small), agro-ecological zones, or administrative regions.
- Micro studies use cross-sectional data which permit comparison across different sub-groups by farm types, socioeconomic groups, etc. at a particular point in time

# Outmigration & Agriculture Productivity (Farm HH with imperfect markets with credit constraints)



**Favourable Policy Environment**

# Productivity Measurement Methods

- Conventionally, productivity is measured by an index of output divided by inputs.
- Two measures of productivity are frequently used: the partial factor productivity (PFP) and total factor productivity (TFP).
- Partial factor productivity is simply the ratio of output and any one of the inputs, typically labour or land.
- Although commonly used, the partial productivity measure has one important weakness in that it does not control for the level of other inputs employed.
- TFP on the other hand measures output per unit of total factor inputs. Therefore, total factor productivity is a generalization of single factor productivity measures such as land productivity or labour productivity.

# Measurement of Total Factor Productivity

- **Non-parametric approach** e.g Malmquist-type indices, Data Enveloping Analysis (DEA)
- **Parametric approach** (Econometric methods) -Engineering approaches, Average Production Function, Stochastic Frontier analysis etc.)

# Approach for Study -Methods

## Approaches

- Experimental RCTs
- Leveraging a-18 year panel data, CVFS
- Instrumental variable
- Prospective panel design
- Household level fixed effect

## Specific Methods

- Mixed method, multilevel information collection
- Longitudinal panel
- Multimode data collection
- Crop cutting surveys in the largest plot

# Current status on measurement

- Partial productivity measures – mainly land and labor productivity measures

## Productivity Measures

- Crop yield per hectare (crop yield)
- Meat and milk yield per animal
- Return to labor per unit area

# Difficulties in Measurement

- Technology adoption and its impact on productivity- several technologies- Improved variety adoption easy but not other technologies such as RCTs, cropping system, water productivity etc.
- Economic theory does not offer unambiguous predictions with regard to the magnitude nor the sign of migration's impacts on agricultural productivity. Rigorous econometric tests are difficult, because many of the same variables are likely to affect both migration and its outcomes.
- Assessing production impacts is further complicated by the possibility that the parameters shaping production may change in response to migration. For example, households may switch to new agricultural technologies when family members migrate and send home remittances that loosen liquidity constraints on productivity-enhancing investments.

# Gaps and Issues

- Nationally represented data not available for Key inputs (fertilizer use, irrigation, pesticides, machinery use) including labor use
- Available farm land data e.g. land holding size does not disaggregate by land quality (e.g. rainfed, irrigated land, productive, marginal land per ha)
- Data on Total Outputs of the farm HHs or administrative unit are not available e.g. total agriculture outputs combining crops and livestock outputs
- Limited information on measurement of total factor productivity (ratio of total outputs to total inputs)
- Longitudinal panel data on agricultural productivity is not available (available NLSS has limited information on total productivity measures)



# Importance of the Current Study

- Relationship between Outmigration and Agricultural Productivity is not clearly known. Therefore, this is very relevant study to explore this issue.
- Panel survey over the years is essential to analyze relationship between Migration and Agricultural Productivity.
- Most of current available studies are based on annual survey of household data. Migration is a complex phenomenon. Study of diverse migration issues such as seasonal, long-term, internal and external migration will require longer term data generation over years from same HHs because there are several interactive effects of many factors in migration
- The study looks very much relevant since it adopts intensive Longitudinal Panel survey of Household in Chitwan Valley
- Study would have been more useful, relevant and representative for Nepal if similar Panel Longitudinal survey would have been undertaken in remote market, inaccessible and marginal locations and compared with this more market accessible favorable location such as Chitwan Valley

**THANK YOU**